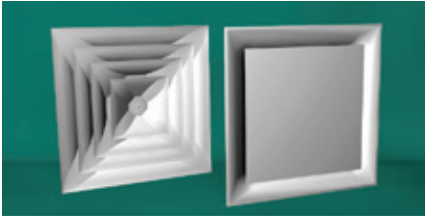




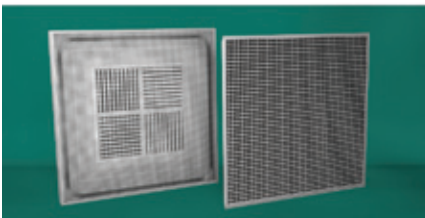
Ceiling Diffusers



Square Ceiling Diffusers

SCD/ASCD, SCDA/ASDA, SPD/ASPD, SPD HI, SPD LT

Price offers a complete range of square cone ceiling diffusers in steel or aluminum construction. Available with fixed or adjustable air patterns, square cone diffusers are the most popular and efficient ceiling diffusers for true 360° degree radial diffusion. Standard ceiling modules, numerous mounting borders, and a wide range of inlet sizes are available. **C7**



Perforated Ceiling Diffusers

PDN/PDNE, PDSP, PDF/APDF, PDC/APDC, PDMC/APDMC, PDDR/PDDRE, PFRF/PFRFE/APFRF/APFRFE, PDS, PDR

Price offers a full line of perforated supply and matching return diffusers that provide a smooth, even appearance that blends into the ceiling. Perforated supply diffusers are available with adjustable louvered pattern controllers on either the face or neck, curved blades, or modular cores, which provide an excellent horizontal air pattern with strong Coanda effect. A complete range of accessories are available. **C31**



Square and Rectangular Directional Diffusers

SMD/AMD, SMDA/AMDA, CSRD, SMX/AMX, SMCD/AMCD, CVD/SCVD/ACVD/LCMD/SMDP

The Price line of square and rectangular directional diffusers allows for versatility of application. These louvered, curved blade and modular core diffusers are available in a wide range of air pattern core styles, with square or rectangular inlets. They can supply large volumes of air at low sound levels and pressure drops. **C89**



Round Cone Diffusers

RCD/RCDE/ARCD/RPD/RID Series

Price offers a complete line of round cone ceiling diffusers that combine the classic beauty of round cone styling with maximum air diffusion efficiency.

..... **C140**

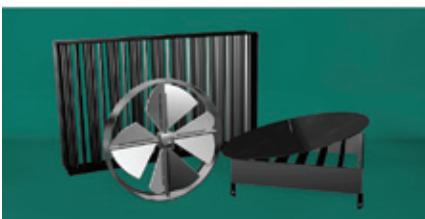


Twist Diffusers

RTD/RVD

Price offers a selection of twist diffuser outlets that are suitable for a wide range of applications. They can supply large volumes of air at low sound levels and pressure drops, and are suitable for installation in higher ceiling applications.

..... **C149**

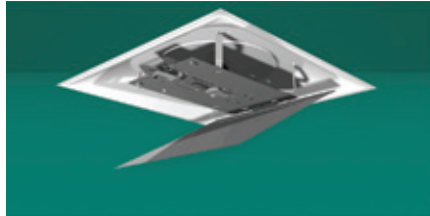


Accessories for Ceiling Diffusers

VCR8/VCR8E/VCR7/VCR6/VCS3/VCR9

Price offers a complete line of surface mounting accessories and air volume dampers for round and square neck applications and duct mounted applications.

..... **C181**



Varitherm[®] Series VPD-C Cooling only, VPD-HC Heating and Cooling
 The Price Varitherm[®] is a thermally powered, self-modulating diffuser that features a specialized linkage design for optimal zone temperature control in a stand-alone package. The Varitherm[®] VPD-HC is available for heating and cooling modes with an automatic heating/cooling changeover, and the Varitherm[®] VPD-C is available for cooling only applications. **C199**



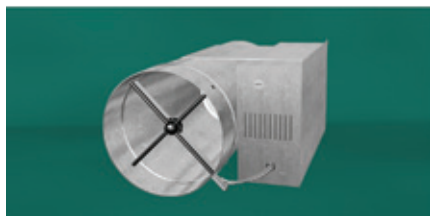
Prodigy[®] Series

The Price Prodigy[®] diffuser features an architecturally pleasing faceplate design and high performance inner cone. A DDC controller utilizes advanced adaptive control algorithms and a high torque motor to modulate air flow and maintain constant room temperatures. The Prodigy[®] Series allows for true VAV control in cooling and heating cycles. Reheat, control of up to 5 zones, building automation, and system pressure control are all possible with the Prodigy[®] Series. **C208**



BACnet Interface Option

The Prodigy BACnet interface option allows the diffuser to be connected to a BACnet network. When connected to the network, Prodigy[®] can share data with other devices, allowing the Building Automation System to monitor each Prodigy diffuser and send commands based on schedules and occupancy modes. **C220**



Pressure Control Valve PCV

The Price PCV is a pressure control valve for use upstream of diffusers. A static pressure sensor downstream of the PCV provides a signal for the valve to control, ensuring that the static pressure in the duct does not exceed "The Design Pressure". The PCV can be used in either a by-pass configuration where excessive air is by-passed into the ceiling space, or where the PCV controls the pressure in the duct by dampening the upstream supply. **C224**



Accessories for VAV Diffusers PRC, PPM

Price offers additional accessories for both the Prodigy[®] and Varitherm[®] diffusers. The PRC is a mechanical pressure relief collar suited for Price VAV diffusers, which bleeds air into the ceiling space when the inlet static pressure exceeds .25 in. w.g. The PPM is a power module designed to allow for up to 30 Prodigy[®] diffusers to be connected in series with minimal electrical wiring. **C229**

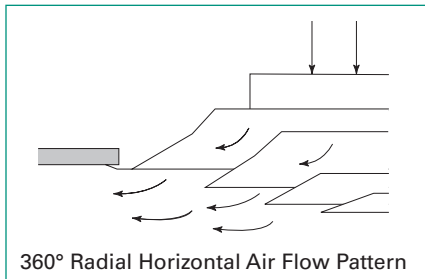
Ceiling Diffusers Application Guidelines

Overview

This section presents a full range of ceiling air diffusers. The performance objective of a ceiling air diffuser is to deliver conditioned air into an occupied space in a quiet draft-free manner. The performance efficiency of a particular diffuser design is usually judged by the diffuser's ability to rapidly dissipate the air velocities and temperature differential of the supply air before it enters the occupied space. Many models have been developed in response to specific air distribution requirements. Others have been developed or modified to meet architectural requirements of appearance, module size or other aesthetic considerations.

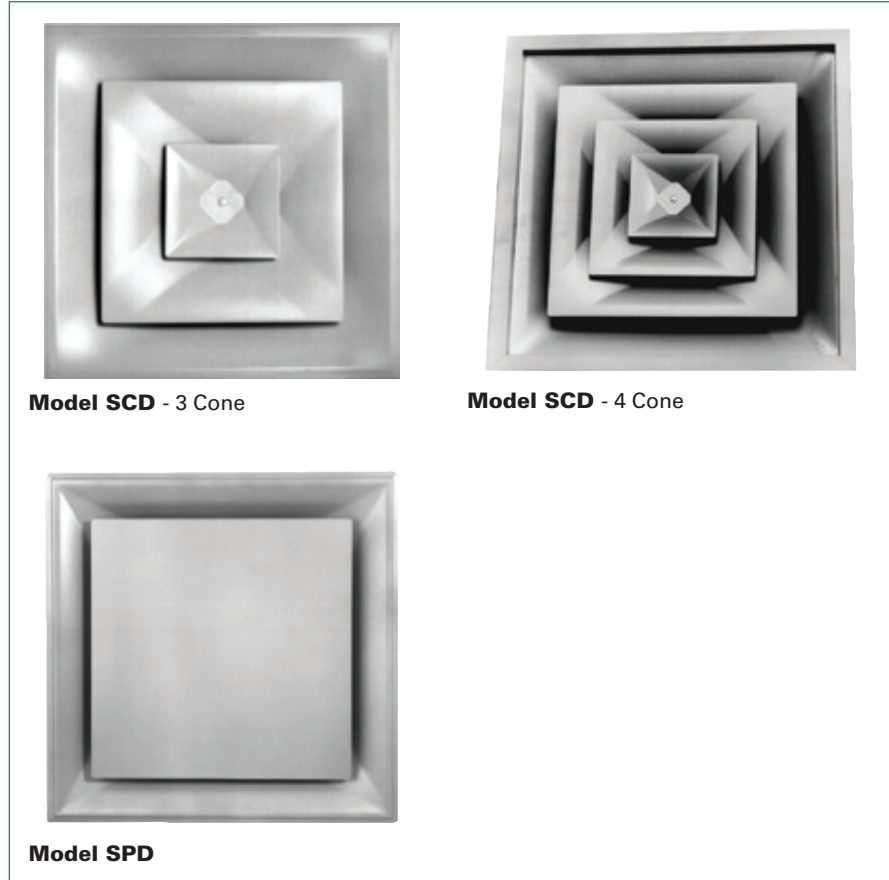
Square Cone Diffusers

The most popular, and one of the most efficient in the market today, is the family of square multiple cone ceiling diffusers. The cones are one-piece die-formed with smooth aerodynamically designed surfaces and no corner joints. With a round inlet, they combine the performance of a round diffuser with a square modular appearance. The square cone diffuser provides a true 360° radial horizontal air flow pattern, ideal for VAV applications. The 360° radial horizontal air flow promotes rapid mixing, temperature equalization and velocity reduction. A consistent, stable air pattern is maintained as the air volume is reduced. For ceiling applications, neck velocities as low as 75 fpm on reduced air volumes result in stable, horizontal air distribution without dumping. On exposed duct VAV applications, stable horizontal air distribution is maintained without dumping down to 20% of the maximum air volume.



Ceiling smudging has long been a concern, and it has been recognized that airborne dirt deposited on ceilings adjacent to air outlets comes from one or both of two sources.

1. The primary air stream may carry dirt through the duct system and deposit it adjacent to the outlets.
2. The secondary or entrained room air can carry dirt from the occupied space and deposit it adjacent to the outlets.



Since the square cone diffusers have been designed to discharge the primary supply air in a 360° radial horizontal air flow pattern, voids and low pressure areas adjacent to the diffuser are either nonexistent or minimized. This provides an effective barrier between the ceiling surface and the secondary air movement that may carry entrained room dirt, the prime cause of smudging and streaking.

Field experience has confirmed that square cone diffusers produce less smudging and streaking than most other similar types of diffusers.

The Price SCD family of square diffusers offers a wide range of options to suit most applications. 3 cone and 4 cone models are available to coordinate with most modular ceilings. A wide range of inlet sizes, border styles and modular panel sizes are available. The model SCDA includes adjustable pattern controllers to provide either a horizontal or vertical air pattern.

Square Plaque Diffusers

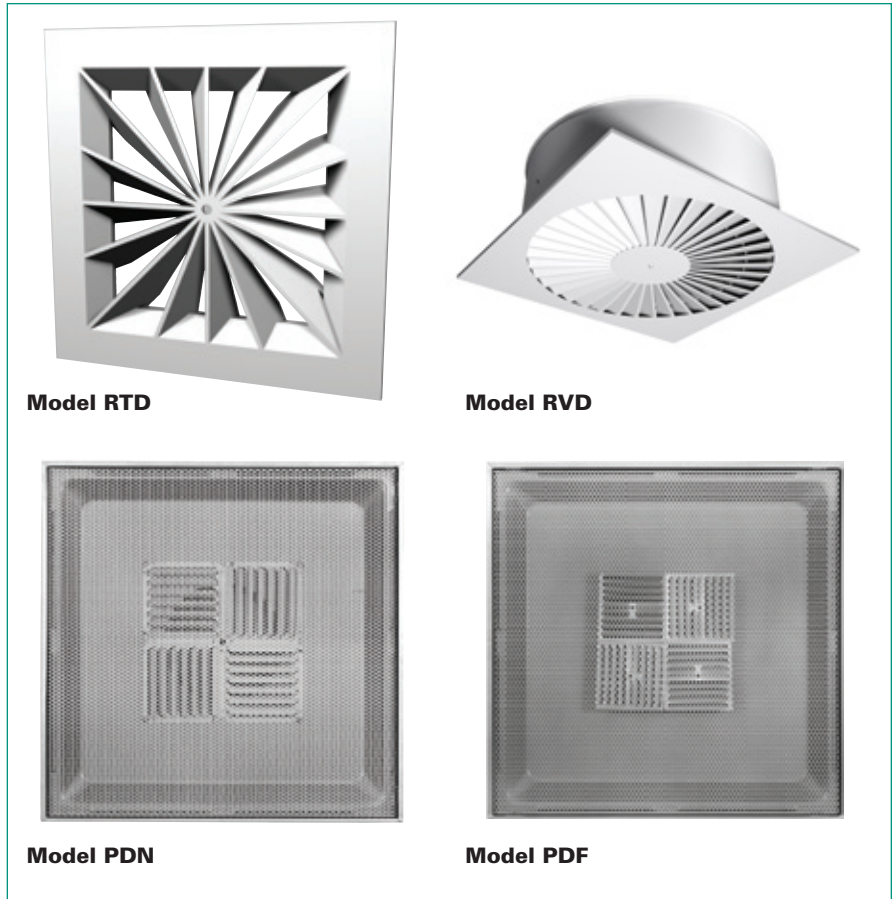
The SPD square plaque diffuser is based on the same aerodynamic outer cone of the SCD, however instead of multiple cones, the SPD features a flat face panel. This plaque design delivers both architectural appeal and engineering performance criteria. The simple, clean and unobtrusive face design is intended to blend with most ceiling systems. The face panel appears flush with the ceiling and has smooth edges and rounded corners to blend with the back cone. The SPD exhibits the same 360° radial horizontal air pattern as the SCD, resulting in all the performance benefits. Rapid mixing, ideal VAV operation and reduced smudging are all achieved with the SPD.

Radial/Twist Diffusers

Radial/Twist diffusers consist of a circular or square face with multiple air vanes, either fixed or adjustable, and a round neck. Diffusers produce a horizontal or vertical twisting pattern for rapid mixing of the room air in heating or cooling modes. A distribution plenum or the outer cone can be connected directly to a round duct. Diffusers can be mounted in a T-bar ceiling or can be mounted to the exposed duct work. The Price RTD is a commercial diffuser with fixed vanes that provides a high induction horizontal air pattern. This high performing twist outlet features extremely low noise levels and short throws, making it ideal for applications with high air change rates.

Perforated Diffusers

Due to popular demand, Price offers a wide range of perforated face air diffusers. One of the most popular is the PDN model, which has been designed to provide superior performance while retaining application flexibility. The PDN model provides a superior horizontal air pattern with a strong Coanda effect against the ceiling. Louvered air pattern controllers, located at the inlet neck of the diffuser, provide positive air flow control and have fixed curved vanes. The radiused shape and blade angle, established by extensive testing of prototype samples, provides positive air flow control. The pattern controllers simply direct the air flow without restricting or dampening the air volume. Since field adjustment of the air pattern does not change the free area, the pressure drop and sound levels remain unchanged from the published performance data. The air pattern is easily adjusted in the field. Available in steel construction or steel construction with aluminum face, and in a wide range of inlet sizes, border styles and module sizes.



Ceiling Diffusers Application Guidelines

Also popular is the PDF series, which offers many of the same performance features as the PDN. The major difference is that the air pattern deflectors of the PDF series are located behind the perforated faceplate.

The PDDR series of perforated return air units match the appearance and module size of the supply air units.

Modular Directional Diffusers

Price offers a complete line of square and rectangular directional ceiling diffusers for versatility of application. This series of directional diffusers is available in either steel construction (SMD) or in aluminum construction (AMD). They are available in a wide variety of 1 way, 2 way, 3 way, or 4 way core styles. With square or rectangular inlet necks, they can supply large volumes of air at low sound levels and at low pressure drops. A wide selection of frame styles and accessories are available to satisfy most application requirements.

The SMDA/AMDA models include individually adjustable vanes to permit field adjustment from a horizontal air pattern to a vertical air pattern on each directional segment of the diffuser. It is recommended that selections of SMDA/AMDA adjustable pattern diffusers be limited to square inlet necks (24 in. x 24 in. maximum size) and to a 4 way core style (core 4A).

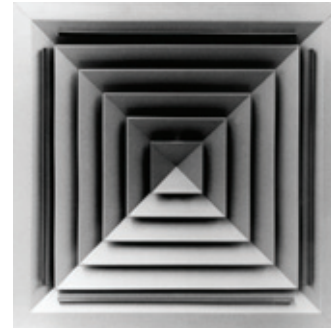
SMD/AMD directional diffusers are not recommended for applications without ceilings, such as exposed duct mounting. Tabulated performance data is based on a ceiling mounted SMD/AMD so that the directional air pattern can benefit from the ceiling Coanda effect. When the diffuser is mounted remote from the ceiling, the horizontal throw will be reduced substantially and the resultant air patterns will spill downward.

Modular Core Diffusers

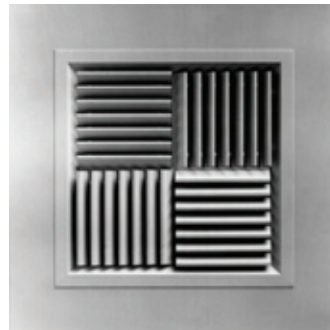
The SMCD/AMCD series of high capacity modular core directional diffusers is designed to supply large volumes of air at relatively low sound levels and pressure drops. They are available in either steel construction (SMCD) or in aluminum construction (AMCD). Field adjustment of the air pattern from 1 way or 2 way to 3 way or 4 way is easily accomplished by repositioning the louvered modular pattern core sections to suit the required arrangement. The SMCD/AMCD diffusers maintain an excellent horizontal air pattern, even at low air volumes, making them an ideal selection for VAV applications. They are offered in a wide range of sizes and a variety of frame styles to suit most application requirements.



Model SMD



Model AMDA



Model SMCD



Model CVD



Model RCD



Model RID

Curved Vane Diffusers

The CVD series of curved vane supply air diffusers are available in a wide range of sizes with 1 way to 4 way directional air patterns. Featuring individually adjustable curved vanes, the supply air can be directed to suit the application. A clean, functional appearance with excellent performance characteristics, the CVD can be installed in ceiling or sidewall locations to provide a wide range of application versatility. The curved vanes require careful field adjustment in order to obtain stable horizontal air patterns from ceiling mounted units. A variety of frame styles are available to suit most application requirements.

Round Cone Diffusers

Price offers a complete line of round cone ceiling diffusers that combine the classic beauty of round cone design with maximum air diffusion efficiency. Round cone ceiling diffusers are also available in field-adjustable air pattern models to provide either a horizontal or a vertical air pattern. At the horizontal air pattern setting they deliver supply air in a 360° radial horizontal air pattern - ideal for VAV applications. Model RID is classified as an industrial diffuser and is well suited to factories, warehouses, shopping malls and other applications where ceilings are high and conditions are variable. At the full vertical setting, it provides an unusually long downward projection.

Product Overview

Price offers a complete range of square cone ceiling diffusers in steel or aluminum construction. Available with fixed or adjustable air patterns, square cone diffusers are the most popular and efficient ceiling diffusers for true 360° radial diffusion.

Models SCD / ASCD

SCD (steel construction) and ASCD (aluminum construction) are the most efficient ceiling diffusers for true 360° radial horizontal air pattern applications, even at low air volumes, making them ideal for VAV applications.

Available in 12 in. x 12 in. / 300 x 300, 20 in. x 20 in. / 500 x 500 and 24 in. x 24 in. / 600 x 600 face sizes for integration with most standard ceiling modules.

Note: Additional (optional) fourth cone available only with 24 in. x 24 in. / 600 x 600 units.

Models SCDA / ASCDA

Adjustable models SCDA (steel construction) and ASCDA (aluminum construction) square cone diffusers are styled to match the SCD/ASCD series and are furnished for field adjustment to desired horizontal or vertical air pattern.

Available in 12 in. x 12 in. / 300 x 300, 20 in. x 20 in. / 500 x 500 and 24 in. x 24 in. / 600 x 600 face sizes for integration with most standard ceiling modules.

Note: Additional (optional) fourth cone available only with 24 in. x 24 in. / 600 x 600 units.

Models SPD / ASPD

Price SPD (steel construction) and ASPD (aluminum construction) square plaque diffusers satisfy both architectural appeal and engineering performance criteria. The simple, clean and unobtrusive face design is intended to blend with most ceiling systems.

Available in 12 in. x 12 in. / 300 x 300, 20 in. x 20 in. / 500 x 500 and 24 in. x 24 in. / 600 x 600 face sizes for integration with most standard ceiling modules.

Models SCD AS / SPD AS

Price Square Cone and Square Plaque Diffuser models SCD AS and SPD AS are constructed from aluminum-silicon coated steel which offers superior resistance to atmospheric conditions, salt spray and condensate corrosion. Aluminized Steel diffusers are an excellent choice for cost sensitive applications where the strength of steel and the corrosion resistance of aluminum are required. Available in 12 in. x 12 in. (300 x 300) and 24 in. x 24 in. (600 x 600) sizes.

Models

Square Cone

- Steel Construction
 - Fixed Pattern
 - Fully Adjustable
- Aluminized Steel Construction
 - Fixed Pattern
- Aluminum Construction
 - Fixed Pattern
 - Fully Adjustable

- SCD
- SCDA
- SCD AS
- ASCD
- ASCDA

Square Plaque

- Steel Construction
- Aluminized Steel Construction
- Aluminum Construction

- SPD
- SPD AS
- ASPD



CEILING DIFFUSERS

Types

SCD (Steel)
SCD AS (Aluminized Steel)
ASCD (Aluminum)
 Fixed Pattern



Pages C9 - C13

SCDA (Steel)
ASDA (Aluminum)
 Fully Adjustable Pattern



Pages C14 - C18

SPD (Steel)
SPD AS (Aluminized Steel)
ASPD (Aluminum)
SPD HI (High Induction)
 Fixed Pattern, Plaque
SPDLT (Low Temperature)



Pages C19 - C23
 Pages C24 - C26
 Pages C27 - C30

CEILING DIFFUSERS

Quick Selection Guide

| Diffuser Type | Ceiling Type | Recommended Frame / Panel* | |
|---|-----------------------------|----------------------------|------------|
| SCD / ASCD / SCD AS Square Cone - Fixed Pattern | Lay-in | | |
| | Inverted T 1 in. [25] | 31 | 3P |
| | Narrow Member 9/16 in. [14] | 17 | 17P |
| | Concealed Spline | 4 | 4P |
| | Surface Mount | 31 | |
| SCDA / ASDA Square Cone - Adjustable Pattern | Lay-in | | |
| | Inverted T 1 in. [25] | 3 | 3P |
| | Narrow Member 9/16 in. [14] | 17 | 17P |
| | Concealed Spline | 4 | 4P |
| | Surface Mount | 1 | |
| SPD / ASPD / SPD AS Square Plaque - Fixed Pattern | Lay-in | | |
| | Inverted T 1 in. [25] | 31 | 3P |
| | Narrow Member 9/16 in. [14] | 17 | 17P |
| | Concealed Spline | 4 | 4P |
| | Surface Mount | 31 | |

*For Panel Type (Lay-in models only), add "P" suffix to Frame Type (i.e. 3P, 17P, 4P).

*Not all models available with all frame styles and sizes, see submittal drawings for complete details.

Square Cone Diffusers

SCD / SCD AS / ASCD Series



Product Information - Fixed Air Pattern

Models

Fixed Air Pattern

Steel Construction **SCD**
 Aluminized Steel Construction **SCD AS**
 Aluminum Construction **ASCD**

Price SCD / ASCD Series square cone diffusers are the most efficient for any ceiling application. The diffuser delivers supply air in a true 360° radial horizontal air pattern, making it ideal for VAV applications. The special contour design of the diffuser cones protects the ceiling and prevents smudging and streaking associated with many other types of ceiling diffusers.

Features

- Choice of steel (SCD), aluminized steel (SCD AS) or aluminum (ASCD) construction.
- Cones are one-piece die-formed with smooth, aerodynamically designed surfaces and no corner joints.
- All sizes are available with 3 concentric cones (**3C**).
- Optional 4 cone model available in 24 in. x 24 in. / 600 x 600 face size for aesthetic considerations (**4C**).
- All sizes available with removable inner cone sub-assembly, featuring a special lock arrangement for fast, easy installation and removal without special tools.
- Excellent performance for VAV applications.
- Complete range of available accessory dampers, equalizing grids, etc.
- Optional insulated backpan (Style 31 T-bar and 4TS only).
- Optional steel panels available with steel models (SCD/SCDA).
- Optional beaded extended neck (2.5 in. tall) for easy flex duct connection BN.

Finish

White Powder Coat **B12**
 For optional and special finishes see color matrix.

Available Module Sizes

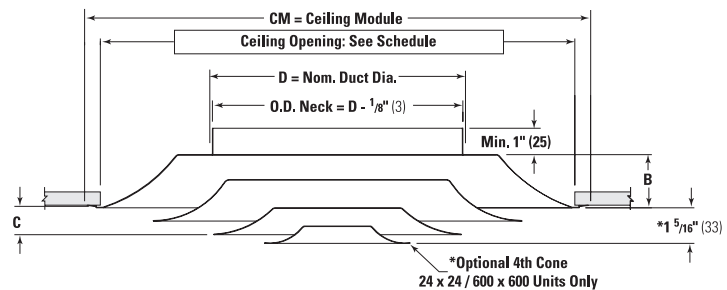
| Imperial | Metric |
|-----------------|-----------|
| 24 in. x 24 in. | 600 x 600 |
| 20 in. x 20 in. | 500 x 500 |
| 12 in. x 12 in. | 300 x 300 |



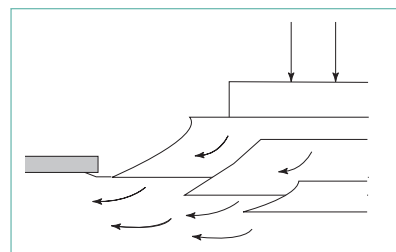
Model SCD / SCD AS / ASCD - 3 Cone



Model SCD / SCD AS / ASCD - 4 Cone
 (24 in. x 24 in. / 600 x 600 face size only)



Air Pattern



Fixed Horizontal Air Pattern

✓ Product Selection Checklist

- 1] Select Inlet Diameter based on desired performance characteristics.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Type by model number (material).
- 4] Select Border/Panel Style according to installation requirements (page C10).
- 5] Select Volume Control Accessories, if desired (page C181-C186).
- 6] Select Number of Cones desired (3C is standard).
- 7] Select Finish.

Example: 8 in. / 24 in. x 24 in. / SCD / 31 / 3C / B12

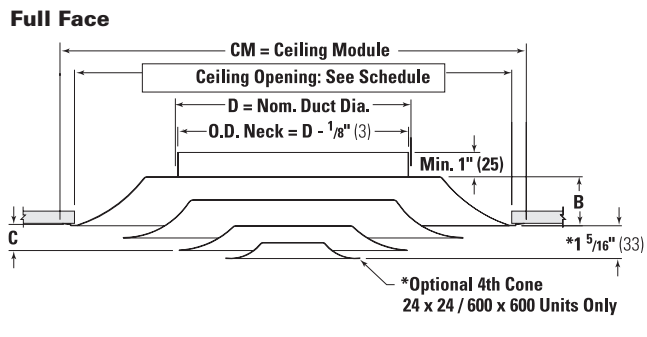
Application Recommendations:

For Border and Panel recommendations, see page C8.

Square Cone Diffusers SCD / SCD AS / ASCD Series



Frame Selection



Dimensional Data — Imperial (in.) / Metric (mm)

| Ceiling Module | | Ceiling Opening | B | C | Duct Size |
|----------------|-----------|--------------------------------|---------------|----------------|--|
| Imperial | Metric | | | | |
| 24 x 24 | 600 x 600 | 22 x 22 [559 x 559] | 2 1/2 [64] | 1 1/16 [27] | 6, 8, 10, 12, 14, 15 [152, 203, 254, 305, 356, 381] |
| 20 x 20 | 500 x 500 | 18 x 18 [457 x 457] | 2 1/2 [64] | 1/2 [13] | 6, 8, 10 [152, 203, 254] |
| 12 x 12 | 300 x 300 | 10 1/2 x 10 1/2 [267 x 267] | 1 1/8 [29] | 1 1/16 [27] | 4, 5, 6, 7, 8 [102, 127, 152, 178, 203] |

Frames for Ceiling Module Sizes 24 x 24 / 600 x 600, 20 x 20 / 500 x 500, 12 x 12 / 300 x 300

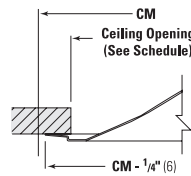
Sizes 20 x 20 / 500 x 500 only available in Type 31 Surface Mount and Type 31 T-bar.

ASCD available in Type 17 & 31 only.

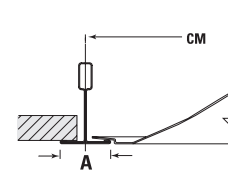
4TS available only on 24x24 SCD.

SCDAS available in type 31 only. 20 x 20 (500 x 500) size not available

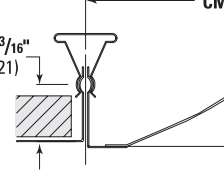
Type 31 Surface Mount



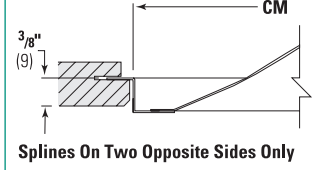
Type 31 T-bar A = 1" [25]



Type 2 Snap-In

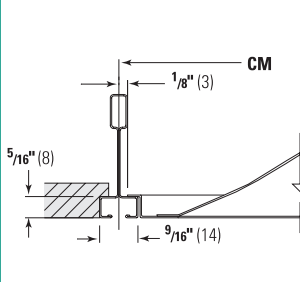


Type 4 Spline

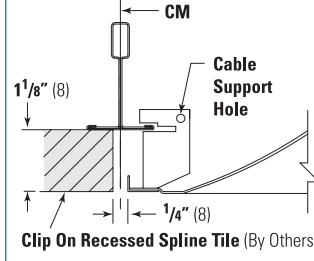


Splines On Two Opposite Sides Only

Type 17 Narrow Member

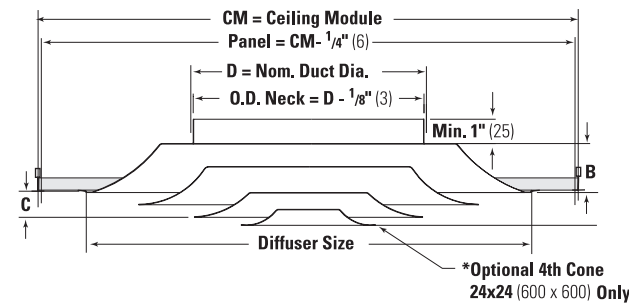


Type 4TS clip-on recessed spline (for Techstyle ceiling)

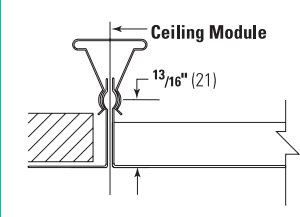


Clip On Recessed Spline Tile (By Others)

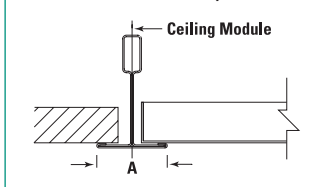
Panel Mount - SCD (Steel Only)



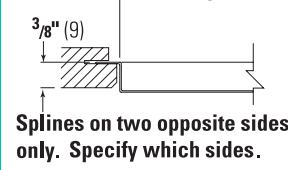
Type 2P Snap-In



Type 3P T-bar A = 1" [25] (Steel Only)

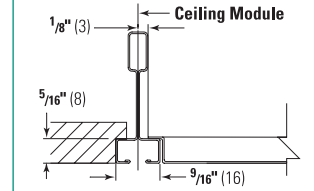


Type 4P Spline



Splines on two opposite sides only. Specify which sides.

Type 17P Narrow Member



| Face View | Modules | | CM = Nom. Panel Size | |
|-----------|----------------------------------|-------------------|----------------------|--|
| | Diffuser Size 24x24 (600x600) | Imperial (inches) | Metric (mm) | |
| | 48 x 24 | 1200 x 600 | | |
| | Diffuser Size 12x12 (300x300) | Imperial (inches) | Metric (mm) | |
| | 24 x 12 | 600 x 300 | | |
| | 48 x 12 | 1200 x 300 | | |
| | 16 x 16 | 400 x 400 | | |
| | 20 x 20 | 500 x 500 | | |
| | 24 x 24 | 600 x 600 | | |

Dimensional Data — Imperial (in.) / Metric (mm)

| Diffuser Size | | B | C | Duct Size |
|---------------|-----------|---------------|----------------|--|
| Imperial | Metric | | | |
| 24 x 24 | 600 x 600 | 2 1/2 [64] | 1 1/16 [27] | 6, 8, 10, 12, 14, 15 [152, 203, 254, 305, 356, 381] |
| 12 x 12 | 300 x 300 | 1 1/8 [29] | 1 1/16 [27] | 4, 5, 6, 7, 8 [102, 127, 152, 178, 203] |

Fire-Rated Square Cone Diffusers SCD-FR Series



Product Information - Fixed Air Pattern

Three Hour Rating - Lay-in

Price SCD-FR square cone diffusers are Fire-Rated Assemblies which are UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

SCD-FR square cone diffusers are the most efficient diffuser for any ceiling application. It delivers supply air in a true 360° radial horizontal air pattern onto the ceiling, making it ideal for VAV applications. The special contour design of the diffuser cones prevents smudging and streaking associated with many other types of ceiling diffusers.

Features

- Available in both imperial and hard metric module sizes.
- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Cones are one-piece die-formed with smooth, aerodynamically designed surfaces and no corner joints.
- All sizes are standard with 3 concentric cones (3C). Optional 4 cone model available in 24" x 24" and 600 x 600 face size for aesthetic considerations (4C).
- Inner cone sub-assembly features a special lock arrangement for fast, easy installation and removal without special tools. Provides access to optional volume controller.
- Optional adjustable volume controller (Allen key adjustable).
- Optional 20 x 20, 24 x 12, and 24 x 24 T-bar Lay-in Panel.

Available Module Sizes

| Imperial | Metric |
|-----------------|-----------|
| 24 in. x 24 in. | 600 x 600 |
| 20 in. x 20 in. | 500 x 500 |
| 12 in. x 12 in. | 300 x 300 |

Finish

White Powder Coat

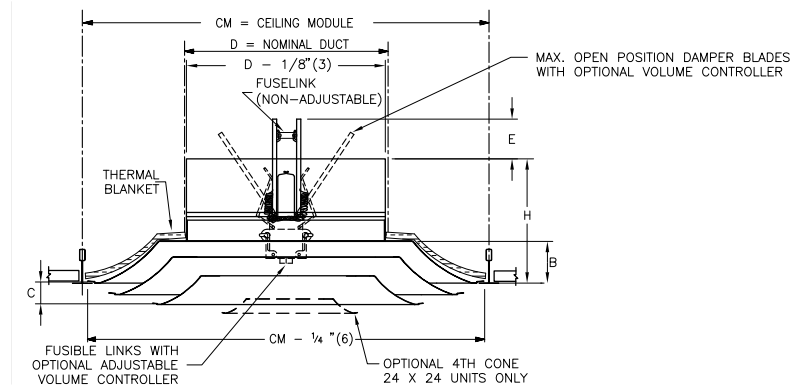
B12

For optional and special finishes see color matrix.

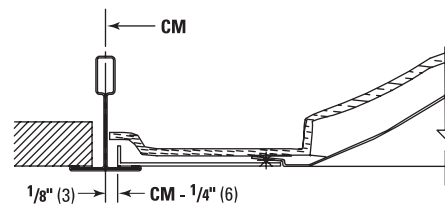


Model SCD-FR - 3 Cone

Model SCD-FR - 4 Cone
(available in 24" x 24" and 600 x 600 face size only)



Panel Mount - SCD-FR (Steel Only)



Dimensional Data - Imperial Units / Metric Units

| Ceiling Module | | B | C | Duct Size |
|----------------|-------------|-------------|--------------|---|
| Imperial (in.) | Metric [mm] | | | |
| 24 x 24 | 600 x 600 | 2 1/2" [64] | 1 1/16" [27] | 6", 8", 10", 12", 14", 15" [152, 203, 254, 305, 356, 381] |
| 20 x 20 | 500 x 500 | 2 1/2" [64] | 1/2" [13] | 6", 8", 10" [152, 203, 254] |
| 12 x 12 | 300 x 300 | 1 1/8" [29] | 1 1/16" [27] | 5", 6", 7", 8" [127, 152, 178, 203] |

Plan View

| Modules | CM = Nom. Panel Size | |
|-------------------------------|----------------------|------------------------|
| Diffuser Size 12x12 (305x305) | Imperial (inches) | Metric (mm) |
| | 24 x 12 | 600 x 300 |
| | 20 x 20 24 x 24 | 500 x 500 600 x 600 |

*Panel option diffuser sizes 12 x 12 [300 x 300] & 20 x 20 [500 x 500] only.

✓ Product Selection Checklist

- 1] Select Inlet Diameter.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Style by model number.
- 4] Select Panel Option according to installation requirements.
- 5] Select Number of Cones desired (3C is standard).
- 6] Select Finish.

Example: 8" / 24" x 24" / SCD-FR / 3C / B12

Square Cone Diffusers SCD / SCD AS / ASCD Series



Performance Data - 12 x 12 / 300 x 300 Face Size

| Listed Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | 400 .010 | 500 .016 | 600 .022 | 700 .031 | 800 .040 | 900 .050 | 1000 .062 | 1200 .090 | 1400 .122 | 1600 .160 |
|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| 4 | Total Pressure | .013 | .021 | .030 | .041 | .054 | .068 | .084 | .121 | .165 | .215 |
| | Flow Rate, cfm | 35 | 44 | 52 | 61 | 70 | 78 | 87 | 104 | 122 | 139 |
| | NC | — | — | — | — | — | — | — | 20 | 25 | 29 |
| | Throw 150, 100, 50 | 1-2-4 | 1-2-4 | 2-3-5 | 2-3-6 | 2-4-6 | 3-4-7 | 3-4-7 | 4-5-8 | 4-6-9 | 5-6-9 |
| 5 | Total Pressure | .015 | .024 | .035 | .047 | .062 | .078 | .097 | .139 | .189 | .247 |
| | Flow Rate, cfm | 54 | 68 | 82 | 95 | 109 | 122 | 136 | 163 | 190 | 218 |
| | NC | — | — | — | — | — | — | 16 | 19 | 25 | 30 |
| | Throw 150, 100, 50 | 2-2-5 | 2-3-6 | 2-4-7 | 3-4-8 | 3-5-8 | 4-5-9 | 4-6-9 | 5-7-10 | 5-8-11 | 6-8-11 |
| 6 | Total Pressure | .018 | .028 | .040 | .055 | .072 | .091 | .112 | .162 | .220 | .287 |
| | Flow Rate, cfm | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | 314 |
| | NC | — | — | — | — | 16 | 20 | 23 | 29 | 34 | 38 |
| | Throw 150, 100, 50 | 2-3-6 | 2-4-7 | 3-4-8 | 3-5-9 | 4-6-10 | 4-7-10 | 5-7-11 | 6-8-12 | 7-9-13 | 8-10-14 |
| 7 | Total Pressure | .022 | .035 | .050 | .069 | .090 | .114 | .140 | .202 | .275 | .359 |
| | Flow Rate, cfm | 107 | 134 | 160 | 187 | 214 | 240 | 267 | 320 | 374 | 427 |
| | NC | — | — | — | 15 | 19 | 23 | 26 | 32 | 37 | 41 |
| | Throw 150, 100, 50 | 2-4-7 | 3-4-9 | 4-5-10 | 4-6-11 | 5-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 | 9-11-16 |
| 8 | Total Pressure | .029 | .045 | .065 | .089 | .116 | .146 | .181 | .260 | .354 | .463 |
| | Flow Rate, cfm | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | 558 |
| | NC | — | — | — | 18 | 22 | 26 | 29 | 35 | 40 | 44 |
| | Throw 150, 100, 50 | 3-4-8 | 3-5-10 | 4-6-11 | 5-7-12 | 6-8-13 | 6-9-14 | 7-10-15 | 8-11-16 | 10-12-17 | 11-13-18 |

Performance Data - 20 x 20 / 500 x 500 Face Size

| Listed Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | 400 .010 | 500 .016 | 600 .022 | 700 .031 | 800 .040 | 900 .050 | 1000 .062 | 1200 .090 | 1400 .122 | 1600 .160 |
|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| 6 | Total Pressure | .013 | .020 | .029 | .040 | .052 | .066 | .081 | .117 | .159 | .207 |
| | Flow Rate, cfm | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | 314 |
| | NC | — | — | — | 16 | 19 | 23 | 26 | 31 | 35 | 39 |
| | Throw 150, 100, 50 | 0-1-3 | 1-2-4 | 1-2-4 | 1-3-5 | 2-3-6 | 2-3-6 | 2-4-6 | 3-4-7 | 3-5-7 | 4-6-8 |
| 8 | Total Pressure | .017 | .026 | .038 | .052 | .068 | .086 | .106 | .153 | .208 | .271 |
| | Flow Rate, cfm | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | 558 |
| | NC | — | — | — | 18 | 22 | 25 | 28 | 33 | 37 | 41 |
| | Throw 150, 100, 50 | 1-2-5 | 2-3-6 | 2-4-6 | 3-4-7 | 3-5-7 | 4-5-8 | 4-6-8 | 5-6-9 | 6-7-10 | 6-7-11 |
| 10 | Total Pressure | .022 | .034 | .049 | .067 | .088 | .111 | .137 | .198 | .269 | .351 |
| | Flow Rate, cfm | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | 872 |
| | NC | — | — | 15 | 20 | 23 | 27 | 30 | 35 | 39 | 43 |
| | Throw 150, 100, 50 | 2-3-6 | 3-4-7 | 3-5-8 | 4-6-9 | 4-6-9 | 5-7-10 | 5-7-10 | 6-8-11 | 7-9-12 | 8-9-13 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC below 15.
8. If the diffuser is mounted on an exposed duct, multiply the throw distance in the table by 0.70.
9. Does not include effects of ceiling radiation damper (SCD-FR)

Square Cone Diffusers SCD / SCD AS / ASCD Series

Performance Data - 24 x 24 / 600 x 600 Face Size

| Listed Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | 400 .010 | 500 .016 | 600 .022 | 700 .031 | 800 .040 | 900 .050 | 1000 .062 | 1200 .090 | 1400 .122 | 1600 .160 |
|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| 6 | Total Pressure | .015 | .023 | .034 | .046 | .060 | .076 | .094 | .135 | .183 | .239 |
| | Flow Rate, cfm | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | 314 |
| | NC | — | — | — | — | 15 | 19 | 22 | 28 | 33 | 37 |
| | Throw 150, 100, 50 | 1-2-4 | 1-2-4 | 2-3-5 | 2-3-6 | 2-4-7 | 3-4-7 | 3-4-7 | 4-5-8 | 4-6-9 | 5-7-9 |
| 8 | Total Pressure, in. w.g. | .016 | .025 | .037 | .050 | .065 | .082 | .102 | .146 | .199 | .260 |
| | Flow Rate, cfm | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | 558 |
| | NC | — | — | — | — | 19 | 22 | 26 | 31 | 36 | 40 |
| | Throw 150, 100, 50 | 2-2-5 | 2-3-6 | 2-4-7 | 3-4-8 | 3-5-9 | 4-6-9 | 4-6-10 | 5-7-11 | 6-8-12 | 7-9-12 |
| 10 | Total Pressure, in. w.g. | .019 | .030 | .044 | .060 | .078 | .098 | .122 | .175 | .238 | .311 |
| | Flow Rate, cfm | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | 872 |
| | NC | — | — | — | 17 | 21 | 25 | 28 | 34 | 39 | 43 |
| | Throw 150, 100, 50 | 2-3-6 | 3-4-8 | 3-5-9 | 4-6-10 | 4-6-11 | 5-7-12 | 5-8-12 | 6-9-13 | 8-10-14 | 9-11-15 |
| 12 | Total Pressure, in. w.g. | .023 | .036 | .051 | .070 | .091 | .115 | .142 | .205 | .279 | .364 |
| | Flow Rate, cfm | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 | 1099 | 1256 |
| | NC | — | — | — | 19 | 24 | 27 | 30 | 36 | 41 | 45 |
| | Throw 150, 100, 50 | 3-4-8 | 3-5-10 | 4-6-11 | 5-7-12 | 5-8-13 | 6-9-14 | 7-10-15 | 8-11-16 | 9-12-17 | 11-13-19 |
| 14 | Total Pressure, in. w.g. | .026 | .041 | .058 | .079 | .104 | .131 | .162 | .233 | .318 | .415 |
| | Flow Rate, cfm | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 | 1497 | 1710 |
| | NC | — | — | 16 | 21 | 25 | 29 | 32 | 38 | 43 | 47 |
| | Throw 150, 100, 50 | 3-5-10 | 4-6-12 | 5-7-13 | 6-9-14 | 6-10-15 | 7-11-16 | 8-12-17 | 10-13-19 | 11-14-20 | 12-15-22 |
| 15 | Total Pressure, in. w.g. | .028 | .044 | .064 | .087 | .114 | .144 | .178 | .256 | .348 | .455 |
| | Flow Rate, cfm | 491 | 614 | 736 | 859 | 982 | 1104 | 1227 | 1472 | 1718 | 1963 |
| | NC | — | — | 17 | 22 | 26 | 30 | 33 | 39 | 43 | 47 |
| | Throw 150, 100, 50 | 4-5-11 | 4-7-13 | 5-8-14 | 6-9-15 | 7-11-16 | 8-12-17 | 9-13-18 | 11-14-20 | 12-15-22 | 13-16-23 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC below 15.
8. If the diffuser is mounted on an exposed duct, multiply the throw distance in the table by 0.70.
9. Does not include effects of ceiling radiation damper (SCD-FR)

Square Cone Diffusers SCDA / ASCDA Series



Product Information - Adjustable Air Pattern

Models

Fully Adjustable Air Pattern

Steel Construction

SCDA

Aluminum Construction

ASCDA

Price SCDA / ASCDA Series square cone ceiling diffusers include adjustable pattern controllers to provide either a horizontal or vertical air pattern for heating and cooling applications. The diffuser delivers supply air in a true 360° radial horizontal air pattern. The special contour design of the diffuser cones prevent smudging and streaking.

Features

- Choice of steel (SCDA), or aluminum (ASCDA) construction.
- Cones are one-piece die-formed with smooth, aerodynamically designed surfaces and no corner joints.
- All sizes are available with 3 concentric cones (**3C**).
- Optional 4 cone model available in 24" x 24" / 600 x 600 face size for aesthetic considerations (**4C**).
- All sizes available with removable inner cone sub-assembly, featuring a special lock arrangement for fast, easy installation and removal without special tools.
- Complete range of available accessory dampers, equalizing grids, etc.
- Optional beaded extended neck (2.5" tall) for easy flex duct connection (BN SCDA only).

Finish

White Powder Coat

B12

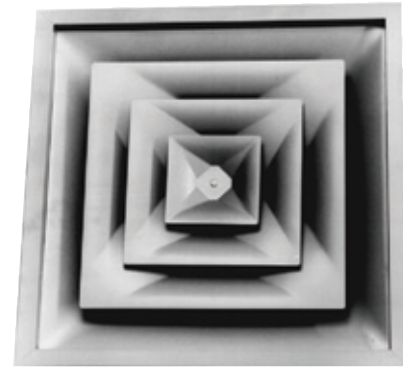
For optional and special finishes see color matrix.

Available Module Sizes

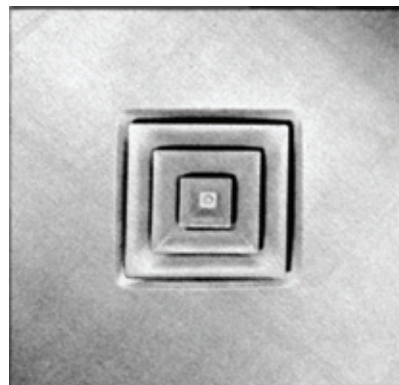
| Imperial | Metric |
|-----------|-----------|
| 24" x 24" | 600 x 600 |
| 20" x 20" | 500 x 500 |
| 12" x 12" | 300 x 300 |



Model SCDA (steel) / ASCDA (aluminum) - 3 Cone



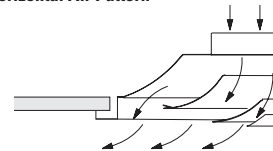
Model SCDA (steel) / ASCDA (aluminum) - 4 Cone
(24" x 24" / 600 x 600 face size only)



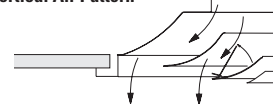
Model SCDA / P Panel Mounted
(Steel Only)

Air Pattern

Horizontal Air Pattern



Vertical Air Pattern



Fully Adjustable Air Pattern

Individually adjustable vanes are located on all four sides of the diffuser and can be adjusted from the face of the diffuser to provide either horizontal or vertical air pattern, as shown.

✓ Product Selection Checklist

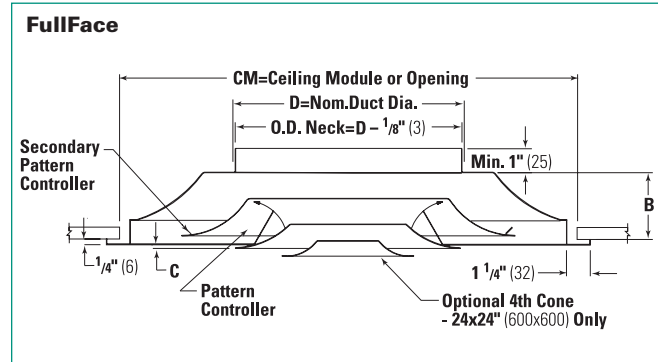
- 1) Select Inlet Diameter based on desired performance characteristics.
- 2) Select Face Size based on ceiling module.
- 3) Select Diffuser Type by model number (material).
- 4) Select Border/Panel Style according to installation requirements (page C10).
- 5) Select Volume Control Accessories, if desired (page C181-C186).
- 6) Select Number of Cones desired (3C is standard).
- 7) Select Finish.

Example: 8" / 24" x 24" / SCDA / 3 / 3C / B12

Application Recommendations:

For Border and Panel recommendations, see page C8.

Frame Selection



Dimensional Data — Imperial (in.) / Metric (mm)

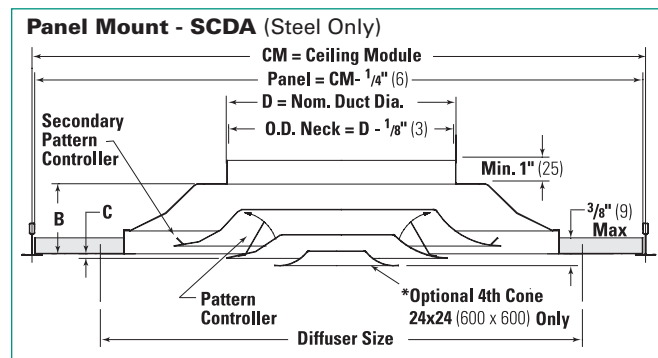
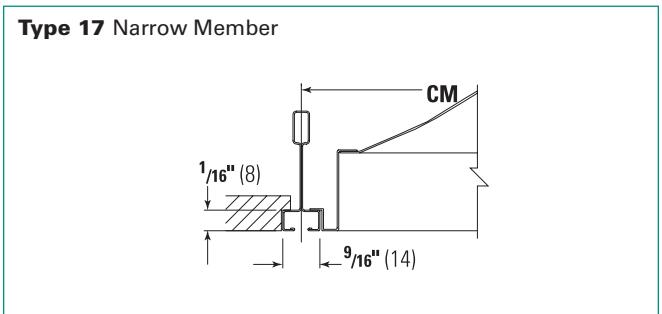
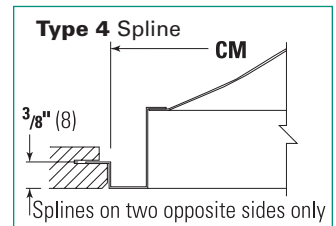
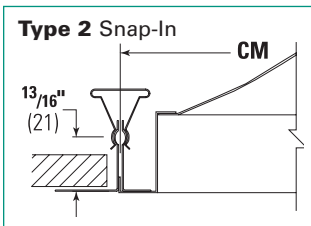
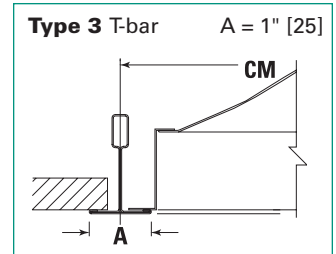
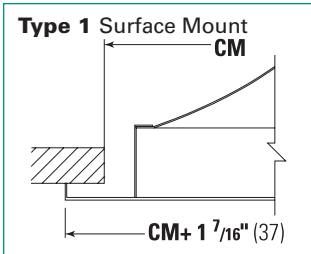
| Ceiling Module | | B (max.) | C (max.) | Duct Size |
|----------------|-----------|---------------------------------------|---------------------------------------|--|
| Imperial | Metric | | | |
| 24 x 24 | 600 x 600 | 3 ³ / ₄ [95] | 1 ¹ / ₈ [3] | 6, 8, 10, 12, 14, 15* [152, 203, 254, 305, 356, 381*] |
| 20 x 20 | 500 x 500 | 2 ⁷ / ₈ [73] | — | 6*, 8*, 10* [152*, 203*, 254*] |
| 12 x 12 | 300 x 300 | 1 ³ / ₄ [44] | 5 ⁵ / ₈ [16] | 4, 5, 6, 7, 8* [102, 127, 152, 178, 203*] |

Note: Secondary Pattern Controllers will be supplied on units indicated with (*)
B & C Dimensions vary depending on neck size.

Frames for Ceiling Module Sizes 24 x 24 / 600 x 600, 20 x 20 / 500 x 500, 12 x 12 / 300 x 300

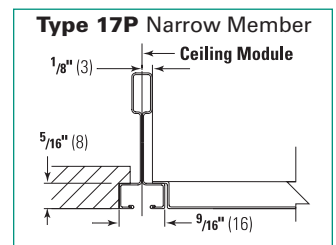
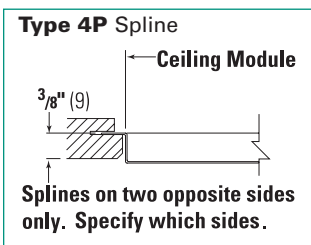
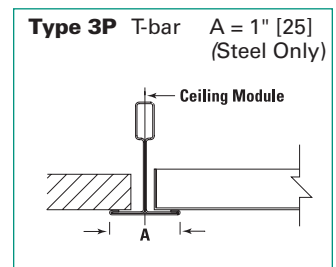
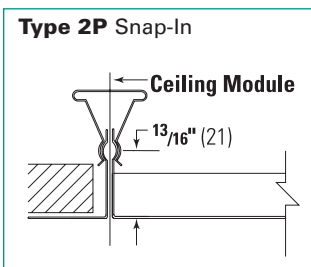
Sizes 20 x 20 / 500 x 500 only available in Type 1 Surface Mount and Type 3 T-bar.

ASCSA available in style 1 and style 3 only.



| Face View | Modules | CM = Nom. Panel Size | |
|-----------|----------------------------------|----------------------|-------------|
| | Diffuser Size 24x24 (600x600) | Imperial (inches) | Metric (mm) |
| | | 48 x 24 | 1200 x 600 |
| Face View | Diffuser Size 12x12 (300x300) | Imperial (inches) | Metric (mm) |
| | | 24 x 12 | 600 x 300 |
| | | 48 x 12 | 1200 x 300 |
| | | 20 x 20 | 500 x 500 |
| | 24 x 24 | 600 x 600 | |

Note: Secondary Pattern Controllers will be supplied on units indicated with (*)
B & C Dimensions vary depending on neck size (steel only).



Dimensional Data — Imperial (in.) / Metric (mm)

| Diffuser Size | | B (max.) | C (max.) | Duct Size |
|---------------|-----------|------------|---------------------------------------|--|
| Imperial | Metric | | | |
| 24 x 24 | 600 x 600 | 4 [102] | 1 ¹ / ₈ [3] | 6, 8, 10, 12, 14, 15* [152, 203, 254, 305, 356, 381*] |
| 12 x 12 | 300 x 300 | 2 [51] | 5 ⁵ / ₈ [16] | 4, 5, 6, 7, 8 [102, 127, 152, 178, 203*] |

Fire-Rated Square Cone Diffusers

SCDA-FR Series



Product Information - Adjustable Air Pattern

Three Hour Rating - Lay-in

Price SCDA-FR square cone diffusers are Fire-Rated Assemblies which are UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

SCDA-FR square cone ceiling diffusers include adjustable pattern controllers to provide either a horizontal or vertical air pattern for heating and cooling applications. The diffuser delivers supply air in a true 360° radial horizontal air pattern. The special contour design of the diffuser cones prevent smudging and streaking.

Features

- Available in both imperial and hard metric module sizes.
- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Cones are one-piece die-formed with smooth, aerodynamically designed surfaces and no corner joints.
- All sizes are standard with 3 concentric cones (3C). Optional 4 cone model available in 24 in. x 24 in. and 600 x 600 face size for aesthetic considerations (4C).
- Inner cone sub-assembly features a special lock arrangement for fast, easy installation and removal without special tools. Provides access to optional volume controller.
- Optional adjustable volume controller (Allen key adjustable).
- Optional 20 in. x 20 in., 24 in. x 12 in., and 24 in. x 24 in. T-bar Lay-in Panel.

Available Module Sizes

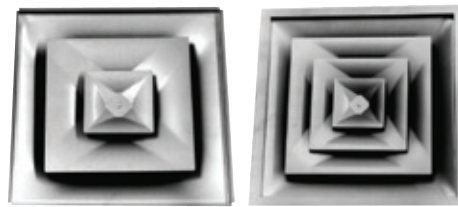
| Imperial | Metric |
|-----------------|-----------|
| 24 in. x 24 in. | 600 x 600 |
| 20 in. x 20 in. | 500 x 500 |
| 12 in. x 12 in. | 300 x 300 |

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.

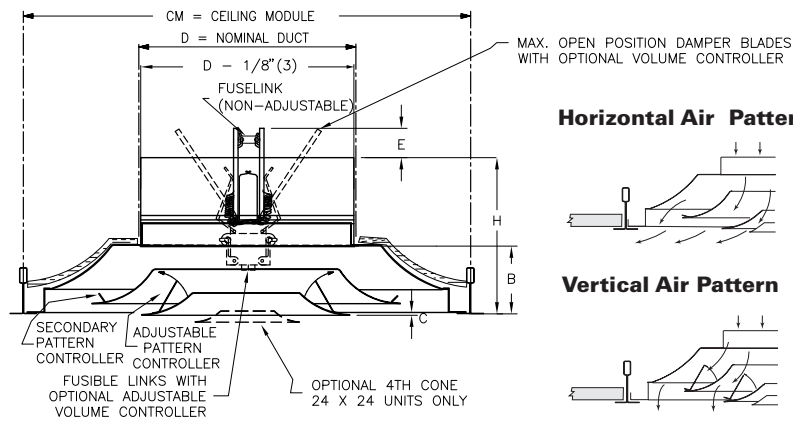


Model SCDA-FR
3 Cone

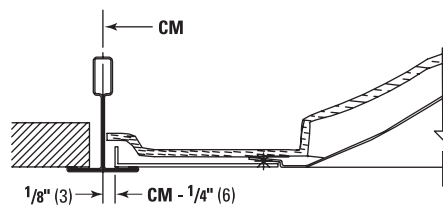
Model SCDA-FR 4 Cone
(available in 24 x 24 and 600 x 600 face size only)

Fully Adjustable Air Pattern

Individually adjustable vanes are located on all four sides of the diffuser and can be adjusted from the face of the diffuser to provide either horizontal or vertical air pattern, as shown below.



Panel Mount - SCDA-FR (Steel Only)



Dimensional Data - Imperial Units / Metric Units

| Ceiling Module | | B | C | Duct Size |
|----------------|-------------|--------------------------------------|---------------------------------------|--|
| Imperial (in.) | Metric [mm] | | | |
| 24 x 24 | 600 x 600 | 3 ³ / ₄ " [95] | 1 ¹ / ₈ " [3] | 6", 8", 10", 12", 14", 15"* [152, 203, 254, 305, 356, 381] |
| 20 x 20 | 500 x 500 | 2 ⁷ / ₈ " [73] | — | 6", 8", 10"* [152, 203, 254] |
| 12 x 12 | 300 x 300 | 1 ³ / ₄ " [44] | 5 ⁵ / ₈ " [116] | 5", 6", 7", 8"* [127, 152, 178, 203] |

Plan View

| Diffuser Size 12x12 (305x305) | CM = Nom. Panel Size | |
|-------------------------------|----------------------|-------------|
| | Imperial (inches) | Metric (mm) |
| | 24 x 12 | 600 x 300 |
| | 20 x 20 | 500 x 500 |
| | 24 x 24 | 600 x 600 |

available in steel only

* secondary pattern controllers will be supplied on units indicated with (*)
* Panel option diffuser sizes 12 x 12 [300 x 300] & 20 x 20 [500 x 500] only.

✓ Product Selection Checklist

- 1) Select Inlet Diameter.
- 2) Select Face Size based on ceiling module.
- 3) Select Diffuser Style by model number.
- 4) Select Panel Option according to installation requirements.
- 5) Select Number of Cones desired (3C is standard).
- 6) Select Finish.

Example: 8" / 24" x 24" / SCDA-FR / 3C / B12

Adjustable Square Cone Diffusers SCDA / ASCDA Series



Performance Data - 12 x 12 / 300 x 300 Face Size

| Listed Size | Neck Velocity, fpm | | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 |
|-------------|-----------------------------|---|-------|--------|--------|--------|--------|---------|---------|---------|----------|----------|
| | Velocity Pressure, in. w.g. | | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | .160 |
| 4 | Total Pressure | H | .016 | .026 | .037 | .050 | .066 | .083 | .103 | .148 | .202 | .263 |
| | | V | .019 | .030 | .043 | .058 | .076 | .096 | .118 | .171 | .232 | .303 |
| | Flow Rate, cfm | | 35 | 44 | 52 | 61 | 70 | 78 | 87 | 104 | 122 | 139 |
| | NC | H | — | — | — | — | — | 16 | 19 | 24 | 29 | 33 |
| | | V | — | — | — | — | — | 17 | 23 | 29 | 33 | 33 |
| | Radius of Diffusion | H | 1-2-3 | 1-2-4 | 2-3-5 | 2-3-6 | 2-3-6 | 3-4-7 | 3-4-7 | 3-5-8 | 4-6-9 | 5-6-9 |
| | V | 3 | 4 | 5 | 5 | 6 | 6 | 6 | 7 | 7 | 8 | |
| 5 | Total Pressure | H | .021 | .034 | .048 | .066 | .086 | .109 | .134 | .193 | .263 | .343 |
| | | V | .031 | .048 | .070 | .095 | .124 | .157 | .193 | .278 | .379 | .495 |
| | Flow Rate, cfm | | 54 | 68 | 82 | 95 | 109 | 122 | 136 | 163 | 190 | 218 |
| | NC | H | — | — | — | — | 17 | 21 | 24 | 29 | 34 | 38 |
| | | V | — | — | — | — | 18 | 23 | 26 | 32 | 38 | 42 |
| | Radius of Diffusion | H | 2-2-5 | 2-3-6 | 2-4-7 | 3-4-8 | 3-5-8 | 4-6-9 | 4-6-9 | 5-7-10 | 6-8-11 | 7-8-11 |
| | V | 4 | 5 | 6 | 6 | 7 | 7 | 8 | 9 | 9 | 10 | |
| 6 | Total Pressure | H | .027 | .042 | .061 | .082 | .108 | .136 | .168 | .242 | .330 | .431 |
| | | V | .047 | .074 | .107 | .145 | .190 | .240 | .296 | .426 | .580 | .758 |
| | Flow Rate, cfm | | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | 314 |
| | NC | H | — | — | — | 18 | 22 | 25 | 28 | 33 | 38 | 42 |
| | | V | — | — | 16 | 21 | 26 | 30 | 33 | 40 | 45 | 50 |
| | Radius of Diffusion | H | 2-3-7 | 3-4-8 | 3-5-8 | 4-6-9 | 4-7-10 | 5-7-10 | 5-8-11 | 7-8-12 | 7-9-13 | 8-10-14 |
| | V | 6 | 7 | 7 | 8 | 8 | 9 | 9 | 10 | 11 | 12 | |
| 7 | Total Pressure | H | .032 | .050 | .073 | .099 | .129 | .164 | .202 | .291 | .396 | .517 |
| | | V | .066 | .104 | .149 | .203 | .265 | .336 | .415 | .597 | .813 | 1.061 |
| | Flow Rate, cfm | | 107 | 134 | 160 | 187 | 214 | 241 | 267 | 321 | 374 | 428 |
| | NC | H | — | — | — | 17 | 21 | 25 | 28 | 32 | 37 | 42 |
| | | V | — | 16 | 22 | 27 | 32 | 36 | 40 | 46 | 51 | 56 |
| | Radius of Diffusion | H | 2-4-7 | 3-5-9 | 4-6-10 | 4-7-11 | 5-7-11 | 6-8-12 | 6-9-13 | 7-10-14 | 9-11-15 | 9-11-16 |
| | V | 7 | 8 | 8 | 9 | 10 | 10 | 11 | 11 | 12 | 14 | |
| 8 | Total Pressure | H | .038 | .059 | .085 | .116 | .152 | .192 | .237 | .341 | .464 | .606 |
| | | V | .090 | .140 | .202 | .275 | .359 | .454 | .561 | .808 | 1.100 | 1.436 |
| | Flow Rate, cfm | | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | 558 |
| | NC | H | — | — | 20 | 24 | 28 | 32 | 35 | 40 | 45 | 48 |
| | | V | — | 21 | 27 | 33 | 37 | 41 | 45 | 51 | 57 | 61 |
| | Radius of Diffusion | H | 3-5-9 | 4-6-10 | 5-7-11 | 6-9-12 | 6-9-13 | 7-10-14 | 8-10-15 | 9-11-16 | 10-12-17 | 11-13-18 |
| | V | 8 | 9 | 9 | 10 | 11 | 12 | 12 | 13 | 14 | 15 | |

CEILING DIFFUSERS

Performance Data - 20 x 20 / 500 x 500 Face Size

| Listed Size | Neck Velocity, fpm | | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 |
|-------------|-----------------------------|---|-------|-------|-------|--------|--------|--------|--------|--------|---------|---------|
| | Velocity Pressure, in. w.g. | | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | .160 |
| 6 | Total Pressure | H | .015 | .024 | .035 | .047 | .062 | .078 | .097 | .139 | .189 | .247 |
| | | V | .018 | .028 | .040 | .055 | .072 | .091 | .112 | .162 | .220 | .287 |
| | Flow Rate, cfm | | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | 314 |
| | NC | H | — | — | — | — | — | 18 | 22 | 27 | 32 | 36 |
| | | V | — | — | — | — | — | 28 | 33 | 37 | 40 | 40 |
| | Radius of Diffusion | H | 1-2-4 | 2-2-5 | 2-3-6 | 2-3-6 | 3-4-7 | 3-4-7 | 3-5-7 | 4-6-8 | 4-6-9 | 5-7-9 |
| | V | 4 | 6 | 7 | 8 | 8 | 9 | 9 | 10 | 11 | 11 | |
| 8 | Total Pressure | H | .019 | .030 | .043 | .058 | .076 | .096 | .118 | .171 | .232 | .303 |
| | | V | .027 | .042 | .061 | .082 | .108 | .136 | .168 | .242 | .330 | .431 |
| | Flow Rate, cfm | | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | 558 |
| | NC | H | — | — | — | — | 18 | 21 | 25 | 30 | 35 | 39 |
| | | V | — | — | 19 | 23 | 26 | 29 | 32 | 37 | 41 | 45 |
| | Radius of Diffusion | H | 2-3-5 | 2-3-7 | 3-4-8 | 3-5-8 | 3-5-9 | 4-6-9 | 4-7-10 | 5-8-11 | 6-8-12 | 7-9-12 |
| | V | 6 | 7 | 9 | 9 | 10 | 11 | 11 | 12 | 13 | 14 | |
| 10 | Total Pressure | H | .022 | .035 | .050 | .069 | .090 | .114 | .140 | .202 | .275 | .359 |
| | | V | .038 | .059 | .085 | .116 | .152 | .192 | .237 | .341 | .464 | .606 |
| | Flow Rate, cfm | | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | 872 |
| | NC | H | — | — | — | 16 | 20 | 24 | 27 | 33 | 37 | 42 |
| | | V | — | 17 | 22 | 26 | 30 | 33 | 36 | 41 | 45 | 48 |
| | Radius of Diffusion | H | 2-3-7 | 3-4-8 | 3-5-9 | 4-6-10 | 4-7-11 | 5-8-12 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 |
| | V | 7 | 9 | 10 | 11 | 12 | 12 | 13 | 14 | 15 | 16 | |

For Performance Notes, see page C18.

Adjustable Square Cone Diffusers SCDA / ASCDA Series



Performance Data - 24 x 24 / 600 x 600 Face Size

| Listed Size | Neck Velocity, fpm | | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 |
|-------------|-----------------------------|---|--------|--------|--------|--------|---------|---------|---------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | .160 |
| 6 | Total Pressure | H | .016 | .026 | .037 | .050 | .066 | .083 | .103 | .148 | .202 | .263 |
| | | V | .027 | .043 | .062 | .084 | .110 | .139 | .171 | .247 | .336 | .439 |
| | Flow Rate, cfm | | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | 314 |
| | NC | H | — | — | — | — | 19 | 23 | 27 | 33 | 38 | 43 |
| | | V | — | 16 | 21 | 25 | 28 | 31 | 34 | 39 | 43 | 46 |
| | Radius of Diffusion | H | 1-2-4 | 2-2-5 | 2-3-6 | 2-3-6 | 3-4-7 | 3-4-7 | 3-5-7 | 4-6-8 | 4-6-9 | 5-7-9 |
| | Vertical Throw | V | 4 | 6 | 7 | 8 | 8 | 9 | 9 | 10 | 11 | 11 |
| 8 | Total Pressure | H | .020 | .032 | .046 | .063 | .082 | .104 | .128 | .184 | .250 | .327 |
| | | V | .034 | .053 | .076 | .104 | .136 | .172 | .212 | .305 | .415 | .543 |
| | Flow Rate, cfm | | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | 558 |
| | NC | H | — | — | — | 17 | 22 | 26 | 30 | 36 | 41 | 46 |
| | | V | — | 18 | 23 | 27 | 31 | 34 | 36 | 41 | 45 | 49 |
| | Radius of Diffusion | H | 2-3-5 | 2-3-7 | 3-4-8 | 3-5-8 | 3-5-9 | 4-6-9 | 4-7-10 | 5-8-11 | 6-8-12 | 7-9-12 |
| | Vertical Throw | V | 6 | 7 | 9 | 9 | 10 | 11 | 11 | 12 | 13 | 14 |
| 10 | Total Pressure | H | .024 | .038 | .055 | .075 | .098 | .124 | .153 | .220 | .299 | .391 |
| | | V | .040 | .062 | .090 | .122 | .160 | .202 | .249 | .359 | .489 | .638 |
| | Flow Rate, cfm | | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | 872 |
| | NC | H | — | — | — | 20 | 24 | 28 | 32 | 38 | 43 | 48 |
| | | V | — | 20 | 25 | 29 | 33 | 36 | 38 | 43 | 47 | 51 |
| | Radius of Diffusion | H | 2-3-7 | 3-4-8 | 3-5-9 | 4-6-10 | 4-7-11 | 5-8-12 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 |
| | Vertical Throw | V | 7 | 9 | 10 | 11 | 12 | 12 | 13 | 14 | 15 | 16 |
| 12 | Total Pressure | H | .028 | .044 | .063 | .086 | .112 | .141 | .175 | .251 | .342 | .447 |
| | | V | .046 | .072 | .103 | .141 | .184 | .232 | .287 | .413 | .562 | .734 |
| | Flow Rate, cfm | | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 | 1099 | 1256 |
| | NC | H | — | — | 16 | 22 | 26 | 30 | 34 | 40 | 45 | 50 |
| | | V | 16 | 22 | 27 | 31 | 34 | 37 | 40 | 45 | 49 | 52 |
| | Radius of Diffusion | H | 3-4-8 | 3-5-10 | 4-6-11 | 5-7-12 | 5-8-13 | 6-9-14 | 7-10-15 | 8-11-16 | 10-12-17 | 11-13-19 |
| | Vertical Throw | V | 9 | 10 | 11 | 12 | 12 | 13 | 14 | 15 | 16 | 17 |
| 14 | Total Pressure | H | .032 | .050 | .072 | .098 | .128 | .162 | .200 | .287 | .391 | .511 |
| | | V | .052 | .082 | .118 | .160 | .209 | .265 | .327 | .471 | .642 | .838 |
| | Flow Rate, cfm | | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 | 1497 | 1710 |
| | NC | H | — | — | 18 | 23 | 28 | 32 | 35 | 42 | 47 | 51 |
| | | V | 17 | 23 | 28 | 32 | 35 | 39 | 41 | 46 | 50 | 54 |
| | Radius of Diffusion | H | 3-5-10 | 4-6-12 | 5-7-13 | 6-9-14 | 6-10-15 | 7-11-16 | 8-12-17 | 10-13-19 | 11-14-20 | 12-15-22 |
| | Vertical Throw | V | 9 | 10 | 11 | 12 | 12 | 13 | 14 | 15 | 16 | 17 |
| 15 | Total Pressure | H | .034 | .053 | .076 | .104 | .136 | .172 | .212 | .305 | .415 | .543 |
| | | V | .069 | .108 | .155 | .211 | .275 | .348 | .430 | .619 | .843 | 1.101 |
| | Flow Rate, cfm | | 491 | 614 | 736 | 859 | 982 | 1104 | 1227 | 1472 | 1718 | 1963 |
| | NC | H | — | — | 19 | 24 | 28 | 32 | 36 | 42 | 48 | 52 |
| | | V | 18 | 24 | 29 | 33 | 36 | 39 | 42 | 47 | 51 | 54 |
| | Radius of Diffusion | H | 4-5-11 | 4-7-13 | 5-8-14 | 6-9-15 | 7-11-16 | 8-12-17 | 9-13-18 | 11-14-20 | 12-15-22 | 13-16-23 |
| | Vertical Throw | V | 8 | 9 | 10 | 11 | 12 | 13 | 13 | 14 | 16 | 17 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Horizontal throw data is based on supply air and room air being at isothermal conditions.
6. Vertical throws are based on 20 °F heating differential and 50 fpm terminal velocity.
7. If the diffuser is mounted on an exposed duct, multiply the throw value in the table by 0.70.
8. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
9. Blanks (—) indicate an NC level below 15.
10. Does not include effects of ceiling radiation damper (SCDA-FR)

Vertical Throw Factors

| Ceiling Module | Listed Size | Cooling ΔT | | Heating ΔT | |
|-------------------|-------------|------------|------|------------|-------|
| | | -10 °F | 0 °F | 20 °F | 40 °F |
| 12x12 / 300 x 300 | 4 | 1.6 | 1.3 | 1.0 | 0.7 |
| | 5 | 1.6 | 1.3 | 1.0 | 0.7 |
| | 6 | 1.6 | 1.3 | 1.0 | 0.7 |
| | 7 | 1.6 | 1.3 | 1.0 | 0.7 |
| 20x20 / 500 x 500 | 8 | 1.6 | 1.3 | 1.0 | 0.7 |
| | 6 | 1.7 | 1.3 | 1.0 | 0.7 |
| | 8 | 1.7 | 1.3 | 1.0 | 0.7 |
| | 10 | 1.7 | 1.3 | 1.0 | 0.6 |
| 24x24 / 600 x 600 | 6 | 1.7 | 1.3 | 1.0 | 0.7 |
| | 8 | 1.7 | 1.3 | 1.0 | 0.7 |
| | 10 | 1.7 | 1.4 | 1.0 | 0.6 |
| | 12 | 1.8 | 1.4 | 1.0 | 0.6 |
| | 14 | 2.0 | 1.5 | 1.0 | 0.5 |
| | 15 | 2.1 | 1.5 | 1.0 | 0.5 |

The table lists throw factors to be applied to the vertical projections listed in the performance tables for temperature differentials other than 20 °F heating differential.

Square Plaque Diffusers

SPD / SPD AS / ASPD Series

Product Information

Models

Radial Horizontal Air Pattern

Steel Construction **SPD**
 Aluminized Steel **SPD AS**
 Aluminum Construction **ASPD**

Price SPD Series square plaque diffuser satisfies both architectural appeal and engineering performance criteria. The simple, clean and unobtrusive face design is intended to blend with most ceiling systems.

Features

- Choice of steel (SPD) or aluminum (ASPD) construction, or aluminized steel (SPDAS).
- Face panel has smooth edges and rounded corners to blend with back cone.
- Back cone is one-piece die-formed with smooth, aerodynamically designed surfaces and no corner joints. Helps prevent ceiling smudging.
- The back cone shape combines with the face panel to deliver a tight 360° radial horizontal air pattern.
- Face panel is easily installed and removed without special tools.
- Maintains true 360° horizontal air pattern even at low air volumes, making it a good choice for VAV applications.
- Complete range of available accessory dampers, equalizing grids, etc.
- Optional insulated backpan (Style 31 T-bar and 4TS only).
- Optional beaded extended neck (2.5 in. (64mm) tall) for easy flex duct connection BN.

Finish

White Powder Coat **B12**
 For optional and special finishes see color matrix.

Available Module Sizes

| Imperial | Metric |
|-----------------|---------------|
| 24 in. x 24 in. | 600mm x 600mm |
| 20 in. x 20 in. | 500mm x 500mm |
| 12 in. x 12 in. | 300mm x 300mm |



Model SPD / ASPD / SPDAS



Model SPD / 3P

✓ Product Selection Checklist

- 1] Select Inlet Diameter based on desired performance characteristics.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Type by model number (Material).
- 4] Select Border/Panel Style according to installation requirements (page C10).
- 5] Select Volume Control Accessories, if desired (page C181-C186).
- 6] Select Finish.

Example: 8 in. / 24 in. x 24 in. / SPD / 31 / B12

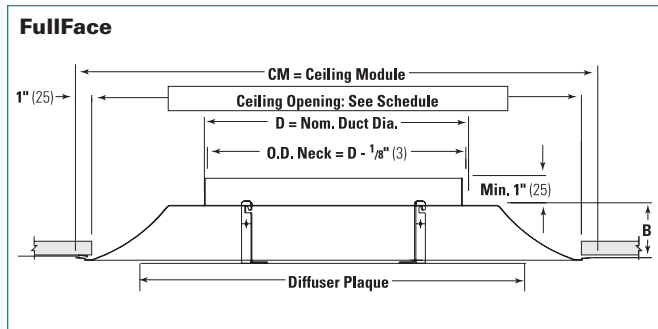
Application Recommendations:

For Border and Panel recommendations, see page C8.

Square Plaque Diffusers SPD / SPD AS / ASPD Series



Frame Selection



Dimensional Data — Imperial (in.)

| Ceiling Module | Ceiling Opening | B | Duct Size |
|----------------|-----------------|-------|----------------------|
| 24 x 24 | 22 x 22 | 2 1/2 | 6, 8, 10, 12, 14, 15 |
| 20 x 20 | 18 x 18 | 2 1/2 | 6, 8, 10 |
| 12 x 12 | 10 1/2 x 10 1/2 | 1 1/8 | 4, 5, 6, 7, 8 |

Dimensional Data — Metric [mm]

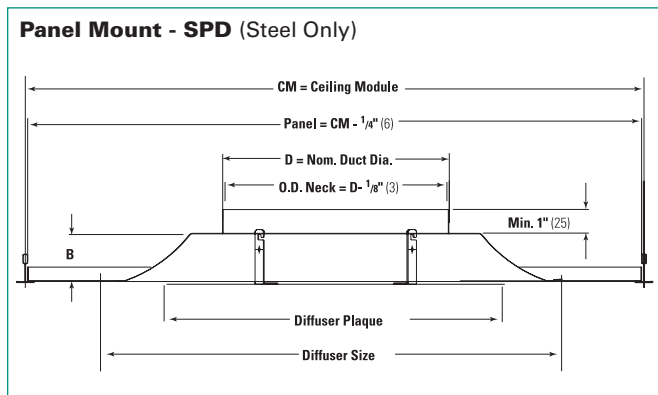
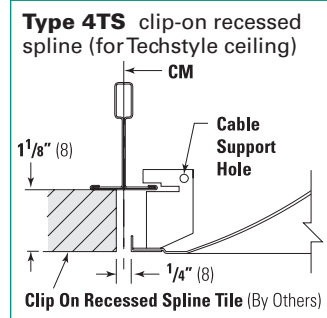
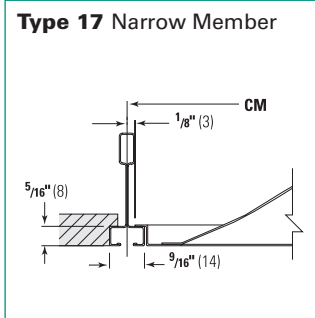
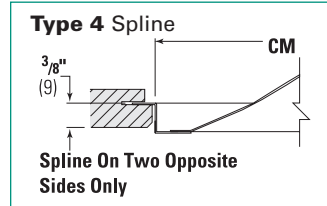
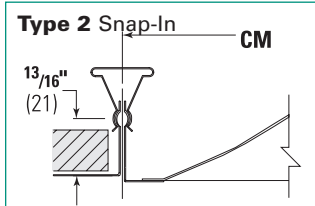
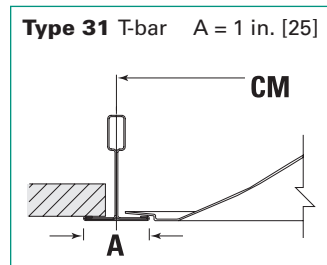
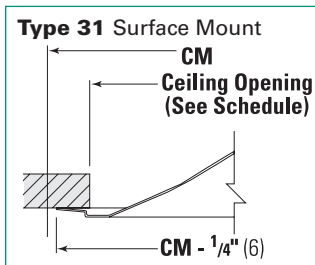
| Ceiling Module | Ceiling Opening | B | Duct Size |
|----------------|-----------------|----|------------------------------|
| 600 x 600 | 559 x 559 | 64 | 152, 203, 254, 305, 356, 381 |
| 500 x 500 | 457 x 457 | 64 | 152, 203, 254 |
| 300 x 300 | 267 x 267 | 29 | 102, 127, 152, 178, 203 |

Frames for Ceiling Module Sizes 24 x 24 / 600 x 600, 20 x 20 / 500 x 500, 12 x 12 / 300 x 300

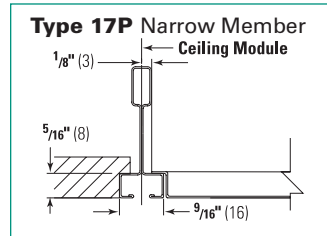
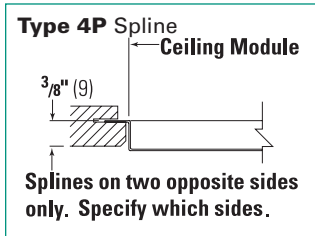
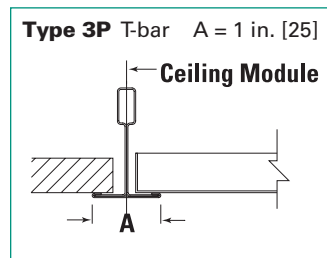
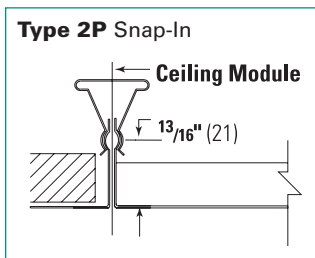
Sizes 20 x 20 / 500 x 500 only available in Type 31 Surface Mount and Type 31 T-bar.

SPDAS available in type 31 only. 20 x 20 (500 x 500) size not available.

4TS available only on 24x24 SPD.



| Face View | Modules | CM = Nom. Panel Size | |
|-----------|----------------------------------|----------------------|-------------|
| | Diffuser Size 24x24 (600x600) | Imperial (inches) | Metric (mm) |
| | | 48 x 24 | 1200 x 600 |
| Face View | Diffuser Size 12x12 (300x300) | Imperial (inches) | Metric (mm) |
| | | 24 x 12 | 600 x 300 |
| | | 48 x 12 | 1200 x 300 |
| | | 20 x 20 | 500 x 500 |
| | | 24 x 24 | 600 x 600 |



Dimensional Data — Imperial (in.)

| Diffuser Size | B | Duct Size |
|---------------|-------|----------------------|
| 24 x 24 | 2 1/2 | 6, 8, 10, 12, 14, 15 |
| 12 x 12 | 1 1/8 | 4, 5, 6, 7, 8 |

Dimensional Data — Metric [mm]

| Diffuser Size | B | Duct Size |
|---------------|----|------------------------------|
| 600 x 600 | 64 | 152, 203, 254, 305, 356, 381 |
| 300 x 300 | 29 | 102, 127, 152, 178, 203 |

Fire-Rated Square Plaque Diffusers SPD-FR Series



Product Information

Three Hour Rating - Lay-in

Price SPD-FR square plaque diffusers are Fire-Rated Assemblies which are UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

SPD-FR square plaque diffusers satisfy both architectural appeal and engineering performance criteria. Simple, clean and unobtrusive face design is intended to blend with most ceiling systems.

Features

- Available in both imperial and hard metric module sizes.
- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Face panel has smooth edges and rounded corners to blend with back cone.
- Back cone is one-piece die-formed with smooth, aerodynamically designed surfaces and no corner joints. Helps prevent ceiling smudging.
- The back cone shape combines with the face panel to deliver a tight 360° radial horizontal air pattern.
- Face panel is easily installed and removed without special tools. Provides access to optional volume controller.
- Maintains true 360° horizontal air pattern even at low air volumes making it a good choice for VAV applications.
- Optional adjustable volume controller (Allen key adjustable).
- Optional 20 in. x 20 in. (500mm x 500mm), 24 in. x 12 in. (600mm x 300mm), and 24 in. x 24 in. (600mm x 600mm) T-bar Lay-in Panel.

Available Module Sizes

| Imperial | Metric |
|-----------------|---------------|
| 24 in. x 24 in. | 600mm x 600mm |
| 20 in. x 20 in. | 500mm x 500mm |
| 12 in. x 12 in. | 300mm x 300mm |

Finish

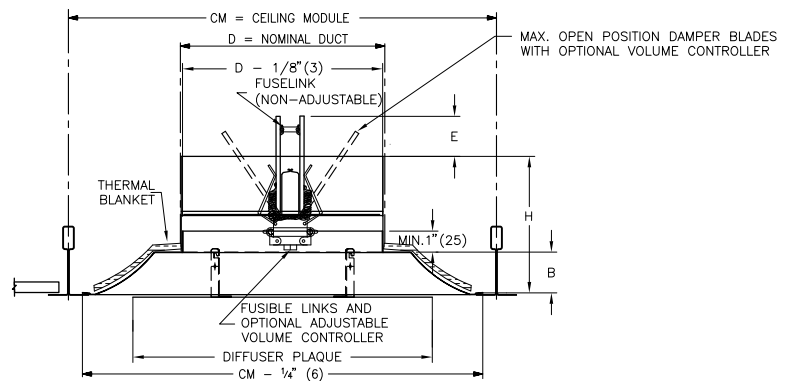
White Powder Coat

B12

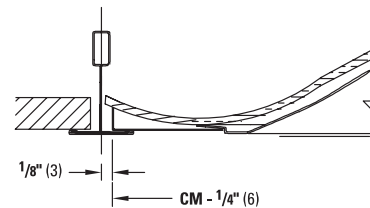
For optional and special finishes see color matrix.



Model SPD-FR



Panel Mount - SPD-FR (Steel Only)



Dimensional Data — Imperial (in.)

| Ceiling Module | B | Duct Size |
|----------------|-------|----------------------|
| 24 x 24 | 2 1/2 | 6, 8, 10, 12, 14, 15 |
| 20 x 20 | 2 1/2 | 6, 8, 10 |
| 12 x 12 | 1 1/8 | 5, 6, 7, 8 |

*Panel diffuser sizes available 12 x 12 & 20 x 20 only.

Dimensional Data — Metric (mm)

| Ceiling Module | B | Duct Size |
|----------------|----|------------------------------|
| 600 x 600 | 64 | 152, 203, 254, 305, 356, 381 |
| 500 x 500 | 64 | 152, 203, 254 |
| 300 x 300 | 29 | 127, 152, 178, 203 |

*Panel diffuser sizes available 300 x 300 & 500 x 500 only.

Plan View

| Diffuser Size 12x12 (305x305) | CM = Nom. Panel Size | |
|----------------------------------|----------------------|-------------|
| | Imperial (inches) | Metric (mm) |
| | 24 x 12 | 600 x 300 |
| | 20 x 20 | 500 x 500 |
| | 24 x 24 | 600 x 600 |

✓ Product Selection Checklist

- 1] Select Inlet Diameter.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Style by model number.
- 4] Select Panel Option according to installation requirements.
- 5] Select Finish.

Example: 8 in. / 24 in. x 24 in. / SPD-FR / B12

Square Plaque Diffusers SPD / SPD AS / ASPD Series



Performance Data - Imperial Units - 12 x 12 Face Size

| Listed Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | 400 .010 | 500 .016 | 600 .022 | 700 .031 | 800 .040 | 900 .050 | 1000 .062 | 1200 .090 | 1400 .122 | 1600 .160 |
|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| 4 | Total Pressure | .017 | .026 | .038 | .052 | .068 | .086 | .106 | .153 | .208 | .271 |
| | Flow Rate, cfm | 35 | 44 | 52 | 61 | 70 | 78 | 87 | 104 | 122 | 139 |
| | NC | — | — | — | — | — | 15 | 19 | 25 | 30 | 34 |
| | Throw 150, 100, 50 | 1-2-4 | 1-2-4 | 2-3-5 | 2-3-6 | 2-4-6 | 3-4-7 | 3-4-7 | 4-5-8 | 4-6-9 | 5-6-9 |
| 5 | Total Pressure, in. w.g. | .027 | .042 | .061 | .082 | .108 | .136 | .168 | .242 | .330 | .431 |
| | Flow Rate, cfm | 54 | 68 | 82 | 95 | 109 | 122 | 136 | 163 | 190 | 218 |
| | NC | — | — | — | — | 16 | 20 | 24 | 30 | 35 | 39 |
| | Throw 150, 100, 50 | 2-2-5 | 2-3-6 | 2-4-7 | 3-4-8 | 3-5-8 | 4-5-9 | 4-6-9 | 5-7-10 | 5-8-11 | 6-8-11 |
| 6 | Total Pressure, in. w.g. | .038 | .059 | .085 | .116 | .152 | .192 | .237 | .341 | .464 | .606 |
| | Flow Rate, cfm | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | 314 |
| | NC | — | — | — | 16 | 20 | 24 | 27 | 33 | 38 | 43 |
| | Throw 150, 100, 50 | 2-3-6 | 2-4-7 | 3-4-8 | 3-5-9 | 4-6-10 | 4-7-10 | 5-7-11 | 6-8-12 | 7-9-13 | 8-10-14 |
| 7 | Total Pressure, in. w.g. | .052 | .081 | .117 | .159 | .207 | .263 | .324 | .467 | .635 | .830 |
| | Flow Rate, cfm | 107 | 134 | 160 | 187 | 214 | 240 | 267 | 320 | 374 | 427 |
| | NC | — | — | — | 19 | 24 | 27 | 31 | 37 | 42 | 46 |
| | Throw 150, 100, 50 | 2-4-7 | 3-4-9 | 4-5-10 | 4-6-11 | 5-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 | 9-11-16 |
| 8 | Total Pressure, in. w.g. | .068 | .106 | .153 | .208 | .271 | .343 | .424 | .610 | .831 | 1.085 |
| | Flow Rate, cfm | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | 558 |
| | NC | — | — | 17 | 22 | 26 | 30 | 34 | 39 | 44 | 49 |
| | Throw 150, 100, 50 | 3-4-8 | 3-5-10 | 4-6-11 | 5-7-12 | 6-8-13 | 6-9-14 | 7-10-15 | 8-11-16 | 10-12-17 | 11-13-18 |

Performance Data - Imperial Units - 20 x 20 Face Size

| Listed Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | 400 .010 | 500 .016 | 600 .022 | 700 .031 | 800 .040 | 900 .050 | 1000 .062 | 1200 .090 | 1400 .122 | 1600 .160 |
|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| 6 | Total Pressure | .014 | .022 | .031 | .043 | .056 | .071 | .087 | .126 | .171 | .223 |
| | Flow Rate, cfm | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | 314 |
| | NC | — | — | — | — | — | 18 | 21 | 27 | 32 | 36 |
| | Throw 150, 100, 50 | 0-1-3 | 1-2-4 | 1-2-4 | 1-3-5 | 2-3-6 | 2-3-6 | 2-4-6 | 3-4-7 | 3-5-7 | 4-6-8 |
| 8 | Total Pressure, in. w.g. | .022 | .035 | .050 | .069 | .090 | .114 | .140 | .202 | .275 | .359 |
| | Flow Rate, cfm | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | 558 |
| | NC | — | — | — | 16 | 20 | 24 | 27 | 33 | 38 | 42 |
| | Throw 150, 100, 50 | 1-2-5 | 2-3-6 | 2-4-6 | 3-4-7 | 3-5-7 | 4-5-8 | 4-6-8 | 5-6-9 | 6-7-10 | 6-7-11 |
| 10 | Total Pressure, in. w.g. | .032 | .051 | .073 | .099 | .130 | .164 | .203 | .292 | .397 | .519 |
| | Flow Rate, cfm | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | 872 |
| | NC | — | — | — | 20 | 24 | 28 | 31 | 37 | 42 | 46 |
| | Throw 150, 100, 50 | 2-3-6 | 3-4-7 | 3-5-8 | 4-6-9 | 4-6-9 | 5-7-10 | 5-7-10 | 6-8-11 | 7-9-12 | 8-9-13 |

For Performance Notes, see page C23.

Performance Data - Imperial Units - 24 x 24 Face Size

| Listed Size | Neck Velocity, fpm | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 |
|-------------|-----------------------------|--------|--------|--------|--------|---------|---------|---------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | .160 |
| 6 | Total Pressure, in. w.g. | .010 | .016 | .023 | .032 | .041 | .053 | .065 | .093 | .127 | .166 |
| | Flow Rate, cfm | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | 314 |
| | NC | — | — | — | — | — | 19 | 22 | 29 | 34 | 38 |
| | Throw 150, 100, 50 | 1-2-4 | 1-2-4 | 2-3-5 | 2-3-6 | 2-4-6 | 3-4-7 | 3-4-7 | 4-5-8 | 4-6-9 | 5-7-9 |
| 8 | Total Pressure, in. w.g. | .018 | .029 | .042 | .057 | .074 | .093 | .115 | .166 | .226 | .295 |
| | Flow Rate, cfm | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | 558 |
| | NC | — | — | — | — | 19 | 23 | 27 | 33 | 38 | 43 |
| | Throw 150, 100, 50 | 2-2-5 | 2-3-6 | 2-4-7 | 3-4-8 | 3-5-9 | 4-6-9 | 4-6-10 | 5-7-11 | 6-8-12 | 7-9-12 |
| 10 | Total Pressure, in. w.g. | .029 | .045 | .065 | .088 | .115 | .146 | .180 | .259 | .353 | .461 |
| | Flow Rate, cfm | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | 872 |
| | NC | — | — | — | 18 | 22 | 26 | 30 | 36 | 41 | 46 |
| | Throw 150, 100, 50 | 2-3-6 | 3-4-8 | 3-5-9 | 4-6-10 | 4-6-11 | 5-7-12 | 5-8-12 | 6-9-13 | 8-10-14 | 9-11-15 |
| 12 | Total Pressure, in. w.g. | .041 | .065 | .093 | .127 | .166 | .210 | .259 | .373 | .508 | .664 |
| | Flow Rate, cfm | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 | 1099 | 1256 |
| | NC | — | — | 15 | 21 | 25 | 29 | 33 | 39 | 44 | 49 |
| | Throw 150, 100, 50 | 3-4-8 | 3-5-10 | 4-6-11 | 5-7-12 | 5-8-13 | 6-9-14 | 7-10-15 | 8-11-16 | 9-12-17 | 11-13-19 |
| 14 | Total Pressure, in. w.g. | .057 | .088 | .127 | .173 | .226 | .286 | .353 | .509 | .693 | .905 |
| | Flow Rate, cfm | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 | 1497 | 1710 |
| | NC | — | — | 18 | 23 | 27 | 31 | 35 | 41 | 46 | 51 |
| | Throw 150, 100, 50 | 3-5-10 | 4-6-12 | 5-7-13 | 6-9-14 | 6-10-15 | 7-11-16 | 8-12-17 | 10-13-19 | 11-14-20 | 12-15-22 |
| 15 | Total Pressure, in. w.g. | .065 | .101 | .146 | .199 | .259 | .328 | .405 | .584 | .794 | 1.037 |
| | Flow Rate, cfm | 491 | 614 | 736 | 859 | 982 | 1104 | 1227 | 1472 | 1718 | 1963 |
| | NC | — | — | 19 | 24 | 28 | 32 | 36 | 42 | 47 | 52 |
| | Throw 150, 100, 50 | 4-5-11 | 4-7-13 | 5-8-14 | 6-9-15 | 7-11-16 | 8-12-17 | 9-13-18 | 11-14-20 | 12-15-22 | 13-16-23 |

CEILING DIFFUSERS

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. If the diffuser is mounted on an exposed duct, multiply the radii of diffusion in the table by 0.70.
7. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
8. Blanks (—) indicate an NC level below 15.
9. Does not include effects of ceiling radiation damper (SPD-FR)

Square Plaque Diffusers SPD / SPD AS / ASPD Series



Performance Data - Metric Units - 300 mm x 300 mm Face Size

| Listed Size | Neck Velocity (m/s) Velocity Pressure (Pa) | 2.0 2 | 2.5 4 | 3.0 5 | 3.5 8 | 4.0 10 | 4.5 12 | 5.0 15 | 6.0 22 | 7.0 30 | 8.0 40 |
|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 100 mm | Total Pressure (Pa) | 4 | 7 | 9 | 13 | 17 | 21 | 26 | 38 | 52 | 68 |
| | L/s | 16 | 21 | 25 | 29 | 33 | 37 | 41 | 49 | 58 | 66 |
| | NC | -- | -- | -- | -- | -- | 16 | 19 | 25 | 30 | 35 |
| | Throw (m) | 0.4-0.6-1.2 | 0.5-0.7-1.5 | 0.6-0.9-1.7 | 0.7-1.0-1.9 | 0.8-1.2-2.0 | 0.9-1.3-2.1 | 1.0-1.5-2.2 | 1.2-1.7-2.4 | 1.4-1.9-2.6 | 1.6-2.0-2.8 |
| 125 mm | Total Pressure (Pa) | 7 | 11 | 14 | 20 | 26 | 33 | 41 | 60 | 81 | 106 |
| | L/s | 26 | 32 | 39 | 45 | 51 | 58 | 64 | 77 | 90 | 103 |
| | NC | -- | -- | -- | -- | 17 | 21 | 24 | 30 | 35 | 39 |
| | Throw (m) | 0.6-0.8-1.7 | 0.7-1.0-2.0 | 0.8-1.2-2.1 | 1.0-1.4-2.3 | 1.1-1.7-2.5 | 1.2-1.9-2.6 | 1.4-2.0-2.8 | 1.7-2.1-3.0 | 1.9-2.3-3.3 | 2.0-2.5-3.5 |
| 150 mm | Total Pressure (Pa) | 9 | 15 | 21 | 30 | 38 | 48 | 59 | 86 | 116 | 153 |
| | L/s | 37 | 46 | 56 | 65 | 74 | 83 | 93 | 111 | 130 | 148 |
| | NC | -- | -- | -- | 16 | 21 | 24 | 28 | 34 | 39 | 43 |
| | Throw (m) | 0.7-1.1-2.1 | 0.9-1.4-2.3 | 1.1-1.6-2.6 | 1.3-1.9-2.8 | 1.4-2.1-3.0 | 1.6-2.2-3.2 | 1.8-2.3-3.3 | 2.1-2.6-3.6 | 2.3-2.8-3.9 | 2.4-3.0-4.2 |
| 180 mm | Total Pressure (Pa) | 13 | 21 | 29 | 40 | 52 | 65 | 80 | 117 | 158 | 208 |
| | L/s | 50 | 63 | 76 | 88 | 101 | 114 | 126 | 151 | 177 | 202 |
| | NC | -- | -- | -- | 20 | 24 | 28 | 31 | 37 | 42 | 46 |
| | Throw (m) | 0.9-1.4-2.5 | 1.1-1.7-2.7 | 1.4-2.1-3.0 | 1.6-2.3-3.2 | 1.8-2.5-3.5 | 2.1-2.6-3.7 | 2.2-2.7-3.9 | 2.5-3.0-4.2 | 2.6-3.2-4.6 | 2.8-3.5-4.9 |
| 205 mm | Total Pressure (Pa) | 17 | 27 | 37 | 53 | 68 | 85 | 105 | 153 | 207 | 271 |
| | L/s | 66 | 82 | 99 | 115 | 132 | 148 | 165 | 198 | 231 | 264 |
| | NC | -- | -- | 17 | 22 | 27 | 31 | 34 | 40 | 45 | 49 |
| | Throw (m) | 1.1-1.7-2.8 | 1.4-2.1-3.1 | 1.7-2.4-3.4 | 2.0-2.6-3.7 | 2.2-2.8-4.0 | 2.4-3.0-4.2 | 2.6-3.1-4.4 | 2.8-3.4-4.9 | 3.0-3.7-5.2 | 3.2-4.0-5.6 |

For Performance Notes, see page C25

Performance Data - Metric Units - 500 mm x 500 mm Face Size

| Listed Size | Neck Velocity (m/s) Velocity Pressure (Pa) | 2.0 2 | 2.5 4 | 3.0 5 | 3.5 8 | 4.0 10 | 4.5 12 | 5.0 15 | 6.0 22 | 7.0 30 | 8.0 40 |
|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 150 mm | Total Pressure (Pa) | 3 | 5 | 8 | 11 | 14 | 17 | 22 | 31 | 43 | 56 |
| | L/s | 37 | 46 | 56 | 65 | 74 | 83 | 93 | 111 | 130 | 148 |
| | NC | -- | -- | -- | -- | -- | 18 | 21 | 27 | 32 | 36 |
| | Throw (m) | 0.3-0.5-0.9 | 0.4-0.6-1.1 | 0.5-0.7-1.4 | 0.5-0.8-1.6 | 0.6-0.9-1.7 | 0.7-1.0-1.9 | 0.8-1.1-2.0 | 0.9-1.4-2.1 | 1.1-1.6-2.3 | 1.2-1.7-2.5 |
| 205 mm | Total Pressure (Pa) | 6 | 9 | 12 | 17 | 22 | 28 | 35 | 51 | 68 | 90 |
| | L/s | 66 | 82 | 99 | 115 | 132 | 148 | 165 | 198 | 231 | 264 |
| | NC | -- | -- | -- | 16 | 20 | 24 | 27 | 33 | 38 | 42 |
| | Throw (m) | 0.5-0.8-1.5 | 0.6-1.0-1.8 | 0.8-1.2-2.0 | 0.9-1.3-2.1 | 1.0-1.5-2.3 | 1.2-1.7-2.4 | 1.3-1.8-2.5 | 1.5-2.0-2.8 | 1.7-2.1-3.0 | 1.9-2.3-3.2 |
| 255 mm | Total Pressure (Pa) | 8 | 13 | 18 | 25 | 32 | 41 | 50 | 73 | 99 | 129 |
| | L/s | 103 | 129 | 154 | 180 | 206 | 232 | 257 | 309 | 360 | 412 |
| | NC | -- | -- | -- | 20 | 24 | 28 | 31 | 37 | 42 | 46 |
| | Throw (m) | 0.8-1.1-2.0 | 1.0-1.4-2.2 | 1.1-1.7-2.4 | 1.3-1.9-2.6 | 1.5-2.0-2.8 | 1.7-2.1-3.0 | 1.8-2.2-3.1 | 2.0-2.4-3.4 | 2.1-2.6-3.7 | 2.3-2.8-4.0 |

For Performance Notes, see page C25

Square Plaque Diffusers SPD / SPD AS / ASPD Series

Performance Data - Metric Units - 600 mm x 600 mm Face Size

| Listed Size | Neck Velocity (m/s) | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 6.0 | 7.0 | 8.0 |
|-------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Velocity Pressure (Pa) | 2 | 4 | 5 | 8 | 10 | 12 | 15 | 22 | 30 | 40 |
| 150 mm | Total Pressure (Pa) | 2 | 4 | 6 | 8 | 10 | 13 | 16 | 23 | 32 | 41 |
| | L/s | 37 | 46 | 56 | 65 | 74 | 83 | 93 | 111 | 130 | 148 |
| | NC | -- | -- | -- | -- | -- | 19 | 22 | 29 | 34 | 38 |
| | Throw (m) | 0.4-0.5-1.1 | 0.4-0.7-1.3 | 0.5-0.8-1.6 | 0.6-0.9-1.9 | 0.7-1.1-2.0 | 0.8-1.2-2.1 | 0.9-1.3-2.2 | 1.1-1.6-2.4 | 1.2-1.9-2.6 | 1.4-2.0-2.8 |
| 205 mm | Total Pressure (Pa) | 4 | 7 | 10 | 14 | 18 | 23 | 29 | 41 | 56 | 74 |
| | L/s | 66 | 82 | 99 | 115 | 132 | 148 | 165 | 198 | 231 | 264 |
| | NC | -- | -- | -- | -- | 19 | 23 | 27 | 33 | 38 | 43 |
| | Throw (m) | 0.6-0.8-1.7 | 0.7-1.0-2.1 | 0.8-1.2-2.3 | 1.0-1.4-2.5 | 1.1-1.7-2.7 | 1.2-1.9-2.8 | 1.4-2.1-3.0 | 1.7-2.3-3.3 | 1.9-2.5-3.5 | 2.2-2.7-3.8 |
| 255 mm | Total Pressure (Pa) | 7 | 11 | 16 | 22 | 29 | 36 | 45 | 64 | 88 | 115 |
| | L/s | 103 | 129 | 154 | 180 | 206 | 232 | 257 | 309 | 360 | 412 |
| | NC | -- | -- | -- | 18 | 22 | 26 | 30 | 36 | 41 | 46 |
| | Throw (m) | 0.8-1.2-2.3 | 1.0-1.5-2.6 | 1.2-1.7-2.9 | 1.4-2.0-3.1 | 1.5-2.3-3.3 | 1.7-2.5-3.5 | 1.9-2.6-3.7 | 2.3-2.9-4.1 | 2.5-3.1-4.4 | 2.7-3.3-4.7 |
| 305 mm | Total Pressure (Pa) | 10 | 16 | 23 | 32 | 41 | 52 | 64 | 93 | 126 | 165 |
| | L/s | 148 | 185 | 222 | 259 | 297 | 334 | 371 | 445 | 519 | 593 |
| | NC | -- | -- | 15 | 21 | 25 | 29 | 33 | 39 | 44 | 49 |
| | Throw (m) | 1.0-1.5-2.8 | 1.3-1.9-3.2 | 1.5-2.3-3.5 | 1.8-2.6-3.7 | 2.0-2.8-4.0 | 2.3-3.0-4.2 | 2.6-3.2-4.5 | 2.8-3.5-4.9 | 3.1-3.7-5.3 | 3.3-4.0-5.7 |
| 355 mm | Total Pressure (Pa) | 14 | 22 | 31 | 44 | 56 | 70 | 87 | 126 | 172 | 225 |
| | L/s | 202 | 252 | 303 | 353 | 404 | 454 | 505 | 605 | 706 | 807 |
| | NC | -- | -- | 18 | 23 | 27 | 31 | 35 | 41 | 46 | 51 |
| | Throw (m) | 1.3-1.9-3.3 | 1.6-2.4-3.7 | 1.9-2.9-4.0 | 2.3-3.1-4.4 | 2.6-3.3-4.7 | 2.9-3.5-4.9 | 3.0-3.7-5.2 | 3.3-4.0-5.7 | 3.6-4.4-6.2 | 3.8-4.7-6.6 |
| 380 mm | Total Pressure (Pa) | 16 | 26 | 35 | 50 | 64 | 81 | 100 | 145 | 197 | 258 |
| | L/s | 232 | 290 | 348 | 405 | 463 | 521 | 579 | 695 | 811 | 927 |
| | NC | -- | -- | 19 | 24 | 28 | 32 | 36 | 42 | 47 | 52 |
| | Throw (m) | 1.4-2.2-3.5 | 1.8-2.7-4.0 | 2.2-3.1-4.3 | 2.5-3.3-4.7 | 2.9-3.5-5.0 | 3.1-3.7-5.3 | 3.2-4.0-5.6 | 3.5-4.3-6.1 | 3.8-4.7-6.6 | 4.1-5.0-7.1 |

Performance Notes:

- All pressures are in Pascals (Pa).
- The NC values and sound pressure level are based on a room absorption of 10dB re 10⁻¹² watts and one diffuser.
- Tested in accordance with ASHRAE Standard 70-2006, "Method of Testing for Rating the Performance of Air Outlets and Inlets".
- Blanks (--) indicate an NC level below 15.
- Radii of diffusion are given in meters to terminal velocities of 0.75 m/s (minimum), 0.5 m/s (middle) and 0.25 m/s (maximum).
- Throw data is based on supply air and room air being at isothermal conditions.
- If the diffuser is mounted on an exposed duct, multiply the radii of diffusion in the table by 0.70.

High Induction Square Plaque Diffusers SPD HI Series



Product Information

Models

Radial Horizontal Air Pattern

Steel Construction

SPD HI

Price SPD HI Series High Induction Square Plaque Diffuser is designed to provide large volumes of air to spaces that need to satisfy both architectural appeal and air distribution performance criteria. A high induction chamber hidden behind the simple, clean and unobtrusive plaque is the key to the great performance that this diffuser has to offer.

High velocity air discharged through the openings in the induction chamber travels in a tight radial pattern along the ceiling while efficiently inducing and mixing with room air. The exceptional horizontal air pattern and rapid mixing of the Price Series SPD HI ensure comfort is maintained in the occupied space in heating as well as in cooling applications. Carefully engineered openings in the chamber provide low noise levels across the diffuser's air flow range without sacrificing its superior air mixing properties.

Features

- Steel construction.
- High aspiration rates with low sound levels throughout the air flow range.
- Face panel has smooth edges and rounded off corners to blend with back cone.
- Back cone is one-piece die-formed with smooth, aerodynamically designed surfaces without corner joints. Helps prevent ceiling smudging.
- The back cone shape combines with the face panel to deliver a tight 360° radial horizontal air pattern.
- Face panel is easily installed and removed without special tools.
- Maintains true 360° horizontal air pattern, even at low air volumes, making it a good choice for VAV applications.

Finish

White Powder Coat

B12

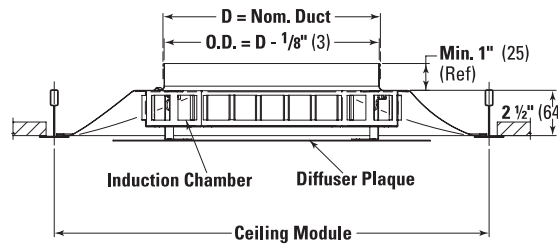
For optional and special finishes see color matrix.

Available Module Sizes

| Imperial | Metric |
|-----------------|-----------|
| 24 in. x 24 in. | 600 x 600 |



Model SPD HI



Dimensional Data — Imperial (in.)

| Ceiling Module | Ceiling Opening | B | Duct Size |
|----------------|-----------------|-------|------------------|
| 24 x 24 | 22 x 22 | 2 1/2 | 6, 8, 10, 12, 14 |

Dimensional Data — Metric [mm]

| Ceiling Module | Ceiling Opening | B | Duct Size |
|----------------|-----------------|----|-------------------------|
| 600 x 600 | 559 x 559 | 64 | 152, 203, 254, 305, 356 |

✓ Product Selection Checklist

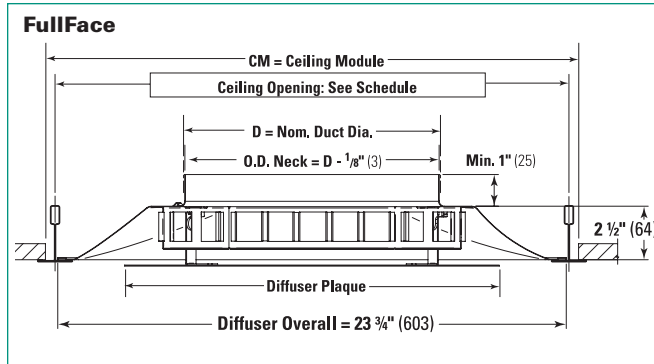
- 1] Select Inlet Diameter based on desired performance characteristics.
- 2] Select Finish.

Example: 8 in. / 24 in. x 24 in. / SPD HI / 31 / B12

Application Recommendations:

For Border and Panel recommendations, see page C8.

Frame Selection



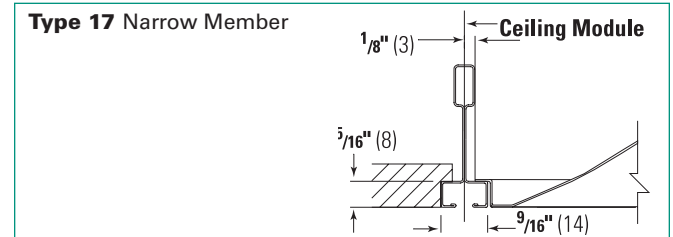
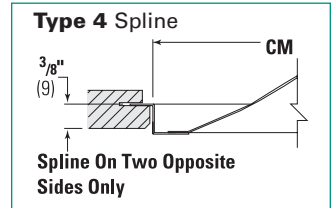
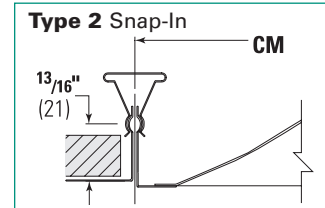
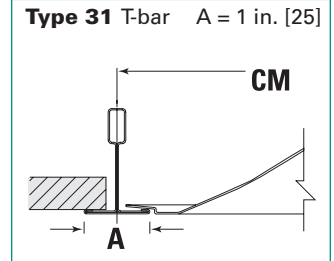
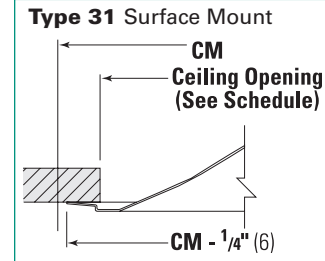
Dimensional Data — Imperial (in.)

| Ceiling Module | Ceiling Opening | B | Duct Size |
|----------------|-----------------|-------|------------------|
| 24 x 24 | 22 x 22 | 2 1/2 | 6, 8, 10, 12, 14 |

Dimensional Data — Metric [mm]

| Ceiling Module | Ceiling Opening | B | Duct Size |
|----------------|-----------------|----|-------------------------|
| 600 x 600 | 559 x 559 | 64 | 152, 203, 254, 305, 356 |

Frames for Ceiling Module Sizes 24 x 24 / 600 x 600



CEILING DIFFUSERS

High Induction Square Plaque Diffusers SPD HI Series



Performance Data - Imperial Units - 24 x 24 Face Size

| Listed Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|-------------|---|--------|--------|---------|---------|----------|----------|----------|----------|----------|----------|
| | | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | 0.062 | 0.090 |
| 6 | Total Pressure, in. w.g. | 0.004 | 0.009 | 0.015 | 0.024 | 0.034 | 0.047 | 0.061 | 0.078 | 0.096 | 0.138 |
| | Flow Rate, cfm | 39 | 59 | 79 | 98 | 118 | 137 | 157 | 177 | 196 | 236 |
| | NC | - | - | - | - | - | - | 17 | 20 | 24 | 29 |
| | Throw 150, 100, 50 | 1-1-2 | 1-1-2 | 1-2-3 | 1-2-4 | 2-2-5 | 2-3-5 | 2-3-6 | 2-3-7 | 3-4-8 | 3-5-9 |
| 8 | Total Pressure, in. w.g. | 0.008 | 0.019 | 0.034 | 0.052 | 0.075 | 0.103 | 0.134 | 0.170 | 0.210 | 0.302 |
| | Flow Rate, cfm | 70 | 105 | 140 | 174 | 209 | 244 | 279 | 314 | 349 | 419 |
| | NC | - | - | - | - | 20 | 25 | 29 | 32 | 36 | 41 |
| | Throw 150, 100, 50 | 1-2-4 | 2-3-5 | 2-4-7 | 3-5-9 | 4-5-11 | 4-6-12 | 5-7-13 | 5-8-14 | 6-9-15 | 7-11-16 |
| 10 | Total Pressure, in. w.g. | 0.015 | 0.035 | 0.062 | 0.096 | 0.138 | 0.188 | 0.246 | 0.311 | 0.385 | 0.554 |
| | Flow Rate, cfm | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 |
| | NC | - | - | 17 | 24 | 29 | 34 | 38 | 42 | 45 | 51 |
| | Throw 150, 100, 50 | 2-3-6 | 3-4-8 | 4-6-11 | 5-7-13 | 6-8-14 | 7-10-15 | 8-11-16 | 8-12-17 | 9-13-18 | 11-14-20 |
| 12 | Total Pressure, in. w.g. | 0.025 | 0.057 | 0.101 | 0.158 | 0.227 | 0.309 | 0.404 | 0.511 | 0.631 | 0.909 |
| | Flow Rate, cfm | 157 | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 |
| | NC | - | 15 | 24 | 31 | 37 | 42 | 46 | 50 | 59 | 59 |
| | Throw 150, 100, 50 | 3-4-8 | 4-6-12 | 5-8-14 | 7-10-15 | 8-12-17 | 9-13-18 | 11-14-19 | 12-15-21 | 13-15-22 | 14-17-24 |
| 14 | Total Pressure, in. w.g. | 0.038 | 0.086 | 0.154 | 0.240 | 0.346 | 0.471 | 0.615 | 0.778 | 0.960 | 1.383 |
| | Flow Rate, cfm | 214 | 321 | 427 | 534 | 641 | 748 | 855 | 962 | 1068 | 1282 |
| | NC | - | 22 | 31 | 38 | 43 | 48 | 52 | 56 | 59 | 65 |
| | Throw 150, 100, 50 | 4-6-11 | 6-8-14 | 7-11-16 | 9-13-18 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-24 | 15-18-25 | 16-20-28 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. If the diffuser is mounted on an exposed duct, multiply the radii of diffusion in the table by 0.70.
7. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
8. Blanks (—) indicate an NC level below 15.

CEILING DIFFUSERS

High Induction Square Plaque Diffusers SPD HI Series

Performance Data - Metric Units - 600 mm x 600 mm Face Size

| Listed Size | Neck Velocity (m/s) Velocity Pressure (Pa) | 1.0 1 | 1.5 1 | 2.0 2 | 2.5 4 | 3.0 6 | 3.5 8 | 4.0 10 | 4.5 13 | 5.0 16 | 6.0 22 |
|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 150 mm | Total Pressure (Pa) | 1 | 2 | 4 | 6 | 9 | 12 | 15 | 19 | 24 | 34 |
| | L/s | 19 | 28 | 37 | 46 | 56 | 65 | 74 | 83 | 93 | 111 |
| | NC | - | - | - | - | - | - | 17 | 20 | 24 | 29 |
| | Throw (m) | 0.2-0.3-0.6 | 0.3-0.5-0.9 | 0.4-0.6-1.2 | 0.5-0.8-1.6 | 0.6-0.9-1.9 | 0.7-1.1-2.2 | 0.8-1.2-2.5 | 0.9-1.4-2.8 | 1.0-1.6-3.1 | 1.2-1.9-3.6 |
| 205 mm | Total Pressure (Pa) | 2 | 5 | 8 | 13 | 19 | 26 | 33 | 42 | 52 | 75 |
| | L/s | 33 | 49 | 66 | 82 | 99 | 115 | 132 | 148 | 165 | 198 |
| | NC | - | - | - | - | 20 | 25 | 29 | 32 | 36 | 41 |
| | Throw (m) | 0.4-0.6-1.1 | 0.6-0.8-1.7 | 0.7-1.1-2.2 | 0.9-1.4-2.8 | 1.1-1.7-3.3 | 1.3-1.9-3.7 | 1.5-2.2-4.0 | 1.7-2.5-4.2 | 1.8-2.8-4.4 | 2.2-3.3-4.9 |
| 255 mm | Total Pressure (Pa) | 4 | 9 | 15 | 24 | 34 | 47 | 61 | 78 | 96 | 138 |
| | L/s | 51 | 77 | 103 | 129 | 154 | 180 | 206 | 232 | 257 | 309 |
| | NC | - | - | 17 | 24 | 29 | 34 | 38 | 42 | 45 | 51 |
| | Throw (m) | 0.6-0.9-1.7 | 0.9-1.3-2.6 | 1.2-1.7-3.5 | 1.4-2.2-3.9 | 1.7-2.6-4.3 | 2.0-3.0-4.6 | 2.3-3.5-5.0 | 2.6-3.7-5.3 | 2.9-3.9-5.5 | 3.5-4.3-6.1 |
| 305 mm | Total Pressure (Pa) | 6 | 14 | 25 | 39 | 57 | 77 | 101 | 127 | 157 | 227 |
| | L/s | 74 | 111 | 148 | 185 | 222 | 259 | 297 | 334 | 371 | 445 |
| | NC | - | 15 | 24 | 31 | 37 | 42 | 46 | 50 | 53 | 59 |
| | Throw (m) | 0.8-1.2-2.5 | 1.2-1.9-3.6 | 1.7-2.5-4.2 | 2.1-3.1-4.7 | 2.5-3.6-5.1 | 2.9-3.9-5.6 | 3.3-4.2-5.9 | 3.6-4.5-6.3 | 3.8-4.7-6.6 | 4.2-5.1-7.3 |
| 355 mm | Total Pressure (Pa) | 10 | 22 | 38 | 60 | 86 | 117 | 153 | 194 | 239 | 345 |
| | L/s | 101 | 151 | 202 | 252 | 303 | 353 | 404 | 454 | 505 | 605 |
| | NC | - | 22 | 31 | 38 | 43 | 48 | 52 | 56 | 59 | 65 |
| | Throw (m) | 1.1-1.7-3.4 | 1.7-2.5-4.2 | 2.3-3.4-4.9 | 2.8-3.9-5.5 | 3.4-4.2-6.0 | 3.7-4.6-6.5 | 4.0-4.9-6.9 | 4.2-5.2-7.4 | 4.5-5.5-7.8 | 4.9-6.0-8.5 |

Performance Notes:

- All pressures are in Pascals (Pa).
- The NC values and sound pressure level are based on a room absorption of 10dB re 10⁻¹² watts and one diffuser.
- Tested in accordance with ASHRAE Standard 70-2006, "Method of Testing for Rating the Performance of Air Outlets and Inlets".
- Blanks (--) indicate an NC level below 15.
- Radii of diffusion are given in meters to terminal velocities of 0.75 m/s (minimum), 0.5 m/s (middle) and 0.25 m/s (maximum).
- Throw data is based on supply air and room air being at isothermal conditions.
- If the diffuser is mounted on an exposed duct, multiply the radii of diffusion in the table by 0.70.

Square Plaque Diffuser Low Temperature Series



Product Features

Model SPDLT

Steel Construction

4 Way Air Pattern

SPDLT

Aluminum Construction

4 Way Pattern

ASPDLT

Price SPDLT Series low temperature square plaque diffuser is designed to distribute low temperature supply air to spaces that need to satisfy both architectural appeal and air distribution performance criteria. The simple, clean and unobstructive face design is intended to blend in with most ceiling systems.

The SPDLT Series provides a 4 way projection, with a tight horizontal ceiling pattern. The SPDLT Series incorporates an Induction Chamber (IC), which is designed to deliver high velocity thin air jets through tapered metal discharge slots. The tapered slots efficiently convert static pressure to velocity pressure, causing a high rate of induction of room air and rapid mixing of the low temperature air. The thin air jets wash across the aerodynamically shaped face of the diffuser backpan in concert with the plaque face, resulting in a tight horizontal air pattern even at reduced flow conditions. The 4 way directional air pattern combined with the high velocity from the discharge slots also ensures sufficient throw is maintained at low flow conditions.

The good horizontal air pattern and rapid mixing of the Price Series SPDLT ensure comfort is maintained in the occupied space with low temperature supply air.

In addition to providing superb air distribution, the tapered air nozzles of the IC are configured to optimize acoustical performance and low pressure drop. The unit features all-metal construction without the use of plastic components. The plaque face is sturdily suspended by four heavy gauge metal legs that lock into the diffuser backpan.

Construction features incorporated into the SPDLT diffuser that are designed to reduce risk of condensation include:

- Diffuser backpan is thermally protected and sealed with $\frac{3}{4}$ in. (19mm) dual density insulation with foil facing to prevent condensation in the unconditioned plenum space.
- The IC is thermally lined with $\frac{1}{2}$ in. (13mm) foil face insulation.
- The upstream side of the square plaque is thermally lined to prevent condensation forming on the face of the plaque.

Finish

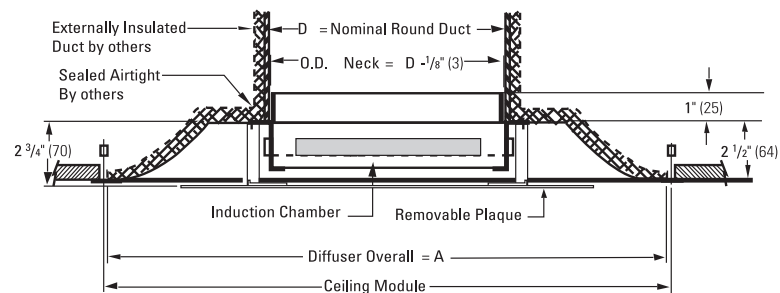
Standard White Powder Coat

B12

Special Finishes -

Available upon request

SPL



Dimensional Data — Imperial (in.)

| Ceiling Module | A | Duct Size |
|----------------|------------------|-------------|
| 24 x 24 | 23 $\frac{3}{4}$ | 4, 6, 8, 10 |
| 20 x 20 | 19 $\frac{3}{4}$ | 4, 6, 8 |

Dimensional Data — Metric [mm]

| Ceiling Module | A | Duct Size |
|----------------|-----|--------------------|
| 610 x 610 | 603 | 102, 152, 203, 254 |
| 508 x 508 | 502 | 102, 152, 203 |

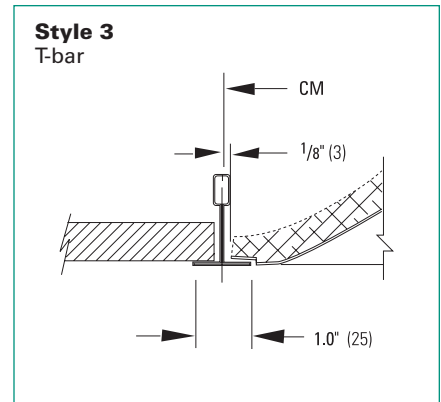
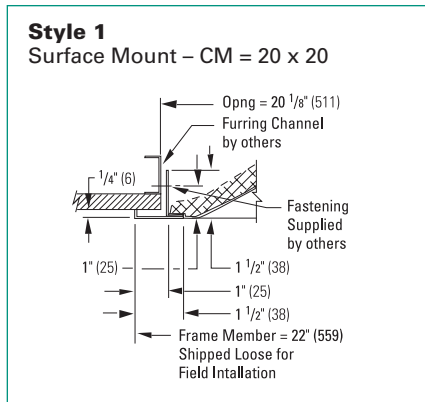
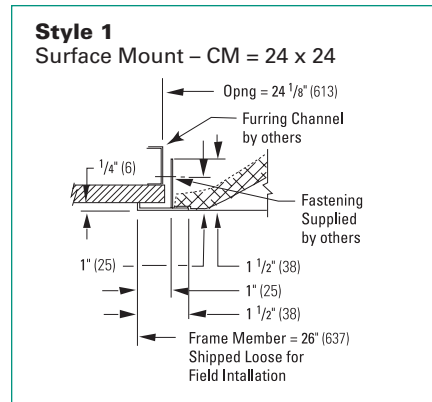
Imperial Modules Only Available.

✓ Product Selection Checklist

- 1] Select Inlet Diameter based on desired performance characteristics.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Type by model number (material).
- 4] Select Border Style according to installation requirements (page C28).
- 5] Select Finish.

Example: 10ft / 24"x24" / SPDLT / 1 / B12

Frame Selection



Installation Guidelines

Low Temperature Diffusers

Diffusers designed for low temperature air distribution must be installed using recommended industry practice to ensure that condensation does not form. Because installation is critical to successful performance, the following additional recommendations are brought to the attention of the installer:

- Provide externally insulated duct, complete with vapor barrier and a suggested minimum resistivity of R3. Field install duct and duct insulation so as to tightly compress foil face insulation on the diffuser backpan.
- Seal airtight the field joint at the diffuser with industry approved duct sealer.
- In the event that the foil face lining of the insulation is punctured, repair with foil tape.

Frame Styles

Style 1 Surface Mount is offered for plastered ceiling mounting where a surface mount condition exists. Flexible, insulated and jacketed duct is required for installation of the diffuser. The surface mount frame is fastened into the frame opening (fasteners supplied by others). Allow sufficient flexduct length to make connection to diffuser neck below ceiling line. After flexduct connection is made, gently lift diffuser through opening and position on frame. Allow sufficient ceiling space clearance above diffuser to insert the unit through the opening.

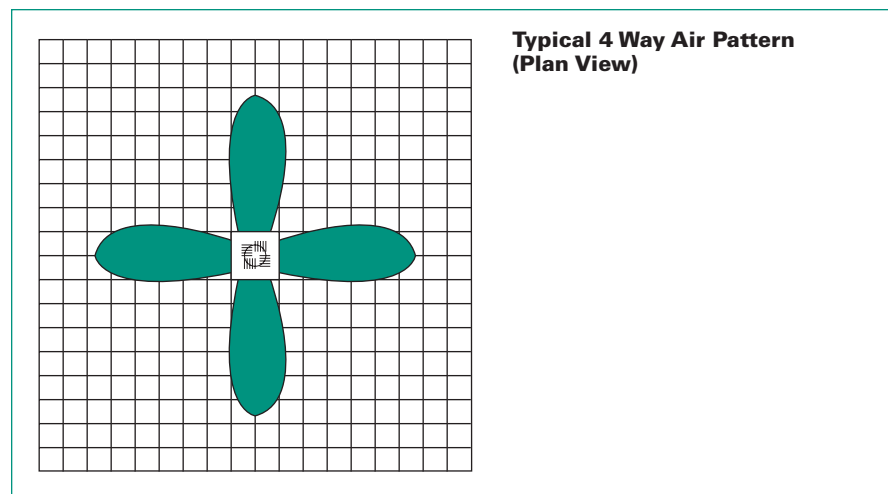
The surface mount frame ensures a smooth, clean fit between the frame and the drywall ceiling. This mounting arrangement also allows the diffuser to be lifted out to provide access to the ceiling plenum for service and adjustment.

Style 3 T-bar Mount is offered for mounting into T-bar ceilings.

Dampers

Since access to the inlet through the diffuser face is not available, inlet dampers are not offered as an option. Air volume control is recommended by field installation of dampers at the branch take-off, upstream of the diffuser. The further the damper can be mounted remote from the diffuser, the less likely damper generated noise will enter the occupied space. It is recommended to insulate and seal the damper quadrant to prevent air leakage.

Air Pattern – SPDLT Series



The SPDLT Series low temperature square plaque diffuser produces a 4 way horizontal air pattern. Air is projected in four high induction, non-spreading jets. The discharge slots of the induction chamber promote long throw and maintain the air stream on the ceiling, even at low flow conditions. The aerodynamic shape of the diffuser backpan prevents dumping at low volume, making this diffuser an excellent choice for VAV applications.

Square Plaque Diffuser Low Temperature Series



Performance Data – 20 x 20 [508 x 508] Module

Inlet Size 4"ø

| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|------------|--------|----------|--------------------|------------|--------|----------|
| | | | | 150 fpm | Throw (ft) | | Drop in. | 150 fpm | Throw (ft) | | Drop in. |
| | | | | | 100 fpm | 50 fpm | | | 100 fpm | 50 fpm | |
| 50 | 0.05 | 0.03 | — | 2 | 4 | 8 | 6 | 2 | 4 | 7 | 11 |
| 75 | 0.11 | 0.06 | 25 | 4 | 6 | 12 | 8 | 4 | 5 | 9 | 14 |
| 100 | 0.20 | 0.12 | 33 | 5 | 8 | 14 | 10 | 5 | 7 | 10 | 15 |
| 125 | 0.31 | 0.18 | 39 | 7 | 10 | 16 | 11 | 6 | 8 | 11 | 17 |
| 150 | 0.44 | 0.26 | 44 | 8 | 12 | 18 | 13 | 7 | 9 | 12 | 19 |
| 175 | 0.60 | 0.35 | 48 | 9 | 13 | 19 | 13 | 8 | 9 | 13 | 20 |
| 200 | 0.79 | 0.46 | 52 | 11 | 14 | 20 | 14 | 8 | 10 | 14 | 22 |

Inlet Size 6"ø

| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|------------|--------|----------|--------------------|------------|--------|----------|
| | | | | 150 fpm | Throw (ft) | | Drop in. | 150 fpm | Throw (ft) | | Drop in. |
| | | | | | 100 fpm | 50 fpm | | | 100 fpm | 50 fpm | |
| 50 | 0.04 | 0.04 | — | 2 | 4 | 8 | 6 | 2 | 4 | 7 | 11 |
| 75 | 0.09 | 0.08 | 18 | 4 | 6 | 12 | 8 | 4 | 5 | 9 | 14 |
| 100 | 0.15 | 0.13 | 26 | 5 | 8 | 14 | 10 | 5 | 7 | 10 | 15 |
| 125 | 0.24 | 0.21 | 32 | 7 | 10 | 16 | 11 | 6 | 8 | 11 | 17 |
| 150 | 0.34 | 0.30 | 38 | 8 | 12 | 18 | 13 | 7 | 9 | 12 | 19 |
| 175 | 0.47 | 0.42 | 42 | 9 | 13 | 19 | 13 | 8 | 9 | 13 | 20 |
| 200 | 0.61 | 0.55 | 46 | 11 | 14 | 20 | 14 | 8 | 10 | 14 | 22 |

Inlet Size 8"ø

| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|------------|--------|----------|--------------------|------------|--------|----------|
| | | | | 150 fpm | Throw (ft) | | Drop in. | 150 fpm | Throw (ft) | | Drop in. |
| | | | | | 100 fpm | 50 fpm | | | 100 fpm | 50 fpm | |
| 50 | 0.04 | 0.04 | — | 2 | 4 | 8 | 6 | 2 | 4 | 7 | 11 |
| 75 | 0.09 | 0.09 | — | 4 | 6 | 12 | 8 | 4 | 5 | 9 | 14 |
| 100 | 0.17 | 0.16 | 21 | 5 | 8 | 14 | 10 | 5 | 7 | 10 | 15 |
| 125 | 0.26 | 0.25 | 27 | 7 | 10 | 16 | 11 | 6 | 8 | 11 | 17 |
| 150 | 0.37 | 0.36 | 33 | 8 | 12 | 18 | 13 | 7 | 9 | 12 | 19 |
| 175 | 0.51 | 0.49 | 37 | 9 | 13 | 19 | 13 | 8 | 9 | 13 | 20 |
| 200 | 0.66 | 0.64 | 41 | 11 | 14 | 20 | 14 | 8 | 10 | 14 | 22 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
TP = total pressure
SP = static pressure
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Isothermal conditions indicate supply air temperature is equal to room air temperature.
6. Cooling conditions are based on a supply air temperature of 40 °F and a room temperature of 75 °F.
7. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
8. Blanks (—) indicate a NC level below 15.
9. Drop is in inches at a terminal velocity of 50 fpm.

Square Plaque Diffuser Low Temperature Series

Performance Data – 24 x 24 [610 x 610] Module

Inlet Size 4" ø

| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|---------|--------|----------|--------------------|---------|--------|----------|
| | | | | Throw (ft) | | | Drop in. | Throw (ft) | | | Drop in. |
| | | | | 150 fpm | 100 fpm | 50 fpm | | 150 fpm | 100 fpm | 50 fpm | |
| 50 | 0.05 | 0.03 | — | 2 | 4 | 7 | 4 | 2 | 4 | 7 | 10 |
| 75 | 0.11 | 0.06 | 25 | 3 | 5 | 11 | 6 | 3 | 5 | 10 | 14 |
| 100 | 0.19 | 0.11 | 33 | 5 | 7 | 14 | 8 | 5 | 7 | 11 | 16 |
| 125 | 0.29 | 0.16 | 39 | 6 | 9 | 16 | 9 | 6 | 9 | 13 | 19 |
| 150 | 0.42 | 0.24 | 43 | 7 | 11 | 18 | 10 | 7 | 10 | 14 | 20 |
| 175 | 0.58 | 0.33 | 47 | 8 | 12 | 19 | 11 | 8 | 10 | 15 | 21 |
| 200 | 0.75 | 0.42 | 51 | 9 | 14 | 20 | 12 | 9 | 11 | 16 | 23 |

Inlet Size 6" ø

| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|---------|--------|----------|--------------------|---------|--------|----------|
| | | | | Throw (ft) | | | Drop in. | Throw (ft) | | | Drop in. |
| | | | | 150 fpm | 100 fpm | 50 fpm | | 150 fpm | 100 fpm | 50 fpm | |
| 50 | 0.03 | 0.03 | — | 2 | 4 | 7 | 4 | 2 | 4 | 7 | 10 |
| 75 | 0.06 | 0.05 | 18 | 3 | 5 | 11 | 6 | 3 | 5 | 10 | 14 |
| 100 | 0.11 | 0.09 | 25 | 5 | 7 | 14 | 8 | 5 | 7 | 11 | 16 |
| 125 | 0.17 | 0.14 | 31 | 6 | 9 | 16 | 9 | 6 | 9 | 13 | 19 |
| 150 | 0.24 | 0.20 | 36 | 7 | 11 | 18 | 10 | 7 | 10 | 14 | 20 |
| 175 | 0.33 | 0.28 | 40 | 8 | 12 | 19 | 11 | 8 | 10 | 15 | 21 |
| 200 | 0.43 | 0.37 | 43 | 9 | 14 | 20 | 12 | 9 | 11 | 16 | 23 |

Inlet Size 8" ø

| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|---------|--------|----------|--------------------|---------|--------|----------|
| | | | | Throw (ft) | | | Drop in. | Throw (ft) | | | Drop in. |
| | | | | 150 fpm | 100 fpm | 50 fpm | | 150 fpm | 100 fpm | 50 fpm | |
| 50 | 0.02 | 0.02 | — | 2 | 4 | 7 | 4 | 2 | 4 | 7 | 10 |
| 75 | 0.05 | 0.05 | — | 3 | 5 | 11 | 6 | 3 | 5 | 10 | 14 |
| 100 | 0.09 | 0.08 | 21 | 5 | 7 | 14 | 8 | 5 | 7 | 11 | 16 |
| 125 | 0.14 | 0.13 | 27 | 6 | 9 | 16 | 9 | 6 | 9 | 13 | 19 |
| 150 | 0.21 | 0.20 | 32 | 7 | 11 | 18 | 10 | 7 | 10 | 14 | 20 |
| 175 | 0.28 | 0.26 | 36 | 8 | 12 | 19 | 11 | 8 | 10 | 15 | 21 |
| 200 | 0.37 | 0.35 | 39 | 9 | 14 | 20 | 12 | 9 | 11 | 16 | 23 |

Inlet Size 10" ø

| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|---------|--------|----------|--------------------|---------|--------|----------|
| | | | | Throw (ft) | | | Drop in. | Throw (ft) | | | Drop in. |
| | | | | 150 fpm | 100 fpm | 50 fpm | | 150 fpm | 100 fpm | 50 fpm | |
| 50 | 0.02 | 0.02 | — | 2 | 4 | 7 | 4 | 2 | 4 | 7 | 10 |
| 75 | 0.05 | 0.05 | — | 3 | 5 | 11 | 6 | 3 | 5 | 10 | 14 |
| 100 | 0.10 | 0.10 | 18 | 5 | 7 | 14 | 8 | 5 | 7 | 11 | 16 |
| 125 | 0.15 | 0.15 | 24 | 6 | 9 | 16 | 9 | 6 | 9 | 13 | 19 |
| 150 | 0.22 | 0.22 | 29 | 7 | 11 | 18 | 10 | 7 | 10 | 14 | 20 |
| 175 | 0.30 | 0.29 | 33 | 8 | 12 | 19 | 11 | 8 | 10 | 15 | 21 |
| 200 | 0.39 | 0.38 | 36 | 9 | 14 | 20 | 12 | 9 | 11 | 16 | 23 |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
TP = total pressure
SP = static pressure
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Isothermal conditions indicate supply air temperature is equal to room air temperature.
- Cooling conditions are based on a supply air temperature of 40 °F and a room temperature of 75 °F.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks (—) indicate a NC level below 15.
- Drop is in inches at a terminal velocity of 50 fpm.

Product Overview

Price offers a full line of perforated supply and matching return ceiling diffusers that provide superior performance characteristics while retaining application flexibility. The perforated face presents a smooth, even appearance that blends into the ceiling. Perforated supply diffusers are available with adjustable louvered pattern controllers on either the face or the neck, providing an excellent horizontal air pattern with a strong Coanda effect against the ceiling.

Model PDN

The PDN series of steel perforated face supply diffusers, with neck mounted pattern controllers, is available in a wide range of sizes and air patterns to suit most applications. The face screen is hinged to allow for access for field adjustment of the pattern controllers. It is available in five frame styles and six module sizes. A drop (extended) face version (PDNE) is available for use in tegular tile ceiling systems with a 3/8 in. [10] drop.

Model PDSP

The PDSP Series of steel and aluminum perforated face ceiling diffusers feature a ceiling-hugging, horizontal air pattern that is field adjustable between a standard 4 way side throw to a star pattern 4 way diagonal throw. Curved blade deflectors mounted at the diffuser neck maintain a consistent horizontal pattern, even at low flow rates, making the PDSP Series an ideal choice for VAV applications. Quick-release latches on the hinged perforated face screen allow easy access for field adjustment of the blades. The drop (extended) face model PDSPE is available to complement tegular tile ceilings.

Model PDC

The PDC series of steel perforated face supply diffusers with adjustable curved vane pattern controllers mounted to the backpan is available in a wide range of sizes and air patterns to suit most applications. The face screen is hinged to allow for access for field adjustment of the pattern controllers. It is available in five frame styles and six module sizes. A drop (extended) face version (PDCE) is available for use in tegular tile ceiling systems with a 3/8 in. [10] drop.

Model PDDR

Matching perforated returns are available to complement the PDN, PDC and PDF series of supply diffusers. The face screen is hinged to allow for access for field adjustment of dampers, etc. It is available in five frame styles and six module sizes. A drop (extended) face version (PDDRE) is available for use in tegular tile ceiling systems with a 3/8 in. [10] drop.

Model PDF

The PDF series of steel perforated face supply diffusers with face mounted pattern controllers is available in a wide range of sizes and air patterns to suit most applications. The face screen is hinged to allow for access for field adjustment of the pattern controllers. It is available in five frame styles and six module sizes. A drop (extended) face version (PDFE) is available for use in tegular tile ceiling systems with a 3/8 in. [10] drop.

Model PDMC

The PDMC series of steel perforated face supply diffusers with neck mounted louvered air pattern modules is available in a wide range of sizes and air patterns to suit most applications. The face screen is hinged to allow for access for field adjust-

ment of the pattern controllers. It is available in five frame styles and three module sizes. A drop (extended) face version is available for use in tegular tile ceiling systems with a 3/8 in. [10] drop.

Models

Supply, Deflectors in Neck

- Flush Face
 - Steel Construction
 - w/ Aluminum Face Screen
- Drop (Extended) Face
 - Steel Construction
 - w/ Aluminum Face Screen

**PDN, PDSP, PDC, PDMC
APDN, APDSP, APDC, APDMC**

**PDNE, PDCE
APDNE, APDCE**

Supply, Deflectors On Face

- Flush Face
 - Steel Construction
 - w/ Aluminum Face Screen
- Drop (Extended) Face
 - Steel Construction
 - w/ Aluminum Face Screen

**PDF
APDF**

**PDFE
APDFE**

Matching Returns

- Flush Face
 - Steel Construction
 - w/ Aluminum Face Screen
- Drop (Extended) Face
 - Steel Construction
 - w/ Aluminum Face Screen

**PDDR
APDDR**

**PDDRE
APDDRE**

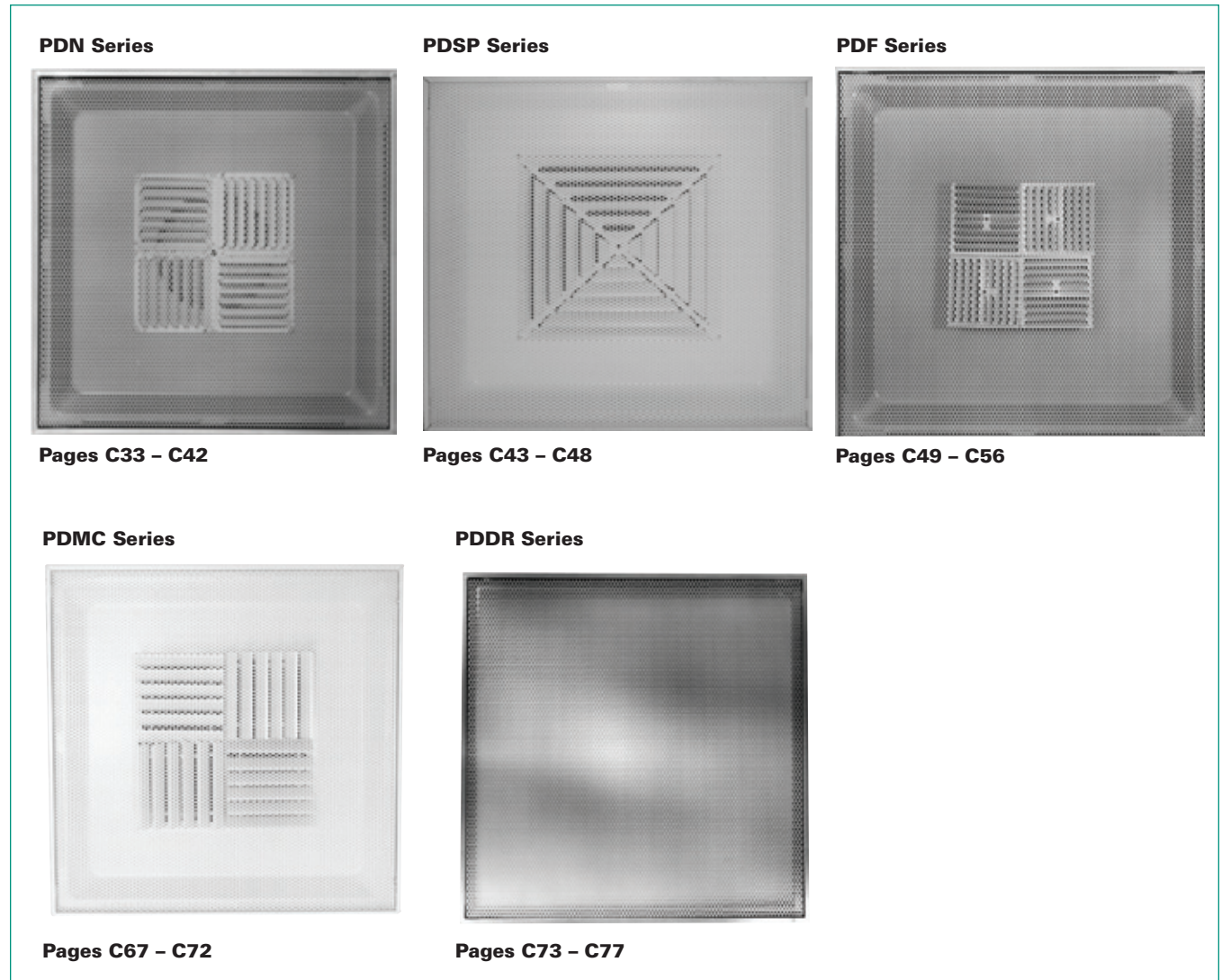
Non-ducted Returns

PFRF / PFRFE / APFRF / APFRFE



CEILING DIFFUSERS

Types



CEILING DIFFUSERS

Quick Selection Guide

| Diffuser Type | Ceiling Type | Recommended Frame / Panel* |
|---|---|----------------------------|
| Supply / Return | Lay-in | |
| Flush Face | Inverted T 1 in. [25] | 3 |
| PDN / PDSP / PDF / PDC / PDMC - Supply | Narrow Member ⁹ / ₁₆ in. [14] | 17 |
| PDDR - Return | Concealed Spline | 4 |
| | Surface Mount | 1 |
| Supply / Return | | |
| Drop (Extended) Face | Lay-in | |
| PDNE / PDFE / PDCE - Supply | Inverted T 1 in. [25] | 3 |
| PDDRE - Return | | |

Perforated Diffusers – Supply PDN Series



Product Information

Models

Deflectors in Neck Flush Face

Steel Construction
w/ Aluminum Face

PDN
APDN

Drop (Extended) Face

Steel Construction
w/ Aluminum Face

PDNE
APDNE

Price PDN / PDNE Series perforated face ceiling diffusers provide a horizontal air pattern with a strong Coanda effect against the ceiling. Adjustable pattern controllers in the inlet neck (round or square) are easily field adjusted to suit the desired air pattern. The drop (extended) face model PDNE is available to complement tegular tile ceilings.

Features

- Choice of cold rolled steel (PDN / PDNE) or aluminum face screen (APDN / APDNE) construction. (Steel backpan and pattern controllers in both cases.)
- Hinged, removable perforated face screen with quick-release spring latches.
- Louvered air pattern controllers are located at the inlet neck and are field adjustable to the desired air pattern.
- Choice of five frame styles (frames 1, 2, 3, 4, 17).
- Complete range of available accessory dampers, equalizing grids etc.
- Optional beaded extended neck (2 1/2 in. tall) for easy flex duct connection (BN).

Finish

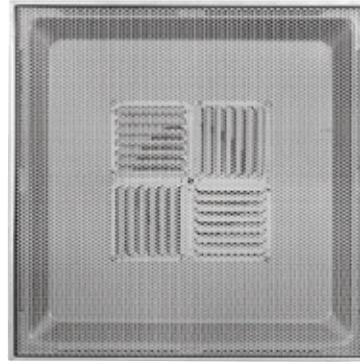
White Powder Coat

B12

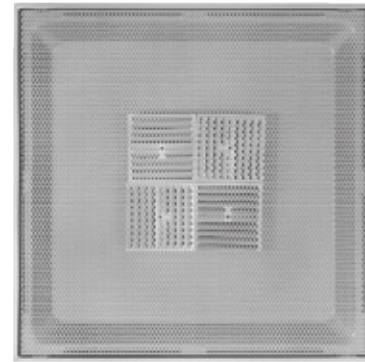
For optional and special finishes see color matrix.

Available Module Sizes

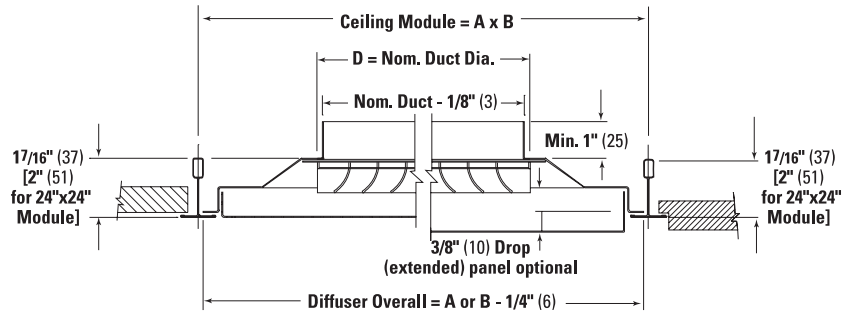
| Imperial | Metric |
|-----------------|------------|
| 12 in. x 12 in. | 300 x 300 |
| 24 in. x 12 in. | 600 x 300 |
| 16 in. x 16 in. | 400 x 400 |
| 20 in. x 20 in. | 500 x 500 |
| 24 in. x 24 in. | 600 x 600 |
| 48 in. x 24 in. | 1200 x 600 |



**Model PDN (Steel) /
APDN (Aluminum Face)**
Flush Face



**Model PDNE (Steel) /
APDNE (Aluminum Face)**
Drop (Extended) Face



Dimensional Data — Imperial (in.) / Metric [mm]

| Neck Size Nominal | A x B Face or Ceiling Module Size, Nominal | | | | | |
|----------------------|--|--------------------|--------------------|--------------------|--------------------|---------------------|
| | 12 x 12 300 x 300 | 24x12 600 x 300 | 16x16 400 x 400 | 20x20 500 x 500 | 24x24 600 x 600 | 48x24 1200 x 600 |
| 6 x 6 [152 x 152] | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 8 x 8 [203 x 203] | | | ▼ | ▼ | ▼ | ▼ |
| 10 x 10 [254 x 254] | | | ▼ | ▼ | ▼ | ▼ |
| 12 x 12 [305 x 305] | | | | ▼ | ▼ | ▼ |
| 14 x 14 [356 x 356] | | | | ▼ | ▼ | ▼ |
| 15 x 15 [381 x 381] | | | | ▼ | ▼ | ▼ |
| 6 x 18 [152 x 457] | | ▼ | | | | |
| 6 in. [152] Dia. | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 8 in. [203] Dia. | | | ▼ | ▼ | ▼ | ▼ |
| 10 in. [254] Dia. | | | ▼ | ▼ | ▼ | ▼ |
| 12 in. [305] Dia. | | | | ▼ | ▼ | ▼ |
| 14 in. [356] Dia. | | | | ▼ | ▼ | ▼ |
| 15 in. [381] Dia. | | | | ▼ | ▼ | ▼ |

✓ Product Selection Checklist

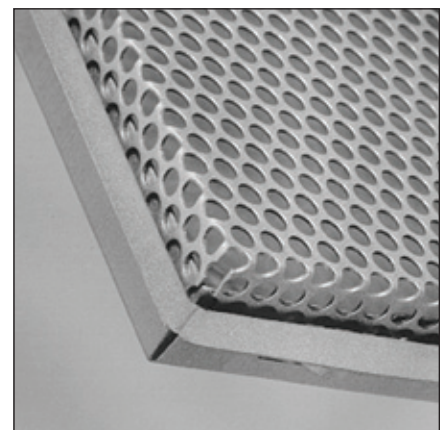
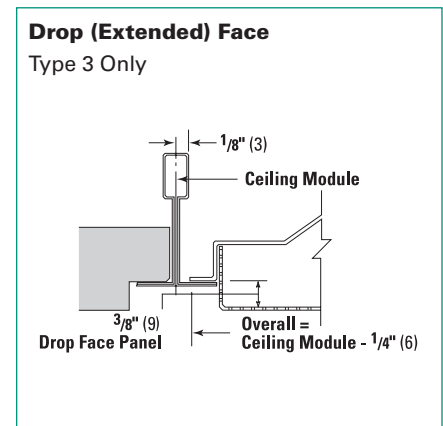
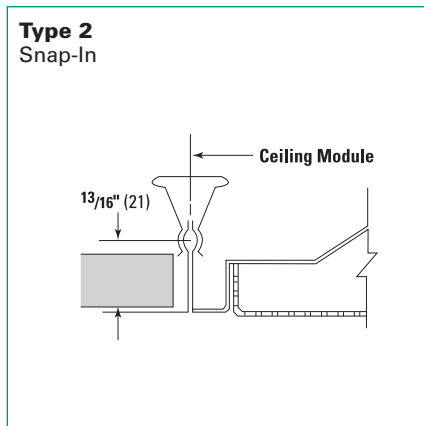
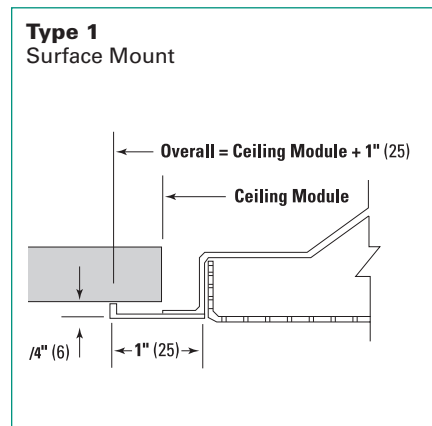
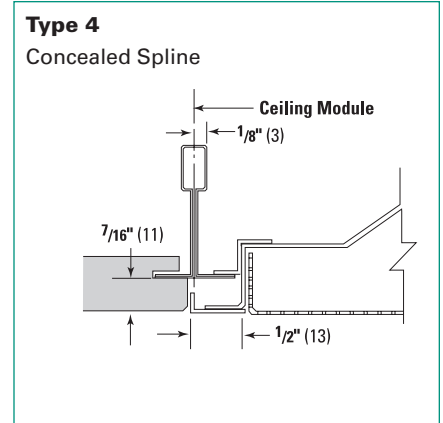
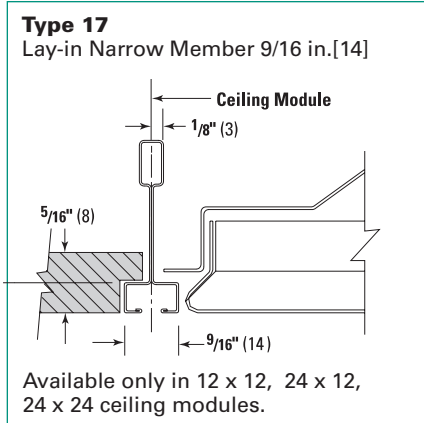
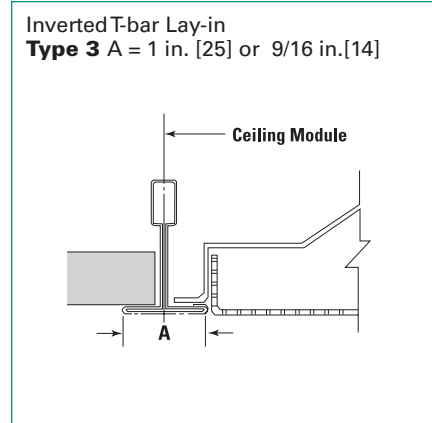
- 1] Select Inlet Diameter or Neck Size L x W based on desired performance characteristics.
- 2] Select Face Size based on ceiling module.
- 3] Select Outlet Type by model number (material, flush or drop face).
- 4] Select Border Style according to installation requirements (page C34).
- 5] Select Volume Control Accessories, if desired (page C181-C186).
- 6] Select Finish.

Example: 8 in. / 24 in. x 24 in. / PDN / 3 / B12

Application Recommendations:

For Border recommendations, see page C32.

Frame Selection



Drop (Extended) Face
Panel Detail

CEILING DIFFUSERS

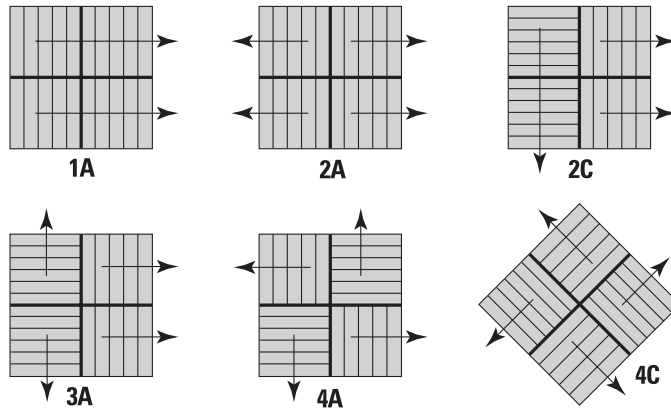
Pattern Adjustment

Modular directional cores on PDN allow field pattern adjustment without affecting performance.

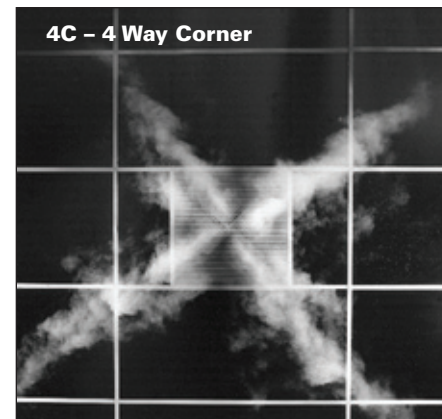
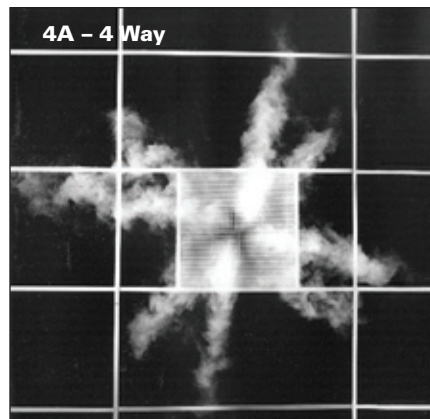
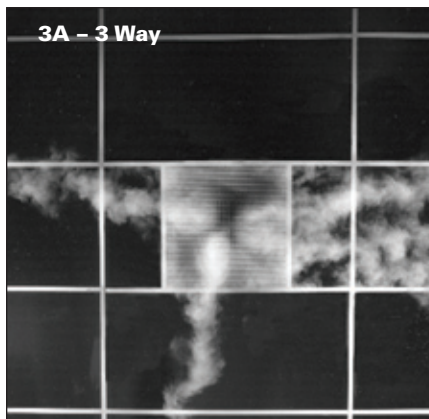
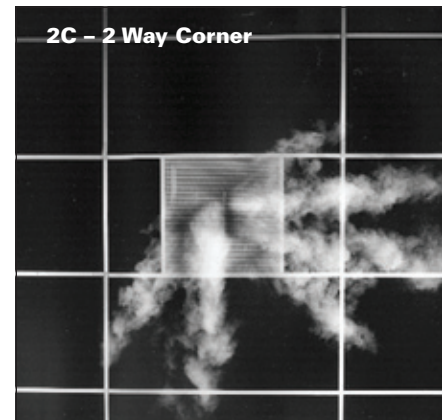
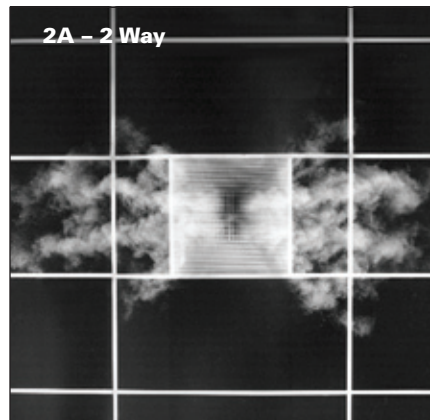
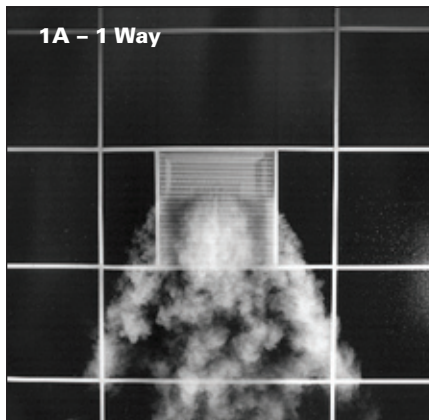
The formed louver air pattern controllers provide positive air flow control without restricting or dampening air volume. Since field adjustment of the air pattern does not change the free area, the pressure drop and sound level remains unchanged. Air pattern adjustments do not change the published performance data for pressure drop and sound level.

The formed louver air pattern controller has fixed, curved vanes. The radius shape and blade angle have been established by extensive testing in our Air Distribution Laboratory.

The photographs below are of a Model PDN, 24 in. x 24 in. module with an 8 in. round inlet neck.



Available Air Patterns



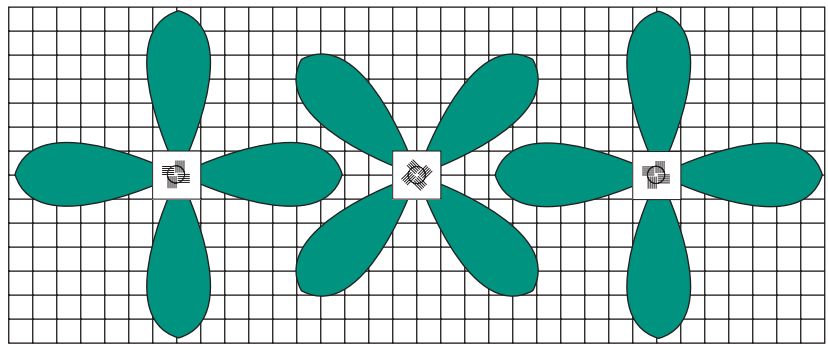
Compressed Pattern Diffusion

The PDN's positive air pattern control, combined with its simple field adjustable air pattern controllers, allows the owner to put diffusers in closer proximity to each other than can be done with most other diffuser types.

By using an alternating 4 way and 4 way corner pattern arrangement, diffuser discharges can be "inter-woven" such that outlets may be tightly spaced without supply air dumping on the room occupants due to colliding air patterns (see illustration).

The compressed air pattern allows the designer the freedom to handle larger air volumes in confined spaces, such as computer rooms, with an unobtrusive and economical perforated diffuser. It should be noted that, in this application, the appearance of the diffuser to the occupant does not change, even though the air pattern setting does - a result not possible with other diffusers.

Compressed Pattern Arrangement



Pattern Controller Adjustment

Field Adjustment Procedure

1. Release spring latches of perforated screen and hinge down as shown. (Use flat object to slide along the seam between the perforated screen and backpan towards corners).
2. Remove outer screw of louvered deflector module, dislodge from corner tab, loosen interlock at center, remove and rotate louvered deflector module to desired position and reinstall. Interlock at center, position at corner tab and secure with outer screw.
Note: No corner tabs on diffuser back pans with 6" nominal inlets.
3. Repeat step 2 as necessary for other louvered deflector modules.
4. To close, lift perforated screen, depress spring latches with fingers and snap shut.

Fire-Rated Perforated Diffusers – Supply PDN-FR / PDNE-FR Series



Product Information

Three Hour Rating - Lay-in Models

Deflectors in Neck

Flush Face

PDN-FR

Drop (Extended) Face

PDNE-FR

Price PDN-FR / PDNE-FR perforated face ceiling diffusers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

PDN-FR / PDNE-FR perforated face ceiling diffusers provide a horizontal air pattern with a strong Coanda effect against the ceiling. Adjustable pattern controllers in the inlet neck (round or square) are easily field adjusted to suit the desired air pattern. The drop (extended) face Model PDNE-FR is available to complement rectangular tile ceilings.

Features

- Available in both imperial and hard metric module sizes.
- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Hinged, removable perforated face screen with quick-release spring latches provides easy access to optional adjustable volume controller (Allen key adjustable). See page C35 for procedure.

Available Module Sizes

| Imperial | Metric |
|-----------|-----------|
| 24" x 24" | 600 x 600 |
| 20" x 20" | 500 x 500 |
| 12" x 12" | 300 x 300 |

Finish

White Powder Coat

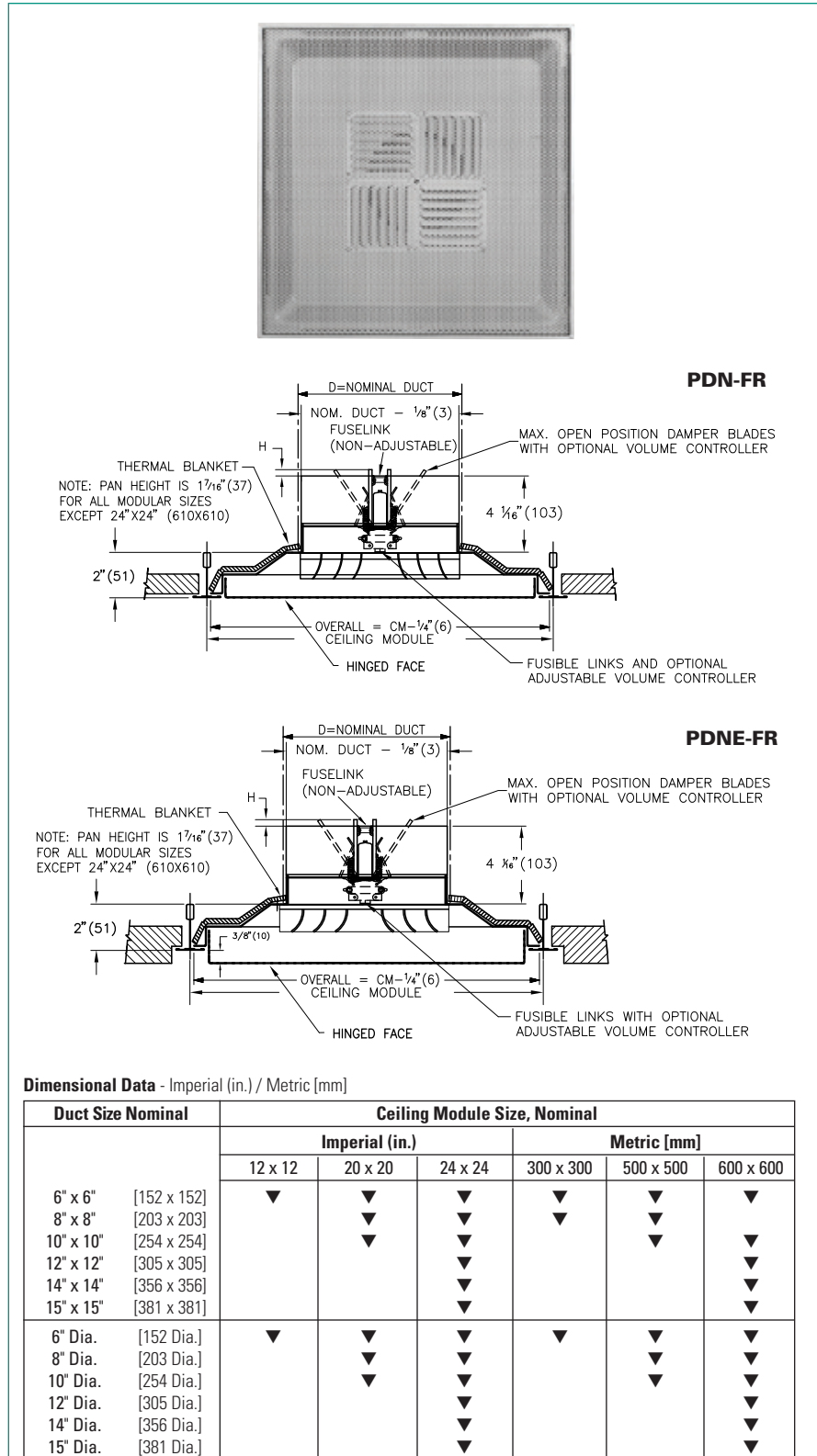
B12

For optional and special finishes see color matrix.

✓ Product Selection Checklist

- 1] Select Inlet Diameter or Neck Size L x W.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Style by model number.
- 4] Select Finish.

Example: 8" / 24" x 24" / PDN-FR / B12



Dimensional Data - Imperial (in.) / Metric [mm]

| Duct Size Nominal | Ceiling Module Size, Nominal | | | | | |
|-----------------------|------------------------------|---------|---------|-------------|-----------|-----------|
| | Imperial (in.) | | | Metric [mm] | | |
| | 12 x 12 | 20 x 20 | 24 x 24 | 300 x 300 | 500 x 500 | 600 x 600 |
| 6" x 6" [152 x 152] | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 8" x 8" [203 x 203] | | ▼ | ▼ | ▼ | ▼ | ▼ |
| 10" x 10" [254 x 254] | | ▼ | ▼ | ▼ | ▼ | ▼ |
| 12" x 12" [305 x 305] | | ▼ | ▼ | ▼ | ▼ | ▼ |
| 14" x 14" [356 x 356] | | ▼ | ▼ | ▼ | ▼ | ▼ |
| 15" x 15" [381 x 381] | | ▼ | ▼ | ▼ | ▼ | ▼ |
| 6" Dia. [152 Dia.] | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 8" Dia. [203 Dia.] | | ▼ | ▼ | ▼ | ▼ | ▼ |
| 10" Dia. [254 Dia.] | | ▼ | ▼ | ▼ | ▼ | ▼ |
| 12" Dia. [305 Dia.] | | ▼ | ▼ | ▼ | ▼ | ▼ |
| 14" Dia. [356 Dia.] | | ▼ | ▼ | ▼ | ▼ | ▼ |
| 15" Dia. [381 Dia.] | | ▼ | ▼ | ▼ | ▼ | ▼ |

All Metric dimensions () are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

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Performance Data – 12 in. x 12 in. / 300 x 300 Module

| Inlet Size | Neck Velocity, fpm | | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
|------------|-----------------------------|-------|--------|--------|--------|---------|---------|----------|----------|---------|
| | Velocity Pressure, in. w.g. | | .006 | .010 | .016 | .022 | .031 | .040 | .062 | .090 |
| 6 Ø | Total Pressure, in. w.g. | | .013 | .022 | .035 | .050 | .069 | .090 | .140 | .202 |
| | Flow Rate, cfm | | 59 | 78 | 98 | 118 | 137 | 157 | 196 | 235 |
| | NC | | — | 16 | 22 | 27 | 31 | 34 | 40 | 45 |
| | Throw ft | 4 Way | 1-1-4 | 1-2-5 | 2-3-7 | 2-4-8 | 3-5-9 | 4-5-11 | 4-7-13 | 5-8-16 |
| | | 3 Way | 1-2-5 | 1-3-6 | 2-4-8 | 3-5-10 | 4-6-11 | 4-6-13 | 5-8-16 | 6-10-19 |
| 2 Way | | 1-2-6 | 2-4-9 | 3-5-11 | 4-6-13 | 5-7-15 | 6-9-17 | 7-11-21 | 9-13-26 | |
| 1 Way | | 1-3-8 | 2-5-11 | 3-7-13 | 5-8-16 | 6-9-19 | 7-11-21 | 9-13-27 | 11-16-32 | |
| 6 x 6 | Total Pressure, in. w.g. | | .016 | .029 | .045 | .065 | .089 | .116 | .181 | .260 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 |
| | NC | | — | — | 19 | 24 | 28 | 32 | 38 | 42 |
| | Throw ft | 4 Way | 1-1-5 | 1-3-6 | 2-4-8 | 3-5-9 | 4-5-11 | 4-6-12 | 5-8-15 | 6-9-18 |
| | | 3 Way | 1-2-5 | 1-3-7 | 2-5-9 | 3-5-11 | 4-6-13 | 5-7-14 | 6-9-18 | 7-11-22 |
| 2 Way | | 1-2-7 | 2-4-10 | 3-6-12 | 4-7-14 | 6-8-17 | 6-10-19 | 8-12-24 | 10-14-29 | |
| 1 Way | | 1-3-9 | 2-5-12 | 4-8-15 | 5-9-18 | 7-11-21 | 8-12-24 | 10-15-30 | 12-18-36 | |

Performance Data – 12 in. x 24 in. / 300 x 600 Module

| Inlet Size | Neck Velocity, fpm | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 |
|------------|-----------------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 |
| 6 Ø | Total Pressure, in. w.g. | | .012 | .022 | .034 | .049 | .067 | .088 | .111 | .137 | .198 | .269 |
| | Flow Rate, cfm | | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 |
| | NC | | — | 16 | 22 | 27 | 31 | 34 | 37 | 40 | 45 | 49 |
| | Throw ft | 4 Way | 2-3-6 | 3-4-7 | 4-5-7 | 4-6-8 | 5-6-9 | 5-7-9 | 6-7-10 | 6-7-10 | 7-8-11 | 7-9-12 |
| | | 3 Way | 2-4-7 | 3-5-8 | 4-6-9 | 5-7-10 | 6-7-10 | 6-8-11 | 7-8-12 | 7-9-12 | 8-10-14 | 9-10-15 |
| 2 Way | | 3-5-9 | 5-7-11 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-18 | 11-14-20 | |
| 1 Way | | 3-6-11 | 6-9-13 | 7-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 | |
| 6 x 6 | Total Pressure, in. w.g. | | .017 | .029 | .046 | .066 | .090 | .118 | .149 | .184 | .265 | .360 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 |
| | NC | | — | — | 19 | 24 | 28 | 32 | 35 | 38 | 42 | 46 |
| | Throw ft | 4 Way | 2-4-6 | 3-5-7 | 4-6-8 | 5-6-9 | 6-7-10 | 6-7-11 | 6-8-11 | 7-8-12 | 7-9-13 | 8-10-14 |
| | | 3 Way | 2-4-8 | 4-6-9 | 5-7-10 | 6-8-12 | 7-8-12 | 7-9-13 | 8-9-13 | 8-10-14 | 9-11-15 | 10-12-17 |
| 2 Way | | 3-6-10 | 5-8-12 | 6-9-13 | 8-10-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-13-19 | 12-15-21 | 13-16-22 | |
| 1 Way | | 4-7-13 | 6-10-15 | 8-12-17 | 10-13-18 | 11-14-20 | 12-15-21 | 13-16-22 | 14-17-23 | 15-18-26 | 16-20-28 | |
| 6 x 18 | Total Pressure, in. w.g. | | .019 | .034 | .053 | .076 | .104 | .136 | .172 | .212 | .305 | .415 |
| | Flow Rate, cfm | | 225 | 300 | 375 | 450 | 525 | 600 | 675 | 750 | 900 | 1050 |
| | NC | | — | 20 | 26 | 31 | 35 | 38 | 41 | 44 | 49 | 53 |
| | Throw ft | 4 Way | 3-6-11 | 6-8-13 | 7-10-14 | 8-11-16 | 10-12-17 | 11-13-18 | 11-14-19 | 12-14-20 | 13-16-22 | 14-17-24 |
| | | 3 Way | 4-8-13 | 7-10-15 | 8-12-17 | 10-13-19 | 12-14-20 | 13-15-22 | 13-16-23 | 14-17-24 | 15-19-27 | 17-20-29 |
| 2 Way | | 5-10-18 | 9-14-21 | 11-16-23 | 14-18-25 | 16-19-27 | 17-21-29 | 18-22-31 | 19-23-33 | 21-25-36 | 22-27-38 | |
| 1 Way | | 7-13-22 | 11-17-26 | 14-20-29 | 17-22-32 | 20-24-34 | 21-26-36 | 22-27-39 | 23-29-41 | 26-32-45 | 28-34-48 | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDN-FR, PDNE-FR)

Performance Data – 16 in. x 16 in. / 400 x 400 Module

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 |
|------------|-----------------------------|--------|---------|---------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 |
| | Total Pressure, in. w.g. | .012 | .022 | .034 | .049 | .067 | .088 | .111 | .137 | .198 | .269 |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 |
| | NC | — | 16 | 22 | 27 | 31 | 34 | 37 | 40 | 45 | 49 |
| 6 Ø | 4 Way | 2-3-6 | 3-4-7 | 4-5-7 | 4-6-8 | 5-6-9 | 5-7-9 | 6-7-10 | 6-7-10 | 7-8-11 | 7-9-12 |
| | 3 Way | 2-4-7 | 3-5-8 | 4-6-9 | 5-7-10 | 6-7-10 | 6-8-11 | 7-8-12 | 7-9-12 | 8-10-14 | 9-10-15 |
| | 2 Way | 3-5-9 | 5-7-11 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-18 | 11-14-20 |
| | 1 Way | 3-6-11 | 6-9-13 | 7-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 |
| | Throw ft | | | | | | | | | | |
| 6 x 6 | Total Pressure, in. w.g. | .017 | .029 | .046 | .066 | .090 | .118 | .149 | .184 | .265 | .360 |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 |
| | NC | — | — | 19 | 24 | 28 | 32 | 35 | 38 | 42 | 46 |
| | 4 Way | 2-4-6 | 3-5-7 | 4-6-8 | 5-6-9 | 6-7-10 | 6-7-11 | 6-8-11 | 7-8-12 | 7-9-13 | 8-10-14 |
| | 3 Way | 2-4-8 | 4-6-9 | 5-7-10 | 6-8-11 | 7-8-12 | 7-9-13 | 8-9-13 | 8-10-14 | 9-11-15 | 10-12-17 |
| 8 Ø | Total Pressure, in. w.g. | .015 | .027 | .042 | .061 | .082 | .108 | .136 | .168 | .242 | .330 |
| | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 |
| | NC | — | 19 | 25 | 30 | 34 | 38 | 41 | 44 | 48 | 53 |
| | 4 Way | 2-4-8 | 4-6-9 | 5-7-10 | 6-8-11 | 7-8-12 | 7-9-12 | 8-9-13 | 8-10-14 | 9-11-15 | 9-12-16 |
| | 3 Way | 3-5-9 | 5-7-11 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-18 | 11-14-20 |
| 8 x 8 | Total Pressure, in. w.g. | .018 | .031 | .049 | .071 | .096 | .126 | .159 | .196 | .283 | .385 |
| | Flow Rate, cfm | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 | 533 | 622 |
| | NC | — | 17 | 23 | 28 | 32 | 35 | 38 | 41 | 46 | 50 |
| | 4 Way | 3-5-9 | 4-6-10 | 5-8-11 | 6-9-12 | 8-9-13 | 8-10-14 | 9-10-15 | 9-11-16 | 10-12-17 | 11-13-19 |
| | 3 Way | 3-6-10 | 5-8-12 | 6-9-13 | 8-10-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-13-19 | 12-15-21 | 13-16-22 |
| 10 Ø | Total Pressure, in. w.g. | .018 | .032 | .050 | .072 | .098 | .128 | .162 | .200 | .287 | .391 |
| | Flow Rate, cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 |
| | NC | — | 22 | 28 | 33 | 37 | 40 | 44 | 46 | 51 | 55 |
| | 4 Way | 3-5-9 | 5-7-11 | 6-9-12 | 7-9-13 | 8-10-15 | 9-11-16 | 9-12-16 | 10-12-17 | 11-13-19 | 12-15-21 |
| | 3 Way | 3-6-11 | 6-9-13 | 7-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 |
| 10 x 10 | Total Pressure, in. w.g. | .019 | .033 | .051 | .074 | .101 | .132 | .167 | .206 | .296 | .403 |
| | Flow Rate, cfm | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 | 833 | 972 |
| | NC | — | 20 | 25 | 30 | 34 | 38 | 41 | 44 | 49 | 53 |
| | 4 Way | 3-6-11 | 5-8-12 | 7-10-14 | 8-11-15 | 9-12-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 |
| | 3 Way | 4-7-13 | 7-10-15 | 8-12-17 | 10-13-18 | 11-14-20 | 12-15-21 | 13-16-22 | 14-17-23 | 15-18-26 | 16-20-28 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDN-FR, PDNE-FR)

Performance Data – 20 in. x 20 in. / 500 x 500 Module

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 |
|------------|-----------------------------|--------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 |
| | Total Pressure, in. w.g. | .012 | .022 | .034 | .049 | .067 | .088 | .111 | .137 | .198 | .269 |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 |
| | NC | — | 16 | 22 | 27 | 31 | 34 | 37 | 40 | 45 | 49 |
| 6 Ø | 4 Way | 2-3-6 | 3-4-7 | 4-5-7 | 4-6-8 | 5-6-9 | 5-7-9 | 6-7-10 | 6-7-10 | 7-8-11 | 7-9-12 |
| | Throw | 3 Way | 2-4-7 | 3-5-8 | 4-6-9 | 5-7-10 | 6-7-10 | 6-8-11 | 7-8-12 | 7-9-12 | 8-10-14 |
| | ft | 2 Way | 3-5-9 | 5-7-11 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-18 |
| | | 1 Way | 3-6-11 | 6-9-13 | 7-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 |
| | | 1 Way | 3-6-11 | 6-9-13 | 7-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 |
| | Total Pressure, in. w.g. | .017 | .029 | .046 | .066 | .090 | .118 | .149 | .184 | .265 | .360 |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 |
| | NC | — | — | 19 | 24 | 28 | 32 | 35 | 38 | 42 | 46 |
| 6 x 6 | 4 Way | 2-4-6 | 3-5-7 | 4-6-8 | 5-6-9 | 6-7-10 | 6-7-11 | 6-8-11 | 7-8-12 | 7-9-13 | 8-10-14 |
| | Throw | 3 Way | 2-4-8 | 4-6-9 | 5-7-10 | 6-8-11 | 7-8-12 | 7-9-13 | 8-9-13 | 8-10-14 | 9-11-15 |
| | ft | 2 Way | 3-6-10 | 5-8-12 | 6-9-13 | 8-10-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-13-19 | 12-15-21 |
| | | 1 Way | 4-7-13 | 6-10-15 | 8-12-17 | 10-13-18 | 11-14-20 | 12-15-21 | 13-16-22 | 14-17-23 | 15-18-26 |
| | | 1 Way | 4-7-13 | 6-10-15 | 8-12-17 | 10-13-18 | 11-14-20 | 12-15-21 | 13-16-22 | 14-17-23 | 15-18-26 |
| | Total Pressure, in. w.g. | .015 | .027 | .042 | .061 | .082 | .108 | .136 | .168 | .242 | .330 |
| | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 |
| | NC | — | 19 | 25 | 30 | 34 | 38 | 41 | 44 | 48 | 53 |
| 8 Ø | 4 Way | 2-4-8 | 4-6-9 | 5-7-10 | 6-8-11 | 7-8-12 | 7-9-12 | 8-9-13 | 8-10-14 | 9-11-15 | 9-12-16 |
| | Throw | 3 Way | 3-5-9 | 5-7-11 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-18 |
| | ft | 2 Way | 4-7-12 | 6-9-14 | 8-11-16 | 9-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-22 | 14-17-24 |
| | | 1 Way | 5-9-15 | 8-12-18 | 10-14-20 | 12-15-21 | 13-16-23 | 14-18-25 | 15-19-26 | 16-20-28 | 18-21-30 |
| | | 1 Way | 5-9-15 | 8-12-18 | 10-14-20 | 12-15-21 | 13-16-23 | 14-18-25 | 15-19-26 | 16-20-28 | 18-21-30 |
| | Total Pressure, in. w.g. | .018 | .031 | .049 | .071 | .096 | .126 | .159 | .196 | .283 | .385 |
| | Flow Rate, cfm | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 | 533 | 622 |
| | NC | — | 17 | 23 | 28 | 32 | 35 | 38 | 41 | 46 | 50 |
| 8 x 8 | 4 Way | 3-5-9 | 4-6-10 | 5-8-11 | 6-9-12 | 8-9-13 | 8-10-14 | 9-10-15 | 9-11-16 | 10-12-17 | 11-13-19 |
| | Throw | 3 Way | 3-6-10 | 5-8-12 | 6-9-13 | 8-10-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-13-19 | 12-15-21 |
| | ft | 2 Way | 4-8-14 | 7-10-16 | 9-13-18 | 10-14-19 | 12-15-21 | 13-16-22 | 14-17-24 | 14-18-25 | 16-19-27 |
| | | 1 Way | 5-10-17 | 9-13-20 | 11-16-22 | 13-17-24 | 15-19-26 | 16-20-28 | 17-21-30 | 18-22-31 | 20-24-34 |
| | | 1 Way | 5-10-17 | 9-13-20 | 11-16-22 | 13-17-24 | 15-19-26 | 16-20-28 | 17-21-30 | 18-22-31 | 20-24-34 |
| | Total Pressure, in. w.g. | .018 | .032 | .050 | .072 | .098 | .128 | .162 | .200 | .287 | .391 |
| | Flow Rate, cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 |
| | NC | — | 22 | 28 | 33 | 37 | 40 | 44 | 46 | 51 | 55 |
| 10 Ø | 4 Way | 3-5-9 | 5-7-11 | 6-9-12 | 7-9-13 | 8-10-15 | 9-11-16 | 9-12-16 | 10-12-17 | 11-13-19 | 12-15-21 |
| | Throw | 3 Way | 3-6-11 | 6-9-13 | 7-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 |
| | ft | 2 Way | 4-9-15 | 8-11-18 | 9-14-20 | 11-15-21 | 13-16-23 | 14-18-25 | 15-19-26 | 16-20-28 | 18-21-30 |
| | | 1 Way | 6-11-19 | 9-14-22 | 12-17-25 | 14-19-27 | 17-21-29 | 18-22-31 | 19-23-33 | 20-25-35 | 22-27-38 |
| | | 1 Way | 6-11-19 | 9-14-22 | 12-17-25 | 14-19-27 | 17-21-29 | 18-22-31 | 19-23-33 | 20-25-35 | 22-27-38 |
| | Total Pressure, in. w.g. | .019 | .033 | .051 | .074 | .101 | .132 | .167 | .206 | .296 | .403 |
| | Flow Rate, cfm | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 | 833 | 972 |
| | NC | — | 20 | 25 | 30 | 34 | 38 | 41 | 44 | 49 | 53 |
| 10 x 10 | 4 Way | 3-6-11 | 5-8-12 | 7-10-14 | 8-11-15 | 9-12-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 |
| | Throw | 3 Way | 4-7-13 | 7-10-15 | 8-12-17 | 10-13-18 | 11-14-20 | 12-15-21 | 13-16-22 | 14-17-23 | 15-18-26 |
| | ft | 2 Way | 5-10-17 | 9-13-20 | 11-16-22 | 13-17-24 | 15-19-26 | 16-20-28 | 17-21-30 | 18-22-31 | 20-24-34 |
| | | 1 Way | 7-12-21 | 11-16-25 | 14-20-28 | 16-21-30 | 19-23-33 | 20-25-35 | 21-26-37 | 23-28-39 | 25-30-43 |
| | | 1 Way | 7-12-21 | 11-16-25 | 14-20-28 | 16-21-30 | 19-23-33 | 20-25-35 | 21-26-37 | 23-28-39 | 25-30-43 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDN-FR, PDNE-FR)

Performance Data – 24 in. x 24 in. / 600 x 600 Module

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
|------------|-----------------------------|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | |
| | Total Pressure, in. w.g. | .013 | .023 | .036 | .052 | .071 | .092 | .116 | .143 | .206 | .281 | |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | |
| | NC | — | 16 | 22 | 27 | 31 | 34 | 37 | 40 | 45 | 49 | |
| 6 Ø | 4 Way | 2-3-6 | 3-4-7 | 4-5-7 | 4-6-8 | 5-6-9 | 5-7-9 | 6-7-10 | 6-7-10 | 7-8-11 | 7-9-12 | |
| | Throw | 3 Way | 2-4-7 | 3-5-8 | 4-6-9 | 5-7-10 | 6-7-10 | 6-8-11 | 7-8-12 | 7-9-12 | 8-10-14 | 9-10-15 |
| | ft | 2 Way | 3-5-9 | 5-7-11 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-18 | 11-14-20 |
| | | 1 Way | 3-6-11 | 6-9-13 | 7-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 |
| | | Total Pressure, in. w.g. | .016 | .029 | .045 | .065 | .089 | .116 | .146 | .181 | .260 | .354 |
| 6 x 6 | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | |
| | NC | — | — | 19 | 24 | 28 | 32 | 35 | 38 | 42 | 46 | |
| | 4 Way | 2-4-6 | 3-5-7 | 4-6-8 | 5-6-9 | 6-7-10 | 6-7-11 | 6-8-11 | 7-8-12 | 7-9-13 | 8-10-14 | |
| | Throw | 3 Way | 2-4-8 | 4-6-9 | 5-7-10 | 6-8-11 | 7-8-12 | 7-9-13 | 8-9-13 | 8-10-14 | 9-11-15 | 10-12-17 |
| | ft | 2 Way | 3-6-10 | 5-8-12 | 6-9-13 | 8-10-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-13-19 | 12-15-21 | 13-16-22 |
| | 1 Way | 4-7-13 | 6-10-15 | 8-12-17 | 10-13-18 | 11-14-20 | 12-15-21 | 13-16-22 | 14-17-23 | 15-18-26 | 16-20-28 | |
| 8 Ø | Total Pressure, in. w.g. | .015 | .027 | .042 | .061 | .084 | .108 | .136 | .168 | .242 | .330 | |
| | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | |
| | NC | — | 19 | 25 | 30 | 34 | 38 | 41 | 44 | 48 | 53 | |
| | 4 Way | 2-4-8 | 4-6-9 | 5-7-10 | 6-8-11 | 7-8-12 | 7-9-12 | 8-9-13 | 8-10-14 | 9-11-15 | 9-12-16 | |
| | Throw | 3 Way | 3-5-9 | 5-7-11 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-18 | 11-14-20 |
| ft | 2 Way | 4-7-12 | 6-9-14 | 8-11-16 | 9-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-22 | 14-17-24 | 15-19-26 | |
| | 1 Way | 5-9-15 | 8-12-18 | 10-14-20 | 12-15-21 | 13-16-23 | 14-18-25 | 15-19-26 | 16-20-28 | 18-21-30 | 19-23-33 | |
| 8 x 8 | Total Pressure, in. w.g. | .018 | .031 | .049 | .071 | .096 | .126 | .159 | .196 | .283 | .385 | |
| | Flow Rate, cfm | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 | 533 | 622 | |
| | NC | — | 17 | 23 | 28 | 32 | 35 | 38 | 41 | 46 | 50 | |
| | 4 Way | 3-5-9 | 4-6-10 | 5-8-11 | 6-9-12 | 8-9-13 | 8-10-14 | 9-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | |
| | Throw | 3 Way | 3-6-10 | 5-8-12 | 6-9-13 | 8-10-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-13-19 | 12-15-21 | 13-16-22 |
| ft | 2 Way | 4-8-14 | 7-10-16 | 9-13-18 | 10-14-19 | 12-15-21 | 13-16-22 | 14-17-24 | 14-18-25 | 16-19-27 | 17-21-30 | |
| | 1 Way | 5-10-17 | 9-13-20 | 11-16-22 | 13-17-24 | 15-19-26 | 16-20-28 | 17-21-30 | 18-22-31 | 20-24-34 | 21-26-37 | |
| 10 Ø | Total Pressure, in. w.g. | .017 | .031 | .048 | .070 | .097 | .124 | .157 | .193 | .278 | .379 | |
| | Flow Rate, cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | |
| | NC | — | 22 | 28 | 33 | 37 | 40 | 44 | 46 | 51 | 55 | |
| | 4 Way | 3-5-9 | 5-7-11 | 6-9-12 | 7-9-13 | 8-10-15 | 9-11-16 | 9-12-16 | 10-12-17 | 11-13-19 | 12-15-21 | |
| | Throw | 3 Way | 3-6-11 | 6-9-13 | 7-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 |
| ft | 2 Way | 4-9-15 | 8-11-18 | 9-14-20 | 11-15-21 | 13-16-23 | 14-18-25 | 15-19-26 | 16-20-28 | 18-21-30 | 19-23-33 | |
| | 1 Way | 6-11-19 | 9-14-22 | 12-17-25 | 14-19-27 | 17-21-29 | 18-22-31 | 19-23-33 | 20-25-35 | 22-27-38 | 24-29-41 | |
| 10 x 10 | Total Pressure, in. w.g. | .019 | .033 | .051 | .074 | .101 | .132 | .167 | .206 | .296 | .403 | |
| | Flow Rate, cfm | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 | 833 | 972 | |
| | NC | — | 20 | 25 | 30 | 34 | 38 | 41 | 44 | 49 | 53 | |
| | 4 Way | 3-6-11 | 5-8-12 | 7-10-14 | 8-11-15 | 9-12-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | |
| | Throw | 3 Way | 4-7-13 | 7-10-15 | 8-12-17 | 10-13-18 | 11-14-20 | 12-15-21 | 13-16-22 | 14-17-23 | 15-18-26 | 16-20-28 |
| ft | 2 Way | 5-10-17 | 9-13-20 | 11-16-22 | 13-17-24 | 15-19-26 | 16-20-28 | 17-21-30 | 18-22-31 | 20-24-34 | 21-26-37 | |
| | 1 Way | 7-12-21 | 11-16-25 | 14-20-28 | 16-21-30 | 19-24-33 | 20-25-35 | 21-26-37 | 23-28-39 | 25-30-43 | 27-33-46 | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDN-FR, PDNE-FR)

Performance Data – 24 in. x 24 in. /600 x 600 Module (continued)

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
|------------|-----------------------------|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | |
| | Total Pressure, in. w.g. | .020 | .035 | .055 | .079 | .107 | .140 | .177 | .218 | .314 | .428 | |
| | Flow Rate, cfm | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 | 1099 | |
| | NC | 17 | 24 | 30 | 35 | 39 | 43 | 46 | 49 | 53 | 57 | |
| 12 Ø | 4 Way | 4-6-11 | 6-9-13 | 7-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 | |
| | Throw | 3 Way | 4-8-14 | 7-10-16 | 9-12-18 | 10-14-19 | 12-15-21 | 13-16-22 | 14-17-24 | 14-18-25 | 16-19-27 | 17-21-30 |
| | ft | 2 Way | 6-10-18 | 9-14-21 | 12-17-24 | 14-18-26 | 16-20-28 | 17-21-30 | 18-22-32 | 19-24-33 | 21-26-36 | 23-28-39 |
| | | 1 Way | 7-13-23 | 12-17-26 | 14-21-29 | 17-23-32 | 20-25-35 | 21-26-37 | 23-28-39 | 24-29-42 | 26-32-46 | 28-35-49 |
| | | Total Pressure, in. w.g. | .020 | .035 | .055 | .079 | .107 | .140 | .177 | .218 | .314 | .428 |
| 12 x 12 | Flow Rate, cfm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
| | NC | — | 22 | 28 | 32 | 37 | 40 | 43 | 46 | 51 | 55 | |
| | 4 Way | 4-7-13 | 7-10-15 | 8-12-17 | 10-13-18 | 11-14-20 | 14-15-21 | 13-16-22 | 14-17-23 | 15-18-26 | 16-20-28 | |
| | Throw | 3 Way | 5-9-15 | 8-12-18 | 10-14-20 | 12-15-22 | 14-17-24 | 15-18-25 | 15-19-27 | 16-20-28 | 18-22-31 | 19-24-33 |
| | ft | 2 Way | 6-12-21 | 10-16-24 | 13-19-27 | 16-21-29 | 18-22-31 | 19-24-34 | 21-25-36 | 22-27-38 | 24-29-41 | 26-31-44 |
| | 1 Way | 8-15-26 | 13-20-30 | 16-23-33 | 20-26-36 | 23-28-39 | 24-30-42 | 26-32-45 | 27-33-47 | 30-36-51 | 32-39-56 | |
| 14 Ø | Total Pressure, in. w.g. | .022 | .039 | .061 | .088 | .119 | .156 | .197 | .243 | .350 | .477 | |
| | Flow Rate, cfm | 321 | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 | 1497 | |
| | NC | 19 | 26 | 32 | 37 | 41 | 44 | 48 | 50 | 55 | 59 | |
| | 4 Way | 4-8-13 | 7-10-15 | 8-12-17 | 10-13-19 | 12-14-20 | 13-15-22 | 13-16-23 | 14-17-24 | 15-19-27 | 17-20-29 | |
| | Throw | 3 Way | 5-9-16 | 8-12-18 | 10-15-21 | 12-16-23 | 14-17-24 | 15-18-26 | 16-20-28 | 17-21-29 | 18-23-32 | 20-24-34 |
| ft | 2 Way | 7-12-21 | 11-16-25 | 13-19-27 | 16-21-30 | 19-23-32 | 20-25-35 | 21-26-37 | 22-27-39 | 25-30-43 | 27-32-46 | |
| | 1 Way | 8-15-27 | 13-20-31 | 17-24-34 | 20-27-38 | 23-29-41 | 25-31-43 | 27-33-46 | 28-34-49 | 31-38-53 | 33-41-57 | |
| 14 x 14 | Total Pressure, in. w.g. | .020 | .036 | .056 | .081 | .110 | .144 | .182 | .224 | .323 | .440 | |
| | Flow Rate, cfm | 408 | 544 | 681 | 817 | 953 | 1089 | 1225 | 1361 | 1633 | 1905 | |
| | NC | 16 | 24 | 30 | 34 | 38 | 42 | 45 | 48 | 53 | 57 | |
| | 4 Way | 5-9-15 | 8-12-17 | 10-14-19 | 12-15-21 | 13-16-23 | 14-17-24 | 15-18-26 | 16-19-27 | 17-21-30 | 19-23-32 | |
| | Throw | 3 Way | 6-10-18 | 9-14-21 | 12-16-23 | 14-18-25 | 16-19-28 | 17-21-29 | 18-22-31 | 19-23-33 | 21-25-36 | 22-28-39 |
| ft | 2 Way | 8-14-24 | 12-18-28 | 15-22-31 | 18-24-34 | 21-26-37 | 23-28-39 | 24-29-42 | 25-31-44 | 28-34-48 | 30-37-52 | |
| | 1 Way | 10-17-30 | 15-23-35 | 19-27-39 | 23-30-42 | 26-32-46 | 28-35-49 | 30-37-52 | 32-39-55 | 35-42-60 | 37-46-65 | |
| 15 Ø | Total Pressure, in. w.g. | .023 | .041 | .064 | .092 | .125 | .164 | .207 | .256 | .368 | .501 | |
| | Flow Rate, cfm | 368 | 491 | 614 | 736 | 859 | 982 | 1104 | 1227 | 1472 | 1718 | |
| | NC | 19 | 27 | 33 | 38 | 42 | 45 | 48 | 51 | 56 | 60 | |
| | 4 Way | 4-8-14 | 7-11-16 | 9-13-18 | 11-14-20 | 13-15-22 | 13-16-23 | 14-17-25 | 15-18-26 | 16-20-28 | 18-22-31 | |
| | Throw | 3 Way | 5-10-17 | 9-13-20 | 11-16-22 | 13-17-24 | 15-18-26 | 16-20-28 | 17-21-30 | 18-22-31 | 20-24-34 | 21-26-37 |
| ft | 2 Way | 7-13-23 | 11-17-26 | 14-21-29 | 17-23-32 | 20-25-35 | 21-26-37 | 23-28-39 | 24-29-42 | 26-32-46 | 28-35-49 | |
| | 1 Way | 9-16-28 | 14-21-33 | 18-26-37 | 21-28-40 | 25-31-44 | 27-33-47 | 28-35-49 | 30-37-52 | 33-40-57 | 36-44-62 | |
| 15 x 15 | Total Pressure, in. w.g. | .021 | .037 | .058 | .083 | .113 | .148 | .187 | .231 | .332 | .452 | |
| | Flow Rate, cfm | 469 | 625 | 782 | 938 | 1094 | 1250 | 1407 | 1563 | 1876 | 2188 | |
| | NC | 17 | 24 | 30 | 35 | 39 | 43 | 46 | 49 | 54 | 58 | |
| | 4 Way | 5-9-16 | 8-12-19 | 10-15-21 | 12-16-23 | 14-17-25 | 15-19-26 | 16-20-28 | 17-21-29 | 19-23-32 | 20-25-35 | |
| | Throw | 3 Way | 6-11-19 | 10-15-22 | 12-18-25 | 15-19-27 | 17-21-29 | 18-22-32 | 19-24-33 | 20-25-35 | 22-27-39 | 24-29-42 |
| ft | 2 Way | 8-15-26 | 13-20-30 | 17-23-33 | 20-26-36 | 23-28-39 | 24-30-42 | 26-32-45 | 27-33-47 | 30-36-51 | 32-39-56 | |
| | 1 Way | 10-19-32 | 17-25-37 | 21-29-42 | 25-32-45 | 28-35-49 | 30-37-53 | 32-39-56 | 34-42-59 | 37-45-64 | 40-49-69 | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDN-FR, PDNE-FR)

Perforated Diffusers – Supply

PDSP Series



Product Information - Star Pattern

Models

Star Pattern Flush Face

Steel Construction
w/ Aluminum Face

PDSP
APDSP

Drop (Extended) Face

Steel Construction
w/ Aluminum Face

PDSPE
APDSPE

The **Price PDSP Series** perforated face ceiling diffuser features a ceiling-hugging horizontal air pattern that is field adjustable between a standard 4 way side throw to a star pattern 4 way diagonal throw. Curved blade deflectors mounted at the diffuser neck maintain a consistent horizontal pattern, even at low flow rates, making the PDSP Series an ideal choice for VAV applications. Quick-release latches on the hinged perforated face screen allow easy access for field adjustment of the blades. The drop (extended) face Model PDSPE is available to complement tegular tile ceilings.

Features

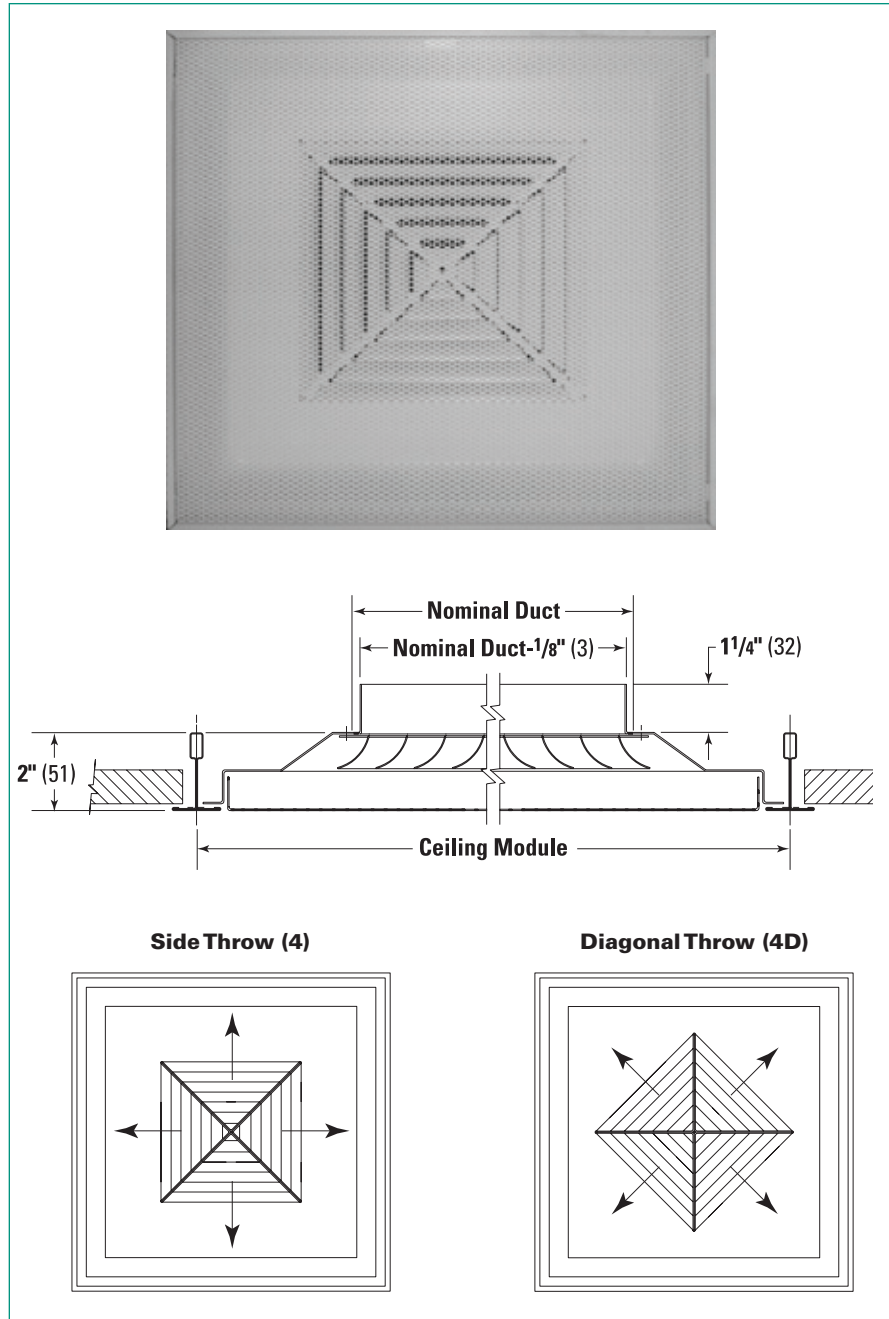
- Choice of cold rolled steel (PDSP / PDSPE) or aluminum face screen (APDSP / APDSPE) construction. Steel backpan and pattern controllers in both cases.
- 4 way pattern available with either factory set side throw or diagonal throw. Side or diagonal throw can be easily changed in the field.
- Hinged, removable perforated face screen with quick-release spring latches.
- Pattern can be field adjusted from horizontal to vertical by turning the blades.
- 3 way horizontal pattern is achieved by redirecting one segment of blades in the opposite direction.
- Choice of five frame styles (PDSPE and APDSPE are available in Frame Style 3 only).
- Complete range of available accessory dampers, equalizing grids etc.
- Optional beaded extended neck (2 1/2 in. tall) for easy flex duct connection (BN).

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.

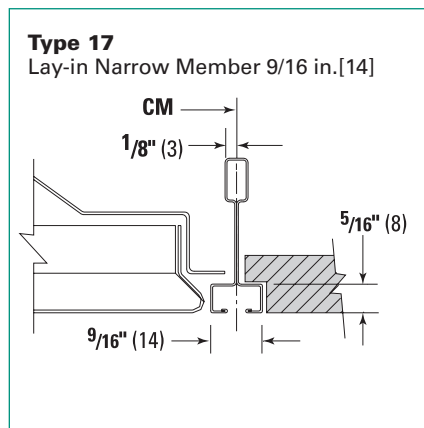
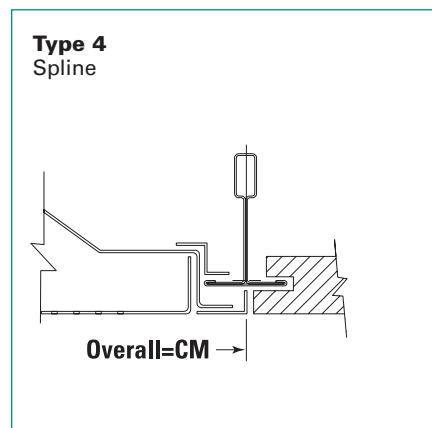
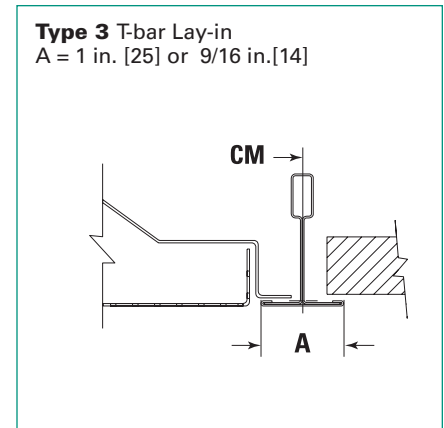
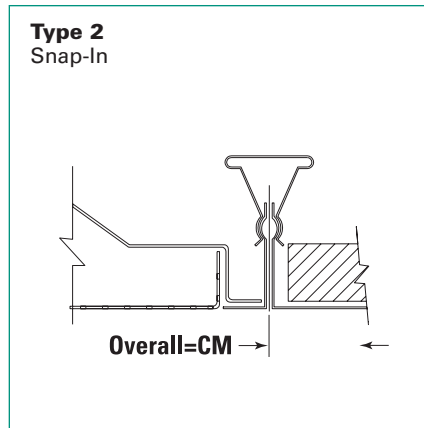
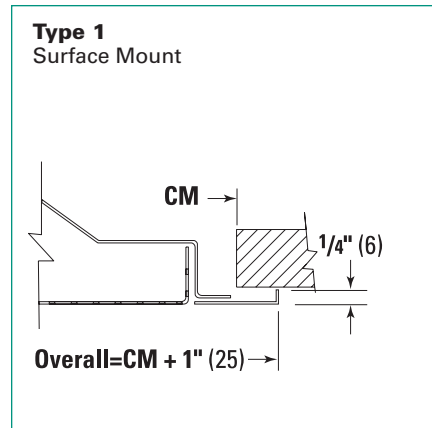


✓ Product Selection Checklist

- 1] Select Inlet Diameter or Neck Size L x W based on desired performance characteristics.
- 2] Select Face Size based on ceiling module.
- 3] Select Outlet Type by model number (material, flush or drop face).
- 4] Select Border Style according to installation requirements.
- 5] Select Air Pattern Option (4, 4D).
- 6] Select Volume Control Accessories, if desired.
- 7] Select Finish.

Example: 8 in. x 24 in. / PDSP / 3 / 4 / B12

Frame Selection

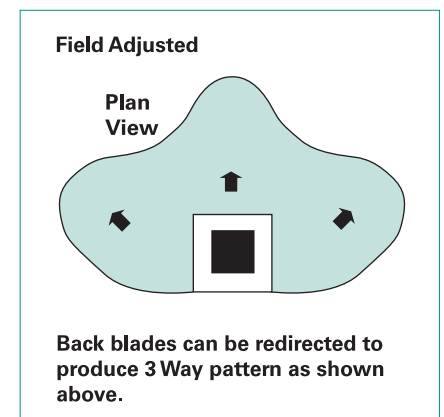
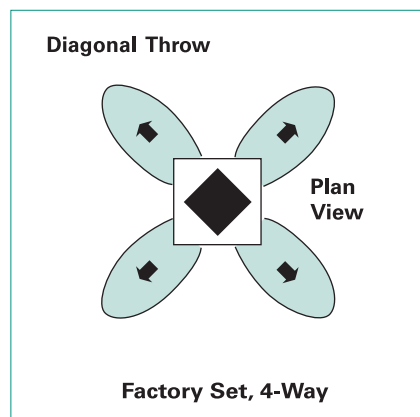
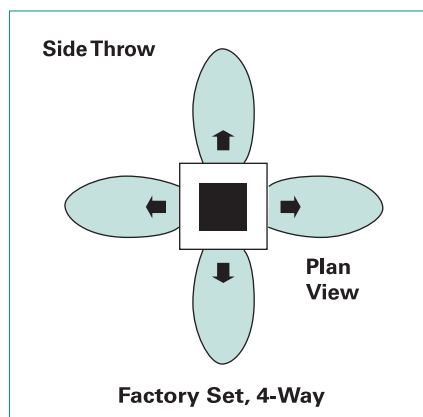


Dimensional Data - Imperial (in.) / Metric [mm]

| Nominal Duct | Ceiling Module Size, Nominal | |
|---------------------|------------------------------|----------------------|
| | 12x12 [305 x 305] | 24x24 [610 x 610] |
| 6 x 6 [152 x 152] | ▼ | ▼ |
| 8 x 8 [203 x 203] | ▼ | ▼ |
| 10 x 10 [254 x 254] | ▼ | ▼ |
| 12 x 12 [305 x 305] | ▼ | ▼ |
| 6 in. [152] Dia. | ▼ | ▼ |
| 8 in. [203] Dia. | ▼ | ▼ |
| 10 in. [254] Dia. | ▼ | ▼ |
| 12 in. [305] Dia. | ▼ | ▼ |
| 14 in. [356] Dia. | ▼ | ▼ |
| 15 in. [381] Dia. | ▼ | ▼ |
| 16 in. [406] Dia. | ▼ | ▼ |

CEILING DIFFUSERS

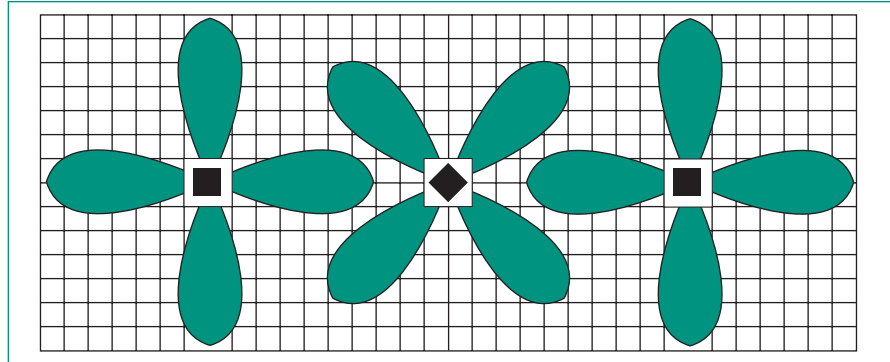
Pattern Options



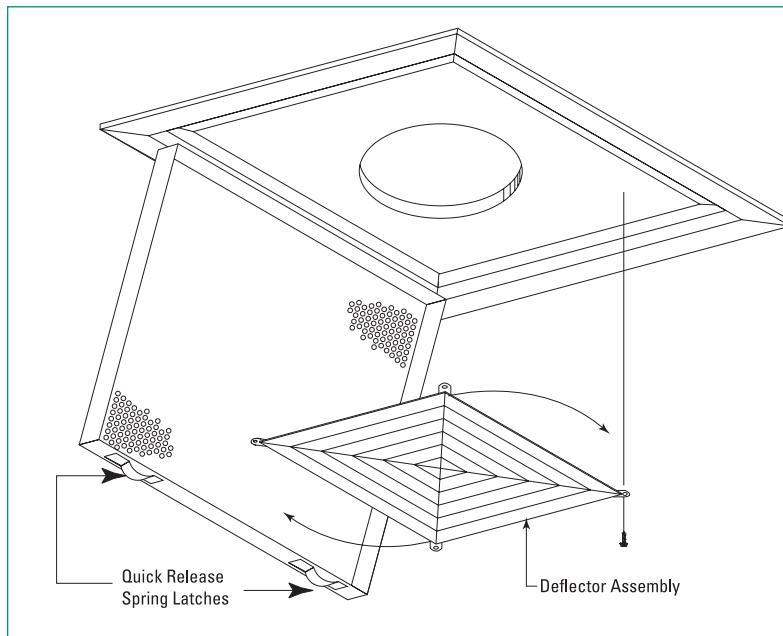
Compressed Pattern Arrangement

The PDSP's positive air pattern control, combined with its simple field adjustable air pattern controllers, allows the owner to put diffusers in closer proximity to each other than can be done with most other diffuser types.

By using an alternating 4 way and 4 way diagonal pattern arrangement, diffuser discharges can be "inter-woven" such that outlets may be tightly spaced without supply air dumping on the room occupants due to colliding air patterns (see illustration).



Pattern Controller Adjustment



Field Adjustment Procedure

1. Release spring latches of perforated screen and hinge down as shown. (Use flat object to slide along the seam between the perforated screen and backpan towards corners.)
2. Remove outer screw of louvered deflector module, dislodge from corner tab, loosen interlock at center, remove and rotate louvered deflector module to desired position and reinstall. Interlock at center, position at corner tab and secure with outer screw.
Note: No corner tabs on diffuser back pans with 6 in. nominal inlets.
3. Repeat step 2 as necessary for other louvered deflector modules.
4. To close, lift perforated screen, depress spring latches with fingers and snap shut.

CEILING DIFFUSERS

Fire-Rated Perforated Diffusers PDSP-FR Series



Product Information - Star Pattern

Three Hour Rating - Lay-in

Price PSDP-FR perforated face high capacity modular core directional diffusers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

The **Price PSDP-FR Series** perforated face ceiling diffuser features a ceiling-hugging horizontal air pattern that is field adjustable between a standard 4 way side throw to a star pattern 4 way diagonal throw. Curved blade deflectors mounted at the diffuser neck maintain a consistent horizontal pattern, even at low flow rates, making the PSDP-FR Series an ideal choice for VAV applications. Quick-release latches on the hinged perforated face screen allow easy access for field adjustment of the blades. The drop (extended) face Model PDSPE-FR is available to complement tegular tile ceilings.

Features

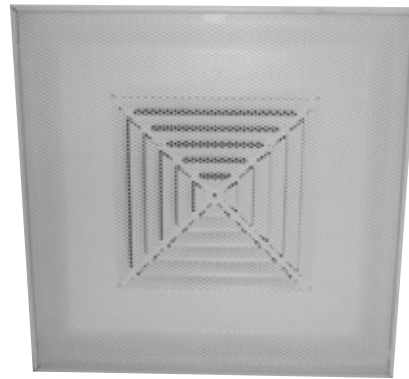
- Cold rolled steel (PDSP-FR/PDSPE-FR) steel backpan and pattern controllers.
- 4 way pattern available with either factory set side throw or diagonal throw. Side or diagonal throw can be easily changed in the field.
- Hinged, removable perforated face screen with quick-release spring latches.
- Pattern can be field adjusted from horizontal to vertical by turning the blades.
- 3 way horizontal pattern is achieved by redirecting one segment of blades in the opposite direction.
- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74°C] fusible link, optional 212 °F [100 °C] fusible link.
- Optional adjustable volume controller (Allen key adjustable).

Finish

White Powder Coat

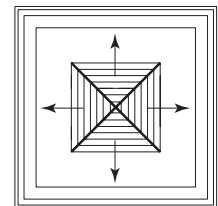
B12

For optional and special finishes see color matrix.

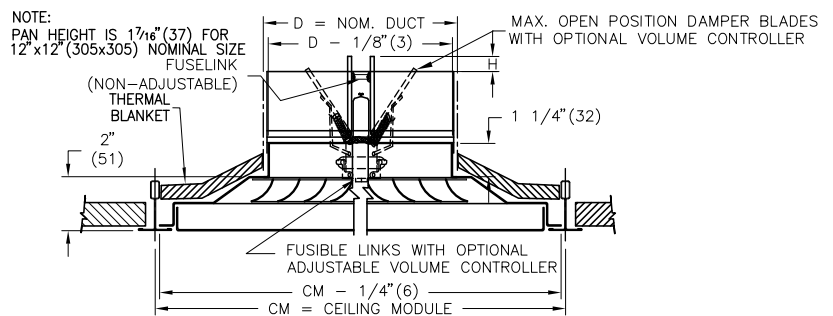
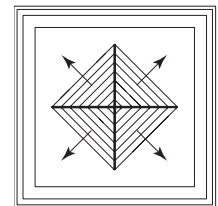


Model PSDP-FR

Side Throw (4)

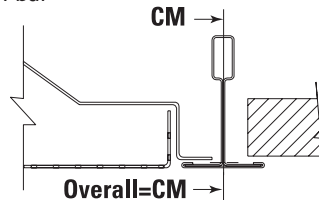


Diagonal Throw (4D)



Frame Selection Type 3

T-bar



Dimensional Data - Imperial (in.) / Metric [mm]

| Nominal Duct | Ceiling Module Size, Nominal | |
|---------------------|------------------------------|--------------------------|
| | 12" x 12" [305 x 305] | 24" x 24" [610 x 610] |
| 6 x 6 [152 x 152] | ▼ | ▼ |
| 8 x 8 [203 x 203] | | ▼ |
| 10 x 10 [254 x 254] | | ▼ |
| 12 x 12 [305 x 305] | | ▼ |
| 6" Dia. [152 Dia.] | ▼ | ▼ |
| 8" Dia. [203 Dia.] | | ▼ |
| 10" Dia. [254 Dia.] | | ▼ |
| 12" Dia. [305 Dia.] | | ▼ |
| 14" Dia. [356 Dia.] | | ▼ |
| 15" Dia. [381 Dia.] | | ▼ |

*Panel Option Diffuser Size 12" x 12" only.

✓ Product Selection Checklist

- 1] Select Inlet Diameter or Neck Size L x W based on desired performance characteristics.
- 2] Select Face Size based on ceiling module.
- 3] Select Outlet Type by model number (material, flush or drop face).
- 4] Select Border Style according to installation requirements.
- 5] Select Air Pattern Option (4, 4D).
- 6] Select Volume Control Accessories, if desired.
- 7] Select Finish.

Example: 8" / 24" x 24" / PSDP-FR / 3 / 4 / B12

Performance Data – 12 in. x 12 in. [305 x 305] Module

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in.wg. | 300 0.006 | 400 0.010 | 500 0.016 | 600 0.022 | 700 0.031 | 800 0.040 | 900 0.050 | 1000 0.062 | 1200 0.090 |
|------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| 6 ø | Total Pressure, in.wg. | 0.020 | 0.033 | 0.052 | 0.072 | 0.102 | 0.131 | 0.164 | 0.203 | 0.295 |
| | Flow Rate, cfm | 59 | 79 | 98 | 118 | 137 | 157 | 177 | 196 | 236 |
| | NC | -- | -- | -- | 20 | 26 | 30 | 34 | 37 | 43 |
| | Throw, ft | 1-3-7 | 2-4-9 | 4-6-10 | 4-7-10 | 5-8-11 | 6-9-12 | 7-9-13 | 7-10-14 | 9-10-15 |
| 6 x 6 | Total Pressure, in.wg. | 0.021 | 0.034 | 0.055 | 0.075 | 0.106 | 0.137 | 0.171 | 0.212 | 0.308 |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 |
| | NC | -- | -- | 16 | 22 | 27 | 32 | 36 | 39 | 45 |
| | Throw, ft | 1-3-7 | 2-5-9 | 4-6-10 | 5-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-10-15 | 9-11-16 |

Performance Data – 24 in. x 24 in. [610 x 610] Module

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in.wg. | 300 0.006 | 400 0.01 | 500 0.016 | 600 0.022 | 700 0.031 | 800 0.04 | 900 0.05 | 1000 0.062 | 1200 0.09 | 1400 0.122 |
|------------|---|--------------|-------------|--------------|--------------|--------------|-------------|-------------|---------------|--------------|---------------|
| 6x6 | Total Pressure, in.wg. | 0.021 | 0.034 | 0.055 | 0.075 | 0.106 | 0.137 | 0.171 | 0.212 | 0.308 | 0.417 |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 |
| | NC | -- | -- | 16 | 22 | 27 | 32 | 36 | 39 | 45 | 50 |
| | Throw, ft | 1-3-7 | 2-5-9 | 4-6-10 | 5-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-10-15 | 9-11-16 | 10-12-17 |
| 8x8 | Total Pressure, in.wg. | 0.023 | 0.038 | 0.061 | 0.083 | 0.118 | 0.152 | 0.190 | 0.235 | 0.341 | 0.463 |
| | Flow Rate, cfm | 133 | 178 | 222 | 267 | 311 | 356 | 400 | 444 | 533 | 622 |
| | NC | -- | -- | 20 | 26 | 32 | 36 | 40 | 43 | 49 | 55 |
| | Throw, ft | 2-4-8 | 3-5-10 | 4-7-12 | 5-8-13 | 6-9-14 | 7-10-15 | 8-12-16 | 9-12-17 | 10-13-19 | 12-14-20 |
| 10x10 | Total Pressure, in.wg. | 0.025 | 0.041 | 0.066 | 0.090 | 0.127 | 0.164 | 0.206 | 0.255 | 0.37 | 0.502 |
| | Flow Rate, cfm | 208 | 278 | 347 | 417 | 486 | 556 | 625 | 694 | 833 | 972 |
| | NC | -- | 16 | 24 | 30 | 35 | 39 | 43 | 47 | 53 | 58 |
| | Throw, ft | 2-4-9 | 3-6-12 | 5-7-14 | 6-9-15 | 7-10-16 | 8-12-18 | 9-13-19 | 10-14-20 | 12-15-21 | 13-16-23 |
| 12x12 | Total Pressure, in.wg. | 0.026 | 0.044 | 0.070 | 0.097 | 0.136 | 0.176 | 0.220 | 0.272 | 0.395 | 0.536 |
| | Flow Rate, cfm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 |
| | NC | -- | 19 | 26 | 32 | 38 | 42 | 46 | 49 | 55 | 61 |
| | Throw, ft | 2-5-10 | 4-6-13 | 5-8-15 | 6-10-17 | 7-11-18 | 9-13-20 | 10-14-21 | 11-15-22 | 13-17-24 | 15-18-26 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. wg.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDSP-FR, PDSPE-FR)

Performance Data – 24 in. x 24 in. [610 x 610] Module (continued)

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in.wg. | 300 0.006 | 400 0.01 | 500 0.016 | 600 0.022 | 700 0.031 | 800 0.04 | 900 0.05 | 1000 0.062 | 1200 0.09 | 1400 0.122 |
|------------|---|--------------|-------------|--------------|--------------|--------------|-------------|-------------|---------------|--------------|---------------|
| 6 | Total Pressure, in.wg. | 0.020 | 0.033 | 0.052 | 0.072 | 0.102 | 0.131 | 0.164 | 0.203 | 0.295 | 0.400 |
| | Flow Rate, cfm | 59 | 79 | 98 | 118 | 137 | 157 | 177 | 196 | 236 | 275 |
| | NC | -- | -- | -- | 20 | 26 | 30 | 34 | 37 | 43 | 49 |
| | Throw, ft | 1-3-7 | 2-4-9 | 4-6-10 | 4-7-10 | 5-8-11 | 6-9-12 | 7-9-13 | 7-10-14 | 9-10-15 | 9-11-16 |
| 8 | Total Pressure, in.wg. | 0.022 | 0.036 | 0.058 | 0.080 | 0.113 | 0.145 | 0.182 | 0.225 | 0.327 | 0.443 |
| | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 |
| | NC | -- | -- | 19 | 25 | 30 | 34 | 38 | 42 | 48 | 53 |
| | Throw, ft | 1-3-7 | 3-5-10 | 4-6-11 | 5-7-12 | 6-9-13 | 7-10-14 | 7-11-15 | 8-11-16 | 10-12-18 | 11-13-19 |
| 10 | Total Pressure, in.wg. | 0.024 | 0.039 | 0.063 | 0.087 | 0.122 | 0.157 | 0.197 | 0.244 | 0.354 | 0.480 |
| | Flow Rate, cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 764 |
| | NC | -- | -- | 22 | 28 | 33 | 38 | 41 | 45 | 51 | 56 |
| | Throw, ft | 2-4-8 | 3-5-11 | 5-7-13 | 5-8-14 | 6-10-15 | 7-11-16 | 8-12-17 | 9-13-18 | 11-14-20 | 12-15-22 |
| 12 | Total Pressure, in.wg. | 0.025 | 0.042 | 0.067 | 0.092 | 0.130 | 0.168 | 0.210 | 0.261 | 0.378 | 0.513 |
| | Flow Rate, cfm | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 | 1100 |
| | NC | -- | 17 | 25 | 31 | 36 | 40 | 44 | 48 | 54 | 59 |
| | Throw, ft | 2-4-9 | 3-6-12 | 5-8-14 | 6-9-16 | 7-11-17 | 8-12-18 | 9-14-19 | 10-14-20 | 12-16-22 | 14-17-24 |
| 14 | Total Pressure, in.wg. | 0.027 | 0.044 | 0.071 | 0.098 | 0.138 | 0.178 | 0.222 | 0.275 | 0.400 | 0.542 |
| | Flow Rate, cfm | 321 | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 | 1497 |
| | NC | -- | 19 | 27 | 33 | 38 | 42 | 46 | 50 | 56 | 61 |
| | Throw, ft | 2-5-10 | 4-7-13 | 5-8-16 | 7-10-17 | 8-11-19 | 9-13-20 | 10-15-21 | 11-16-22 | 13-17-24 | 15-19-26 |
| 15 | Total Pressure, in.wg. | 0.027 | 0.046 | 0.073 | 0.100 | 0.141 | 0.182 | 0.228 | 0.282 | 0.410 | 0.556 |
| | Flow Rate, cfm | 368 | 491 | 614 | 736 | 859 | 982 | 1104 | 1227 | 1473 | 1718 |
| | NC | -- | 21 | 28 | 34 | 39 | 44 | 47 | 51 | 57 | 62 |
| | Throw, ft | 2-5-10 | 4-7-14 | 6-8-16 | 7-10-18 | 8-12-19 | 9-14-21 | 10-15-22 | 11-16-23 | 14-18-25 | 16-19-27 |
| 16 | Total Pressure, in.wg. | 0.028 | 0.047 | 0.075 | 0.103 | 0.145 | 0.186 | 0.233 | 0.289 | 0.420 | 0.569 |
| | Flow Rate, cfm | 419 | 559 | 698 | 838 | 977 | 1117 | 1257 | 1396 | 1676 | 1955 |
| | NC | -- | 21 | 29 | 35 | 40 | 44 | 48 | 52 | 58 | 63 |
| | Throw, ft | 3-5-10 | 5-7-14 | 6-9-17 | 7-10-19 | 8-12-20 | 9-14-22 | 10-16-23 | 12-17-24 | 14-19-26 | 16-20-29 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. wg.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDSP-FR, PDSPE-FR)

Product Information

Models

Deflectors on Face

Flush Face

Steel Construction
w/ Aluminum Face

PDF
APDF

Drop (Extended) Face

Steel Construction
w/ Aluminum Face

PDFE
APDFE

Price PDF / PDFE Series perforated face ceiling diffusers provide a superior horizontal air pattern with a strong Coanda effect against the ceiling. Adjustable pattern controllers in diffuser face are easily field adjusted to suit the desired air pattern. The drop (extended) face Model PDFE is available to complement regular tile ceilings.

Features

- Choice of cold rolled steel (PDF / PDFE) or aluminum face screen (APDF / APDFE) construction. Steel backpan and pattern controllers in both cases.
- Hinged, removable perforated faceplate with quick-release spring latches.
- Louvered air pattern controllers are located on the diffuser face and are field adjustable to the desired air pattern.
- Choice of five frame styles (Frames 1, 2, 3, 4, 17).
- Complete range of available accessory dampers, equalizing grids etc.
- Optional beaded extended neck (2 1/2 in. tall) for easy flex duct connection (BN).

Available Module Sizes

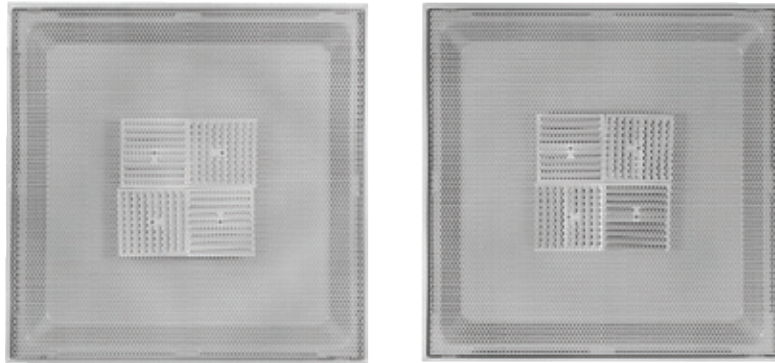
| Imperial | Metric |
|-----------------|-----------|
| 12 in. x 12 in. | 300 x 300 |
| 24 in. x 12 in. | 600 x 300 |
| 16 in. x 16 in. | 400 x 400 |
| 20 in. x 20 in. | 500 x 500 |
| 24 in. x 24 in. | 600 x 600 |

Finish

White Powder Coat

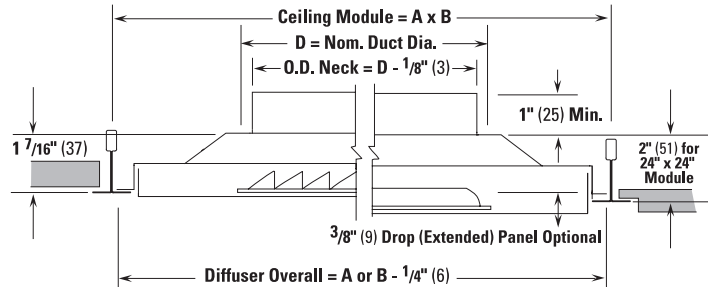
B12

For optional and special finishes see color matrix.



**Model PDF (Steel) /
APDF (Aluminum Face)**
Flush Face

**Model PDFE (Steel) /
APDFE (Aluminum Face)**
Drop (Extended) Face



Dimensional Data — Imperial (in.) / Metric [mm]

| Neck Size Nominal | A x B Face or Ceiling Module Size, Nominal | | | | | |
|----------------------|--|--------------------|--------------------|--------------------|--------------------|---------------------|
| | 12 x 12 300 x 300 | 24x12 600 x 300 | 16x16 400 x 400 | 20x20 500 x 500 | 24x24 600 x 600 | 48x24 1200 x 600 |
| 6 x 6 [152 x 152] | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 8 x 8 [203 x 203] | | | ▼ | ▼ | ▼ | ▼ |
| 10 x 10 [254 x 254] | | | | ▼ | ▼ | ▼ |
| 12 x 12 [305 x 305] | | | | | ▼ | ▼ |
| 14 x 14 [356 x 356] | | | | | ▼ | ▼ |
| 16 x 16 [406 x 406] | | | | | ▼ | ▼ |
| 18 x 18 [457 x 457] | | | | | ▼ | ▼ |
| 6 x 18 [152 x 457] | | ▼ | | | | |
| 6 in. [152] Dia. | ▼ | | ▼ | ▼ | ▼ | ▼ |
| 8 in. [203] Dia. | | | ▼ | ▼ | ▼ | ▼ |
| 10 in. [254] Dia. | | | | ▼ | ▼ | ▼ |
| 12 in. [305] Dia. | | | | | ▼ | ▼ |
| 14 in. [356] Dia. | | | | | ▼ | ▼ |
| 15 in. [381] Dia. | | | | | ▼ | ▼ |
| 16 in. [406] Dia. | | | | | | ▼ |
| 18 in. [457] Dia. | | | | | | |

✓ Product Selection Checklist

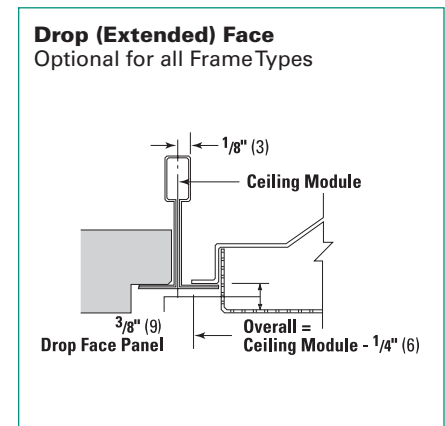
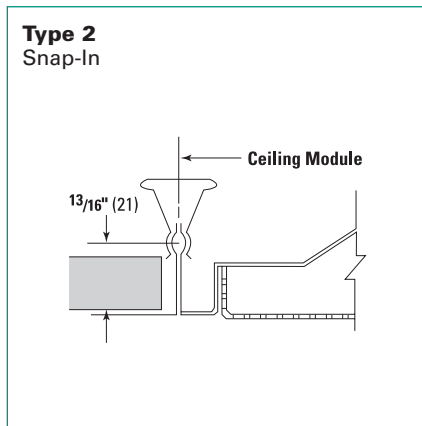
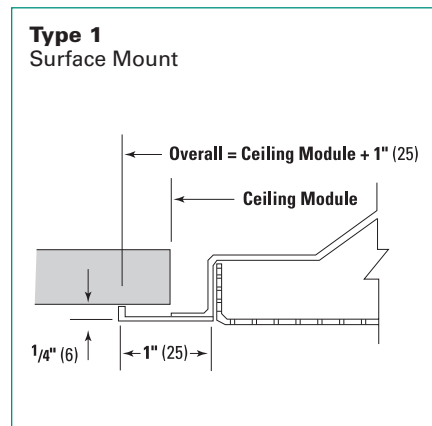
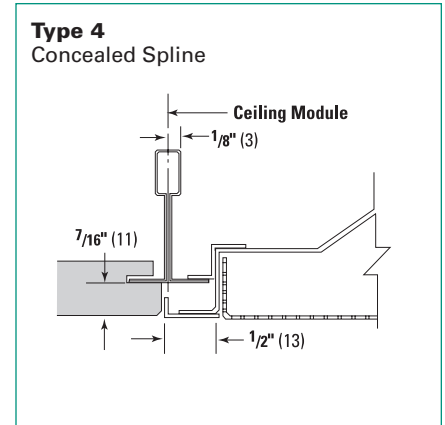
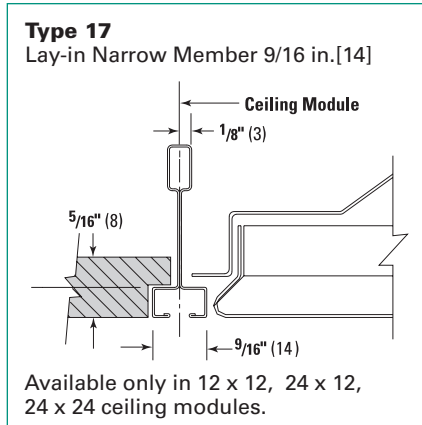
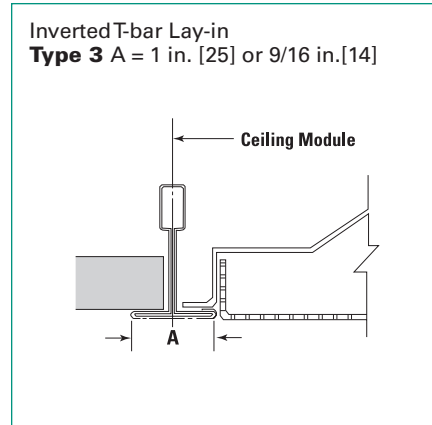
- 1) Select Inlet Diameter or Neck Size L x W based on desired performance characteristics.
- 2) Select Face Size based on ceiling module.
- 3) Select Outlet Type by model number (material, flush or drop face).
- 4) Select Border Style according to installation requirements (page C50).
- 5) Select Volume Control accessories, if desired (page C181-C186).
- 6) Select Finish.

Example: 8 in. / 24 in. x 24 in. / PDF / 3 / B12

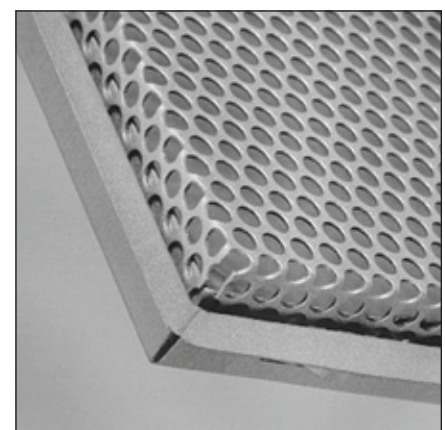
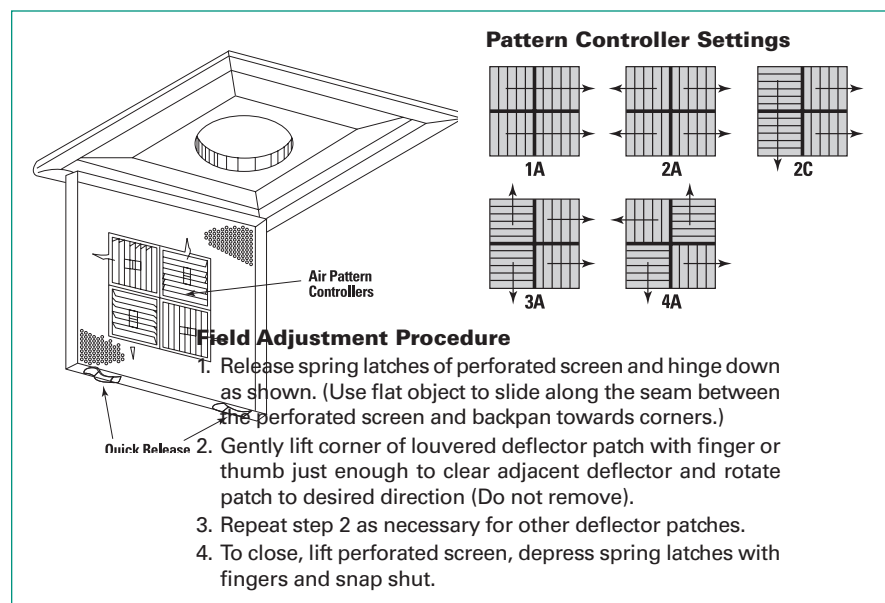
Application Recommendations:

For Border recommendations, see page C32.

Frame Selection



Air Pattern Adjustment



Drop (Extended) Face
Panel Detail

Fire-Rated Perforated Diffusers – Supply PDF-FR / PDFE-FR Series



Product Information

Three Hour Rating - Lay-in Models

Deflectors on Face

Flush Face

PDF-FR

Drop (Extended) Face

PDFE-FR

Price PDF-FR / PDFE-FR perforated face ceiling diffusers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

PDF-FR / PDFE-FR perforated face ceiling diffusers provide a superior horizontal air pattern with a strong Coanda effect against the ceiling. Adjustable pattern controllers in diffuser face are easily field adjusted to suit the desired air pattern. The drop (extended) face Model PDFE-FR is available to complement tegular tile ceilings.

Features

- Available in both imperial and hard metric module sizes.
- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Hinged, removable perforated faceplate with quick-release spring latches provides easy access to optional adjustable volume controller (Allen key adjustable). See page C50 for procedure.

Available Module Sizes

| Imperial | Metric |
|-----------------|-----------|
| 24 in. x 24 in. | 600 x 600 |
| 20 in. x 20 in. | 500 x 500 |
| 12 in. x 12 in. | 300 x 300 |

Finish

White Powder Coat

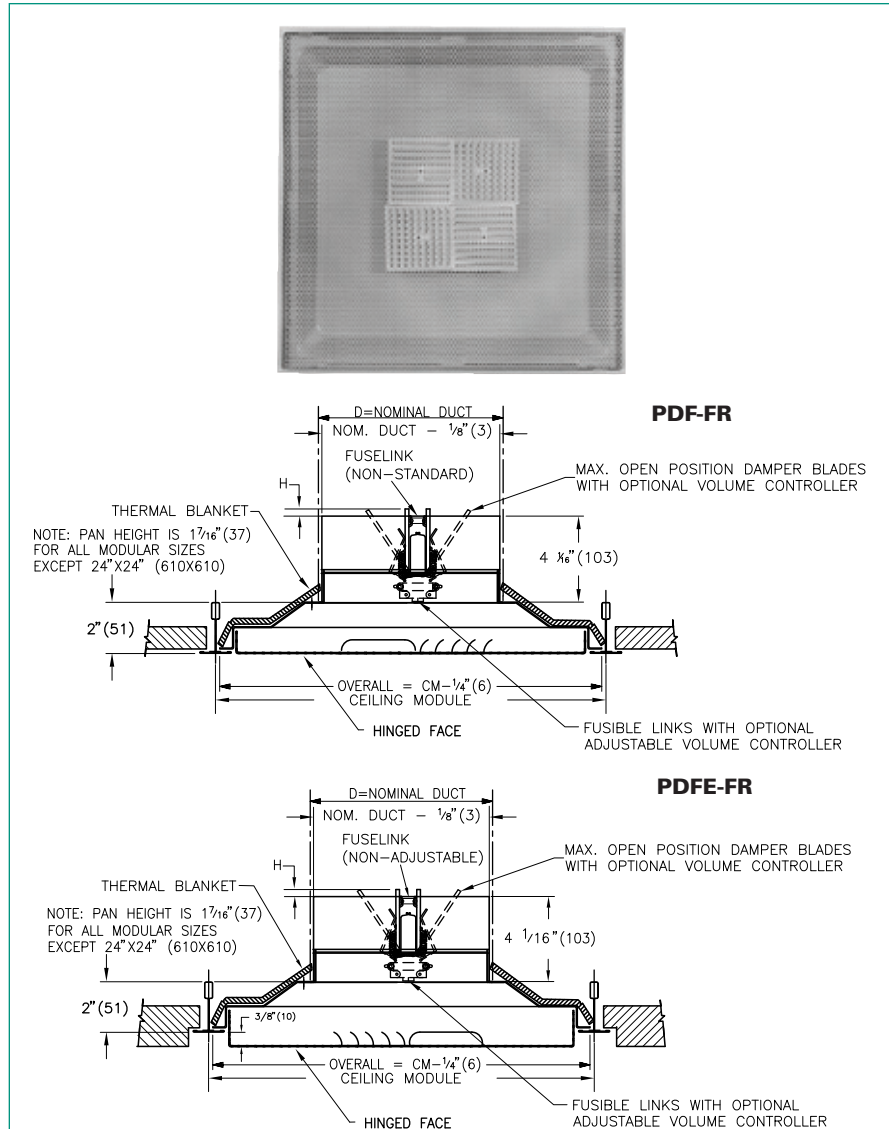
B12

For optional and special finishes see color matrix.

✓ Product Selection Checklist

- 1] Select Inlet Diameter or Neck Size L x W.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Style by model number.
- 4] Select Finish.

Example: 8 in./24 in. x 24 in./PDF-FR/B12



Dimensional Data - Imperial (in.) / Metric [mm]

| Duct Size Nominal | Ceiling Module Size, Nominal | | | | | |
|-----------------------------|------------------------------|---------|-------------|-----------|-----------|-----------|
| | Imperial (in.) | | Metric [mm] | | | |
| | 12 x 12 | 20 x 20 | 24 x 24 | 300 x 300 | 500 x 500 | 600 x 600 |
| 6 in. x 6 in. [152 x 152] | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 8 in. x 8 in. [203 x 203] | | ▼ | ▼ | | ▼ | ▼ |
| 10 in. x 10 in. [254 x 254] | | | ▼ | | ▼ | ▼ |
| 12 in. x 12 in. [305 x 305] | | | ▼ | | ▼ | ▼ |
| 14 in. x 14 in. [356 x 356] | | | ▼ | | ▼ | ▼ |
| 15 in. x 15 in. [381 x 381] | | | ▼ | | ▼ | ▼ |
| 6 in. Dia. [152 Dia.] | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 8 in. Dia. [203 Dia.] | | ▼ | ▼ | | ▼ | ▼ |
| 10 in. Dia. [254 Dia.] | | | ▼ | | ▼ | ▼ |
| 12 in. Dia. [305 Dia.] | | | ▼ | | ▼ | ▼ |
| 14 in. Dia. [356 Dia.] | | | ▼ | | ▼ | ▼ |
| 15 in. Dia. [381 Dia.] | | | ▼ | | ▼ | ▼ |

Performance Data – 12 in. x 12 in. / 300 x 300 Module

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
|------------|-----------------------------|--------|--------|--------|---------|---------|---------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | |
| 6 Ø | Total Pressure, in. w.g. | .012 | .021 | .033 | .047 | .064 | .084 | .106 | .131 | .189 | .257 | |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | |
| | NC | — | — | — | 19 | 24 | 28 | 32 | 35 | 41 | 46 | |
| | 4 Way | 0-1-4 | 1-2-6 | 1-3-7 | 2-4-8 | 3-5-9 | 4-6-10 | 4-7-10 | 5-7-11 | 6-8-12 | 7-9-13 | |
| | Throw | 3 Way | 1-1-5 | 1-2-7 | 2-4-9 | 2-5-10 | 3-6-11 | 4-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 |
| | ft | 2 Way | 1-2-7 | 1-3-10 | 2-5-12 | 3-7-13 | 4-8-14 | 6-10-15 | 7-11-16 | 8-12-17 | 10-13-19 | 11-14-20 |
| | 1 Way | 1-2-9 | 2-4-12 | 3-6-15 | 4-9-17 | 5-10-18 | 7-12-19 | 9-13-20 | 10-15-21 | 12-17-23 | 14-18-25 | |
| 6 x 6 | Total Pressure, in. w.g. | .013 | .024 | .037 | .054 | .073 | .096 | .121 | .150 | .215 | .293 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | |
| | NC | — | — | 17 | 22 | 27 | 31 | 35 | 38 | 44 | 48 | |
| | 4 Way | 1-1-5 | 1-2-7 | 2-4-9 | 2-5-9 | 3-6-10 | 4-7-11 | 5-8-11 | 6-9-12 | 7-9-13 | 8-10-14 | |
| | Throw | 3 Way | 1-2-6 | 1-3-8 | 2-5-10 | 3-6-11 | 4-7-12 | 5-8-13 | 6-9-14 | 7-10-14 | 8-11-16 | 10-12-17 |
| | ft | 2 Way | 1-2-8 | 2-4-11 | 3-6-14 | 4-8-15 | 5-10-16 | 7-11-17 | 8-13-18 | 9-14-19 | 11-15-21 | 13-16-23 |
| | 1 Way | 1-3-11 | 2-5-14 | 3-8-17 | 5-11-19 | 7-12-20 | 9-14-22 | 11-16-23 | 12-17-24 | 14-19-26 | 16-20-29 | |

Performance Data – 12 in. x 24 in. / 300 x 600 Module

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
|------------|-----------------------------|--------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | |
| 6 Ø | Total Pressure, in. w.g. | .012 | .021 | .033 | .047 | .064 | .084 | .106 | .131 | .189 | .257 | |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | |
| | NC | — | — | — | 19 | 24 | 28 | 32 | 35 | 41 | 46 | |
| | 4 Way | 0-1-4 | 1-2-6 | 1-3-7 | 2-4-8 | 3-5-9 | 4-6-10 | 4-7-10 | 5-7-11 | 6-8-12 | 7-9-13 | |
| | Throw | 3 Way | 1-1-5 | 1-2-7 | 2-4-9 | 2-5-10 | 3-6-11 | 4-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 |
| | ft | 2 Way | 1-2-7 | 1-3-10 | 2-5-12 | 3-7-13 | 4-8-14 | 6-10-15 | 7-11-16 | 8-12-17 | 10-13-19 | 11-14-20 |
| | 1 Way | 1-2-9 | 2-4-12 | 3-6-15 | 4-9-17 | 5-10-18 | 7-12-19 | 9-13-20 | 10-15-21 | 12-17-23 | 14-18-25 | |
| 6 x 6 | Total Pressure, in. w.g. | .013 | .024 | .037 | .054 | .073 | .096 | .121 | .150 | .215 | .293 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | |
| | NC | — | — | 17 | 22 | 27 | 31 | 35 | 38 | 44 | 48 | |
| | 4 Way | 1-1-5 | 1-2-7 | 2-4-9 | 2-5-9 | 3-6-10 | 4-7-11 | 5-8-11 | 6-9-12 | 7-9-13 | 8-10-14 | |
| | Throw | 3 Way | 1-2-6 | 1-3-8 | 2-5-10 | 3-6-11 | 4-7-12 | 5-8-13 | 6-9-14 | 7-10-14 | 8-11-16 | 10-12-17 |
| | ft | 2 Way | 1-2-8 | 2-4-11 | 3-6-14 | 4-8-15 | 5-10-16 | 7-11-17 | 8-13-18 | 9-14-19 | 11-15-21 | 13-16-23 |
| | 1 Way | 1-3-11 | 2-5-14 | 3-8-17 | 5-11-19 | 7-12-20 | 9-14-22 | 11-16-23 | 12-17-24 | 14-19-26 | 16-20-29 | |
| 6 x 18 | Total Pressure, in. w.g. | .026 | .047 | .073 | .105 | .144 | .188 | .237 | .293 | .422 | .574 | |
| | Flow Rate, cfm | 225 | 300 | 375 | 450 | 525 | 600 | 675 | 750 | 900 | 1050 | |
| | NC | — | 22 | 29 | 35 | 40 | 44 | 47 | 51 | 56 | 61 | |
| | 4 Way | 2-5-11 | 4-8-13 | 6-9-15 | 8-11-16 | 9-12-17 | 10-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 | |
| | Throw | 3 Way | 2-6-14 | 4-9-16 | 7-11-18 | 9-14-19 | 11-15-21 | 12-16-22 | 14-17-24 | 14-18-25 | 16-19-27 | 17-21-30 |
| | ft | 2 Way | 3-7-18 | 6-12-21 | 9-15-24 | 12-18-26 | 14-20-28 | 16-21-30 | 18-22-32 | 19-24-33 | 21-26-37 | 23-28-40 |
| | 1 Way | 4-9-23 | 7-15-26 | 11-19-30 | 15-23-32 | 18-25-35 | 20-26-37 | 23-28-40 | 24-30-42 | 26-32-46 | 29-35-49 | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDF-FR, PDFE-FR)

Performance Data – 16 in. x 16 in. / 400 x 400 Module

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
|------------|-----------------------------|--------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | |
| 6 Ø | Total Pressure, in. w.g. | .012 | .021 | .033 | .047 | .064 | .084 | .106 | .131 | .189 | .257 | |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | |
| | NC | — | — | — | 19 | 24 | 28 | 32 | 35 | 41 | 46 | |
| | 4 Way | 0-1-4 | 1-2-6 | 1-3-7 | 2-4-8 | 3-5-9 | 4-6-10 | 4-7-10 | 5-7-11 | 6-8-12 | 7-9-13 | |
| | Throw | 3 Way | 1-1-5 | 1-2-7 | 2-4-9 | 2-5-10 | 3-6-11 | 4-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 |
| | ft | 2 Way | 1-2-7 | 1-3-10 | 2-5-12 | 3-7-13 | 4-8-14 | 6-10-15 | 7-11-16 | 8-12-17 | 10-13-19 | 11-14-20 |
| | 1 Way | 1-2-9 | 2-4-12 | 3-6-15 | 4-9-17 | 5-10-18 | 7-12-19 | 9-13-20 | 10-15-21 | 12-17-23 | 14-18-25 | |
| 6 x 6 | Total Pressure, in. w.g. | .013 | .024 | .037 | .054 | .073 | .096 | .121 | .150 | .215 | .293 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | |
| | NC | — | — | 17 | 22 | 27 | 31 | 35 | 38 | 44 | 48 | |
| | 4 Way | 1-1-5 | 1-2-7 | 2-4-9 | 2-5-9 | 3-6-10 | 4-7-11 | 5-8-11 | 6-9-12 | 7-9-13 | 8-10-14 | |
| | Throw | 3 Way | 1-2-6 | 1-3-8 | 2-5-10 | 3-6-11 | 4-7-12 | 5-8-13 | 6-9-14 | 7-10-14 | 8-11-16 | 10-12-17 |
| | ft | 2 Way | 1-2-8 | 2-4-11 | 3-6-14 | 4-8-15 | 5-10-16 | 7-11-17 | 8-13-18 | 9-14-19 | 11-15-21 | 13-16-23 |
| | 1 Way | 1-3-11 | 2-5-14 | 3-8-17 | 5-11-19 | 7-12-20 | 9-14-22 | 11-16-23 | 12-17-24 | 14-19-26 | 16-20-29 | |
| 8 Ø | Total Pressure, in. w.g. | .017 | .029 | .046 | .066 | .090 | .118 | .149 | .184 | .265 | .360 | |
| | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | |
| | NC | — | — | 21 | 26 | 31 | 35 | 39 | 42 | 48 | 52 | |
| | 4 Way | 1-2-7 | 2-3-9 | 2-5-10 | 3-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 7-10-14 | 9-11-16 | 10-12-17 | |
| | Throw | 3 Way | 1-2-8 | 2-4-11 | 3-7-12 | 4-8-13 | 6-9-14 | 7-11-15 | 8-11-16 | 9-12-17 | 11-13-19 | 12-14-20 |
| | ft | 2 Way | 1-3-11 | 2-6-14 | 4-9-16 | 6-11-18 | 8-12-19 | 9-14-20 | 11-15-22 | 12-16-23 | 14-18-25 | 16-19-27 |
| | 1 Way | 2-4-13 | 3-7-18 | 5-11-20 | 7-13-22 | 10-15-24 | 12-18-26 | 13-19-27 | 15-20-29 | 18-22-31 | 19-24-34 | |
| 8 x 8 | Total Pressure, in. w.g. | .019 | .034 | .053 | .076 | .104 | .136 | .172 | .212 | .305 | .415 | |
| | Flow Rate, cfm | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 | 533 | 622 | |
| | NC | — | 16 | 23 | 29 | 34 | 38 | 41 | 45 | 50 | 55 | |
| | 4 Way | 1-3-8 | 2-5-10 | 3-6-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 | 9-11-16 | 10-12-18 | 11-13-19 | |
| | Throw | 3 Way | 1-3-9 | 2-5-12 | 4-8-14 | 5-9-15 | 7-11-16 | 8-12-17 | 9-13-18 | 10-14-19 | 12-15-21 | 13-16-23 |
| | ft | 2 Way | 2-4-12 | 3-7-16 | 5-10-18 | 7-12-20 | 10-15-22 | 11-16-23 | 12-17-24 | 14-18-26 | 16-20-28 | 18-22-30 |
| | 1 Way | 2-5-16 | 4-9-20 | 6-13-23 | 9-16-25 | 12-18-27 | 14-20-29 | 16-22-31 | 17-23-32 | 20-25-35 | 22-27-38 | |
| 10Ø | Total Pressure, in. w.g. | .022 | .039 | .061 | .088 | .119 | .156 | .197 | .243 | .350 | .477 | |
| | Flow Rate In cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | |
| | NC | — | 19 | 26 | 31 | 36 | 40 | 44 | 47 | 53 | 57 | |
| | 4 Way | 1-3-10 | 3-6-11 | 4-7-13 | 6-9-14 | 7-10-15 | 8-11-16 | 9-12-17 | 10-13-18 | 11-14-20 | 12-15-21 | |
| | Throw | 3 Way | 2-4-11 | 3-7-14 | 5-9-15 | 7-11-17 | 8-13-18 | 10-14-19 | 11-14-20 | 12-15-21 | 14-17-23 | 15-18-25 |
| | ft | 2 Way | 2-5-15 | 4-9-18 | 6-12-20 | 9-14-22 | 11-17-24 | 13-18-26 | 14-19-27 | 16-20-29 | 18-22-31 | 19-24-34 |
| | 1 Way | 3-6-19 | 5-11-23 | 8-15-25 | 11-18-28 | 14-21-30 | 16-23-32 | 18-24-34 | 20-25-36 | 23-28-39 | 24-30-42 | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDF-FR, PDFE-FR)

Performance Data – 20 in. x 20 in. / 500 x 500 Module

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
|------------|-----------------------------|-------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | |
| | Total Pressure, in. w.g. | .012 | .021 | .033 | .047 | .064 | .084 | .106 | .131 | .189 | .257 | |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | |
| | NC | — | — | — | 19 | 24 | 28 | 32 | 35 | 41 | 46 | |
| 6 | Throw | 4 Way | 0-1-4 | 1-2-6 | 1-3-7 | 2-4-8 | 3-5-9 | 4-6-10 | 4-7-10 | 5-7-11 | 6-8-12 | 7-9-13 |
| | | 3 Way | 1-1-5 | 1-2-7 | 2-4-9 | 2-5-10 | 3-6-11 | 4-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 |
| | | 2 Way | 1-2-7 | 1-3-10 | 2-5-12 | 3-7-13 | 4-8-14 | 6-10-15 | 7-11-16 | 8-12-17 | 10-13-19 | 11-14-20 |
| | | 1 Way | 1-2-9 | 2-4-12 | 3-6-15 | 4-9-17 | 5-10-18 | 7-12-19 | 9-13-20 | 10-15-21 | 12-17-23 | 14-18-25 |
| | Total Pressure, in. w.g. | .013 | .024 | .037 | .054 | .073 | .096 | .121 | .150 | .215 | .293 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | |
| | NC | — | — | 17 | 22 | 27 | 31 | 35 | 38 | 44 | 48 | |
| 6 x 6 | Throw | 4 Way | 1-1-5 | 1-2-7 | 2-4-9 | 2-5-9 | 3-6-10 | 4-7-11 | 5-8-11 | 6-9-12 | 7-9-13 | 8-10-14 |
| | | 3 Way | 1-2-6 | 1-3-8 | 2-5-10 | 3-6-11 | 4-7-12 | 5-8-13 | 6-9-14 | 7-10-14 | 8-11-16 | 10-12-17 |
| | | 2 Way | 1-2-8 | 2-4-11 | 3-6-14 | 4-8-15 | 5-10-16 | 7-11-17 | 8-13-18 | 9-14-19 | 11-15-21 | 13-16-23 |
| | | 1 Way | 1-3-11 | 2-5-14 | 3-8-17 | 5-11-19 | 7-12-20 | 9-14-22 | 11-16-23 | 12-17-24 | 14-19-26 | 16-20-29 |
| | Total Pressure, in. w.g. | .017 | .029 | .046 | .066 | .090 | .118 | .149 | .184 | .265 | .360 | |
| | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | |
| | NC | — | — | 21 | 26 | 31 | 35 | 39 | 42 | 48 | 52 | |
| 8 | Throw | 4 Way | 1-2-7 | 2-3-9 | 2-5-10 | 3-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 7-10-14 | 9-11-16 | 10-12-17 |
| | | 3 Way | 1-2-8 | 2-4-11 | 3-7-12 | 4-8-13 | 6-9-14 | 7-11-15 | 8-11-16 | 9-12-17 | 11-13-19 | 12-14-20 |
| | | 2 Way | 1-3-11 | 2-6-14 | 4-9-16 | 6-11-18 | 8-12-19 | 9-14-20 | 11-15-22 | 12-16-23 | 14-18-25 | 16-19-27 |
| | | 1 Way | 2-4-13 | 3-7-18 | 5-11-20 | 7-13-22 | 10-15-24 | 12-18-26 | 13-19-27 | 15-20-29 | 18-22-31 | 19-24-34 |
| | Total Pressure, in. w.g. | .019 | .034 | .053 | .076 | .104 | .136 | .172 | .212 | .305 | .415 | |
| | Flow Rate, cfm | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 | 533 | 622 | |
| | NC | — | 16 | 23 | 29 | 34 | 38 | 41 | 45 | 50 | 55 | |
| 8 x 8 | Throw | 4 Way | 1-3-8 | 2-5-10 | 3-6-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 | 9-11-16 | 10-12-18 | 11-13-19 |
| | | 3 Way | 1-3-9 | 2-5-12 | 4-8-14 | 5-9-15 | 7-11-16 | 8-12-17 | 9-13-18 | 10-14-19 | 12-15-21 | 13-16-23 |
| | | 2 Way | 2-4-12 | 3-7-16 | 5-10-18 | 7-12-20 | 10-15-22 | 11-16-23 | 12-17-24 | 14-18-26 | 16-20-28 | 18-22-30 |
| | | 1 Way | 2-5-16 | 4-9-20 | 6-13-23 | 9-16-25 | 12-18-27 | 14-20-29 | 16-22-31 | 17-23-32 | 20-25-35 | 22-27-38 |
| | Total Pressure, in. w.g. | .022 | .039 | .061 | .088 | .119 | .156 | .197 | .243 | .350 | .477 | |
| | Flow Rate In cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | |
| | NC | — | 19 | 26 | 31 | 36 | 40 | 44 | 47 | 53 | 57 | |
| 10Ø | Throw | 4 Way | 1-3-9 | 3-6-11 | 4-7-13 | 6-9-14 | 7-10-15 | 8-11-16 | 9-12-17 | 10-13-18 | 11-14-20 | 12-15-21 |
| | | 3 Way | 2-4-11 | 3-7-14 | 5-9-15 | 7-11-17 | 8-13-18 | 10-14-19 | 11-14-20 | 12-15-21 | 14-17-23 | 15-18-25 |
| | | 2 Way | 2-5-14 | 4-9-18 | 6-12-20 | 9-14-22 | 11-17-24 | 13-18-26 | 14-19-27 | 16-20-29 | 18-22-31 | 19-24-34 |
| | | 1 Way | 3-6-18 | 5-11-23 | 8-15-25 | 11-18-28 | 14-21-30 | 16-23-32 | 18-24-34 | 20-25-36 | 23-28-39 | 24-30-42 |
| | Total Pressure | .025 | .044 | .069 | .099 | .134 | .176 | .222 | .274 | .395 | .538 | |
| | Flow Rate | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 | 833 | 972 | |
| | NC | — | 22 | 28 | 34 | 39 | 43 | 47 | 50 | 55 | 60 | |
| 10 x 10 | Throw | 4 Way | 2-4-11 | 3-7-13 | 5-9-14 | 7-11-16 | 8-12-17 | 9-13-18 | 11-13-19 | 12-14-20 | 13-16-22 | 14-17-24 |
| | | 3 Way | 2-5-13 | 4-9-15 | 6-11-17 | 9-13-19 | 10-14-20 | 11-15-22 | 13-16-23 | 14-17-24 | 15-19-26 | 16-20-29 |
| | | 2 Way | 3-7-17 | 5-11-20 | 8-14-23 | 11-17-25 | 13-19-27 | 15-20-29 | 17-22-31 | 19-23-32 | 20-25-35 | 22-27-38 |
| | | 1 Way | 4-8-21 | 7-14-25 | 10-18-28 | 14-21-31 | 17-24-34 | 19-25-36 | 21-27-38 | 23-28-40 | 25-31-44 | 27-34-48 |
| | Total Pressure | .027 | .048 | .075 | .108 | .147 | .192 | .242 | .299 | .431 | .587 | |
| | Flow Rate | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 | 1099 | |
| | NC | — | 23 | 30 | 35 | 40 | 44 | 48 | 51 | 57 | 62 | |
| 12 | Throw | 4 Way | 2-5-12 | 4-8-14 | 6-10-15 | 8-12-17 | 9-13-18 | 10-14-19 | 12-14-20 | 12-15-21 | 14-17-23 | 15-18-25 |
| | | 3 Way | 3-6-14 | 5-9-16 | 7-12-18 | 9-14-20 | 11-15-21 | 12-16-23 | 14-17-24 | 15-18-26 | 16-20-28 | 18-21-30 |
| | | 2 Way | 3-8-19 | 6-12-22 | 10-16-24 | 12-19-27 | 15-20-29 | 17-22-31 | 19-23-32 | 20-24-34 | 22-27-38 | 23-29-41 |
| | | 1 Way | 4-10-23 | 8-16-27 | 12-19-30 | 16-23-33 | 18-25-36 | 21-27-38 | 23-29-41 | 25-30-43 | 27-33-47 | 29-36-51 |
| | Total Pressure | .032 | .057 | .089 | .128 | .174 | .227 | .288 | .355 | .512 | .697 | |
| | Flow Rate | 321 | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 | 1497 | |
| | NC | 18 | 27 | 33 | 39 | 44 | 48 | 52 | 55 | 60 | 65 | |
| 14 | Throw | 4 Way | 3-7-14 | 5-10-16 | 8-12-18 | 10-14-19 | 11-15-21 | 13-16-22 | 14-17-24 | 14-18-25 | 16-19-27 | 17-21-30 |
| | | 3 Way | 4-8-16 | 7-12-19 | 10-14-21 | 12-16-23 | 14-18-25 | 15-19-27 | 16-20-28 | 17-21-30 | 19-23-33 | 20-25-35 |
| | | 2 Way | 5-11-22 | 9-15-25 | 13-19-28 | 15-22-31 | 18-24-33 | 21-25-36 | 22-27-38 | 23-28-40 | 25-31-44 | 27-33-47 |
| | | 1 Way | 6-14-27 | 11-19-32 | 16-24-35 | 19-27-39 | 23-30-42 | 26-32-45 | 27-33-47 | 29-35-50 | 32-39-55 | 34-42-59 |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks (—) indicate an NC level below 15.
- Data does not include effects of ceiling radiation damper (PDF-FR, PDF-E-FR)

Performance Data – 24 in. x 24 in. / 600 x 600 Module

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
|------------|-----------------------------|--------------------------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | |
| | Total Pressure, in. w.g. | .009 | .016 | .026 | .037 | .050 | .066 | .083 | .103 | .148 | .202 | |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | |
| | NC | — | — | — | 16 | 21 | 25 | 29 | 32 | 38 | 43 | |
| 6 Ø | 4 Way | 0-0-2 | 0-1-3 | 0-1-4 | 1-2-6 | 1-2-7 | 1-3-8 | 2-3-9 | 2-4-10 | 3-6-12 | 4-7-13 | |
| | Throw | 3 Way | 0-0-2 | 0-1-3 | 1-1-5 | 1-2-7 | 1-2-9 | 1-3-10 | 2-4-11 | 2-5-13 | 3-7-14 | 4-9-15 |
| | ft | 2 Way | 0-1-2 | 0-1-4 | 1-2-7 | 1-2-10 | 1-3-12 | 2-4-13 | 2-5-15 | 3-7-17 | 4-10-19 | 6-12-20 |
| | | 1 Way | 0-1-3 | 1-1-5 | 1-2-8 | 1-3-12 | 2-4-15 | 2-5-17 | 3-7-19 | 4-8-21 | 5-12-23 | 7-15-25 |
| | | Total Pressure, in. w.g. | .010 | .018 | .029 | .042 | .057 | .074 | .093 | .115 | .166 | .226 |
| 6 x 6 | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | |
| | NC | — | — | — | 19 | 24 | 28 | 32 | 35 | 41 | 46 | |
| | 4 Way | 0-1-4 | 1-2-6 | 1-3-8 | 2-4-9 | 2-5-10 | 3-6-11 | 4-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | |
| | Throw | 3 Way | 0-1-4 | 1-2-7 | 1-3-9 | 2-4-11 | 3-6-12 | 3-7-13 | 4-8-14 | 5-9-14 | 7-11-16 | 9-12-17 |
| | ft | 2 Way | 1-1-6 | 1-3-10 | 2-4-12 | 3-6-15 | 4-8-16 | 5-10-17 | 6-11-18 | 7-12-19 | 10-15-21 | 11-16-23 |
| | 1 Way | 1-2-7 | 1-3-12 | 2-5-15 | 3-7-18 | 4-10-20 | 6-12-22 | 7-14-23 | 9-15-24 | 12-18-26 | 14-20-29 | |
| | Total Pressure, in. w.g. | .013 | .023 | .036 | .052 | .070 | .092 | .116 | .143 | .206 | .281 | |
| 8 Ø | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | |
| | NC | — | — | 18 | 23 | 28 | 32 | 36 | 39 | 45 | 49 | |
| | 4 Way | 0-1-4 | 1-2-7 | 1-3-9 | 2-4-10 | 2-5-12 | 3-7-13 | 4-8-14 | 5-9-14 | 7-10-16 | 8-12-17 | |
| | Throw | 3 Way | 1-1-5 | 1-2-8 | 1-3-10 | 2-5-12 | 3-6-14 | 4-8-15 | 5-9-16 | 6-10-17 | 8-12-19 | 10-14-20 |
| | ft | 2 Way | 1-2-6 | 1-3-11 | 2-4-14 | 3-6-17 | 4-8-19 | 5-11-20 | 6-12-22 | 8-14-23 | 11-17-25 | 13-19-27 |
| | 1 Way | 1-2-8 | 2-3-14 | 2-5-17 | 3-8-21 | 5-11-24 | 6-14-26 | 8-16-27 | 10-17-29 | 14-21-31 | 16-24-34 | |
| | Total Pressure, in. w.g. | .015 | .026 | .041 | .059 | .081 | .106 | .134 | .165 | .238 | .324 | |
| 8 x 8 | Flow Rate, cfm | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 | 533 | 622 | |
| | NC | — | — | 20 | 26 | 31 | 35 | 38 | 42 | 47 | 52 | |
| | 4 Way | 1-2-7 | 2-4-10 | 3-6-11 | 4-7-12 | 5-8-13 | 6-10-14 | 7-11-15 | 8-11-16 | 10-12-18 | 11-13-19 | |
| | Throw | 3 Way | 1-2-9 | 2-4-12 | 3-7-14 | 4-9-15 | 6-10-16 | 8-12-17 | 9-13-18 | 10-14-19 | 12-15-21 | 13-16-23 |
| | ft | 2 Way | 1-3-12 | 3-6-15 | 4-9-18 | 6-12-20 | 8-13-22 | 10-15-23 | 12-17-24 | 13-18-26 | 15-20-28 | 18-22-30 |
| | 1 Way | 2-4-14 | 3-7-19 | 5-11-23 | 7-14-25 | 10-17-27 | 13-19-29 | 14-22-31 | 16-23-32 | 19-25-35 | 22-27-38 | |
| | Total Pressure, in. w.g. | .017 | .030 | .047 | .067 | .092 | .120 | .151 | .187 | .269 | .367 | |
| 10 Ø | Flow Rate, cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | |
| | NC | — | 16 | 23 | 28 | 33 | 37 | 41 | 44 | 50 | 54 | |
| | 4 Way | 1-2-8 | 2-4-11 | 2-6-13 | 4-8-14 | 5-9-15 | 6-10-16 | 8-12-17 | 9-13-18 | 10-14-20 | 12-15-21 | |
| | Throw | 3 Way | 1-2-10 | 2-4-14 | 3-7-15 | 4-9-17 | 6-11-18 | 8-12-19 | 9-14-20 | 10-15-21 | 12-17-23 | 14-18-25 |
| | ft | 2 Way | 1-3-13 | 3-6-18 | 4-9-20 | 6-12-22 | 8-14-24 | 10-16-26 | 12-18-27 | 14-20-29 | 16-22-31 | 19-24-34 |
| | 1 Way | 2-4-16 | 3-7-23 | 5-11-25 | 7-15-28 | 10-18-30 | 13-21-32 | 15-23-34 | 17-25-36 | 21-28-39 | 24-30-42 | |
| | Total Pressure, in. w.g. | .019 | .034 | .054 | .077 | .105 | .138 | .174 | .215 | .310 | .422 | |
| 10 x 10 | Flow Rate, cfm | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 | 833 | 972 | |
| | NC | — | 19 | 25 | 31 | 36 | 40 | 44 | 47 | 52 | 57 | |
| | 4 Way | 2-4-10 | 3-7-13 | 5-9-14 | 7-10-16 | 8-12-17 | 9-13-18 | 10-13-19 | 11-14-20 | 13-16-22 | 14-17-24 | |
| | Throw | 3 Way | 2-5-12 | 4-8-15 | 6-10-17 | 8-12-19 | 10-14-20 | 11-15-22 | 12-16-23 | 14-17-24 | 15-19-26 | 16-20-29 |
| | ft | 2 Way | 3-6-16 | 5-11-20 | 8-14-23 | 11-16-25 | 13-19-27 | 15-20-29 | 16-22-31 | 18-23-32 | 20-25-35 | 22-27-38 |
| | 1 Way | 3-8-21 | 6-14-25 | 9-17-28 | 14-21-31 | 16-24-34 | 18-25-36 | 21-27-38 | 23-28-40 | 25-31-44 | 27-34-48 | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDF-FR, PDFE-FR)

Performance Data – 24 in. x 24 in. / 600 x 600 Module (continued)

| Inlet Size | Neck Velocity, fpm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
|------------|-----------------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 | .090 | .122 | |
| 12 Ø | Total Pressure, in. w.g. | .021 | .037 | .058 | .083 | .113 | .148 | .187 | .231 | .332 | .452 | |
| | Flow Rate, cfm | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 | 1099 | |
| | NC | — | 20 | 27 | 32 | 37 | 41 | 45 | 48 | 54 | 59 | |
| | Throw | 4 Way | 2-4-11 | 3-6-14 | 4-9-15 | 6-11-17 | 8-12-18 | 9-14-19 | 11-14-20 | 12-15-21 | 14-17-23 | 15-18-25 |
| | | 3 Way | 2-4-13 | 3-8-16 | 5-11-18 | 8-13-20 | 10-15-21 | 11-16-23 | 13-17-24 | 14-18-26 | 16-20-28 | 18-21-30 |
| | ft | 2 Way | 3-6-17 | 5-10-22 | 7-14-24 | 10-17-27 | 13-20-29 | 15-22-31 | 17-23-32 | 19-24-34 | 22-27-38 | 23-29-41 |
| | 1 Way | 3-7-21 | 6-13-27 | 9-18-30 | 13-21-33 | 16-25-36 | 19-27-38 | 21-29-41 | 23-30-43 | 27-33-47 | 29-36-51 | |
| 12 x 12 | Total Pressure, in. w.g. | .024 | .043 | .067 | .097 | .131 | .172 | .217 | .268 | .386 | .525 | |
| | Flow Rate, cfm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
| | NC | — | 23 | 30 | 35 | 40 | 44 | 48 | 51 | 57 | 61 | |
| | Throw | 4 Way | 3-6-13 | 5-9-15 | 8-11-17 | 9-13-19 | 11-14-20 | 12-15-22 | 13-16-23 | 14-17-24 | 15-19-26 | 16-20-29 |
| | | 3 Way | 3-8-16 | 6-11-18 | 9-14-20 | 11-16-22 | 13-17-24 | 15-18-26 | 16-19-27 | 17-20-29 | 18-22-32 | 20-24-34 |
| | ft | 2 Way | 4-10-21 | 8-15-24 | 12-18-27 | 15-21-30 | 17-23-32 | 20-24-35 | 21-26-37 | 22-27-39 | 24-30-42 | 26-32-46 |
| | 1 Way | 6-13-26 | 10-18-31 | 15-23-34 | 18-26-37 | 21-29-40 | 24-31-43 | 26-32-46 | 28-34-48 | 31-37-53 | 33-40-57 | |
| 14 Ø | Total Pressure, in. w.g. | .025 | .045 | .070 | .101 | .137 | .180 | .227 | .281 | .404 | .550 | |
| | Flow Rate, cfm | 321 | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 | 1497 | |
| | NC | — | 24 | 30 | 36 | 41 | 45 | 49 | 52 | 57 | 62 | |
| | Throw | 4 Way | 3-6-14 | 5-9-16 | 7-12-18 | 9-14-19 | 11-15-21 | 12-16-22 | 14-17-24 | 14-18-25 | 16-19-27 | 17-21-30 |
| | | 3 Way | 3-7-16 | 6-11-19 | 9-14-21 | 11-16-23 | 13-18-25 | 15-19-27 | 16-20-28 | 17-21-30 | 19-23-33 | 20-25-35 |
| | ft | 2 Way | 4-10-22 | 8-15-25 | 12-18-28 | 15-22-31 | 17-24-33 | 20-25-36 | 22-27-38 | 23-28-40 | 25-31-44 | 27-33-47 |
| | 1 Way | 5-12-27 | 10-18-32 | 15-23-35 | 18-27-39 | 22-30-42 | 25-32-45 | 27-33-47 | 29-35-50 | 32-39-55 | 34-42-59 | |
| 14 x 14 | Total Pressure, in. w.g. | .029 | .052 | .081 | .117 | .159 | .207 | .263 | .324 | .467 | .635 | |
| | Flow Rate, cfm | 408 | 544 | 681 | 817 | 953 | 1089 | 1225 | 1361 | 1633 | 1905 | |
| | NC | 17 | 26 | 33 | 39 | 44 | 48 | 51 | 55 | 60 | 65 | |
| | Throw | 4 Way | 4-9-15 | 8-12-18 | 10-14-20 | 12-15-22 | 14-17-24 | 15-18-25 | 15-19-27 | 16-20-28 | 18-22-31 | 19-24-33 |
| | | 3 Way | 5-11-19 | 9-14-21 | 12-17-24 | 14-19-26 | 16-20-28 | 17-21-30 | 19-23-32 | 20-24-34 | 21-26-37 | 23-28-40 |
| | ft | 2 Way | 7-14-25 | 12-19-29 | 16-23-32 | 19-25-35 | 22-27-38 | 23-29-40 | 25-30-43 | 26-32-45 | 29-35-49 | 31-38-53 |
| | 1 Way | 9-18-31 | 15-24-36 | 20-28-40 | 24-31-44 | 27-33-47 | 29-36-50 | 31-38-53 | 33-40-56 | 36-44-62 | 38-47-67 | |
| 15 Ø | Total Pressure, in. w.g. | .028 | .050 | .078 | .112 | .153 | .200 | .252 | .312 | .449 | .611 | |
| | Flow Rate, cfm | 368 | 491 | 614 | 736 | 859 | 982 | 1104 | 1227 | 1472 | 1718 | |
| | NC | 16 | 25 | 32 | 38 | 42 | 46 | 50 | 53 | 59 | 64 | |
| | Throw | 4 Way | 3-7-15 | 6-10-17 | 9-13-19 | 10-15-21 | 12-16-22 | 14-17-24 | 15-18-25 | 15-19-27 | 17-21-29 | 18-22-32 |
| | | 3 Way | 4-8-18 | 7-12-20 | 10-15-23 | 12-18-25 | 14-19-27 | 16-20-29 | 18-22-30 | 19-23-32 | 20-25-35 | 22-27-38 |
| | ft | 2 Way | 5-11-23 | 9-16-27 | 14-20-30 | 16-23-33 | 19-25-36 | 22-27-38 | 23-29-41 | 25-30-43 | 27-33-47 | 29-36-51 |
| | 1 Way | 6-14-29 | 11-20-34 | 17-26-38 | 20-29-41 | 24-32-45 | 27-34-48 | 29-36-51 | 31-38-54 | 34-41-59 | 37-45-63 | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Data does not include effects of ceiling radiation damper (PDF-FR, PDFE-FR)

Perforated Diffusers – Supply

PDC Series

c/w Individually Adjustable Curved Blades



Product Information

Models

Adjustable Curved Blades

Flush Face

Steel Construction
w/ Aluminum Face

PDC
APDC

Drop (Extended) Face

Steel Construction
w/ Aluminum Face

PDCE
APDCE

Price PDC / PDCE Series perforated face ceiling diffusers feature individually adjustable curved blades at the diffuser inlet, available in fixed 1, 2, 2 way corner, 3 and 4 way air patterns. The adjustable curved blades provide total flexibility in pattern adjustment from horizontal to vertical, as well as low pressure loss and noise levels. Quick-release latches on the hinged perforated face screen allow easy access for field adjustment of the blades. The drop (extended) face Model PDCE is available to complement tegular tile ceilings.

Features

- Choice of cold rolled steel (PDC / PDCE) or aluminum face screen (APDC / APDCE) construction. Steel backpan and pattern controllers in both cases.
- Five air pattern options are available from 1 to 4 way.
- Hinged, removable perforated face screen with quick-release spring latches.
- Individually pivoting curved blades are located at the inlet neck and are field adjustable from horizontal to vertical air pattern.
- Choice of five frame styles (PDCE and APDCE are available in Frame Style 3 only).
- Complete range of available accessory dampers, equalizing grids etc.
- Optional beaded extended neck (2½ in. tall) for easy flex duct connection (BN).

Application

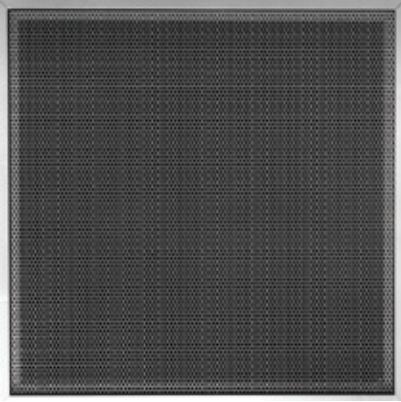
- PDC diffusers are designed for spaces requiring low noise and air pattern adjustment from horizontal to vertical.

Finish

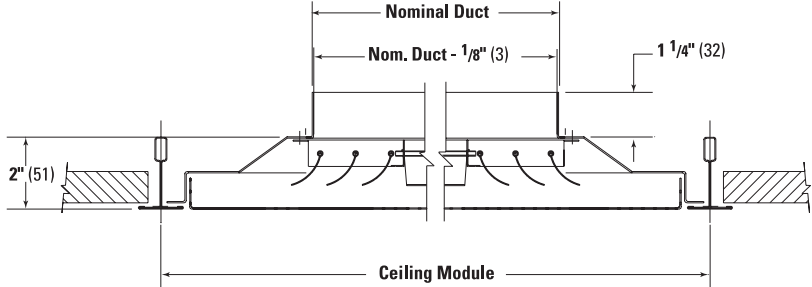
White Powder Coat

B12

For optional and special finishes see color matrix.



PDC - Frame Style 3



Dimensional Data — Imperial (in.) / Metric [mm]

| Neck Size Nominal | Ceiling Module Size, Nominal | | |
|----------------------|------------------------------|----------------------|----------------------|
| | 12 x 12 [305 x 305] | 16x16 [406 x 406] | 24x24 [610 x 610] |
| 6 x 6 [152 x 152] | ▼ | ▼ | ▼ |
| 8 x 8 [203 x 203] | | ▼ | ▼ |
| 10 x 10 [254 x 254] | | ▼ | ▼ |
| 12 x 12 [305 x 305] | | | ▼ |
| 14 x 14 [356 x 356] | | | ▼ |
| 15 x 15 [381 x 381] | | | ▼ |
| 16 x 16 [406 x 406] | | | ▼ |
| 18 x 18 [457 x 457] | | | ▼ |
| 6 in. [152] Dia. | ▼ | ▼ | ▼ |
| 8 in. [203] Dia. | | ▼ | ▼ |
| 10 in. [254] Dia. | | ▼ | ▼ |
| 12 in. [305] Dia. | | | ▼ |
| 14 in. [356] Dia. | | | ▼ |
| 15 in. [381] Dia. | | | ▼ |
| 16 in. [406] Dia. | | | ▼ |
| 18 in. [457] Dia. | | | ▼ |

✓ Product Selection Checklist

- 1] Select Inlet Diameter or Neck Size L x W based on desired performance characteristics.
- 2] Select Face Size based on ceiling module.
- 3] Select Outlet Type by model number (material, flush or drop face).
- 4] Select Border Style according to installation requirements.
- 5] Select Air Pattern Option (1, 2, 2C, 3 or 4 way).
- 6] Select Volume Control Accessories, if desired.
- 7] Select Finish.

Example: 8 in. / 24 in. x 24 in. / PDC / 3 / 4 / B12

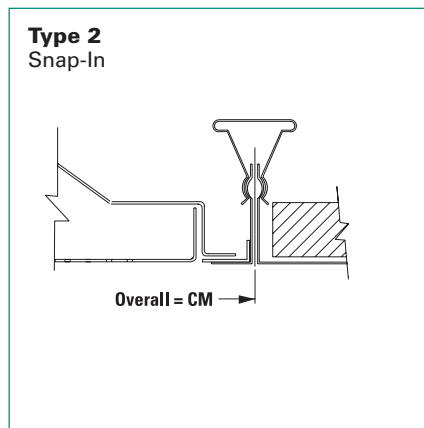
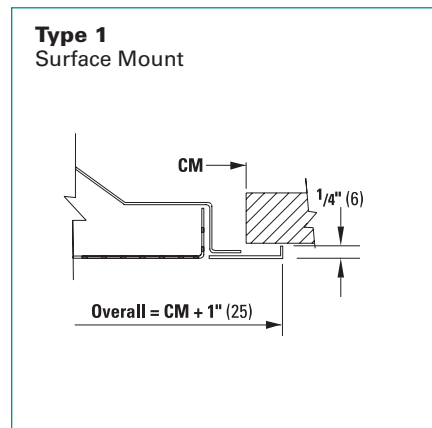
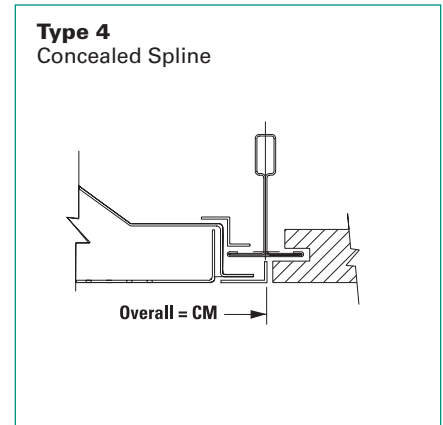
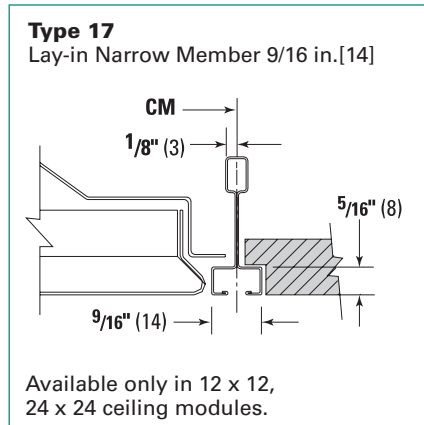
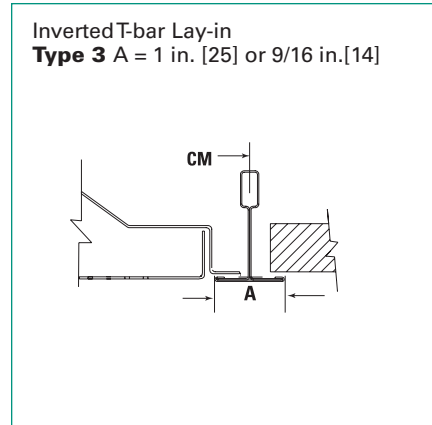
Perforated Diffusers - Supply

PDC Series

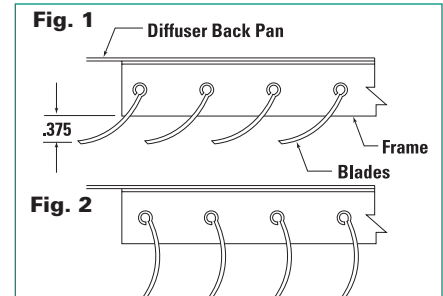
c/w Individually Adjustable Curved Blades



Frame Selection

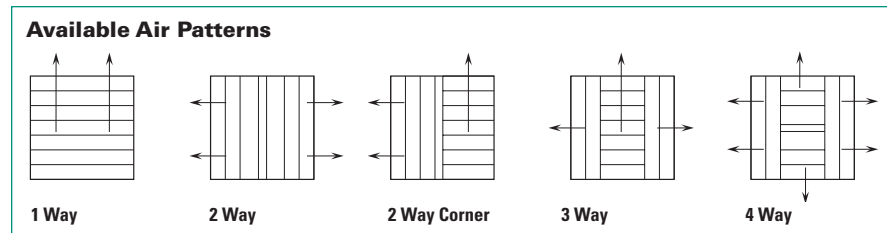
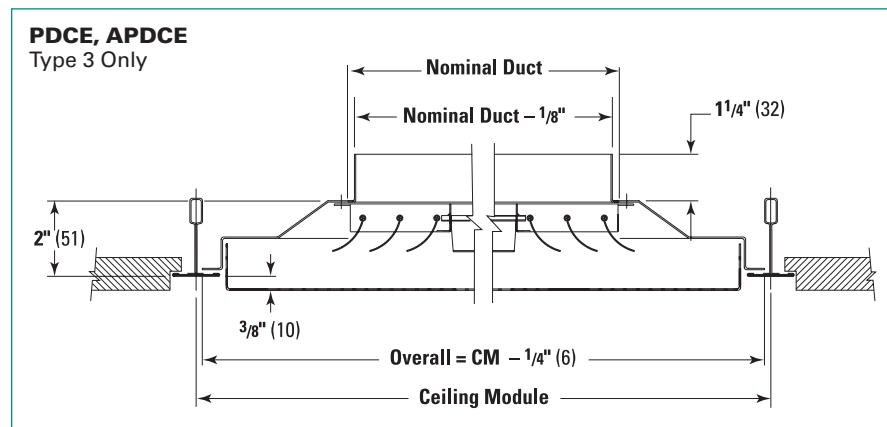
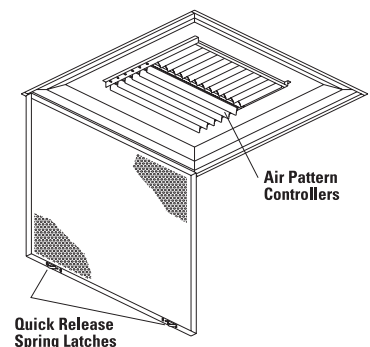


Air Pattern Adjustment



Field Adjustment Procedure

1. Release spring latches of perforated screen and hinge down as shown. (Use flat object to slide along the seam between the perforated screen and backpan towards corners.)
2. For a tight horizontal air pattern, individually adjust each curved blade as illustrated by Fig. 1.
3. For a vertical air pattern, individually adjust each blade as illustrated by Fig. 2.
4. To close, lift perforated screen, depress screen latches with fingers and snap shut.



Fire-Rated Perforated Diffusers – Supply

PDC-FR / PDCE-FR Series

c/w Individually Adjustable Curved Blades



Product Information

Three Hour Rating - Lay-in Models

Adjustable Curved Blades

Flush Face

PDC-FR

Drop (Extended) Face

PDCE-FR

Price PDC-FR / PDCE-FR perforated face ceiling diffusers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

PDC-FR / PDCE-FR perforated face ceiling diffusers feature individually adjustable curved blades at the diffuser inlet, available in fixed 1, 2, 2 way corner, 3 and 4 way air patterns. The adjustable curved blades provide total flexibility in pattern adjustment from horizontal to vertical, as well as low pressure loss and noise levels. The drop (extended) face Model PDCE-FR is available to complement tegular tile ceilings.

Features

- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Hinged, removable perforated faceplate with quick-release spring latches provides easy access to optional adjustable volume controller (Allen key adjustable).

Available Module Sizes

| Imperial |
|-----------------|
| 12 in. x 12 in. |
| 24 in. x 24 in. |

Finish

White Powder Coat

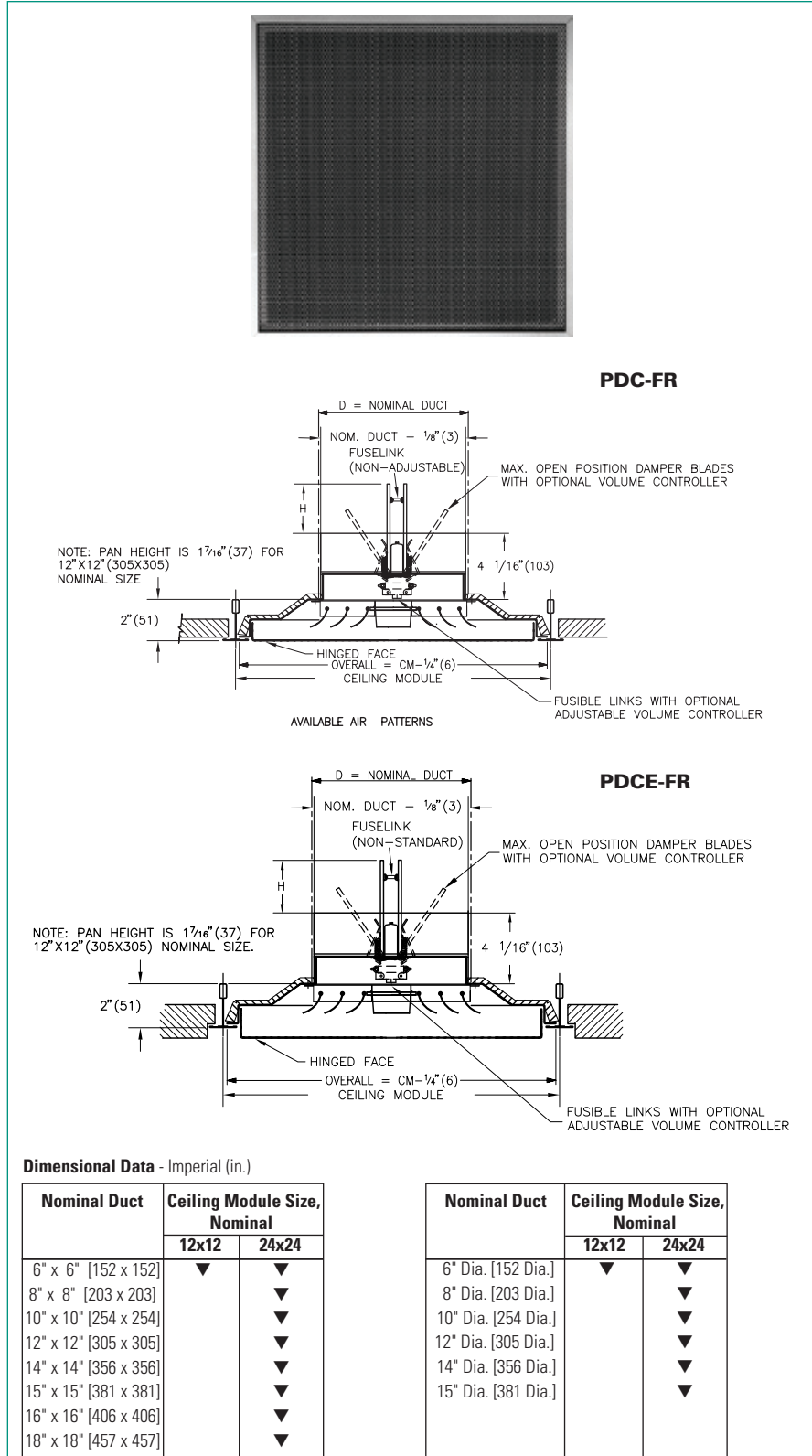
B12

For optional and special finishes see color matrix.

✓ Product Selection Checklist

- 1] Select Inlet Diameter or Neck Size L x W.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Style by model number.
- 4] Select Pattern.
- 5] Select Finish.

Example: 8 in./24 in. x 24 in./PDC-FR/4/B12



Dimensional Data - Imperial (in.)

| Nominal Duct | Ceiling Module Size, Nominal | |
|-----------------------|------------------------------|-------|
| | 12x12 | 24x24 |
| 6" x 6" [152 x 152] | ▼ | ▼ |
| 8" x 8" [203 x 203] | ▼ | ▼ |
| 10" x 10" [254 x 254] | ▼ | ▼ |
| 12" x 12" [305 x 305] | ▼ | ▼ |
| 14" x 14" [356 x 356] | ▼ | ▼ |
| 15" x 15" [381 x 381] | ▼ | ▼ |
| 16" x 16" [406 x 406] | ▼ | ▼ |
| 18" x 18" [457 x 457] | ▼ | ▼ |

| Nominal Duct | Ceiling Module Size, Nominal | |
|---------------------|------------------------------|-------|
| | 12x12 | 24x24 |
| 6" Dia. [152 Dia.] | ▼ | ▼ |
| 8" Dia. [203 Dia.] | ▼ | ▼ |
| 10" Dia. [254 Dia.] | ▼ | ▼ |
| 12" Dia. [305 Dia.] | ▼ | ▼ |
| 14" Dia. [356 Dia.] | ▼ | ▼ |
| 15" Dia. [381 Dia.] | ▼ | ▼ |

Perforated Diffusers - Supply

PDC Series

c/w Individually Adjustable Curved Blades



Performance Data – 12 in. x 12 in. [305 x 305] Module

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | 300 0.006 | 400 0.010 | 500 0.016 | 600 0.022 | 700 0.031 | 800 0.040 | 1000 0.062 | 1200 0.090 | |
|---------------|---|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|----------|
| 6 in. | Total Pressure, in. w.g. | 0.015 | 0.027 | 0.042 | 0.061 | 0.083 | 0.108 | 0.169 | 0.243 | |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 196 | 235 | |
| | NC | - | - | - | 18 | 23 | 28 | 35 | 42 | |
| | Throw ft | 4 Way | 3-4-7 | 3-5-8 | 4-6-8 | 5-7-9 | 6-7-10 | 6-8-11 | 7-8-12 | 8-9-13 |
| | | 3 Way | 3-4-8 | 4-5-10 | 4-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 9-11-16 | 10-12-17 |
| 2 Way | | 3-4-9 | 4-6-10 | 5-7-11 | 6-9-12 | 7-9-13 | 8-10-14 | 9-11-16 | 10-12-17 | |
| 1 Way | | 4-5-11 | 5-7-14 | 6-9-18 | 7-11-21 | 8-12-23 | 9-14-25 | 12-18-28 | 14-21-30 | |
| 6 in. x 6 in. | Total Pressure, in. w.g. | 0.016 | 0.028 | 0.044 | 0.063 | 0.086 | 0.112 | 0.175 | 0.252 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | |
| | NC | - | - | - | 19 | 24 | 29 | 37 | 43 | |
| | Throw ft | 4 Way | 3-5-7 | 4-6-8 | 5-7-9 | 6-7-10 | 6-8-11 | 7-8-12 | 8-9-13 | 8-10-15 |
| | | 3 Way | 3-5-10 | 4-7-11 | 5-8-13 | 7-10-14 | 8-11-15 | 9-11-16 | 10-13-18 | 11-14-20 |
| 2 Way | | 4-6-10 | 5-7-11 | 6-9-13 | 7-10-14 | 9-11-15 | 9-11-16 | 10-13-18 | 11-14-20 | |
| 1 Way | | 4-7-13 | 6-9-18 | 7-11-22 | 9-13-24 | 10-15-26 | 12-18-28 | 15-22-31 | 18-24-34 | |

Performance Data – 16 in. x 16 in. [406 x 406] Module

| Inlet Size | Neck Velocity fpm Velocity Pressure, in. w.g. | 300 0.006 | 400 0.010 | 500 0.016 | 600 0.022 | 700 0.031 | 800 0.040 | 900 0.050 | 1000 0.062 | 1200 0.090 | 1400 0.122 | |
|-----------------|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|----------|
| 6 in. | Total Pressure, in. w.g. | 0.015 | 0.027 | 0.042 | 0.061 | 0.083 | 0.108 | 0.137 | 0.169 | 0.243 | 0.330 | |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | |
| | NC | - | - | - | 18 | 23 | 28 | 32 | 35 | 42 | 47 | |
| | Throw ft | 4 Way | 2-3-5 | 3-4-6 | 3-5-7 | 4-5-8 | 5-6-8 | 5-6-9 | 5-7-9 | 6-7-10 | 6-8-11 | 7-8-12 |
| | | 3 Way | 2-3-7 | 3-4-9 | 4-5-10 | 4-7-11 | 5-8-12 | 6-9-12 | 7-9-13 | 7-10-14 | 9-11-15 | 9-12-16 |
| 2 Way | | 2-4-7 | 3-5-9 | 4-6-10 | 5-7-11 | 6-8-12 | 7-9-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-12-16 | |
| 1 Way | | 2-4-9 | 4-6-12 | 5-7-15 | 6-9-18 | 7-10-20 | 8-12-21 | 9-13-23 | 10-15-24 | 12-18-26 | 14-20-28 | |
| 6 in. x 6 in. | Total Pressure, in. w.g. | 0.016 | 0.028 | 0.044 | 0.063 | 0.086 | 0.112 | 0.142 | 0.175 | 0.252 | 0.343 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | |
| | NC | - | - | - | 19 | 24 | 29 | 33 | 37 | 43 | 48 | |
| | Throw ft | 4 Way | 3-4-6 | 3-5-7 | 4-6-8 | 5-6-9 | 5-7-9 | 6-7-10 | 6-8-11 | 6-8-11 | 7-9-12 | 8-9-13 |
| | | 3 Way | 3-4-8 | 4-5-10 | 5-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 | 9-11-16 | 10-12-17 | 11-13-19 |
| 2 Way | | 3-5-9 | 4-6-10 | 5-8-11 | 6-9-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-19 | |
| 1 Way | | 3-6-11 | 5-7-15 | 6-9-18 | 7-11-21 | 9-13-22 | 10-15-24 | 11-17-25 | 12-18-27 | 15-21-29 | 17-22-32 | |
| 8 in. | Total Pressure, in. w.g. | 0.017 | 0.029 | 0.046 | 0.066 | 0.090 | 0.118 | 0.149 | 0.184 | 0.265 | 0.361 | |
| | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | |
| | NC | - | - | - | 21 | 26 | 31 | 35 | 38 | 44 | 50 | |
| | Throw ft | 4 Way | 4-5-7 | 5-6-8 | 5-7-9 | 6-7-10 | 6-8-11 | 7-8-12 | 7-9-13 | 8-9-13 | 8-10-14 | 9-11-16 |
| | | 3 Way | 4-6-10 | 5-7-12 | 6-9-13 | 7-10-14 | 9-11-15 | 10-12-17 | 10-12-18 | 11-13-18 | 12-14-20 | 13-15-22 |
| 2 Way | | 4-6-10 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 10-12-17 | 10-12-18 | 11-13-18 | 12-14-20 | 13-15-22 | |
| 1 Way | | 5-7-15 | 7-10-20 | 8-12-22 | 10-15-25 | 12-17-27 | 13-20-28 | 15-21-30 | 17-22-32 | 20-25-35 | 22-27-38 | |
| 8 in. x 8 in. | Total Pressure, in. w.g. | 0.017 | 0.031 | 0.048 | 0.069 | 0.094 | 0.122 | 0.155 | 0.191 | 0.275 | 0.374 | |
| | Flow Rate, cfm | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 | 533 | 622 | |
| | NC | - | - | 16 | 22 | 27 | 32 | 36 | 39 | 46 | 51 | |
| | Throw ft | 4 Way | 4-6-8 | 5-7-9 | 6-7-11 | 7-8-12 | 7-9-12 | 8-9-13 | 8-10-14 | 9-11-15 | 9-12-16 | 10-12-18 |
| | | 3 Way | 5-7-11 | 6-9-13 | 8-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 |
| 2 Way | | 5-8-11 | 7-9-13 | 9-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 | |
| 1 Way | | 6-9-18 | 8-12-23 | 10-15-25 | 12-18-28 | 14-21-30 | 16-23-32 | 18-24-34 | 20-25-36 | 23-28-39 | 24-30-42 | |
| 10 in. | Total Pressure, in. w.g. | 0.018 | 0.032 | 0.049 | 0.071 | 0.097 | 0.126 | 0.160 | 0.197 | 0.284 | 0.386 | |
| | Flow Rate, cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | |
| | NC | - | - | 17 | 23 | 28 | 33 | 37 | 40 | 47 | 52 | |
| | Throw ft | 4 Way | 5-6-9 | 6-7-10 | 7-8-12 | 7-9-13 | 8-10-14 | 9-10-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-14-20 |
| | | 3 Way | 5-8-13 | 7-10-15 | 9-12-16 | 10-13-18 | 11-14-19 | 12-15-21 | 13-16-22 | 13-16-23 | 15-18-25 | 16-19-27 |
| 2 Way | | 6-9-13 | 8-10-15 | 9-12-16 | 10-13-18 | 11-14-19 | 12-15-21 | 13-16-22 | 13-16-23 | 15-18-25 | 16-19-27 | |
| 1 Way | | 7-11-22 | 10-15-25 | 12-18-28 | 15-22-31 | 17-23-33 | 20-25-35 | 22-27-38 | 23-28-40 | 25-31-43 | 27-33-47 | |
| 10 in. x 10 in. | Total Pressure, in. w.g. | 0.018 | 0.033 | 0.051 | 0.074 | 0.100 | 0.131 | 0.166 | 0.205 | 0.295 | 0.401 | |
| | Flow Rate, cfm | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 | 833 | 972 | |
| | NC | - | - | 18 | 24 | 30 | 34 | 38 | 42 | 48 | 53 | |
| | Throw ft | 4 Way | 6-7-10 | 7-8-12 | 8-9-13 | 8-10-14 | 9-11-16 | 10-12-17 | 10-12-18 | 11-13-19 | 12-14-20 | 13-16-22 |
| | | 3 Way | 7-10-14 | 9-12-16 | 11-13-18 | 12-14-20 | 13-15-22 | 13-16-23 | 14-17-25 | 15-18-26 | 16-20-29 | 18-22-31 |
| 2 Way | | 8-10-14 | 10-12-16 | 11-13-18 | 12-14-20 | 13-15-22 | 13-16-23 | 14-17-25 | 15-18-26 | 16-20-29 | 18-22-31 | |
| 1 Way | | 9-13-24 | 12-18-28 | 15-22-32 | 18-24-35 | 21-26-37 | 23-28-40 | 24-30-42 | 26-32-45 | 28-35-49 | 31-37-53 | |

See Performance Notes Page C62.

Perforated Diffusers - Supply

PDC Series

c/w Individually Adjustable Curved Blades



Performance Data – 24 in. x 24 in. [610 x 610] Module

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | 300 0.006 | 400 0.010 | 500 0.016 | 600 0.022 | 700 0.031 | 800 0.040 | 900 0.050 | 1000 0.062 | 1200 0.090 | 1400 0.122 | |
|-----------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|----------|
| 6 in. | Total Pressure, in. w.g. | 0.015 | 0.027 | 0.042 | 0.061 | 0.083 | 0.108 | 0.137 | 0.169 | 0.243 | 0.330 | |
| | Flow Rate, cfm | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 | 235 | 274 | |
| | NC | - | - | - | 18 | 23 | 28 | 32 | 35 | 42 | 47 | |
| | Throw ft | 4 Way | 2-3-5 | 3-4-6 | 3-5-7 | 4-5-8 | 4-6-8 | 5-6-9 | 5-7-9 | 6-7-10 | 6-8-11 | 7-8-12 |
| | | 3 Way | 2-3-6 | 3-4-8 | 3-5-10 | 4-6-11 | 5-7-12 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 | 9-12-16 |
| 2 Way | | 2-3-7 | 3-5-9 | 4-6-10 | 5-7-11 | 5-8-12 | 6-9-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-12-16 | |
| 1 Way | | 2-4-8 | 3-5-11 | 4-7-13 | 5-8-16 | 6-9-19 | 7-11-21 | 8-12-23 | 9-13-24 | 11-16-26 | 13-19-28 | |
| 6 in. x 6 in. | Total Pressure, in. w.g. | 0.016 | 0.028 | 0.044 | 0.063 | 0.086 | 0.112 | 0.142 | 0.175 | 0.252 | 0.343 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | |
| | NC | - | - | - | 19 | 24 | 29 | 33 | 37 | 43 | 48 | |
| | Throw ft | 4 Way | 2-4-6 | 3-5-7 | 4-6-8 | 5-6-9 | 5-7-9 | 6-7-10 | 6-8-11 | 6-8-11 | 7-9-12 | 8-9-13 |
| | | 3 Way | 3-4-8 | 3-5-10 | 4-6-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 | 8-11-16 | 10-12-17 | 11-13-19 |
| 2 Way | | 3-4-9 | 4-6-10 | 5-7-11 | 6-9-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-19 | |
| 1 Way | | 2-5-10 | 4-7-14 | 6-8-17 | 7-10-20 | 8-12-22 | 9-14-24 | 10-15-25 | 11-17-27 | 14-20-29 | 16-22-32 | |
| 8 in. | Total Pressure, in. w.g. | 0.017 | 0.029 | 0.046 | 0.066 | 0.090 | 0.118 | 0.149 | 0.184 | 0.265 | 0.361 | |
| | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | |
| | NC | - | - | - | 21 | 26 | 31 | 35 | 38 | 44 | 50 | |
| | Throw ft | 4 Way | 3-5-7 | 4-6-8 | 5-7-9 | 6-7-10 | 6-8-11 | 7-8-12 | 7-9-13 | 8-9-13 | 8-10-14 | 9-11-16 |
| | | 3 Way | 3-5-10 | 5-7-12 | 6-9-13 | 7-10-14 | 8-11-15 | 9-12-17 | 10-12-18 | 10-12-18 | 11-13-18 | 12-14-20 |
| 2 Way | | 4-6-10 | 5-8-12 | 6-9-13 | 8-10-14 | 9-11-15 | 10-12-17 | 10-12-18 | 11-13-18 | 12-14-20 | 13-15-22 | |
| 1 Way | | 4-7-14 | 6-9-18 | 8-11-22 | 9-14-25 | 11-16-27 | 12-18-28 | 14-21-30 | 15-22-32 | 18-25-35 | 21-27-38 | |
| 8 in. x 8 in. | Total Pressure, in. w.g. | 0.017 | 0.031 | 0.048 | 0.069 | 0.094 | 0.122 | 0.155 | 0.191 | 0.275 | 0.374 | |
| | Flow Rate, cfm | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 | 533 | 622 | |
| | NC | - | - | 16 | 22 | 27 | 32 | 36 | 39 | 46 | 51 | |
| | Throw ft | 4 Way | 4-6-8 | 5-7-9 | 6-7-11 | 7-8-12 | 7-9-12 | 8-9-13 | 8-10-14 | 9-11-15 | 9-12-16 | 10-12-18 |
| | | 3 Way | 4-6-11 | 6-8-13 | 7-10-15 | 8-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 |
| 2 Way | | 5-7-11 | 6-9-13 | 8-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-25 | |
| 1 Way | | 6-9-17 | 8-11-23 | 9-14-25 | 11-17-28 | 13-20-30 | 15-23-32 | 17-24-34 | 19-25-36 | 23-28-39 | 24-30-42 | |
| 10 in. | Total Pressure, in. w.g. | 0.018 | 0.032 | 0.049 | 0.071 | 0.097 | 0.126 | 0.160 | 0.197 | 0.284 | 0.386 | |
| | Flow Rate, cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | |
| | NC | - | - | 17 | 23 | 28 | 33 | 37 | 40 | 47 | 52 | |
| | Throw ft | 4 Way | 5-6-9 | 6-7-10 | 7-8-12 | 7-9-13 | 8-10-14 | 9-10-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-14-20 |
| | | 3 Way | 5-8-13 | 7-10-15 | 8-12-16 | 10-13-18 | 11-14-19 | 12-15-21 | 13-16-22 | 13-16-23 | 15-18-25 | 16-19-27 |
| 2 Way | | 6-9-13 | 8-10-15 | 9-12-16 | 10-13-18 | 11-14-19 | 12-15-21 | 13-16-22 | 13-16-23 | 15-18-25 | 16-19-27 | |
| 1 Way | | 7-10-20 | 9-14-25 | 11-17-28 | 14-20-31 | 16-23-33 | 18-25-35 | 20-27-38 | 23-28-40 | 25-31-43 | 27-33-47 | |
| 10 in. x 10 in. | Total Pressure, in. w.g. | 0.018 | 0.033 | 0.051 | 0.074 | 0.100 | 0.131 | 0.166 | 0.205 | 0.295 | 0.401 | |
| | Flow Rate, cfm | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 | 833 | 972 | |
| | NC | - | - | 18 | 24 | 30 | 34 | 38 | 42 | 48 | 53 | |
| | Throw ft | 4 Way | 6-7-10 | 7-8-12 | 8-9-13 | 8-10-14 | 9-11-16 | 10-12-17 | 10-12-18 | 11-13-19 | 12-14-20 | 13-16-22 |
| | | 3 Way | 6-9-14 | 8-12-16 | 10-13-18 | 12-14-20 | 13-15-22 | 13-16-23 | 14-17-25 | 15-18-26 | 16-20-29 | 18-22-31 |
| 2 Way | | 7-10-14 | 9-12-16 | 11-13-18 | 12-14-20 | 13-15-22 | 13-16-23 | 14-17-25 | 15-18-26 | 16-20-29 | 18-22-31 | |
| 1 Way | | 8-13-24 | 11-17-28 | 14-21-32 | 17-24-35 | 20-26-37 | 22-28-40 | 24-30-42 | 26-32-45 | 28-35-49 | 31-37-53 | |
| 12 in. | Total Pressure, in. w.g. | 0.019 | 0.033 | 0.052 | 0.075 | 0.102 | 0.133 | 0.169 | 0.208 | 0.300 | 0.409 | |
| | Flow Rate, cfm | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 | 1099 | |
| | NC | - | - | 19 | 25 | 30 | 35 | 39 | 42 | 48 | 54 | |
| | Throw ft | 4 Way | 6-8-11 | 7-9-13 | 8-10-14 | 9-11-15 | 10-12-17 | 10-13-18 | 11-13-19 | 11-14-20 | 13-15-22 | 14-17-23 |
| | | 3 Way | 7-10-15 | 9-12-18 | 11-14-20 | 12-15-21 | 13-16-23 | 14-18-25 | 15-19-26 | 16-20-28 | 18-21-30 | 19-23-33 |
| 2 Way | | 8-11-15 | 10-12-18 | 11-14-20 | 12-15-21 | 13-16-23 | 14-18-25 | 15-19-26 | 16-20-28 | 18-21-30 | 19-23-33 | |
| 1 Way | | 9-14-26 | 12-19-30 | 15-23-34 | 19-26-37 | 22-28-40 | 25-30-43 | 26-32-45 | 27-34-48 | 30-37-52 | 32-40-56 | |
| 12 in. x 12 in. | Total Pressure, in. w.g. | 0.019 | 0.035 | 0.054 | 0.078 | 0.106 | 0.138 | 0.175 | 0.216 | 0.312 | 0.424 | |
| | Flow Rate, cfm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
| | NC | - | - | 20 | 26 | 31 | 36 | 40 | 44 | 50 | 55 | |
| | Throw ft | 4 Way | 7-9-12 | 8-10-14 | 9-11-16 | 10-12-17 | 11-13-19 | 12-14-20 | 12-15-21 | 13-16-22 | 14-17-24 | 15-19-26 |
| | | 3 Way | 8-12-17 | 11-14-20 | 13-16-22 | 14-17-24 | 15-19-26 | 16-20-28 | 17-21-30 | 18-22-31 | 20-24-34 | 21-26-37 |
| 2 Way | | 10-12-17 | 11-14-20 | 13-16-22 | 14-17-24 | 15-19-26 | 16-20-28 | 17-21-30 | 18-22-31 | 20-24-34 | 21-26-37 | |
| 1 Way | | 11-17-29 | 15-23-34 | 19-27-38 | 23-29-42 | 26-32-45 | 28-34-48 | 29-36-51 | 31-38-54 | 34-42-59 | 37-45-63 | |

See Performance Notes Page C62.

Perforated Diffusers - Supply

PDC Series

c/w Individually Adjustable Curved Blades



Performance Data – 24 in. x 24 in. [610 x 610] Module (continued)

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | 300 0.006 | 400 0.010 | 500 0.016 | 600 0.022 | 700 0.031 | 800 0.040 | 900 0.050 | 1000 0.062 | 1200 0.090 | 1400 0.122 | |
|-----------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|----------|
| 14 in. | Total Pressure, in. w.g. | 0.020 | 0.035 | 0.055 | 0.079 | 0.107 | 0.140 | 0.177 | 0.219 | 0.315 | 0.428 | |
| | Flow Rate, cfm | 321 | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 | 1497 | |
| | NC | - | - | 20 | 27 | 32 | 36 | 40 | 44 | 50 | 55 | |
| | Throw ft | 4 Way | 7-9-13 | 8-10-15 | 9-12-16 | 10-13-18 | 11-14-19 | 12-15-21 | 13-16-22 | 13-16-23 | 15-18-25 | 16-19-27 |
| | | 3 Way | 9-13-18 | 12-14-20 | 13-16-23 | 14-18-25 | 16-19-27 | 17-20-29 | 18-22-31 | 19-23-32 | 20-25-35 | 22-27-38 |
| 2 Way | | 10-13-18 | 12-14-20 | 13-16-23 | 14-18-25 | 16-19-27 | 17-20-29 | 18-22-31 | 19-23-32 | 20-25-35 | 22-27-38 | |
| 1 Way | | 12-18-30 | 16-24-35 | 20-28-39 | 24-30-43 | 27-33-46 | 29-35-50 | 30-37-53 | 32-39-55 | 35-43-61 | 38-46-66 | |
| 14 in. x 14 in. | Total Pressure, in. w.g. | 0.020 | 0.036 | 0.057 | 0.082 | 0.111 | 0.145 | 0.184 | 0.227 | 0.327 | 0.444 | |
| | Flow Rate, cfm | 408 | 544 | 681 | 817 | 953 | 1089 | 1225 | 1361 | 1633 | 1905 | |
| | NC | - | - | 22 | 28 | 33 | 37 | 41 | 45 | 51 | 56 | |
| | Throw ft | 4 Way | 8-10-14 | 10-12-16 | 11-13-18 | 12-14-20 | 13-15-22 | 13-16-23 | 14-17-25 | 15-18-26 | 16-20-29 | 18-22-31 |
| | | 3 Way | 11-14-20 | 13-16-23 | 15-18-26 | 16-20-28 | 18-22-31 | 19-23-33 | 20-24-35 | 21-26-37 | 23-28-40 | 25-31-43 |
| 2 Way | | 12-14-20 | 13-16-23 | 15-18-26 | 16-20-28 | 18-22-31 | 19-23-33 | 20-24-35 | 21-26-37 | 23-28-40 | 25-31-43 | |
| 1 Way | | 14-22-34 | 19-28-40 | 24-31-44 | 28-34-48 | 30-37-52 | 32-40-56 | 34-42-59 | 36-44-63 | 40-48-69 | 43-52-74 | |
| 15 in. | Total Pressure, in. w.g. | 0.020 | 0.036 | 0.056 | 0.080 | 0.109 | 0.143 | 0.181 | 0.223 | 0.321 | 0.437 | |
| | Flow Rate, cfm | 368 | 491 | 614 | 736 | 859 | 982 | 1104 | 1227 | 1472 | 1718 | |
| | NC | - | - | 21 | 27 | 32 | 37 | 41 | 45 | 51 | 56 | |
| | Throw ft | 4 Way | 8-10-14 | 9-11-16 | 10-12-18 | 11-14-19 | 12-15-21 | 13-16-22 | 14-17-23 | 14-18-25 | 16-19-27 | 17-21-29 |
| | | 3 Way | 10-13-19 | 13-16-22 | 14-17-25 | 16-19-27 | 17-21-29 | 18-22-31 | 19-23-33 | 20-25-35 | 22-27-38 | 24-29-41 |
| 2 Way | | 11-13-19 | 13-16-22 | 14-17-25 | 16-19-27 | 17-21-29 | 18-22-31 | 19-23-33 | 20-25-35 | 22-27-38 | 24-29-41 | |
| 1 Way | | 13-20-33 | 18-27-38 | 22-30-42 | 27-33-46 | 29-35-50 | 31-38-53 | 33-40-56 | 34-42-59 | 38-46-65 | 41-50-70 | |
| 15 in. x 15 in. | Total Pressure, in. w.g. | 0.021 | 0.037 | 0.058 | 0.083 | 0.114 | 0.148 | 0.188 | 0.232 | 0.334 | 0.454 | |
| | Flow Rate, cfm | 469 | 625 | 782 | 938 | 1094 | 1250 | 1407 | 1563 | 1876 | 2188 | |
| | NC | - | - | 22 | 28 | 34 | 38 | 42 | 46 | 52 | 57 | |
| | Throw ft | 4 Way | 9-11-15 | 10-13-18 | 11-14-20 | 13-15-22 | 14-17-23 | 14-18-25 | 15-19-27 | 16-20-28 | 18-22-31 | 19-23-33 |
| | | 3 Way | 12-15-21 | 14-18-25 | 16-20-28 | 18-21-30 | 19-23-33 | 20-25-35 | 21-26-37 | 23-28-39 | 25-30-43 | 27-33-46 |
| 2 Way | | 12-15-21 | 14-18-25 | 16-20-28 | 18-21-30 | 19-23-33 | 20-25-35 | 21-26-37 | 23-28-39 | 25-30-43 | 27-33-46 | |
| 1 Way | | 16-24-37 | 21-30-42 | 27-34-47 | 30-37-52 | 32-40-56 | 35-42-60 | 37-45-64 | 39-47-67 | 42-52-73 | 46-56-79 | |
| 16 in. | Total Pressure, in. w.g. | 0.020 | 0.036 | 0.057 | 0.082 | 0.112 | 0.146 | 0.184 | 0.228 | 0.328 | 0.446 | |
| | Flow Rate, cfm | 419 | 558 | 698 | 838 | 977 | 1117 | 1256 | 1396 | 1675 | 1954 | |
| | NC | - | - | 22 | 28 | 33 | 38 | 42 | 45 | 51 | 57 | |
| | Throw ft | 4 Way | 8-10-14 | 10-12-17 | 11-13-19 | 12-14-20 | 13-16-22 | 14-17-24 | 14-18-25 | 15-19-26 | 17-20-29 | 18-22-31 |
| | | 3 Way | 11-14-20 | 14-17-23 | 15-18-26 | 17-20-29 | 18-22-31 | 19-23-33 | 20-25-35 | 21-26-37 | 23-29-41 | 25-31-44 |
| 2 Way | | 12-14-20 | 14-17-23 | 15-18-26 | 17-20-29 | 18-22-31 | 19-23-33 | 20-25-35 | 21-26-37 | 23-29-41 | 25-31-44 | |
| 1 Way | | 15-22-35 | 20-28-40 | 24-32-45 | 28-35-49 | 31-38-53 | 33-40-57 | 35-43-60 | 37-45-63 | 40-49-69 | 43-53-75 | |
| 16 in. x 16 in. | Total Pressure, in. w.g. | 0.021 | 0.038 | 0.059 | 0.085 | 0.116 | 0.151 | 0.191 | 0.236 | 0.340 | 0.463 | |
| | Flow Rate, cfm | 533 | 711 | 889 | 1067 | 1245 | 1422 | 1600 | 1778 | 2134 | 2489 | |
| | NC | - | 15 | 23 | 29 | 34 | 39 | 43 | 46 | 53 | 58 | |
| | Throw ft | 4 Way | 9-12-16 | 11-13-19 | 12-15-21 | 13-16-23 | 14-18-25 | 15-19-27 | 16-20-28 | 17-21-30 | 19-23-33 | 20-25-35 |
| | | 3 Way | 13-16-23 | 15-19-26 | 17-21-30 | 19-23-32 | 20-25-35 | 22-26-37 | 23-28-40 | 24-30-42 | 26-32-46 | 29-35-49 |
| 2 Way | | 13-16-23 | 15-19-26 | 17-21-30 | 19-23-32 | 20-25-35 | 22-26-37 | 23-28-40 | 24-30-42 | 26-32-46 | 29-35-49 | |
| 1 Way | | 18-26-39 | 23-32-45 | 29-36-51 | 32-39-55 | 35-42-60 | 37-45-64 | 39-48-68 | 41-51-72 | 45-55-78 | 49-60-85 | |
| 18 in. | Total Pressure, in. w.g. | 0.021 | 0.038 | 0.059 | 0.085 | 0.116 | 0.151 | 0.191 | 0.236 | 0.340 | 0.463 | |
| | Flow Rate, cfm | 530 | 707 | 884 | 1060 | 1237 | 1414 | 1590 | 1767 | 2120 | 2474 | |
| | NC | - | 20 | 27 | 34 | 39 | 43 | 47 | 51 | 57 | 62 | |
| | Throw ft | 4 Way | 9-12-16 | 11-13-19 | 12-15-21 | 13-16-23 | 14-18-25 | 15-19-27 | 16-20-28 | 17-21-30 | 19-23-33 | 20-25-35 |
| | | 3 Way | 13-16-23 | 15-19-26 | 17-21-29 | 19-23-32 | 20-25-35 | 21-26-37 | 23-28-39 | 24-29-42 | 26-32-46 | 28-35-49 |
| 2 Way | | 13-16-23 | 15-19-26 | 17-21-29 | 19-23-32 | 20-25-35 | 21-26-37 | 23-28-39 | 24-29-42 | 26-32-46 | 28-35-49 | |
| 1 Way | | 17-26-39 | 23-32-45 | 29-36-50 | 32-39-55 | 34-42-60 | 37-45-64 | 39-48-68 | 41-50-71 | 45-55-78 | 49-60-84 | |
| 18 in. x 18 in. | Total Pressure, in. w.g. | 0.022 | 0.039 | 0.061 | 0.088 | 0.120 | 0.157 | 0.198 | 0.245 | 0.353 | 0.480 | |
| | Flow Rate, cfm | 675 | 900 | 1125 | 1350 | 1575 | 1800 | 2025 | 2250 | 2700 | 3150 | |
| | NC | - | 21 | 29 | 35 | 40 | 44 | 48 | 52 | 58 | 63 | |
| | Throw ft | 4 Way | 11-13-18 | 12-15-21 | 14-17-24 | 15-18-26 | 16-20-28 | 17-21-30 | 18-23-32 | 19-24-34 | 21-26-37 | 23-28-40 |
| | | 3 Way | 15-18-26 | 17-21-30 | 19-23-33 | 21-26-36 | 23-28-39 | 24-30-42 | 26-32-45 | 27-33-47 | 30-36-51 | 32-39-56 |
| 2 Way | | 15-18-26 | 17-21-30 | 19-23-33 | 21-26-36 | 23-28-39 | 24-30-42 | 26-32-45 | 27-33-47 | 30-36-51 | 32-39-56 | |
| 1 Way | | 21-31-44 | 28-36-51 | 33-40-57 | 36-44-62 | 39-48-67 | 42-51-72 | 44-54-76 | 46-57-80 | 51-62-88 | 55-67-95 | |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks (—) indicate an NC level below 15.
- Data does not include effects of ceiling radiation damper (PDC-FR, PDCE-FR)

Modular Core Perforated Diffusers PDMC / APDMC Series



Product Information

Models

Steel Construction **PDMC**
Aluminum Face and Core **APDMC**

Price PDMC / APDMC Series perforated face high capacity modular core directional diffusers match in detail the SMCD / AMCD series and offer a perforated face for smooth integration with the ceiling system. Field adjustment of the air pattern is easily accomplished by opening the perforated faceplate and repositioning the modular pattern controllers. The core design provides an excellent horizontal pattern, suitable for VAV applications.

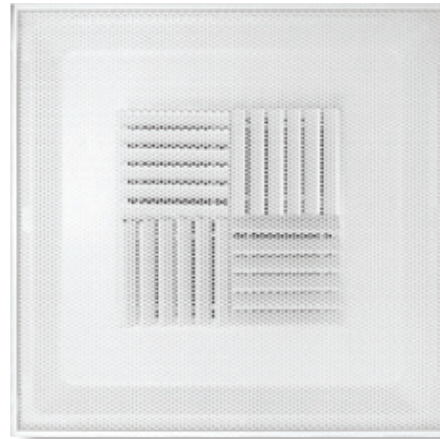
Features

- Steel perforated face, backpan, and core construction (PDMC).
- Steel backpan and core with aluminum perforated faceplate (APDMC).
- Perforated face panel has $\frac{3}{16}$ in. [5] diameter holes staggered $\frac{1}{4}$ in. [6] on center.
- Four louvered air pattern modules are located at the neck and can be easily repositioned in the field without tools.
- Adjustable 1, 2, 3 or 4 way patterns, in a wide selection of sizes.
- Optional opposed blade damper available.
- Optional beaded extended neck ($2\frac{1}{2}$ in. tall) for easy flex duct connection (BN).

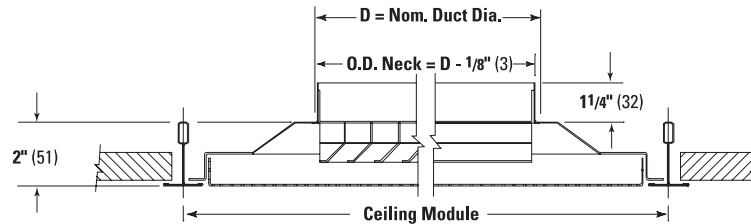
Finish

White **B12**

For optional and special finishes see color matrix.



**Model PDMC (Steel) / APDMC (Aluminum)
Frame Style 3**



Dimensional Data — Imperial (in.) / Metric [mm]

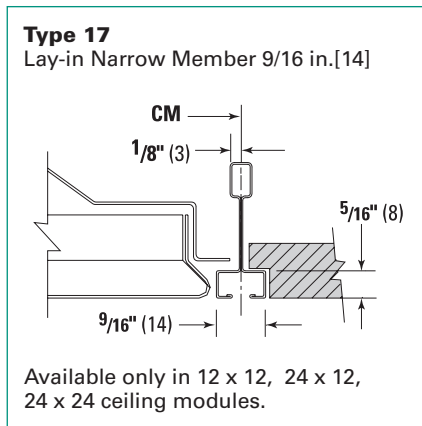
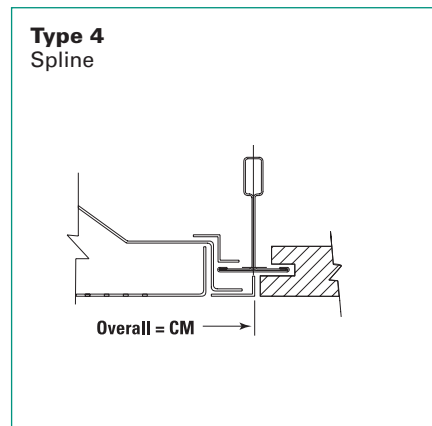
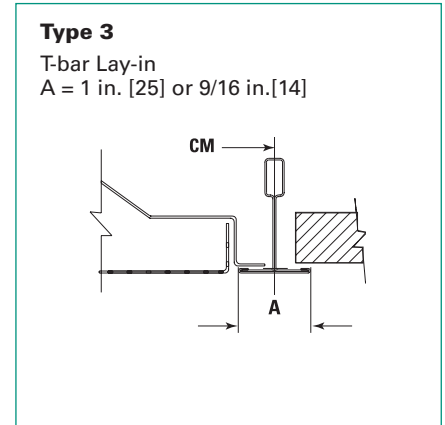
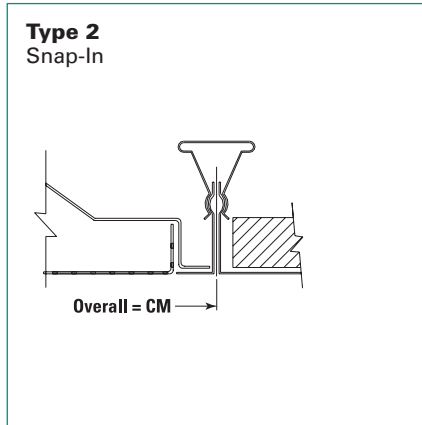
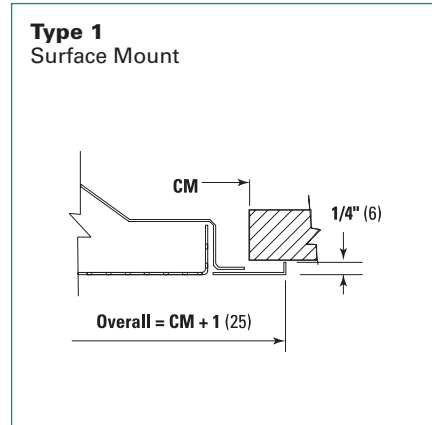
| Nominal Duct Square | Nominal Duct Round | Ceiling Module Size, Nominal | | |
|------------------------|-----------------------|------------------------------|----------------------|----------------------|
| | | 12x12 [305 x 305] | 16x16 [406 x 406] | 24x24 [610 x 610] |
| 6 x 6 [152 x 152] | 6 [152] | ▼ | ▼ | ▼ |
| 8 x 8 [203 x 203] | 8 [203] | | ▼ | ▼ |
| 10 x 10 [254 x 254] | 10 [254] | | ▼ | ▼ |
| 12 x 12 [305 x 305] | 12 [305] | | | ▼ |
| 14 x 14 [356 x 356] | 14 [356] | | | ▼ |
| 15 x 15 [381 x 381] | 15 [381] | | | ▼ |
| 16 x 16 [406 x 406] | 16 [406] | | | ▼ |
| 18 x 18 [457 x 457] | 18 [457] | | | ▼ |

✓ Product Selection Checklist

- 1) Select Inlet Size (square or round) based on desired performance characteristics.
- 2) Select Face Size based on ceiling module (24 x 24 standard).
- 3) Select Model Number (material).
- 4) Select Border/Panel Style according to installation requirements
- 5) Select Volume Control Accessories, if desired.
- 6) Select Finish.

Example: 8 in. x 8 in. / 24 in. x 24 in. / PDMC / 3 / B12

Frame Selection



Air Pattern Adjustment

Quick Release Spring Latches

Pattern Controller Settings

Field Adjustment Procedure

1. Release spring latches of perforated screen and hinge down as shown (use flat object to slide along the seam between the perforated screen and backpan towards corners).
2. Gently remove controller modules and rotate to desired direction.
3. Repeat step 2 as necessary for other modules.
4. To close, lift perforated screen, depress spring latches with fingers and snap shut.

Fire-Rated Modular Core Perforated Diffusers

PDMC-FR Series



Product Information

Three Hour Rating - Lay-in

Price PDMC-FR perforated face high capacity modular core directional diffusers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

PDMC-FR perforated face high capacity modular core directional diffusers offer a perforated face for smooth integration with the ceiling systems. Field adjustment of the air pattern is easily accomplished by opening the perforated faceplate and repositioning the modular pattern controllers. The core design provides an excellent horizontal pattern suitable for VAV applications.

Features

- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Perforated face panel has 3/16 in. [5] diameter holes staggered 1/4 in. [6] on center.
- Individual louvered air pattern modules are located at the neck and can be easily repositioned in the field without tools.
- Hinged, removable perforated faceplate with quick-release spring latches provides easy access to optional adjustable volume controller (Allen key adjustable). See page C68 for procedure.
- Adjustable 1, 2, 3 or 4 way patterns, in a wide selection of sizes.

Available Module Sizes

| Imperial | Metric |
|-----------------|-------------|
| 24 in. x 24 in. | [610 x 610] |
| 12 in. x 12 in. | [305 x 305] |

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.

Dimensional Data - Imperial (in.)

| Nominal Duct | Ceiling Module Size, Nominal | |
|-----------------------|------------------------------|-----------------------------|
| | 12 in. x 12 in. [305 x 305] | 24 in. x 24 in. [610 x 610] |
| 6" x 6" [152 x 152] | ▼ | ▼ |
| 8" x 8" [203 x 203] | ▼ | ▼ |
| 10" x 10" [254 x 254] | ▼ | ▼ |
| 12" x 12" [305 x 305] | ▼ | ▼ |
| 14" x 14" [356 x 356] | ▼ | ▼ |
| 15" x 15" [381 x 381] | ▼ | ▼ |
| 16" x 16" [406 x 406] | ▼ | ▼ |
| 18" x 18" [457 x 457] | ▼ | ▼ |

Dimensional Data - Metric [mm]

| Nominal Duct | Ceiling Module Size, Nominal | |
|---------------------|------------------------------|-----------------------------|
| | 12 in. x 12 in. [300 x 300] | 24 in. x 24 in. [600 x 600] |
| 6" Dia. [152 Dia.] | ▼ | ▼ |
| 8" Dia. [203 Dia.] | ▼ | ▼ |
| 10" Dia. [254 Dia.] | ▼ | ▼ |
| 12" Dia. [305 Dia.] | ▼ | ▼ |
| 14" Dia. [356 Dia.] | ▼ | ▼ |
| 15" Dia. [381 Dia.] | ▼ | ▼ |

✓ Product Selection Checklist

- 1) Select Inlet Size L x W.
- 2) Select Face Size based on ceiling module (24 x 24 standard).
- 3) Select Diffuser Style by model number.
- 4) Select Pattern.
- 5) Select Finish.

Example: 8 in. x 8 in. / 24 in. x 24 in. / PDMC-FR / 3 / B12

Modular Core Perforated Diffusers PDMC / APDMC Series



Performance Data – 12 in. x 12 in. [305 x 305] Module

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in.w.g. Total Pressure, in.wg. | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | |
|------------|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|
| | | 0.006 0.036 | 0.010 0.060 | 0.016 0.096 | 0.022 0.132 | 0.031 0.186 | 0.040 0.240 | 0.050 0.300 | 0.062 0.372 | 0.090 0.540 | |
| 6 | Flow Rate, cfm | 59 | 79 | 98 | 118 | 137 | 157 | 177 | 196 | 236 | |
| | NC | -- | -- | 19 | 25 | 31 | 35 | 40 | 44 | 50 | |
| | Throw ft | 4 Way | 2-3-7 | 3-4-9 | 4-5-10 | 4-7-11 | 5-8-12 | 6-9-13 | 7-10-14 | 7-10-15 | 9-11-16 |
| | | 3 Way | 3-4-8 | 4-5-11 | 4-7-12 | 5-8-14 | 6-9-15 | 7-10-16 | 8-12-17 | 9-12-18 | 11-14-19 |
| | | 2 Way | 4-5-11 | 5-7-14 | 6-9-17 | 7-11-18 | 8-12-20 | 9-14-21 | 11-16-22 | 12-17-23 | 14-18-26 |
| 1 Way | | 4-7-13 | 6-9-18 | 7-11-21 | 9-13-23 | 10-15-24 | 12-17-26 | 13-20-28 | 15-21-29 | 18-23-32 | |
| 6x6 | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | |
| | NC | -- | -- | 20 | 26 | 32 | 37 | 41 | 45 | 51 | |
| | Throw ft | 4 Way | 3-4-8 | 4-6-10 | 5-7-12 | 6-8-13 | 7-10-14 | 7-10-15 | 8-11-16 | 9-12-17 | 10-13-18 |
| | | 3 Way | 3-5-10 | 4-7-13 | 6-8-14 | 7-10-15 | 8-12-17 | 9-13-18 | 10-13-19 | 11-14-20 | 13-15-22 |
| | | 2 Way | 4-7-13 | 6-9-17 | 7-11-19 | 9-13-21 | 10-16-22 | 12-17-24 | 13-18-25 | 15-19-26 | 17-21-29 |
| 1 Way | | 6-8-17 | 7-11-21 | 9-14-23 | 11-17-26 | 13-20-28 | 15-21-30 | 17-22-31 | 19-23-33 | 21-26-36 | |

Performance Data – 16 in. x 16 in. [406 x 406] Module

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in.w.g. Total Pressure, in.wg. | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | |
|------------|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|
| | | 0.006 0.036 | 0.010 0.060 | 0.016 0.096 | 0.022 0.132 | 0.031 0.186 | 0.040 0.240 | 0.050 0.300 | 0.062 0.372 | 0.090 0.540 | |
| 6 | Flow Rate, cfm | 59 | 79 | 98 | 118 | 137 | 157 | 177 | 196 | 236 | |
| | NC | -- | -- | 19 | 25 | 31 | 35 | 40 | 44 | 50 | |
| | Throw ft | 4 Way | 2-3-7 | 3-4-8 | 4-5-9 | 4-7-10 | 5-7-10 | 6-8-11 | 7-8-12 | 7-9-12 | 8-10-14 |
| | | 3 Way | 3-4-8 | 4-5-10 | 4-7-11 | 5-8-12 | 6-9-13 | 7-9-13 | 8-10-14 | 9-11-15 | 9-12-16 |
| | | 2 Way | 4-5-11 | 5-7-13 | 6-9-14 | 7-11-15 | 8-12-17 | 9-13-18 | 11-13-19 | 12-14-20 | 13-15-22 |
| 1 Way | | 4-7-13 | 6-9-16 | 7-11-18 | 9-13-19 | 10-15-21 | 12-16-22 | 13-17-24 | 14-18-25 | 16-19-27 | |
| 6x6 | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | |
| | NC | -- | -- | 20 | 26 | 32 | 37 | 41 | 45 | 51 | |
| | Throw ft | 4 Way | 3-4-8 | 4-6-9 | 5-7-10 | 6-8-11 | 7-8-12 | 7-9-13 | 8-9-13 | 8-10-14 | 9-11-15 |
| | | 3 Way | 3-5-9 | 4-7-11 | 6-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 11-13-19 |
| | | 2 Way | 4-7-12 | 6-9-14 | 7-11-16 | 9-12-17 | 10-13-19 | 12-14-20 | 12-15-21 | 13-16-23 | 14-17-25 |
| 1 Way | | 6-8-15 | 7-11-18 | 9-14-20 | 11-15-22 | 13-17-24 | 15-18-25 | 15-19-27 | 16-20-28 | 18-22-31 | |
| 8 | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | |
| | NC | -- | -- | 22 | 28 | 34 | 38 | 43 | 47 | 53 | |
| | Throw ft | 4 Way | 2-4-8 | 3-5-10 | 4-6-12 | 5-8-13 | 6-9-14 | 7-10-15 | 8-11-16 | 8-12-17 | 10-13-18 |
| | | 3 Way | 2-5-9 | 4-6-12 | 5-8-14 | 6-9-15 | 7-11-17 | 8-12-18 | 9-13-19 | 10-14-20 | 12-15-22 |
| | | 2 Way | 3-6-12 | 5-8-16 | 7-10-19 | 8-12-21 | 9-14-22 | 11-16-24 | 12-18-25 | 14-19-27 | 16-21-29 |
| 1 Way | | 4-8-15 | 7-10-20 | 8-13-24 | 10-15-26 | 12-18-28 | 14-20-30 | 15-22-32 | 17-24-33 | 20-26-36 | |
| 8x8 | Flow Rate, cfm | 133 | 178 | 222 | 267 | 311 | 356 | 400 | 444 | 533 | |
| | NC | -- | -- | 23 | 29 | 35 | 40 | 44 | 48 | 54 | |
| | Throw ft | 4 Way | 3-5-10 | 4-6-12 | 5-8-13 | 6-10-15 | 8-11-16 | 9-12-17 | 10-13-18 | 11-13-19 | 12-15-21 |
| | | 3 Way | 4-6-12 | 5-8-14 | 6-10-16 | 8-12-17 | 9-13-19 | 10-14-20 | 12-15-21 | 13-16-23 | 14-17-25 |
| | | 2 Way | 5-8-15 | 7-10-19 | 9-13-21 | 10-16-23 | 12-18-25 | 14-19-27 | 16-20-29 | 17-21-30 | 19-23-33 |
| 1 Way | | 6-10-19 | 9-13-24 | 11-16-27 | 13-19-29 | 15-22-31 | 17-24-34 | 19-25-36 | 22-27-38 | 24-29-41 | |
| 10 | Flow Rate, cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | |
| | NC | -- | 16 | 24 | 30 | 36 | 41 | 45 | 49 | 55 | |
| | Throw ft | 4 Way | 2-5-9 | 4-6-12 | 5-8-15 | 6-9-16 | 7-11-17 | 8-12-19 | 9-14-20 | 10-15-21 | 12-16-23 |
| | | 3 Way | 3-5-11 | 5-7-14 | 6-9-18 | 7-11-19 | 8-13-21 | 10-14-22 | 11-16-24 | 12-18-25 | 14-19-27 |
| | | 2 Way | 3-7-14 | 6-10-19 | 8-12-24 | 10-14-26 | 11-17-28 | 13-19-30 | 14-22-32 | 16-24-33 | 19-26-36 |
| 1 Way | | 4-9-18 | 8-12-24 | 10-15-29 | 12-18-32 | 14-21-35 | 16-24-37 | 18-27-39 | 20-29-42 | 24-32-46 | |
| 10x10 | Flow Rate, cfm | 208 | 278 | 347 | 417 | 486 | 556 | 625 | 694 | 833 | |
| | NC | -- | 17 | 25 | 32 | 37 | 42 | 46 | 50 | 57 | |
| | Throw ft | 4 Way | 4-6-11 | 5-8-15 | 6-10-17 | 8-12-18 | 9-13-20 | 10-15-21 | 11-16-22 | 13-17-23 | 15-18-26 |
| | | 3 Way | 4-7-14 | 6-9-18 | 8-11-20 | 9-14-22 | 11-16-24 | 12-18-25 | 14-19-27 | 15-20-28 | 18-22-31 |
| | | 2 Way | 6-9-18 | 8-12-24 | 10-15-27 | 12-18-29 | 14-21-31 | 16-24-34 | 18-25-36 | 20-27-38 | 24-29-41 |
| 1 Way | | 7-11-23 | 10-15-30 | 13-19-33 | 15-23-36 | 18-27-39 | 20-30-42 | 23-32-45 | 26-33-47 | 30-36-51 | |

See Performance Notes Page C69.

Modular Core Perforated Diffusers

PDMC / APDMC Series



Performance Data – 24 in. x 24 in. [610 x 610] Module

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in.w.g. Total Pressure, in.w.g. | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 0.006 0.028 | 0.010 0.047 | 0.016 0.075 | 0.022 0.103 | 0.031 0.146 | 0.040 0.188 | 0.050 0.235 | 0.062 0.291 | 0.090 0.423 |
| 6 | Flow Rate, cfm | 59 | 79 | 98 | 118 | 137 | 157 | 177 | 196 | 236 |
| | NC | -- | -- | 19 | 25 | 31 | 35 | 40 | 44 | 50 |
| Throw ft | 4 Way | 2-3-7 | 3-4-8 | 4-5-8 | 4-7-9 | 5-7-10 | 6-8-11 | 7-8-11 | 7-8-12 | 8-9-13 |
| | 3 Way | 3-4-8 | 4-5-9 | 4-7-10 | 5-8-11 | 6-8-12 | 7-9-13 | 8-10-14 | 8-10-14 | 9-11-16 |
| | 2 Way | 4-5-10 | 5-7-12 | 6-9-13 | 7-10-15 | 8-11-16 | 9-12-17 | 10-13-18 | 11-13-19 | 12-15-21 |
| | 1 Way | 4-7-13 | 6-9-15 | 7-11-17 | 9-13-18 | 10-14-20 | 12-15-21 | 13-16-23 | 14-17-24 | 15-18-26 |
| | NC | -- | -- | 19 | 25 | 31 | 35 | 40 | 44 | 50 |
| 6x6 | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 |
| | NC | -- | -- | 20 | 26 | 32 | 37 | 41 | 45 | 51 |
| Throw ft | 4 Way | 3-4-7 | 4-6-8 | 5-7-9 | 6-7-10 | 6-8-11 | 7-8-12 | 7-9-13 | 8-9-13 | 8-10-15 |
| | 3 Way | 3-5-9 | 4-7-10 | 6-8-11 | 7-9-12 | 8-10-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-18 |
| | 2 Way | 4-7-12 | 6-9-14 | 7-11-15 | 9-12-17 | 10-13-18 | 11-14-19 | 12-14-20 | 12-15-21 | 14-17-24 |
| | 1 Way | 6-8-15 | 7-11-17 | 9-13-19 | 11-15-21 | 13-16-22 | 14-17-24 | 15-18-25 | 15-19-27 | 17-21-29 |
| | NC | -- | -- | 20 | 26 | 32 | 37 | 41 | 45 | 51 |
| 8 | Flow Rate, cfm | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 |
| | NC | -- | -- | 22 | 28 | 34 | 38 | 43 | 47 | 53 |
| Throw ft | 4 Way | 2-4-8 | 3-5-10 | 4-6-11 | 5-8-12 | 6-9-13 | 7-10-14 | 8-11-15 | 8-11-16 | 10-12-17 |
| | 3 Way | 2-5-9 | 4-6-12 | 5-8-13 | 6-9-15 | 7-11-16 | 8-12-17 | 9-13-18 | 10-13-19 | 12-15-21 |
| | 2 Way | 3-6-12 | 5-8-16 | 7-10-18 | 8-12-20 | 9-14-21 | 11-16-23 | 12-17-24 | 14-18-25 | 16-20-28 |
| | 1 Way | 4-8-15 | 7-10-20 | 8-13-22 | 10-15-25 | 12-18-27 | 14-20-28 | 15-21-30 | 17-22-32 | 20-25-35 |
| | NC | -- | -- | 22 | 28 | 34 | 38 | 43 | 47 | 53 |
| 8x8 | Flow Rate, cfm | 133 | 178 | 222 | 267 | 311 | 356 | 400 | 444 | 533 |
| | NC | -- | -- | 23 | 29 | 35 | 40 | 44 | 48 | 54 |
| Throw ft | 4 Way | 3-5-10 | 4-6-11 | 5-8-13 | 6-10-14 | 8-11-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-14-20 |
| | 3 Way | 4-6-12 | 5-8-14 | 6-10-15 | 8-12-17 | 9-13-18 | 10-14-19 | 12-14-20 | 12-15-21 | 14-17-24 |
| | 2 Way | 5-8-15 | 7-10-18 | 9-13-20 | 10-16-22 | 12-17-24 | 14-18-26 | 16-19-27 | 17-20-29 | 18-22-31 |
| | 1 Way | 6-10-19 | 9-13-23 | 11-16-25 | 13-19-28 | 15-21-30 | 17-23-32 | 19-24-34 | 21-25-36 | 23-28-39 |
| | NC | -- | -- | 23 | 29 | 35 | 40 | 44 | 48 | 54 |
| 10 | Flow Rate, cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 |
| | NC | -- | 16 | 24 | 30 | 36 | 41 | 45 | 49 | 55 |
| Throw ft | 4 Way | 2-5-9 | 4-6-12 | 5-8-14 | 6-9-15 | 7-11-17 | 8-12-18 | 9-13-19 | 10-14-20 | 12-15-22 |
| | 3 Way | 3-5-11 | 5-7-14 | 6-9-17 | 7-11-18 | 8-13-20 | 10-14-21 | 11-16-23 | 12-17-24 | 14-18-26 |
| | 2 Way | 3-7-14 | 6-10-19 | 8-12-22 | 10-14-25 | 11-17-27 | 13-19-28 | 14-21-30 | 16-22-32 | 19-25-35 |
| | 1 Way | 4-9-18 | 8-12-24 | 10-15-28 | 12-18-31 | 14-21-33 | 16-24-35 | 18-24-38 | 20-28-40 | 24-31-43 |
| | NC | -- | 16 | 24 | 30 | 36 | 41 | 45 | 49 | 55 |
| 10x10 | Flow Rate, cfm | 208 | 278 | 347 | 417 | 486 | 556 | 625 | 694 | 833 |
| | NC | -- | 17 | 25 | 32 | 37 | 42 | 46 | 50 | 57 |
| Throw ft | 4 Way | 4-6-11 | 5-8-14 | 6-10-16 | 8-12-17 | 9-13-19 | 10-14-20 | 11-15-21 | 13-16-22 | 14-17-24 |
| | 3 Way | 4-7-14 | 6-9-17 | 8-11-19 | 9-14-21 | 11-16-22 | 12-17-24 | 14-18-25 | 15-19-27 | 17-21-29 |
| | 2 Way | 6-9-18 | 8-12-23 | 10-15-25 | 12-18-28 | 14-21-30 | 16-23-32 | 18-24-34 | 20-25-36 | 23-28-39 |
| | 1 Way | 7-11-23 | 10-15-28 | 13-19-32 | 15-23-35 | 18-26-37 | 20-28-40 | 23-30-42 | 26-32-45 | 28-35-49 |
| | NC | -- | 17 | 25 | 32 | 37 | 42 | 46 | 50 | 57 |
| 12 | Flow Rate, cfm | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 |
| | NC | -- | 18 | 26 | 32 | 38 | 43 | 47 | 51 | 57 |
| Throw ft | 4 Way | 2-5-11 | 4-7-14 | 6-9-17 | 7-11-18 | 8-12-20 | 9-14-21 | 11-16-23 | 12-17-24 | 14-18-26 |
| | 3 Way | 3-6-13 | 5-8-17 | 7-11-20 | 8-13-22 | 10-15-24 | 11-17-26 | 13-19-27 | 14-20-29 | 17-22-31 |
| | 2 Way | 4-8-17 | 7-11-22 | 9-14-27 | 11-17-29 | 13-20-32 | 15-22-34 | 17-25-36 | 19-27-38 | 22-29-42 |
| | 1 Way | 5-11-21 | 9-14-28 | 12-18-34 | 14-21-37 | 16-25-40 | 19-28-43 | 21-32-45 | 23-34-48 | 28-37-52 |
| | NC | -- | 18 | 26 | 32 | 38 | 43 | 47 | 51 | 57 |
| 12x12 | Flow Rate, cfm | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
| | NC | -- | 19 | 27 | 34 | 39 | 44 | 48 | 52 | 59 |
| Throw ft | 4 Way | 4-7-13 | 6-9-17 | 7-11-19 | 9-13-21 | 10-16-22 | 12-17-24 | 13-18-25 | 15-19-27 | 17-21-29 |
| | 3 Way | 5-8-16 | 7-11-20 | 9-13-23 | 11-16-25 | 13-19-27 | 14-20-29 | 16-22-31 | 18-23-32 | 20-25-35 |
| | 2 Way | 6-11-21 | 10-14-27 | 12-18-30 | 14-21-33 | 17-25-36 | 19-27-38 | 21-29-41 | 24-30-43 | 27-33-47 |
| | 1 Way | 8-13-27 | 12-18-34 | 15-22-38 | 18-27-42 | 21-31-45 | 24-34-48 | 27-36-51 | 30-38-54 | 34-42-59 |
| | NC | -- | 19 | 27 | 34 | 39 | 44 | 48 | 52 | 59 |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks (—) indicate an NC level below 15.
- Data does not include effects of ceiling radiation damper (PDMC-FR)

Modular Core Perforated Diffusers PDMC / APDMC Series



Performance Data – 24 in. x 24 in. [610 x 610] Module (continued)

| Inlet Size | Neck Velocity, fpm Velocity Pressure, in.w.g. Total Pressure, in.w.g. | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|------------|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 0.006 0.028 | 0.010 0.047 | 0.016 0.075 | 0.022 0.103 | 0.031 0.146 | 0.040 0.188 | 0.050 0.235 | 0.062 0.291 | 0.090 0.423 |
| 14 | Flow Rate, cfm | 321 | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 |
| | NC | -- | 19 | 27 | 34 | 39 | 44 | 49 | 52 | 59 |
| Throw ft | 4 Way | 3-6-12 | 5-8-16 | 7-10-20 | 8-12-21 | 9-14-23 | 11-16-25 | 12-18-26 | 13-20-28 | 16-21-30 |
| | 3 Way | 3-7-15 | 6-10-19 | 8-12-24 | 10-15-26 | 11-17-28 | 13-19-30 | 15-22-32 | 16-24-33 | 19-26-36 |
| | 2 Way | 4-10-19 | 8-13-26 | 11-16-31 | 13-19-34 | 15-23-37 | 17-26-40 | 19-29-42 | 22-31-44 | 26-34-49 |
| | 1 Way | 5-12-24 | 10-16-32 | 13-20-39 | 16-24-43 | 19-28-46 | 22-32-50 | 24-36-53 | 27-39-55 | 32-43-61 |
| | 1 Way | 5-12-24 | 10-16-32 | 13-20-39 | 16-24-43 | 19-28-46 | 22-32-50 | 24-36-53 | 27-39-55 | 32-43-61 |
| 14x14 | Flow Rate, cfm | 408 | 544 | 681 | 817 | 953 | 1089 | 1225 | 1361 | 1633 |
| | NC | -- | 21 | 29 | 35 | 41 | 46 | 50 | 54 | 60 |
| Throw ft | 4 Way | 4-8-15 | 7-10-20 | 9-13-22 | 10-15-24 | 12-18-26 | 14-20-28 | 15-21-30 | 17-22-31 | 20-24-34 |
| | 3 Way | 5-9-18 | 8-12-24 | 10-15-27 | 12-19-29 | 14-22-31 | 16-24-34 | 19-25-36 | 21-27-38 | 24-29-41 |
| | 2 Way | 7-12-25 | 11-16-32 | 14-21-35 | 16-25-39 | 19-29-42 | 22-32-45 | 25-34-48 | 27-35-50 | 32-39-55 |
| | 1 Way | 9-15-31 | 14-21-40 | 17-26-44 | 21-31-49 | 24-36-52 | 27-40-56 | 31-42-59 | 34-44-63 | 40-48-69 |
| | 1 Way | 9-15-31 | 14-21-40 | 17-26-44 | 21-31-49 | 24-36-52 | 27-40-56 | 31-42-59 | 34-44-63 | 40-48-69 |
| 15 | Flow Rate, cfm | 368 | 491 | 614 | 736 | 859 | 982 | 1104 | 1227 | 1473 |
| | NC | -- | 20 | 28 | 35 | 40 | 45 | 49 | 53 | 60 |
| Throw ft | 4 Way | 3-6-13 | 5-9-17 | 7-11-21 | 9-13-23 | 10-15-25 | 11-17-27 | 13-19-28 | 14-21-30 | 17-23-33 |
| | 3 Way | 3-8-15 | 6-10-21 | 9-13-25 | 10-15-28 | 12-18-30 | 14-21-32 | 15-23-34 | 17-25-36 | 21-28-39 |
| | 2 Way | 5-10-21 | 8-14-28 | 11-17-34 | 14-21-37 | 16-24-40 | 18-28-43 | 21-31-45 | 23-34-48 | 28-37-52 |
| | 1 Way | 6-13-26 | 15-22-42 | 18-27-47 | 22-33-52 | 26-38-56 | 29-42-60 | 33-45-64 | 37-47-67 | 42-52-73 |
| | 1 Way | 6-13-26 | 15-22-42 | 18-27-47 | 22-33-52 | 26-38-56 | 29-42-60 | 33-45-64 | 37-47-67 | 42-52-73 |
| 15x15 | Flow Rate, cfm | 469 | 625 | 781 | 938 | 1094 | 1250 | 1406 | 1563 | 1875 |
| | NC | -- | 21 | 29 | 36 | 41 | 46 | 51 | 54 | 61 |
| Throw ft | 4 Way | 5-8-16 | 7-11-21 | 9-14-24 | 11-16-26 | 13-19-28 | 15-21-30 | 16-22-32 | 18-24-34 | 21-26-37 |
| | 3 Way | 5-10-20 | 9-13-25 | 11-16-28 | 13-20-31 | 15-23-34 | 18-25-36 | 20-27-38 | 22-28-40 | 25-31-44 |
| | 2 Way | 7-13-26 | 12-18-34 | 15-22-38 | 18-26-42 | 20-31-45 | 23-34-48 | 26-36-51 | 29-38-54 | 34-42-59 |
| | 1 Way | 9-16-33 | 15-22-42 | 18-27-47 | 22-33-52 | 26-38-56 | 29-42-60 | 33-45-64 | 37-47-67 | 42-52-73 |
| | 1 Way | 9-16-33 | 15-22-42 | 18-27-47 | 22-33-52 | 26-38-56 | 29-42-60 | 33-45-64 | 37-47-67 | 42-52-73 |
| 16 | Flow Rate, cfm | 419 | 559 | 698 | 838 | 977 | 1117 | 1257 | 1396 | 1676 |
| | NC | -- | 21 | 29 | 35 | 41 | 46 | 50 | 54 | 60 |
| Throw ft | 4 Way | 3-7-14 | 5-9-18 | 8-11-22 | 9-14-25 | 11-16-27 | 12-18-28 | 14-21-30 | 15-22-32 | 18-25-35 |
| | 3 Way | 4-8-16 | 6-11-22 | 9-14-27 | 11-16-29 | 13-19-32 | 15-22-34 | 16-25-36 | 18-27-38 | 22-29-42 |
| | 2 Way | 5-11-22 | 8-15-29 | 12-18-36 | 15-22-39 | 17-26-42 | 20-29-45 | 22-33-48 | 24-36-51 | 29-39-56 |
| | 1 Way | 6-13-27 | 11-18-37 | 15-23-45 | 18-27-49 | 22-32-53 | 24-37-57 | 27-41-60 | 30-45-63 | 37-49-69 |
| | 1 Way | 6-13-27 | 11-18-37 | 15-23-45 | 18-27-49 | 22-32-53 | 24-37-57 | 27-41-60 | 30-45-63 | 37-49-69 |
| 16x16 | Flow Rate, cfm | 533 | 711 | 889 | 1067 | 1244 | 1422 | 1600 | 1778 | 2133 |
| | NC | -- | 22 | 30 | 37 | 42 | 47 | 51 | 55 | 62 |
| Throw ft | 4 Way | 5-9-17 | 8-12-23 | 10-15-25 | 12-17-28 | 14-20-30 | 16-23-32 | 17-24-34 | 19-25-36 | 23-28-39 |
| | 3 Way | 6-10-21 | 9-14-27 | 12-17-30 | 14-21-33 | 16-24-36 | 19-27-38 | 21-29-41 | 23-30-43 | 27-33-47 |
| | 2 Way | 8-14-28 | 12-19-36 | 16-23-40 | 19-28-44 | 22-33-48 | 25-36-51 | 28-38-54 | 31-40-57 | 36-44-63 |
| | 1 Way | 10-17-35 | 16-23-45 | 19-29-51 | 23-35-55 | 27-41-60 | 31-45-64 | 35-48-68 | 39-51-72 | 45-55-78 |
| | 1 Way | 10-17-35 | 16-23-45 | 19-29-51 | 23-35-55 | 27-41-60 | 31-45-64 | 35-48-68 | 39-51-72 | 45-55-78 |
| 18 | Flow Rate, cfm | 530 | 707 | 884 | 1060 | 1237 | 1414 | 1590 | 1767 | 2121 |
| | NC | -- | 22 | 30 | 37 | 42 | 47 | 51 | 55 | 62 |
| Throw ft | 4 Way | 3-7-15 | 6-10-20 | 9-13-25 | 10-15-28 | 12-18-30 | 14-20-32 | 15-23-34 | 17-25-36 | 20-28-39 |
| | 3 Way | 4-9-18 | 7-12-25 | 10-15-30 | 12-18-33 | 14-21-36 | 16-25-38 | 18-28-41 | 20-30-43 | 25-33-47 |
| | 2 Way | 5-12-25 | 9-16-33 | 14-20-40 | 16-25-44 | 19-29-48 | 22-33-51 | 25-37-54 | 27-40-57 | 33-44-63 |
| | 1 Way | 7-15-31 | 12-20-41 | 17-26-50 | 20-31-55 | 24-36-60 | 27-41-64 | 31-46-68 | 34-50-71 | 41-55-78 |
| | 1 Way | 7-15-31 | 12-20-41 | 17-26-50 | 20-31-55 | 24-36-60 | 27-41-64 | 31-46-68 | 34-50-71 | 41-55-78 |
| 18x18 | Flow Rate, cfm | 675 | 900 | 1125 | 1350 | 1575 | 1800 | 2025 | 2250 | 2700 |
| | NC | -- | 23 | 31 | 38 | 43 | 48 | 52 | 56 | 63 |
| Throw ft | 4 Way | 5-10-20 | 9-13-25 | 11-16-28 | 13-20-31 | 15-23-34 | 17-25-36 | 20-27-38 | 22-28-40 | 25-31-44 |
| | 3 Way | 6-12-23 | 10-16-31 | 13-20-34 | 16-23-37 | 18-27-40 | 21-31-43 | 23-32-46 | 26-34-48 | 31-37-53 |
| | 2 Way | 8-16-31 | 14-21-41 | 17-26-46 | 21-31-50 | 24-36-54 | 28-41-58 | 31-43-61 | 35-46-64 | 41-50-71 |
| | 1 Way | 11-20-39 | 17-26-51 | 22-33-57 | 26-39-62 | 30-46-67 | 35-51-72 | 39-54-76 | 43-57-80 | 51-62-88 |
| | 1 Way | 11-20-39 | 17-26-51 | 22-33-57 | 26-39-62 | 30-46-67 | 35-51-72 | 39-54-76 | 43-57-80 | 51-62-88 |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks (—) indicate an NC level below 15.
- Data does not include effects of ceiling radiation damper (PDMC-FR)

Perforated Diffusers – Return PDDR / PDDRE Series



Product Information

Models

Matching Return for Models PDN and PDF

Flush Face

Steel Construction
w/ Aluminum Face Screen

PDDR
APDDR

Drop (Extended) Face

Steel Construction
w/ Aluminum Face Screen

PDDRE
APDDRE

Price PDDR / PDDRE Series perforated face return air ceiling diffusers are designed to match supply air models PDN and PDF in appearance and detail, except that air pattern controllers are not required. The PDDR series is offered in two versions — one for ducted return and one for plenum return applications. For ducted return air applications, PDDR features the same backpan as the supply air models, providing a connection to a flexible or rigid round duct, or to a square or rectangular duct. For plenum return (non-ducted) applications, a special frame assembly results in an inlet 2 in. [51] under module size for maximum free area. The drop (extended) face Model PDDRE is available to complement the supply air models PDNE, PDCE and PDFE for tegular tile ceilings.

Features

- Choice of cold rolled steel (PDDR / PDDRE) or aluminum face screen (APDDR / APDDRE) construction, both with steel backpan or frame.
- Hinged, removable perforated faceplate with quick-release spring latches.
- Choice of five frame styles.
- Complete range of available accessory dampers, equalizing grids etc.
- Light shield option (LS) available on plenum return units (PDDR/APDDR).
- Optional beaded extended neck (2½ in. tall) for easy flex duct connection (BN).

Available Module Sizes


| Imperial | Metric |
|-----------------|------------|
| 12 in. x 12 in. | 300 x 300 |
| 24 in. x 12 in. | 600 x 300 |
| 16 in. x 16 in. | 400 x 400 |
| 20 in. x 20 in. | 500 x 500 |
| 24 in. x 24 in. | 600 x 600 |
| 48 in. x 24 in. | 1200 x 600 |

Finish


White Powder Coat

B12

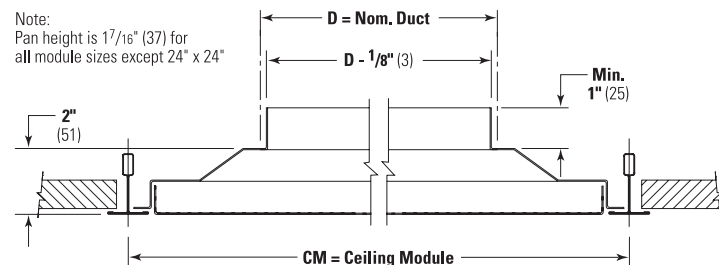
For optional and special finishes see color matrix.



**Model PDDR –
Round Duct Connection**



Model PDDR – Maximum Square Neck for plenum return



Note: Pan height is 17/16" (37) for all module sizes except 24" x 24"

Dimensional Data — Imperial (in.) / Metric [mm]

| | Ceiling Module | | | | | |
|----------------------|----------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| | 12 x 12 300 x 300 | 24x12 600 x 300 | 16x16 400 x 400 | 20x20 500 x 500 | 24x24 600 x 600 | 48x24 1200 x 600 |
| D Square Duct | | | | | | |
| 6 x 6 [152 x 152] | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 8 x 8 [203 x 203] | | | ▼ | ▼ | ▼ | ▼ |
| 10 x 10 [254 x 254] | | | ▼ | ▼ | ▼ | ▼ |
| 12 x 12 [305 x 305] | | | | ▼ | ▼ | ▼ |
| 14 x 14 [356 x 356] | | | | ▼ | ▼ | ▼ |
| 15 x 15 [381 x 381] | | | | | ▼ | ▼ |
| 6 x 18 [152 x 457] | | ▼ | | | | |
| 16 x 16 [400 x 400] | | | | | ▼ | |
| 18 x 18 [457 x 457] | | | | | ▼ | |
| D Round Duct | | | | | | |
| 6 in. [152] | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 8 in. [203] | | | ▼ | ▼ | ▼ | ▼ |
| 10 in. [254] | | | ▼ | ▼ | ▼ | ▼ |
| 12 in. [305] | | | | ▼ | ▼ | ▼ |
| 14 in. [356] | | | | ▼ | ▼ | ▼ |
| 15 in. [381] | | | | | ▼ | ▼ |
| 16 in. [406] | | | | | ▼ | |
| 18 in. [457] | | | | | ▼ | |

▼* Indicates units for plenum return (non-ducted) application.

✓ Product Selection Checklist

- 1) Select Inlet Diameter or Neck Size L x W based on desired performance characteristics.
- 2) Select Face Size based on ceiling module.
- 3) Select Outlet Type by model number (material, flush or drop face).
- 4) Select Border Style according to installation requirements (page C74).
- 5) Select Volume Control Accessories, if desired (page C181-C186).
- 6) Select Finish.

Example: 8 in. / 24 in. x 24 in. / PDDR / 3 / B12

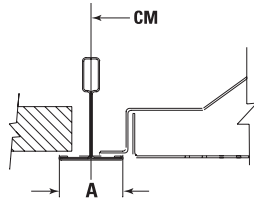
Application Recommendations:

For Border recommendations, see page C32.

Frame Selection

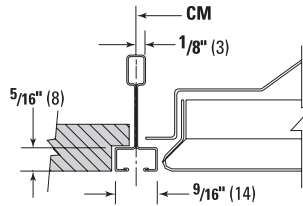
Type 3

Inverted T-bar Lay-in
A = 1 in. [25] or 9/16 in.[14]



Type 17

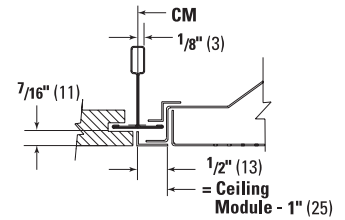
Lay-in Narrow Member 9/16 in.[14]



Available only in 12 x 12, 24 x 12,
24 x 24 ceiling modules.

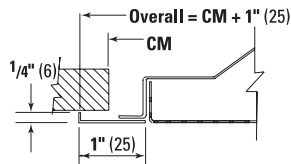
Type 4

Concealed Spline



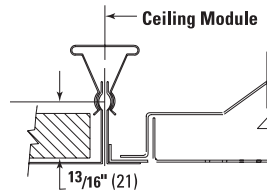
Type 1

Surface Mount



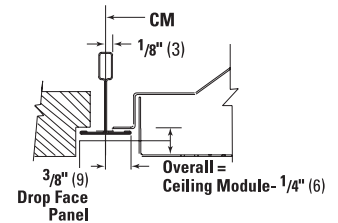
Type 2

Snap-In



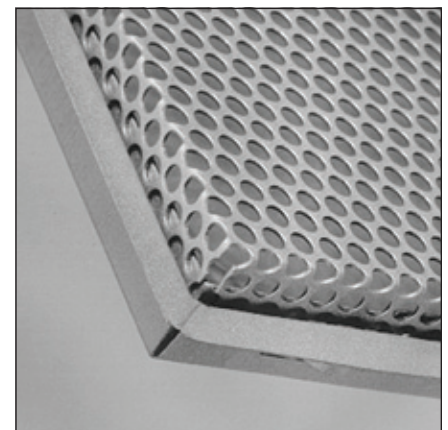
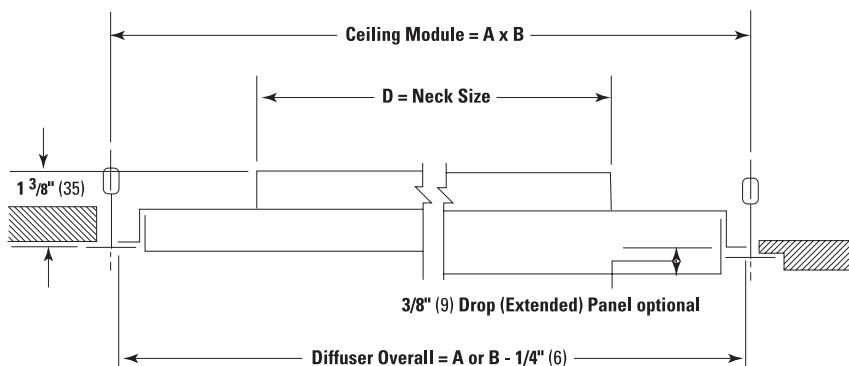
Drop (Extended) Face

Type 3 Only



Model PDDR

For plenum return (non-ducted) applications



Drop (Extended) Face
Panel Detail

Fire-Rated Perforated Diffusers – Return PDDR-FR / PDDRE-FR



Product Information

Three Hour Rating - Lay-in Models

Matching Returns for
PDN-FR, PDF-FR, PDC-FR
Flush Face

PDDR-FR

Matching Returns for
PDNE-FR, PDFE-FR, PDCE-FR
Drop (Extended) Face

PDDRE-FR

Price PDDR-FR /PDDRE-FR perforated face return air ceiling diffusers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

Features

- Available in both imperial and hard metric module sizes.
- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Hinged, removable perforated faceplate provides access to optional adjustable volume controller (Allen key adjustable). See page C45 for procedure.

Available Module Sizes

| Imperial | Metric |
|-----------------|-----------|
| 12 in. x 12 in. | 300 x 300 |
| 20 in. x 20 in. | 500 x 500 |
| 24 in. x 24 in. | 600 x 600 |

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.

✓ Product Selection Checklist

- 1] Select Inlet diameter or Neck Size L x W.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser style by model number.
- 4] Select Finish.

Example: 8 in. / 24 in. x 24 in. / PDDR-FR / B12

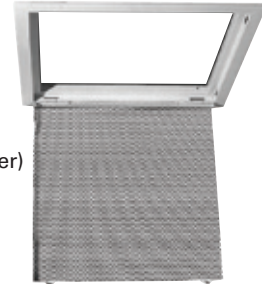
Model PDDR-FR

Round Duct Connection (minus required damper)

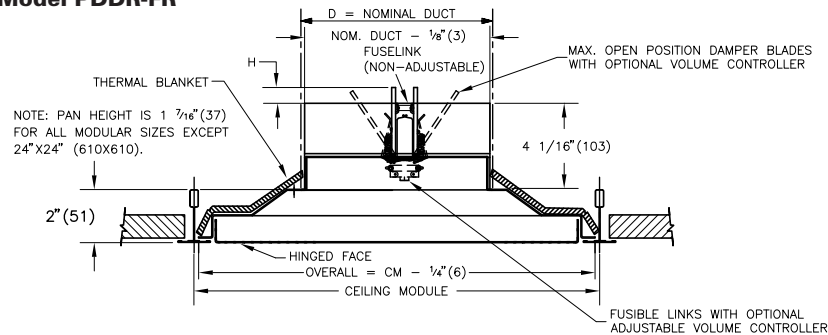


Model PDDRE-FR

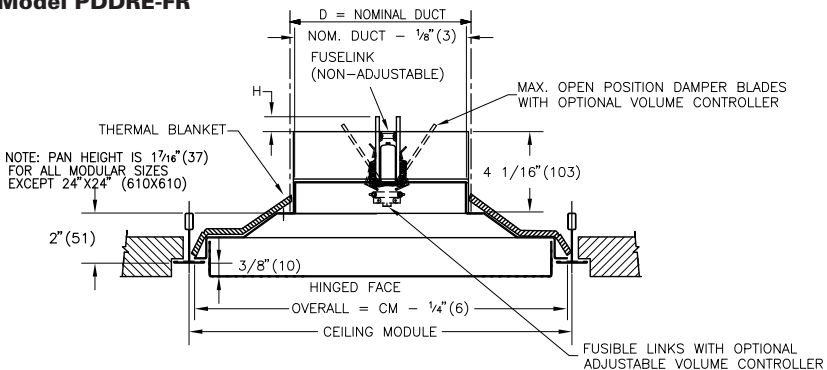
Maximum Square Neck for Plenum Return (minus required damper)



Model PDDR-FR



Model PDDRE-FR



Dimensional Data - Imperial (in.) / Metric [mm]

| | Ceiling Module Size, Nominal | | | | | | | |
|-----------------------------|------------------------------|---------|---------|---------|---------|-------------|-----------|-----------|
| | Imperial (in.) | | | | | Metric [mm] | | |
| | 12 x 12 | 16 x 16 | 20 x 20 | 24 x 24 | 24 x 12 | 300 x 300 | 500 x 500 | 600 x 600 |
| 6 in. x 6 in. [152 x 152] | ▼ | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 8 in. x 8 in. [203 x 203] | | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 10 in. x 10 in. [254 x 254] | * | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 12 in. x 12 in. [305 x 305] | | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 14 in. x 14 in. [356 x 356] | | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 15 in. x 15 in. [381 x 381] | | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 22 in. x 10 in. [559 x 254] | | | | ▼ | * | | | ▼ |
| 18 in. x 18 in. [547 x 547] | | | * | | | | | |
| 6 in. Dia. [152 Dia.] | ▼ | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 8 in. Dia. [203 Dia.] | | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 10 in. Dia. [254 Dia.] | | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 12 in. Dia. [305 Dia.] | | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 14 in. Dia. [356 Dia.] | | | ▼ | ▼ | | ▼ | ▼ | ▼ |
| 15 in. Dia. [381 Dia.] | | | ▼ | ▼ | | ▼ | ▼ | ▼ |

* Available only on maximum square neck for plenum returns.

Performance Data – 12 in. x 12 in. / 300 x 300 Module

| Neck Size | Face Module | Neck Velocity, fpm Neg. Static Pressure Velocity Pressure | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|-----------|-------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | | .007 .002 | .015 .006 | .027 .010 | .042 .016 | .061 .022 | .083 .031 | .108 .040 | .137 .050 | .169 .062 |
| 6 Ø | 12 x 12 | Air Flow, cfm | 39 | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 |
| | | NC | — | — | — | — | — | — | — | — | 15 |
| 6 x 6 | 12 x 12 | Air Flow, cfm | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
| | | NC | — | — | — | — | — | — | — | — | 16 |

Performance Data – 16 in. x 16 in. / 400 x 400 Module

| Neck Size | Face Module | Neck Velocity, fpm Neg. Static Pressure Velocity Pressure | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|-----------|-------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | | .007 .002 | .015 .006 | .027 .010 | .042 .016 | .061 .022 | .083 .031 | .108 .040 | .137 .050 | .169 .062 |
| 6 Ø | 16 x 16 | Air Flow, cfm | 39 | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 |
| | | NC | — | — | — | — | — | — | — | — | 15 |
| 6 x 6 | 16 x 16 | Air Flow, cfm | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
| | | NC | — | — | — | — | — | — | — | — | 16 |
| 8 Ø | 16 x 16 | Air Flow, cfm | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 |
| | | NC | — | — | — | — | — | — | — | — | 17 |
| 8 x 8 | 16 x 16 | Air Flow, cfm | 89 | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 |
| | | NC | — | — | — | — | — | — | — | — | 18 |
| 10 Ø | 16 x 16 | Air Flow, cfm | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 |
| | | NC | — | — | — | — | — | — | — | 15 | 18 |
| 10 x 10 | 16 x 16 | Air Flow, cfm | 139 | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 |
| | | NC | — | — | — | — | — | — | — | 16 | 19 |

Performance Data – 20 in. x 20 in. / 500 x 500 Module

| Neck Size | Face Module | Neck Velocity, fpm Neg. Static Pressure Velocity Pressure | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|-----------|-------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | | .007 .002 | .015 .006 | .027 .010 | .042 .016 | .061 .022 | .083 .031 | .108 .040 | .137 .050 | .169 .062 |
| 6 Ø | 20 x 20 | Air Flow, cfm | 39 | 59 | 78 | 98 | 118 | 137 | 157 | 176 | 196 |
| | | NC | — | — | — | — | — | — | — | — | — |
| 6 x 6 | 20 x 20 | Air Flow, cfm | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
| | | NC | — | — | — | — | — | — | — | — | 16 |
| 8 Ø | 20 x 20 | Air Flow, cfm | 70 | 105 | 140 | 175 | 209 | 244 | 279 | 314 | 349 |
| | | NC | — | — | — | — | — | — | — | — | — |
| 8 x 8 | 20 x 20 | Air Flow, cfm | 89 | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 |
| | | NC | — | — | — | — | — | — | — | — | 18 |
| 10 Ø | 20 x 20 | Air Flow, cfm | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 |
| | | NC | — | — | — | — | — | — | — | — | 16 |
| 10 x 10 | 20 x 20 | Air Flow, cfm | 139 | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 |
| | | NC | — | — | — | — | — | — | — | 16 | 19 |
| 12 Ø | 20 x 20 | Air Flow, cfm | 157 | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 |
| | | NC | — | — | — | — | — | — | — | 16 | 19 |
| 12 x 12 | 20 x 20 | Air Flow, cfm | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| | | NC | — | — | — | — | — | — | — | 17 | 20 |
| 14 Ø | 20 x 20 | Air Flow, cfm | 207 | 311 | 414 | 518 | 622 | 725 | 829 | 932 | 1036 |
| | | NC | — | — | — | — | — | — | — | 18 | 21 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
5. Blanks (—) indicate an NC level below 15.
6. Data does not include effects of ceiling radiation damper (PDDR-FR, PDDRE-FR)

Perforated Diffusers PDDR / PDDRE Series



Performance Data – 24 in. x 12 in. / 600 x 300 Module

| Neck Size | Face Module | Neck Velocity, fpm Neg. Static Pressure Velocity Pressure | 200 .007 .002 | 300 .015 .006 | 400 .027 .010 | 500 .042 .016 | 600 .061 .022 | 700 .083 .031 | 800 .108 .040 | 900 .137 .050 | 1000 .169 .062 |
|-----------|-------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| 6 Ø | 24 x 12 | Air Flow, cfm NC | 39 — | 59 — | 78 — | 98 — | 118 — | 137 — | 157 — | 176 — | 196 15 |
| 6 x 6 | 24 x 12 | Air Flow, cfm NC | 50 — | 75 — | 100 — | 125 — | 150 — | 175 — | 200 — | 225 — | 250 16 |
| 18 x 6 | 24 x 12 | Air Flow, cfm NC | 150 — | 225 — | 300 — | 375 — | 450 — | 525 — | 600 — | 675 16 | 750 19 |

Performance Data – 24 in. x 24 in. / 600 x 600 Module

| Neck Size | Face Module | Neck Velocity, fpm Neg. Static Pressure Velocity Pressure | 200 .007 .002 | 300 .015 .006 | 400 .027 .010 | 500 .042 .016 | 600 .061 .022 | 700 .083 .031 | 800 .108 .040 | 900 .137 .050 | 1000 .169 .062 |
|-----------|-------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| 6 Ø | 24 x 24 | Air Flow, cfm NC | 39 — | 59 — | 78 — | 98 — | 118 — | 137 — | 157 — | 176 — | 196 — |
| 6 x 6 | 24 x 24 | Air Flow, cfm NC | 50 — | 75 — | 100 — | 125 — | 150 — | 175 — | 200 — | 225 — | 250 16 |
| 8 Ø | 24 x 24 | Air Flow, cfm NC | 70 — | 105 — | 140 — | 175 — | 209 — | 244 — | 279 — | 314 — | 349 — |
| 8 x 8 | 24 x 24 | Air Flow, cfm NC | 89 — | 133 — | 178 — | 222 — | 266 — | 311 — | 355 — | 400 — | 444 18 |
| 10 Ø | 24 x 24 | Air Flow, cfm NC | 109 — | 164 — | 218 — | 273 — | 327 — | 382 — | 436 — | 491 — | 545 16 |
| 10 x 10 | 24 x 24 | Air Flow, cfm NC | 139 — | 208 — | 278 — | 347 — | 416 — | 486 — | 555 — | 625 16 | 694 19 |
| 12 Ø | 24 x 24 | Air Flow, cfm NC | 157 — | 236 — | 314 — | 393 — | 471 — | 550 — | 628 — | 707 16 | 785 19 |
| 12 x 12 | 24 x 24 | Air Flow, cfm NC | 200 — | 300 — | 400 — | 500 — | 600 — | 700 — | 800 — | 900 17 | 1000 20 |
| 14 Ø | 24 x 24 | Air Flow, cfm NC | 207 — | 311 — | 414 — | 518 — | 622 — | 725 — | 829 — | 932 18 | 1036 21 |
| 14 x 14 | 24 x 24 | Air Flow, cfm NC | 272 — | 408 — | 544 — | 681 — | 817 — | 953 — | 1089 — | 1225 18 | 1361 21 |
| 15 Ø | 24 x 24 | Air Flow, cfm NC | 245 — | 368 — | 491 — | 614 — | 736 — | 859 — | 982 16 | 1104 19 | 1227 22 |
| 15 x 15 | 24 x 24 | Air Flow, cfm NC | 313 — | 469 — | 625 — | 782 — | 938 — | 1094 — | 1250 — | 1407 18 | 1563 21 |

Performance Data – Plenum Return

| Neck Size | Face Module | Neck Velocity, fpm Neg. Static Pressure Velocity Pressure | 200 .008 .002 | 300 .019 .006 | 400 .033 .010 | 500 .051 .016 | 600 .074 .022 | 700 .101 .031 | 800 .132 .040 | 900 .167 .050 | 1000 .206 .062 |
|-----------|-------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| 10 x 10 | 12 x 12 | Air Flow, cfm NC | 139 — | 208 — | 278 — | 347 — | 416 18 | 486 22 | 555 26 | 625 29 | 694 31 |
| 14 x 14 | 16 x 16 | Air Flow, cfm NC | 272 — | 408 — | 554 — | 681 15 | 817 20 | 953 24 | 1089 27 | 1225 30 | 1361 33 |
| 18 x 18 | 20 x 20 | Air Flow, cfm NC | 450 — | 675 — | 900 — | 1125 16 | 1350 21 | 1575 25 | 1800 28 | 2025 31 | 2250 34 |
| 22 x 10 | 24 x 12 | Air Flow, cfm NC | 306 — | 458 — | 611 — | 764 15 | 917 20 | 1069 24 | 1222 27 | 1375 30 | 1528 33 |
| 22 x 22 | 24 x 24 | Air Flow, cfm NC | 672 — | 1008 — | 1344 — | 1681 17 | 2017 22 | 2353 26 | 2689 29 | 3025 32 | 3361 35 |
| 46 x 22 | 48 x 24 | Air Flow, cfm NC | 1406 — | 2018 — | 2811 — | 3514 19 | 4217 24 | 4919 28 | 5622 31 | 6325 34 | 7028 37 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
5. Blanks (—) indicate an NC level below 15.
6. Data does not include effects of ceiling radiation damper (PDDR-FR, PDDRE-FR)

Perforated Diffusers - Return

PFRF / PFRFE / APFRF / APFRFE Series



Product Information

Models

Perforated Face Ceiling Panel

Steel Construction **PFRF**
 Steel Construction, extended face **PFRFE**
 Aluminum Construction **APFRF**
 Aluminum Construction, extended face **APFRFE**

Price PFRF / PFRFE / APFRF / APFRFE Series perforated ceiling panels are used as non-ducted return outlets for T-bar Lay-in ceilings.

Features

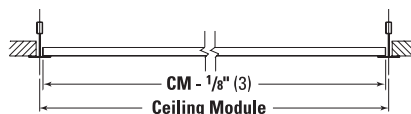
- Choice of cold rolled steel (PFRF/PFRFE) or aluminum panel (APFRF/APFRFE).
- Choice of flat or drop face design.
- Economical, high capacity return outlet.

Finish

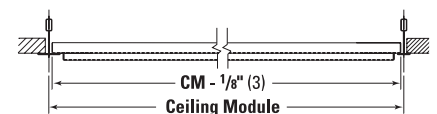
White Powder Coat **B12**
 For optional and special finishes see color matrix.



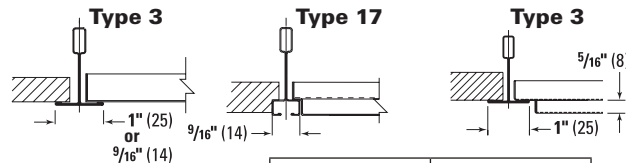
PFRF / APFRF



PFRFE / APFRFE



Frame Selection



| Imperial | Metric |
|-----------------|-----------|
| 12 in. x 12 in. | 300 x 300 |
| 24 in. x 12 in. | 600 x 300 |
| 24 in. x 24 in. | 600 x 600 |

✓ Product Selection Checklist

- 1] Select Ceiling Panel Size based on ceiling module.
- 2] Select Outlet Type by model number.
- 3] Select Finish.

Example: 24 in. x 24 in. / PFRF / B12

Performance Data – Plenum Return

| Module Size | Neck Velocity, fpm Neg. Static Pressure Velocity Pressure | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|-------------|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | .008 .002 | .019 .006 | .033 .010 | .051 .016 | .074 .022 | .101 .031 | .132 .040 | .167 .050 | .206 .062 |
| 12 x 12 | Air Flow, cfm | 168 | 252 | 336 | 420 | 504 | 588 | 672 | 756 | 840 |
| | NC | — | — | — | — | 19 | 23 | 26 | 29 | 32 |
| 24 x 12 | Air Flow, cfm | 351 | 527 | 703 | 878 | 1054 | 1230 | 1406 | 1581 | 1757 |
| | NC | — | — | — | 16 | 20 | 24 | 28 | 31 | 33 |
| 24 x 24 | Air Flow, cfm | 735 | 1102 | 1469 | 1837 | 2204 | 2572 | 2939 | 3306 | 3674 |
| | NC | — | — | — | 17 | 22 | 26 | 29 | 33 | 35 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
5. Blanks (—) indicate and NC level below 15.

Perforated Diffusers Architectural Quality / High Performance

price



Product Overview

Models

Premium Architectural
Supply, Deflectors on Face
Matching Return

PDS
PDR

Price offers a premium line of perforated supply and matching return ceiling diffusers that combine the exceptional performance and desirable architectural appeal of extruded aluminum construction.

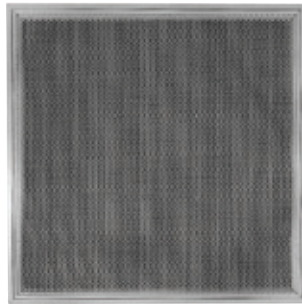
Model PDS

Adjustable air pattern deflectors are located on the perforated face, allowing field adjustment to suit desired conditions. The pattern controllers and backpan are finished in black to make them virtually invisible.

Models PDR

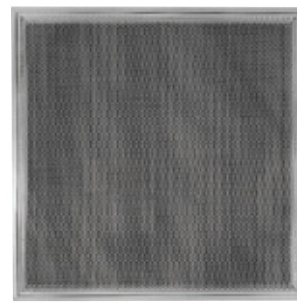
Matching returns are available to complement the PDS series.

PDS Series



Pages C80 - C86

PDR Series



Pages C87 - C88

Quick Selection Guide

| Diffuser Type | Ceiling Type | Recommended Frame |
|--|--|----------------------|
| Premium Architectural Supply / Return PDS / PDR | Lay-in Inverted T 1 in. [25] Surface Mount | 3 1 |

CEILING DIFFUSERS

Perforated Diffusers

PDS Series

Architectural Quality – Supply



Product Information

Models

Architectural Perforated Face
Extruded Aluminum Construction **PDS**
Extruded Aluminum Construction
for MRI applications **PDS MRI**

Price PDS Series premium perforated supply ceiling diffusers combine exceptional performance and the desirable architectural appeal of extruded aluminum construction for highly efficient heating, cooling and air ventilation applications. Adjustable air pattern deflectors are located on the perforated face, allowing for field adjustment to suit desired conditions. The pattern deflectors and backpan are finished in black to make them virtually invisible.

Features

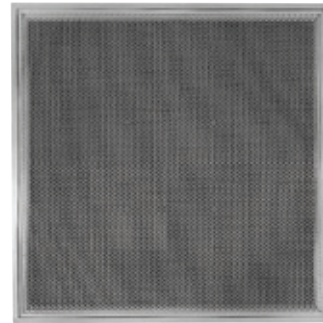
- Efficient, draftless air distribution for most ceiling types.
- Hinged, removable perforated faceplate with quick-release spring latches.
- Louvered air pattern deflectors are located on the perforated face and are field adjustable to the desired air pattern.
- Extruded aluminum border and mounting frame match seamlessly for a flush mount that blends with most ceiling tiles.
- Requires minimum ceiling plenum height. Overall diffuser height only 3 in. [76] for all available sizes.
- Complete range of available accessory dampers, equalizing grids etc.
- All aluminum construction (non-magnetic) for MRI applications (PDS-MRI).

Available Module Sizes

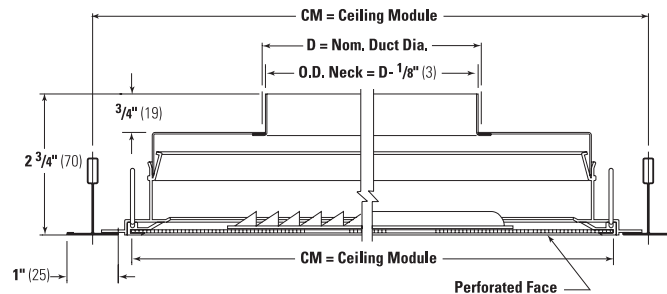
| Imperial | | Metric | |
|-----------------|------------|------------|------------|
| 12 in. x 12 in. | 300 x 300 | 300 x 300 | 300 x 300 |
| 12 in. x 24 in. | 300 x 600 | 300 x 600 | 300 x 600 |
| 16 in. x 16 in. | 400 x 400 | 400 x 400 | 400 x 400 |
| 20 in. x 20 in. | 500 x 500 | 500 x 500 | 500 x 500 |
| 24 in. x 24 in. | 600 x 600 | 600 x 600 | 600 x 600 |
| 12 in. x 24 in. | 300 x 600 | 300 x 600 | 300 x 600 |
| 12 in. x 36 in. | 300 x 900 | 300 x 900 | 300 x 900 |
| 12 in. x 48 in. | 300 x 1200 | 300 x 1200 | 300 x 1200 |
| 24 in. x 36 in. | 600 x 900 | 600 x 900 | 600 x 900 |
| 24 in. x 48 in. | 600 x 1200 | 600 x 1200 | 600 x 1200 |

Finish

White Powder Coat **B12**
For optional and special finishes see color matrix.



PDS - Type 3



Dimensional Data — Imperial (in.) / Metric [mm]

| H - Ceiling Module Imperial Metric | D - Square Duct | | | | | | D - Round Duct Diameters | | | | | | |
|---------------------------------------|----------------------|----------------------|------------------------|------------------------|-----------------------|---|--------------------------|------------|------------|------------|-------------|-------------|-------------|
| | 6 x 6 [152 x 152] | 8 x 8 [203 x 203] | 10 x 10 [254 x 254] | 12 x 12 [305 x 305] | 6 x 18 [152 x 457] | | 5 [127] | 6 [152] | 7 [178] | 8 [203] | 10 [254] | 12 [305] | 14 [356] |
| 12 x 12 | ▼ | ▼ | N/A | N/A | N/A | ▼ | ▼ | ▼ | ▼ | N/A | N/A | N/A | N/A |
| 12 x 24 | ▼ | ▼ | N/A | N/A | ▼ | ▼ | ▼ | ▼ | ▼ | N/A | N/A | N/A | N/A |
| 12 x 36 | ▼ | ▼ | N/A | N/A | N/A | ▼ | ▼ | ▼ | ▼ | N/A | N/A | N/A | N/A |
| 12 x 48 | ▼ | ▼ | N/A | N/A | N/A | ▼ | ▼ | ▼ | ▼ | N/A | N/A | N/A | N/A |
| 16 x 16 | ▼ | ▼ | ▼ | ▼ | N/A | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | N/A |
| 20 x 20 | ▼ | ▼ | ▼ | ▼ | N/A | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 24 x 24 | ▼ | ▼ | ▼ | ▼ | N/A | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 24 x 36 | ▼ | ▼ | ▼ | ▼ | N/A | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |
| 24 x 48 | ▼ | ▼ | ▼ | ▼ | N/A | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ | ▼ |

Standard inlet neck sizes (▼).
Inlet neck sizes marked N/A are not available for the listed ceiling opening.

✓ Product Selection Checklist

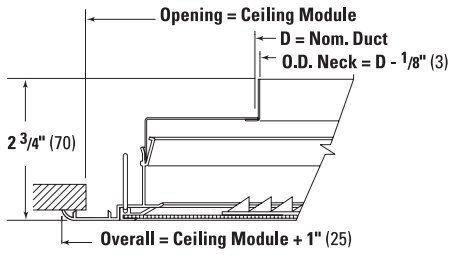
- 1) Select Inlet Diameter or Neck Size L x W based on desired performance characteristics.
- 2) Select Face Size based on ceiling module.
- 3) Select Outlet Type by model number.
- 4) Select Border Style according to installation requirements (page C81).
- 5) Select Volume Control Accessories, if desired (page C181-C186).
- 6) Select Finish.

Example: 8 in. / 24 in. x 24 in. / PDS / 3 / B12

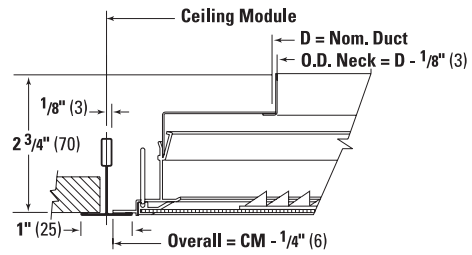
Application Recommendations:
For Border recommendations, see page C79.

Frame Selection

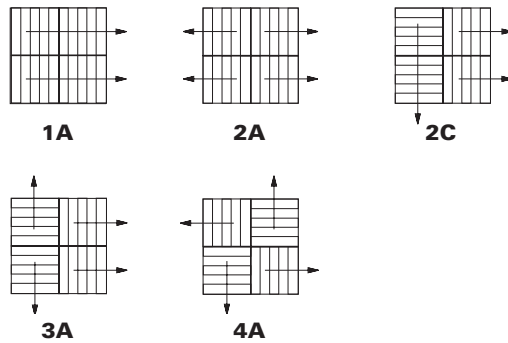
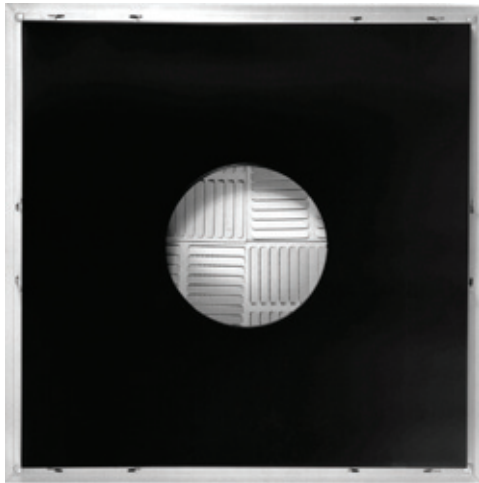
Type 1
 Surface Mount



Type 3
 Lay-in Inverted T 1 in.[25]



Air Pattern Adjustment



CEILING DIFFUSERS

Perforated Diffusers
PDS Series
 Architectural Quality – Supply



Performance Data – 12 in. x 12 in. / 300 x 300 Module

| Inlet Size | | | .030 | .050 | .078 | .112 | .152 | .196 | .310 | .440 | .600 |
|------------|--------------------------|-------|--------|--------|---------|---------|---------|----------|----------|----------|----------|
| 5 Ø | Total Pressure, in. w.g. | | .030 | .050 | .078 | .112 | .152 | .196 | .310 | .440 | .600 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | 25 | 30 | 35 | 39 | 43 | 49 | 54 | 58 |
| | Throw ft | 4 Way | 2-2-5 | 2-4-6 | 4-5-8 | 4-6-10 | 5-7-12 | 5-8-13 | 6-10-16 | 7-12-19 | 10-14-23 |
| | | 3 Way | 2-4-5 | 2-5-7 | 4-5-8 | 5-6-10 | 5-7-12 | 6-8-14 | 7-11-17 | 8-13-19 | 10-14-24 |
| 2 Way | | 2-4-6 | 4-5-8 | 4-6-10 | 5-7-12 | 6-8-14 | 6-10-16 | 8-12-19 | 10-14-23 | 11-17-28 | |
| 1 Way | | 4-5-7 | 4-6-10 | 5-7-12 | 6-10-14 | 7-11-17 | 8-12-19 | 10-16-24 | 12-18-29 | 13-20-34 | |
| 6 Ø | Total Pressure, in. w.g. | | .018 | .031 | .048 | .069 | .094 | .121 | .192 | .272 | .372 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | 18 | 23 | 28 | 32 | 36 | 42 | 47 | 51 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-6 | 3-4-8 | 3-6-9 | 4-7-11 | 4-8-12 | 6-9-14 | 7-11-18 | 9-13-21 |
| | | 3 Way | 2-3-4 | 2-4-7 | 3-4-8 | 4-6-9 | 4-7-11 | 6-8-13 | 7-10-15 | 8-12-18 | 9-13-22 |
| 2 Way | | 2-3-6 | 3-4-8 | 3-6-9 | 4-7-11 | 6-8-13 | 6-9-14 | 8-11-18 | 9-13-21 | 10-15-25 | |
| 1 Way | | 3-4-7 | 3-6-9 | 4-7-11 | 6-9-13 | 7-10-15 | 8-11-18 | 9-14-22 | 11-17-26 | 12-19-31 | |
| 6 x 6 | Total Pressure, in. w.g. | | .015 | .025 | .039 | .056 | .076 | .098 | .155 | .220 | .300 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | — | 19 | 24 | 28 | 32 | 38 | 43 | 47 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 4-7-11 | 5-8-13 | 6-10-16 | 8-12-19 |
| | | 3 Way | 2-3-4 | 2-4-6 | 3-4-7 | 4-5-8 | 4-6-10 | 5-7-12 | 6-9-14 | 7-11-16 | 8-12-20 |
| 2 Way | | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 5-7-12 | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 | |
| 1 Way | | 3-4-6 | 3-5-8 | 4-6-10 | 5-8-12 | 6-9-14 | 7-10-16 | 8-13-20 | 10-15-24 | 11-17-28 | |
| 7 Ø | Total Pressure, in. w.g. | | .014 | .024 | .037 | .053 | .073 | .094 | .149 | .211 | .288 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | — | 17 | 22 | 26 | 30 | 36 | 41 | 45 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 4-7-11 | 5-8-13 | 6-10-16 | 8-12-19 |
| | | 3 Way | 2-3-4 | 2-4-6 | 3-4-7 | 4-5-8 | 4-6-10 | 5-7-12 | 6-9-14 | 7-11-16 | 8-12-20 |
| 2 Way | | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 5-7-12 | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 | |
| 1 Way | | 3-4-6 | 3-5-8 | 4-6-10 | 5-8-12 | 6-9-14 | 7-10-16 | 8-13-20 | 10-15-24 | 11-17-28 | |

Performance Data - 12" x 24", 36", 48" / 300 x 600, 900, 1200 Module

| Inlet Size | | | .027 | .045 | .071 | .102 | .139 | .179 | .283 | .402 | .549 |
|------------|--------------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 5 Ø | Total Pressure, in. w.g. | | .027 | .045 | .071 | .102 | .139 | .179 | .283 | .402 | .549 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | 25 | 30 | 35 | 39 | 43 | 49 | 54 | 58 |
| | Throw ft | 4 Way | 2-2-5 | 2-2-6 | 4-5-8 | 4-6-10 | 5-7-12 | 5-8-13 | 6-10-16 | 7-12-19 | 10-14-23 |
| | | 3 Way | 2-4-5 | 2-5-7 | 4-5-8 | 5-6-10 | 5-7-12 | 6-8-14 | 7-11-17 | 8-13-19 | 10-14-24 |
| 2 Way | | 2-4-6 | 4-5-8 | 4-6-10 | 5-7-12 | 6-8-14 | 6-10-16 | 8-12-19 | 10-14-23 | 11-17-28 | |
| 1 Way | | 4-5-7 | 4-6-10 | 5-7-12 | 6-10-14 | 7-11-17 | 8-12-19 | 10-16-24 | 12-18-29 | 13-20-34 | |
| 6 Ø | Total Pressure, in. w.g. | | .014 | .024 | .037 | .054 | .073 | .095 | .150 | .213 | .291 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | 18 | 23 | 28 | 32 | 36 | 42 | 47 | 51 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-6 | 3-4-8 | 3-6-9 | 4-7-11 | 4-8-12 | 6-9-14 | 7-11-18 | 9-13-21 |
| | | 3 Way | 2-3-4 | 2-4-7 | 3-4-8 | 4-6-9 | 4-7-11 | 6-8-13 | 7-10-15 | 8-12-18 | 9-13-22 |
| 2 Way | | 2-3-6 | 3-4-8 | 3-6-9 | 4-7-11 | 6-8-13 | 6-9-14 | 8-11-18 | 9-13-21 | 10-15-25 | |
| 1 Way | | 3-4-7 | 3-6-9 | 4-7-11 | 6-9-13 | 7-10-15 | 8-11-18 | 9-14-22 | 11-17-26 | 12-19-31 | |
| 6 x 6 | Total Pressure, in. w.g. | | .010 | .016 | .025 | .036 | .049 | .064 | .101 | .143 | .195 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | — | 19 | 24 | 28 | 32 | 38 | 43 | 47 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 4-7-11 | 5-8-13 | 6-10-16 | 8-12-19 |
| | | 3 Way | 2-3-4 | 2-4-6 | 3-4-7 | 4-5-8 | 4-6-10 | 5-7-12 | 6-9-14 | 7-11-16 | 8-12-20 |
| 2 Way | | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 5-7-12 | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 | |
| 1 Way | | 3-4-6 | 3-5-8 | 4-6-10 | 5-8-12 | 6-9-14 | 7-10-16 | 8-13-20 | 10-15-24 | 11-17-28 | |
| 18 x 6 | Total Pressure, in. w.g. | | .035 | .059 | .095 | .135 | .185 | .240 | .370 | .530 | .730 |
| | Flow Rate, cfm | | 225 | 300 | 375 | 450 | 525 | 600 | 750 | 900 | 1050 |
| | NC | | 17 | 25 | 31 | 36 | 40 | 44 | 50 | 55 | 60 |
| | Throw ft | 4 Way | 4-7-9 | 6-10-16 | 8-12-20 | 10-15-24 | 11-17-28 | 13-19-32 | 16-24-39 | 19-29-46 | 22-34-53 |
| | | 3 Way | 5-8-12 | 7-10-16 | 8-13-20 | 10-15-24 | 12-18-28 | 13-20-32 | 17-25-41 | 20-30-49 | 23-35-56 |
| 2 Way | | 5-8-13 | 7-11-18 | 9-13-22 | 11-16-27 | 13-19-32 | 15-22-35 | 19-29-44 | 21-32-51 | 25-37-60 | |
| 1 Way | | 8-12-19 | 11-16-26 | 13-19-33 | 16-23-39 | 19-27-46 | 21-31-51 | 26-39-62 | 31-47-74 | 37-55-89 | |
| 7 Ø | Total Pressure, in. w.g. | | .009 | .015 | .023 | .034 | .046 | .059 | .094 | .134 | .183 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | — | 17 | 22 | 28 | 30 | 36 | 41 | 45 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 4-7-11 | 5-8-13 | 6-10-16 | 8-12-19 |
| | | 3 Way | 2-3-4 | 2-4-6 | 3-4-7 | 4-5-8 | 4-6-10 | 5-7-12 | 6-9-14 | 7-11-16 | 8-12-20 |
| 2 Way | | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 5-7-12 | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 | |
| 1 Way | | 3-4-6 | 3-5-8 | 4-6-10 | 5-8-12 | 6-9-14 | 7-10-16 | 8-13-20 | 10-15-24 | 11-17-28 | |

See performance notes Page C80.

Perforated Diffusers

PDS Series

Architectural Quality – Supply



Performance Data – 16 in. x 16 in. / 400 x 400 Module

| Inlet Size | | | | | | | | | | | |
|------------|--------------------------|-------|--------|---------|---------|----------|----------|----------|----------|----------|----------|
| 5 Ø | Total Pressure, in. w.g. | | .028 | .048 | .075 | .107 | .146 | .188 | .297 | .422 | .576 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | 25 | 30 | 35 | 39 | 43 | 49 | 54 | 58 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 4-7-11 | 5-8-13 | 6-10-16 | 8-12-19 |
| | | 3 Way | 2-3-4 | 2-4-6 | 3-4-7 | 4-5-8 | 4-6-10 | 5-7-12 | 6-9-14 | 7-11-16 | 8-12-20 |
| | | 2 Way | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-10 | 5-7-12 | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 |
| | | 1 Way | 3-4-6 | 3-5-8 | 4-6-10 | 5-8-12 | 6-9-14 | 7-10-16 | 8-13-20 | 10-15-24 | 11-17-28 |
| 6 Ø | Total Pressure, in. w.g. | | .016 | .026 | .041 | .059 | .079 | .103 | .163 | .231 | .315 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | 18 | 23 | 28 | 32 | 36 | 42 | 47 | 51 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-5 | 3-4-7 | 3-5-7 | 4-6-9 | 4-7-10 | 5-7-12 | 6-9-15 | 7-11-18 |
| | | 3 Way | 2-3-4 | 2-4-6 | 3-4-7 | 4-5-7 | 4-6-9 | 5-7-11 | 6-8-13 | 7-10-15 | 7-11-19 |
| | | 2 Way | 2-3-5 | 3-4-7 | 3-5-7 | 4-6-9 | 5-7-11 | 5-7-12 | 7-9-15 | 7-11-18 | 8-13-21 |
| | | 1 Way | 3-4-6 | 3-5-7 | 4-6-9 | 5-7-11 | 6-8-13 | 7-9-15 | 7-12-19 | 9-14-22 | 10-16-26 |
| 6 x 6 | Total Pressure, in. w.g. | | .011 | .019 | .029 | .042 | .057 | .073 | .116 | .165 | .225 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | — | 19 | 24 | 28 | 32 | 38 | 43 | 47 |
| | Throw ft | 4 Way | 2-2-3 | 2-3-4 | 3-3-6 | 3-4-7 | 3-5-9 | 3-6-10 | 4-7-11 | 5-9-14 | 7-10-17 |
| | | 3 Way | 2-3-3 | 2-3-5 | 3-3-6 | 3-4-7 | 3-5-9 | 4-6-10 | 5-8-12 | 6-10-14 | 7-11-19 |
| | | 2 Way | 2-3-4 | 3-3-5 | 3-4-7 | 3-5-9 | 4-6-10 | 4-7-11 | 6-9-14 | 7-10-17 | 8-12-20 |
| | | 1 Way | 3-3-5 | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-12 | 6-9-14 | 7-11-17 | 9-13-21 | 10-15-24 |
| 7 Ø | Total Pressure, in. w.g. | | .010 | .017 | .026 | .038 | .051 | .066 | .105 | .149 | .204 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | — | 17 | 22 | 26 | 30 | 36 | 41 | 45 |
| | Throw ft | 4 Way | 2-2-3 | 2-3-4 | 3-3-6 | 3-4-7 | 3-5-9 | 3-6-9 | 4-7-11 | 5-9-14 | 7-10-16 |
| | | 3 Way | 2-3-3 | 2-3-5 | 3-3-6 | 3-4-7 | 3-5-9 | 4-6-10 | 5-8-12 | 6-9-14 | 7-10-17 |
| | | 2 Way | 2-3-4 | 3-3-6 | 3-4-7 | 3-5-9 | 4-6-10 | 4-7-11 | 6-9-14 | 7-10-16 | 8-12-20 |
| | | 1 Way | 3-3-5 | 3-4-7 | 3-5-9 | 4-7-10 | 5-8-12 | 6-9-14 | 7-11-17 | 9-13-20 | 9-14-24 |
| 8 Ø | Total Pressure, in. w.g. | | .023 | .038 | .059 | .085 | .115 | .149 | .235 | .337 | .462 |
| | Flow Rate, cfm | | 135 | 180 | 220 | 265 | 310 | 355 | 445 | 535 | 620 |
| | NC | | — | 22 | 28 | 34 | 38 | 41 | 47 | 53 | 57 |
| | Throw ft | 4 Way | 2-3-6 | 3-4-8 | 4-7-10 | 4-8-12 | 6-9-14 | 7-10-15 | 8-12-20 | 10-14-23 | 11-17-28 |
| | | 3 Way | 2-3-7 | 3-6-8 | 4-7-11 | 6-8-13 | 7-9-15 | 7-10-17 | 9-13-21 | 10-15-25 | 11-18-29 |
| | | 2 Way | 2-4-7 | 4-6-10 | 4-8-12 | 6-9-14 | 7-10-17 | 8-12-19 | 10-14-23 | 12-18-29 | 13-21-33 |
| | | 1 Way | 3-6-9 | 4-8-12 | 7-9-15 | 8-10-18 | 9-13-21 | 10-14-23 | 12-19-30 | 14-22-35 | 17-25-41 |
| 8 x 8 | Total Pressure, in. w.g. | | .017 | .028 | .044 | .063 | .085 | .110 | .173 | .248 | .340 |
| | Flow Rate, cfm | | 135 | 180 | 220 | 265 | 310 | 355 | 445 | 535 | 620 |
| | NC | | — | 17 | 23 | 29 | 33 | 36 | 42 | 48 | 52 |
| | Throw ft | 4 Way | 2-3-5 | 3-4-7 | 4-6-9 | 4-7-11 | 5-8-13 | 6-9-14 | 7-11-18 | 9-13-21 | 10-15-25 |
| | | 3 Way | 2-3-6 | 3-5-7 | 4-6-10 | 5-7-12 | 6-8-14 | 6-9-15 | 8-12-19 | 9-14-23 | 10-16-26 |
| | | 2 Way | 3-4-6 | 4-5-9 | 4-7-11 | 5-8-13 | 6-9-15 | 7-11-17 | 9-13-21 | 11-16-26 | 12-19-30 |
| | | 1 Way | 3-5-8 | 4-7-11 | 6-8-14 | 7-10-16 | 8-12-19 | 9-13-21 | 11-17-27 | 13-20-32 | 15-23-37 |
| 10 Ø | Total Pressure, in. w.g. | | .031 | .052 | .083 | .119 | .161 | .207 | .328 | .467 | .640 |
| | Flow Rate, cfm | | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 |
| | NC | | 17 | 25 | 31 | 36 | 40 | 44 | 50 | 55 | 60 |
| | Throw ft | 4 Way | 4-5-8 | 5-6-11 | 6-8-13 | 7-10-16 | 7-12-18 | 8-13-22 | 11-17-26 | 13-19-31 | 16-23-36 |
| | | 3 Way | 4-5-8 | 5-7-12 | 6-8-14 | 7-11-17 | 8-12-16 | 10-14-18 | 12-18-29 | 14-22-34 | 17-24-40 |
| | | 2 Way | 4-6-10 | 5-8-13 | 6-10-16 | 8-12-19 | 10-14-23 | 11-16-25 | 13-20-32 | 16-24-45 | 18-28-44 |
| | | 1 Way | 5-7-12 | 7-10-17 | 8-12-20 | 10-14-24 | 12-18-29 | 13-20-32 | 17-25-41 | 20-30-48 | 23-35-56 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. The throw determined by these factors is the throw from long side of the diffuser. The throw from short sides will be approximately 0.7 times the throw from long sides.
7. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
8. Blanks (—) indicate NC levels below 15.

Perforated Diffusers

PDS Series

Architectural Quality – Supply



Performance Data – 20 in. x 20 in. / 500 x 500 Module

| Inlet Size | | | | | | | | | | | |
|------------|--------------------------|--------|--------|---------|---------|----------|----------|----------|----------|----------|----------|
| 5 Ø | Total Pressure, in. w.g. | | .028 | .047 | .073 | .105 | .142 | .184 | .291 | .414 | .564 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | 25 | 30 | 35 | 39 | 43 | 49 | 54 | 58 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-5 | 3-4-6 | 3-5-7 | 4-5-9 | 4-6-10 | 5-7-12 | 5-9-15 | 7-11-17 |
| | | 3 Way | 2-3-4 | 2-4-5 | 3-4-6 | 4-5-7 | 4-5-9 | 5-6-11 | 5-8-13 | 6-10-15 | 7-11-18 |
| | | 2 Way | 2-3-5 | 3-4-6 | 3-5-7 | 4-5-9 | 5-6-11 | 5-7-12 | 6-9-15 | 7-11-17 | 8-13-21 |
| 1 Way | | 3-4-5 | 3-5-7 | 4-5-9 | 5-7-11 | 5-8-13 | 6-9-15 | 7-12-18 | 9-14-22 | 10-15-25 | |
| 6 Ø | Total Pressure, in. w.g. | | .015 | .025 | .039 | .057 | .077 | .099 | .157 | .222 | .303 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | 18 | 23 | 28 | 32 | 36 | 42 | 47 | 51 |
| | Throw ft | 4 Way | 2-2-3 | 2-3-4 | 3-3-6 | 3-4-7 | 3-5-8 | 3-6-9 | 4-7-11 | 5-8-13 | 7-10-16 |
| | | 3 Way | 2-3-3 | 2-3-5 | 3-3-6 | 3-4-7 | 3-5-8 | 4-6-10 | 5-7-11 | 6-9-13 | 7-10-16 |
| | | 2 Way | 2-3-4 | 3-3-6 | 3-4-7 | 3-5-8 | 4-6-10 | 4-7-11 | 6-8-13 | 7-10-16 | 7-11-19 |
| 1 Way | | 3-3-5 | 3-4-7 | 3-5-8 | 4-7-9 | 5-7-11 | 6-8-13 | 7-11-16 | 8-12-20 | 9-14-23 | |
| 6 x 6 | Total Pressure, in. w.g. | | .010 | .017 | .027 | .039 | .053 | .086 | .108 | .154 | .210 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | 17 | 23 | 29 | 33 | 36 | 42 | 48 | 52 |
| | Throw ft | 4 Way | 2-2-3 | 2-2-4 | 2-3-5 | 2-4-6 | 3-5-8 | 3-5-8 | 4-6-10 | 4-8-12 | 6-9-14 |
| | | 3 Way | 2-2-3 | 2-3-5 | 2-3-5 | 3-4-6 | 3-5-8 | 4-5-9 | 4-7-11 | 5-8-12 | 6-9-15 |
| | | 2 Way | 2-2-4 | 2-3-5 | 2-4-6 | 3-5-8 | 4-5-9 | 4-6-10 | 5-8-12 | 6-9-14 | 7-11-17 |
| 1 Way | | 2-3-5 | 2-4-6 | 3-5-8 | 4-6-9 | 5-7-11 | 5-8-12 | 6-10-15 | 8-11-18 | 8-13-21 | |
| 7 Ø | Total Pressure, in. w.g. | | .009 | .015 | .024 | .035 | .047 | .062 | .097 | .138 | .189 |
| | Flow Rate, cfm | | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | NC | | — | — | 17 | 22 | 26 | 30 | 36 | 41 | 45 |
| | Throw ft | 4 Way | 2-2-3 | 2-2-4 | 2-3-5 | 2-4-6 | 3-4-8 | 3-5-8 | 4-6-10 | 5-8-12 | 6-9-14 |
| | | 3 Way | 2-2-3 | 2-3-5 | 2-3-5 | 3-4-6 | 3-4-8 | 4-5-9 | 5-7-11 | 5-8-12 | 8-9-15 |
| | | 2 Way | 2-2-4 | 2-3-5 | 2-4-6 | 3-4-8 | 4-5-9 | 4-6-10 | 5-8-12 | 6-9-14 | 7-11-17 |
| 1 Way | | 2-3-5 | 2-4-6 | 3-4-8 | 4-6-9 | 5-7-11 | 5-8-12 | 6-10-15 | 8-11-18 | 8-13-21 | |
| 8 Ø | Total Pressure, in. w.g. | | .020 | .033 | .052 | .075 | .102 | .132 | .207 | .297 | .408 |
| | Flow Rate, cfm | | 135 | 180 | 220 | 265 | 310 | 355 | 445 | 535 | 620 |
| | NC | | — | 22 | 28 | 34 | 38 | 41 | 47 | 53 | 57 |
| | Throw ft | 4 Way | 2-3-5 | 3-4-7 | 4-6-9 | 4-7-10 | 5-8-12 | 6-9-13 | 7-10-17 | 9-12-20 | 10-14-24 |
| | | 3 Way | 2-3-6 | 3-5-7 | 4-6-10 | 5-7-11 | 6-8-13 | 6-9-14 | 8-11-18 | 9-13-22 | 10-15-25 |
| | | 2 Way | 3-4-6 | 4-5-9 | 4-7-10 | 5-8-12 | 6-9-14 | 7-10-16 | 9-12-20 | 10-15-25 | 11-18-29 |
| 1 Way | | 3-5-8 | 4-7-10 | 6-8-13 | 7-10-15 | 8-11-18 | 9-12-20 | 10-16-26 | 12-19-30 | 14-22-35 | |
| 8 x 8 | Total Pressure, in. w.g. | | .014 | .024 | .037 | .053 | .072 | .093 | .147 | .210 | .289 |
| | Flow Rate, cfm | | 135 | 180 | 220 | 265 | 310 | 355 | 445 | 535 | 620 |
| | NC | | — | 17 | 23 | 29 | 33 | 36 | 42 | 48 | 52 |
| | Throw ft | 4 Way | 2-3-5 | 3-4-6 | 4-5-8 | 4-6-10 | 5-7-12 | 5-8-13 | 6-10-16 | 8-12-19 | 9-14-23 |
| | | 3 Way | 2-3-5 | 3-5-6 | 4-5-9 | 5-6-11 | 5-7-13 | 5-8-14 | 7-11-17 | 8-13-21 | 9-14-23 |
| | | 2 Way | 3-4-5 | 4-5-8 | 4-6-10 | 5-7-12 | 5-8-14 | 6-10-15 | 8-12-19 | 10-14-23 | 11-17-27 |
| 1 Way | | 3-5-7 | 4-6-10 | 5-7-13 | 6-9-14 | 7-11-17 | 8-12-19 | 10-15-26 | 12-18-29 | 14-21-33 | |
| 10 Ø | Total Pressure, in. w.g. | | .025 | .042 | .067 | .097 | .131 | .169 | .267 | .380 | .520 |
| | Flow Rate, cfm | | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 |
| | NC | | 17 | 25 | 31 | 36 | 40 | 44 | 50 | 55 | 60 |
| | Throw ft | 4 Way | 3-4-8 | 4-6-10 | 6-8-12 | 7-9-14 | 7-11-17 | 8-13-20 | 10-15-24 | 12-18-29 | 14-21-33 |
| | | 3 Way | 3-4-8 | 4-7-11 | 6-8-13 | 7-10-15 | 8-11-19 | 9-13-21 | 11-17-26 | 13-20-31 | 15-22-36 |
| | | 2 Way | 3-6-9 | 4-8-12 | 6-9-14 | 8-11-18 | 9-13-21 | 10-14-23 | 12-19-30 | 14-22-35 | 17-25-41 |
| 1 Way | | 4-7-11 | 7-9-15 | 8-11-19 | 9-13-22 | 11-17-26 | 12-19-30 | 15-23-37 | 19-18-44 | 21-32-52 | |
| 10 x 10 | Total Pressure, in. w.g. | | .018 | .030 | .048 | .069 | .093 | .120 | .190 | .270 | .370 |
| | Flow Rate, cfm | | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 |
| | NC | | — | 21 | 27 | 32 | 36 | 40 | 46 | 51 | 56 |
| | Throw ft | 4 Way | 3-4-7 | 4-5-9 | 5-7-11 | 6-8-13 | 6-10-15 | 7-11-18 | 9-14-22 | 11-16-26 | 13-19-30 |
| | | 3 Way | 3-4-7 | 4-6-10 | 5-7-12 | 6-9-14 | 7-10-17 | 8-12-19 | 10-15-24 | 12-18-28 | 14-20-33 |
| | | 2 Way | 3-5-8 | 4-7-11 | 5-8-13 | 7-10-16 | 8-12-19 | 9-13-21 | 11-17-27 | 13-20-32 | 15-23-37 |
| 1 Way | | 4-6-10 | 6-8-14 | 7-10-17 | 8-12-20 | 10-15-24 | 11-17-27 | 14-21-34 | 17-25-40 | 19-29-47 | |
| 12 Ø | Total Pressure, in. w.g. | | .015 | .025 | .040 | .057 | .078 | .101 | .159 | .226 | .310 |
| | Flow Rate, cfm | | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 |
| | NC | | — | 18 | 24 | 29 | 33 | 37 | 43 | 48 | 53 |
| | Throw ft | 4 Way | 3-4-7 | 4-5-9 | 5-7-11 | 6-8-13 | 6-10-15 | 7-11-18 | 9-14-22 | 11-16-26 | 13-19-30 |
| | | 3 Way | 3-4-7 | 4-6-10 | 5-7-12 | 6-9-14 | 7-10-17 | 8-12-19 | 10-15-24 | 12-18-28 | 14-20-33 |
| | | 2 Way | 3-5-8 | 4-7-11 | 5-8-13 | 7-10-16 | 8-12-19 | 9-13-21 | 11-17-27 | 13-20-32 | 15-23-37 |
| 1 Way | | 4-6-10 | 6-8-14 | 7-10-17 | 8-12-20 | 10-15-24 | 11-17-27 | 14-21-34 | 17-25-40 | 19-29-47 | |

See Performance Notes Page C81.

Perforated Diffusers

PDS Series

Architectural Quality – Supply



Performance Data – 24 in. x 24 in. / 600 x 600 Module

| Inlet Size | | | | | | | | | | | |
|------------|--------------------------|--------|---------|---------|----------|----------|----------|----------|----------|----------|----------|
| 5 Ø | Total Pressure, in. w.g. | .027 | .045 | .071 | .102 | .138 | .178 | .282 | .400 | .546 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | |
| | NC | — | 25 | 30 | 35 | 39 | 43 | 49 | 54 | 58 | |
| | Throw ft | 4 Way | 2-2-3 | 2-3-4 | 3-3-6 | 3-4-7 | 3-5-8 | 3-6-9 | 4-7-11 | 5-8-13 | 7-10-16 |
| | | 3 Way | 2-3-3 | 2-3-5 | 3-3-6 | 3-4-7 | 3-5-8 | 4-6-10 | 5-8-12 | 6-9-13 | 7-10-17 |
| 2 Way | | 2-3-4 | 3-3-6 | 3-4-7 | 3-5-8 | 4-6-10 | 4-7-11 | 6-8-13 | 7-10-16 | 8-12-19 | |
| 1 Way | | 3-3-5 | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-12 | 6-8-13 | 7-11-17 | 8-13-20 | 9-14-24 | |
| 6 Ø | Total Pressure, in. w.g. | .014 | .024 | .037 | .053 | .073 | .094 | .148 | .211 | .288 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | |
| | NC | — | 18 | 23 | 28 | 32 | 36 | 42 | 47 | 51 | |
| | Throw ft | 4 Way | 1-1-3 | 1-2-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-12 | 6-9-14 |
| | | 3 Way | 1-2-3 | 1-3-4 | 2-3-5 | 3-4-6 | 3-4-7 | 4-5-9 | 4-7-10 | 5-8-12 | 6-9-15 |
| 2 Way | | 1-2-4 | 2-3-5 | 2-4-6 | 3-4-7 | 4-5-9 | 4-6-9 | 5-7-12 | 6-9-14 | 7-10-17 | |
| 1 Way | | 2-3-4 | 2-4-6 | 3-4-7 | 4-6-9 | 4-7-10 | 5-7-12 | 6-9-15 | 7-11-18 | 8-12-20 | |
| 6 x 6 | Total Pressure, in. w.g. | .009 | .016 | .025 | .036 | .049 | .063 | .101 | .143 | .195 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | |
| | NC | — | — | 19 | 24 | 28 | 32 | 38 | 43 | 47 | |
| | Throw ft | 4 Way | 1-1-3 | 1-2-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 | 6-8-13 |
| | | 3 Way | 1-2-3 | 1-3-4 | 2-3-5 | 3-4-6 | 3-4-7 | 4-5-8 | 4-6-10 | 5-8-11 | 6-8-14 |
| 2 Way | | 1-2-4 | 2-3-5 | 2-4-6 | 3-4-7 | 4-5-8 | 4-6-9 | 5-7-11 | 6-8-13 | 6-10-16 | |
| 1 Way | | 2-3-4 | 2-4-6 | 3-4-7 | 4-6-8 | 4-6-10 | 5-7-11 | 6-9-14 | 7-11-17 | 8-12-20 | |
| 7 Ø | Total Pressure, in. w.g. | .009 | .015 | .023 | .033 | .045 | .058 | .091 | .130 | .177 | |
| | Flow Rate, cfm | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | |
| | NC | — | — | 17 | 22 | 26 | 30 | 36 | 41 | 45 | |
| | Throw ft | 4 Way | 1-1-3 | 1-2-3 | 2-3-5 | 2-3-6 | 3-4-7 | 3-5-8 | 3-6-9 | 4-7-11 | 6-8-13 |
| | | 3 Way | 1-2-3 | 1-3-4 | 2-3-5 | 3-3-6 | 3-4-7 | 3-5-8 | 4-6-10 | 5-8-11 | 6-8-14 |
| 2 Way | | 1-2-3 | 2-3-5 | 2-3-6 | 3-4-7 | 3-5-8 | 3-6-9 | 5-7-11 | 6-8-13 | 6-10-16 | |
| 1 Way | | 2-3-4 | 2-3-6 | 3-4-7 | 3-6-8 | 4-6-10 | 5-7-11 | 6-9-14 | 7-10-17 | 8-12-19 | |
| 8 Ø | Total Pressure, in. w.g. | .018 | .031 | .048 | .069 | .094 | .122 | .192 | .275 | .377 | |
| | Flow Rate, cfm | 135 | 180 | 220 | 265 | 310 | 355 | 445 | 535 | 620 | |
| | NC | — | 22 | 28 | 34 | 38 | 41 | 47 | 53 | 57 | |
| | Throw ft | 4 Way | 2-2-4 | 3-3-6 | 3-5-8 | 3-6-9 | 4-7-11 | 5-8-12 | 6-9-15 | 8-11-18 | 9-13-21 |
| | | 3 Way | 2-3-5 | 3-4-6 | 3-5-9 | 4-6-10 | 5-7-12 | 5-8-15 | 7-10-16 | 8-12-20 | 9-14-22 |
| 2 Way | | 3-3-5 | 3-4-8 | 3-6-9 | 4-7-11 | 5-8-13 | 6-9-15 | 8-11-18 | 9-14-22 | 10-16-26 | |
| 1 Way | | 3-4-7 | 3-6-9 | 5-7-12 | 6-9-14 | 7-10-16 | 8-11-18 | 9-15-23 | 10-17-28 | 13-20-32 | |
| 8 x 8 | Total Pressure, in. w.g. | .013 | .022 | .034 | .049 | .067 | .087 | .137 | .196 | .268 | |
| | Flow Rate, cfm | 135 | 180 | 220 | 265 | 310 | 355 | 445 | 535 | 620 | |
| | NC | — | 17 | 23 | 29 | 33 | 36 | 42 | 48 | 52 | |
| | Throw ft | 4 Way | 2-2-4 | 2-3-6 | 3-5-7 | 3-6-9 | 4-7-11 | 5-7-11 | 6-9-15 | 7-11-17 | 8-12-20 |
| | | 3 Way | 2-2-5 | 2-4-6 | 3-5-8 | 4-6-10 | 5-7-11 | 5-7-12 | 7-10-16 | 7-11-19 | 8-13-21 |
| 2 Way | | 2-3-5 | 3-4-7 | 3-6-9 | 4-7-11 | 5-7-12 | 6-9-14 | 7-11-17 | 9-13-21 | 10-16-25 | |
| 1 Way | | 2-4-7 | 3-6-9 | 5-7-11 | 6-8-13 | 7-9-16 | 7-11-17 | 9-14-22 | 11-16-26 | 12-19-30 | |
| 10 Ø | Total Pressure, in. w.g. | .023 | .038 | .061 | .087 | .118 | .152 | .241 | .342 | .470 | |
| | Flow Rate, cfm | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 | |
| | NC | 17 | 25 | 31 | 36 | 40 | 44 | 50 | 55 | 60 | |
| | Throw ft | 4 Way | 3-4-7 | 4-5-9 | 5-7-11 | 6-8-13 | 6-10-15 | 7-11-17 | 9-14-21 | 11-16-25 | 13-18-29 |
| | | 3 Way | 3-4-7 | 4-6-10 | 5-7-12 | 6-9-14 | 7-10-16 | 8-12-18 | 10-15-23 | 12-17-27 | 14-19-32 |
| 2 Way | | 3-5-8 | 4-7-11 | 5-8-13 | 7-10-16 | 8-12-18 | 9-13-20 | 11-16-26 | 13-19-31 | 15-22-36 | |
| 1 Way | | 4-6-10 | 6-8-14 | 7-10-16 | 8-12-19 | 10-15-23 | 11-16-26 | 14-20-33 | 16-24-39 | 18-28-46 | |
| 10 x 10 | Total Pressure, in. w.g. | .016 | .026 | .042 | .061 | .082 | .106 | .169 | .240 | .329 | |
| | Flow Rate, cfm | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 | |
| | NC | — | 21 | 27 | 32 | 36 | 40 | 46 | 51 | 56 | |
| | Throw ft | 4 Way | 3-4-6 | 4-5-8 | 5-6-10 | 5-7-12 | 5-9-14 | 6-10-16 | 8-13-20 | 10-15-24 | 12-17-27 |
| | | 3 Way | 3-4-6 | 4-5-9 | 5-6-11 | 5-8-13 | 6-9-15 | 7-10-17 | 9-14-22 | 11-16-25 | 13-18-30 |
| 2 Way | | 3-5-7 | 4-6-9 | 5-7-12 | 6-9-15 | 7-11-17 | 8-12-19 | 10-15-25 | 12-18-29 | 14-21-34 | |
| 1 Way | | 4-5-9 | 5-7-13 | 6-9-15 | 7-11-18 | 9-13-22 | 10-15-25 | 13-19-31 | 15-23-36 | 17-26-43 | |
| 12Ø | Total Pressure, in. w.g. | .013 | .021 | .035 | .051 | .069 | .089 | .141 | .200 | .274 | |
| | Flow Rate, cfm | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 | |
| | NC | — | 18 | 24 | 29 | 33 | 37 | 43 | 48 | 53 | |
| | Throw ft | 4 Way | 3-4-6 | 4-4-8 | 4-6-10 | 5-7-11 | 5-9-13 | 6-10-16 | 8-12-19 | 10-14-23 | 11-17-26 |
| | | 3 Way | 3-4-6 | 4-5-9 | 4-7-11 | 5-8-12 | 6-9-15 | 7-11-17 | 9-13-21 | 11-16-25 | 12-18-29 |
| 2 Way | | 3-4-7 | 4-6-10 | 4-7-11 | 6-9-14 | 7-11-17 | 8-11-18 | 10-15-24 | 11-18-28 | 13-20-32 | |
| 1 Way | | 4-5-9 | 5-7-12 | 6-9-15 | 7-11-18 | 9-13-21 | 10-15-24 | 12-18-30 | 15-22-35 | 17-26-41 | |
| 12 x 12 | Total Pressure, in. w.g. | .019 | .032 | .051 | .074 | .099 | .128 | .200 | .290 | .390 | |
| | Flow Rate, cfm | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 | |
| | NC | 16 | 24 | 30 | 35 | 39 | 43 | 49 | 54 | 58 | |
| | Throw ft | 4 Way | 3-5-8 | 4-7-11 | 6-8-14 | 7-10-16 | 8-12-19 | 9-13-22 | 11-17-27 | 13-20-32 | 15-23-38 |
| | | 3 Way | 4-5-8 | 5-7-12 | 6-9-15 | 7-11-17 | 8-12-20 | 9-14-23 | 12-18-28 | 14-21-34 | 16-25-39 |
| 2 Way | | 4-6-10 | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 | 10-16-26 | 13-20-32 | 16-24-38 | 18-28-45 | |
| 1 Way | | 5-8-12 | 7-10-16 | 8-13-20 | 10-15-25 | 12-18-29 | 13-20-32 | 17-25-40 | 20-30-49 | 23-35-57 | |
| 14 Ø | Total Pressure, in. w.g. | .017 | .029 | .047 | .068 | .091 | .118 | .184 | .267 | .359 | |
| | Flow Rate, cfm | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 | |
| | NC | 16 | 22 | 28 | 33 | 37 | 41 | 47 | 52 | 56 | |
| | Throw ft | 4 Way | 3-5-8 | 4-7-11 | 6-8-14 | 7-10-16 | 8-12-19 | 9-13-22 | 11-17-27 | 13-20-32 | 15-23-38 |
| | | 3 Way | 4-5-8 | 5-7-12 | 6-9-15 | 7-11-17 | 8-12-20 | 9-14-23 | 12-18-28 | 14-21-34 | 16-25-39 |
| 2 Way | | 4-6-10 | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 | 10-16-26 | 13-20-32 | 16-24-38 | 18-28-45 | |
| 1 Way | | 5-8-12 | 7-10-16 | 8-13-20 | 10-15-25 | 12-18-29 | 13-20-32 | 17-25-40 | 20-30-49 | 23-35-57 | |

See Performance Notes Page C81.

CEILING DIFFUSERS

Perforated Diffusers

PDS Series

Architectural Quality – Supply



Performance Data – 24 in. x 36 in., 48 in. / 600 x 900, 1200 Module

| Inlet Size | | | | | | | | | | | |
|------------|--------------------------|----------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| 5 Ø | Total Pressure, in. w.g. | Flow Rate, cfm | .026 | .044 | .068 | .098 | .133 | .171 | .271 | .385 | .525 |
| | | NC | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | Throw ft | 4 Way | 2-2-3 | 2-3-4 | 3-3-6 | 3-4-7 | 3-5-8 | 3-6-9 | 4-7-11 | 5-8-13 | 7-10-16 |
| | | 3 Way | 2-3-3 | 2-3-5 | 3-3-6 | 3-4-7 | 3-5-8 | 4-6-10 | 5-8-12 | 6-9-13 | 7-10-17 |
| | | 2 Way | 2-3-4 | 3-3-6 | 3-4-7 | 3-5-8 | 4-6-10 | 4-7-11 | 6-8-13 | 7-10-16 | 8-12-19 |
| 1 Way | 3-3-5 | 3-4-7 | 3-5-8 | 4-7-10 | 5-8-12 | 6-8-13 | 7-11-17 | 8-13-20 | 9-14-24 | | |
| 6 Ø | Total Pressure, in. w.g. | Flow Rate, cfm | .013 | .022 | .035 | .050 | .068 | .088 | .139 | .198 | .270 |
| | | NC | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | Throw ft | 4 Way | 1-1-4 | 1-3-5 | 3-4-6 | 3-5-7 | 4-5-9 | 4-6-10 | 5-7-12 | 5-9-14 | 7-11-17 |
| | | 3 Way | 1-3-4 | 1-4-5 | 3-4-6 | 4-5-7 | 4-5-9 | 5-6-11 | 5-8-13 | 6-10-14 | 7-11-18 |
| | | 2 Way | 1-3-5 | 3-4-6 | 3-5-7 | 4-5-9 | 5-6-11 | 5-7-12 | 6-9-14 | 7-11-17 | 8-13-21 |
| 1 Way | 3-4-5 | 3-5-7 | 4-5-9 | 5-7-11 | 5-8-13 | 6-9-14 | 7-12-18 | 9-14-22 | 10-15-25 | | |
| 6 x 6 | Total Pressure, in. w.g. | Flow Rate, cfm | .009 | .015 | .023 | .033 | .045 | .058 | .091 | .129 | .177 |
| | | NC | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | Throw ft | 4 Way | 1-1-3 | 1-2-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 | 6-8-13 |
| | | 3 Way | 1-2-3 | 1-3-4 | 2-3-5 | 3-4-6 | 3-4-7 | 4-5-8 | 4-6-10 | 5-8-11 | 6-8-14 |
| | | 2 Way | 1-2-4 | 2-3-5 | 2-3-6 | 3-4-7 | 4-5-8 | 4-6-9 | 5-7-11 | 6-10-13 | 6-10-16 |
| 1 Way | 2-3-4 | 2-4-6 | 3-4-7 | 4-6-8 | 4-6-10 | 5-7-11 | 6-9-14 | 7-11-17 | 8-12-20 | | |
| 7 Ø | Total Pressure, in. w.g. | Flow Rate, cfm | .009 | .015 | .023 | .033 | .044 | .057 | .089 | .127 | .174 |
| | | NC | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 |
| | Throw ft | 4 Way | 1-1-3 | 1-2-3 | 2-3-5 | 2-3-6 | 3-4-7 | 3-5-8 | 3-6-9 | 4-7-11 | 6-8-13 |
| | | 3 Way | 1-2-3 | 1-3-4 | 2-3-5 | 3-3-6 | 3-4-7 | 3-5-8 | 4-6-10 | 5-8-11 | 6-8-14 |
| | | 2 Way | 1-2-3 | 2-3-5 | 2-3-6 | 3-4-7 | 3-5-8 | 3-6-9 | 5-7-11 | 6-8-13 | 6-10-16 |
| 1 Way | 2-3-4 | 2-3-6 | 3-4-7 | 3-6-8 | 4-6-10 | 5-7-11 | 6-9-14 | 7-10-17 | 8-12-19 | | |
| 8 Ø | Total Pressure, in. w.g. | Flow Rate, cfm | .017 | .029 | .045 | .065 | .088 | .115 | .180 | .258 | .354 |
| | | NC | 135 | 180 | 220 | 265 | 310 | 355 | 445 | 535 | 620 |
| | Throw ft | 4 Way | 2-3-4 | 3-3-6 | 3-5-8 | 3-6-9 | 4-7-11 | 5-8-12 | 6-9-15 | 8-11-18 | 9-13-22 |
| | | 3 Way | 2-3-5 | 3-4-6 | 3-5-9 | 4-6-10 | 5-7-12 | 5-8-13 | 7-10-16 | 8-12-20 | 9-14-22 |
| | | 2 Way | 3-3-5 | 3-4-8 | 3-6-9 | 4-7-11 | 5-8-13 | 6-9-15 | 8-11-18 | 9-14-22 | 10-16-26 |
| 1 Way | 3-4-7 | 3-6-9 | 5-7-12 | 6-9-14 | 7-10-16 | 8-11-18 | 9-15-23 | 11-17-22 | 13-20-32 | | |
| 8 x 8 | Total Pressure, in. w.g. | Flow Rate, cfm | .012 | .019 | .031 | .045 | .060 | .078 | .123 | .176 | .241 |
| | | NC | 135 | 180 | 220 | 265 | 310 | 355 | 445 | 535 | 620 |
| | Throw ft | 4 Way | 2-2-4 | 2-3-6 | 3-5-7 | 3-6-9 | 4-7-11 | 5-7-11 | 6-9-15 | 7-11-17 | 8-12-20 |
| | | 3 Way | 2-2-5 | 2-4-6 | 3-5-8 | 4-6-9 | 5-7-11 | 5-7-12 | 7-10-16 | 7-11-19 | 8-13-21 |
| | | 2 Way | 2-3-5 | 3-4-7 | 3-6-9 | 4-7-11 | 5-7-12 | 6-9-14 | 7-11-17 | 9-13-21 | 10-16-25 |
| 1 Way | 2-4-7 | 3-6-9 | 5-7-11 | 6-8-13 | 7-10-16 | 7-11-17 | 9-14-22 | 11-16-26 | 12-19-30 | | |
| 10 Ø | Total Pressure, in. w.g. | Flow Rate, cfm | .021 | .034 | .055 | .078 | .106 | .137 | .216 | .308 | .422 |
| | | NC | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 |
| | Throw ft | 4 Way | 3-4-7 | 4-5-9 | 5-7-11 | 6-8-13 | 6-10-15 | 7-11-17 | 9-14-21 | 11-16-25 | 13-18-29 |
| | | 3 Way | 3-4-7 | 4-6-10 | 5-7-12 | 6-9-14 | 7-10-16 | 8-12-18 | 10-15-23 | 12-17-27 | 14-19-32 |
| | | 2 Way | 3-5-8 | 4-7-11 | 5-8-13 | 7-10-16 | 8-12-18 | 9-13-20 | 11-16-26 | 13-19-31 | 14-19-33 |
| 1 Way | 4-6-10 | 6-8-14 | 7-10-16 | 8-12-19 | 10-15-23 | 11-16-26 | 14-20-33 | 16-24-39 | 18-28-46 | | |
| 10 x 10 | Total Pressure, in. w.g. | Flow Rate, cfm | .014 | .024 | .038 | .055 | .073 | .095 | .150 | .213 | .292 |
| | | NC | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 |
| | Throw ft | 4 Way | 3-4-6 | 4-5-8 | 5-6-10 | 5-7-12 | 5-9-14 | 6-10-16 | 8-13-20 | 10-15-24 | 12-17-27 |
| | | 3 Way | 3-4-6 | 4-5-9 | 5-6-11 | 5-8-13 | 6-9-15 | 7-11-17 | 9-13-22 | 11-16-25 | 13-18-30 |
| | | 2 Way | 3-5-7 | 4-6-9 | 5-7-12 | 6-9-15 | 7-11-17 | 8-12-19 | 10-15-25 | 12-18-29 | 14-21-34 |
| 1 Way | 4-5-9 | 5-7-13 | 6-9-15 | 7-11-18 | 9-14-22 | 10-15-25 | 13-19-31 | 15-23-36 | 17-26-43 | | |
| 12Ø | Total Pressure, in. w.g. | Flow Rate, cfm | .012 | .019 | .030 | .043 | .058 | .075 | .119 | .170 | .233 |
| | | NC | 210 | 280 | 345 | 415 | 485 | 555 | 695 | 825 | 975 |
| | Throw ft | 4 Way | 3-4-6 | 4-4-8 | 4-6-10 | 5-7-11 | 5-9-13 | 6-10-16 | 8-12-19 | 10-14-23 | 11-17-26 |
| | | 3 Way | 3-4-6 | 4-5-9 | 4-6-11 | 5-8-12 | 6-9-15 | 7-11-17 | 9-13-21 | 11-16-25 | 12-18-29 |
| | | 2 Way | 3-4-7 | 4-6-10 | 4-7-11 | 6-9-14 | 7-11-17 | 8-11-18 | 10-15-24 | 11-18-28 | 13-20-33 |
| 1 Way | 4-5-9 | 5-7-12 | 6-9-15 | 7-11-18 | 9-13-21 | 10-15-24 | 12-18-30 | 15-22-35 | 17-26-41 | | |
| 12 x 12 | Total Pressure, in. w.g. | Flow Rate, cfm | .016 | .027 | .049 | .062 | .083 | .107 | .168 | .243 | .327 |
| | | NC | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
| | Throw ft | 4 Way | 3-5-8 | 4-7-11 | 6-8-14 | 7-10-16 | 8-12-19 | 9-13-22 | 11-17-27 | 13-20-32 | 15-23-38 |
| | | 3 Way | 4-5-8 | 5-7-12 | 6-9-15 | 7-11-17 | 8-12-20 | 9-14-23 | 12-18-28 | 14-21-34 | 16-25-39 |
| | | 2 Way | 4-6-10 | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 | 10-16-26 | 13-20-32 | 16-24-38 | 18-28-45 |
| 1 Way | 5-8-12 | 7-10-16 | 8-13-20 | 10-15-25 | 12-18-29 | 13-20-32 | 17-25-40 | 20-30-49 | 23-35-57 | | |
| 14Ø | Total Pressure, in. w.g. | Flow Rate, cfm | .014 | .024 | .038 | .055 | .073 | .095 | .150 | .213 | .292 |
| | | NC | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 | 1400 |
| | Throw ft | 4 Way | 3-5-8 | 4-7-11 | 6-8-14 | 7-10-16 | 8-12-19 | 9-13-22 | 11-17-27 | 13-20-32 | 15-23-38 |
| | | 3 Way | 4-5-8 | 5-7-12 | 6-9-15 | 7-11-17 | 8-12-20 | 9-14-23 | 12-18-28 | 14-21-34 | 16-25-39 |
| | | 2 Way | 4-6-10 | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 | 10-16-26 | 13-20-32 | 16-24-38 | 18-28-45 |
| 1 Way | 5-8-12 | 7-10-16 | 8-13-20 | 10-15-25 | 12-18-29 | 13-20-32 | 17-25-40 | 20-30-49 | 23-35-57 | | |

CEILING DIFFUSERS

See Performance Notes Page C81.

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All Metric dimensions () are soft conversion.
Imperial dimensions are converted to metric and rounded to the nearest millimeter.

C-85

Perforated Diffusers

PDR Series

Architectural Quality – Return



Product Information

Models

Architectural Perforated Face Matching Return

Extruded Aluminum Construction **PDR**
 Extruded Aluminum Construction for MRI applications **PDR MRI**

Price PDR Series matching returns for the premium perforated supply ceiling diffusers PDS, offer the same construction features and are designed for ducted or plenum return applications.

Features

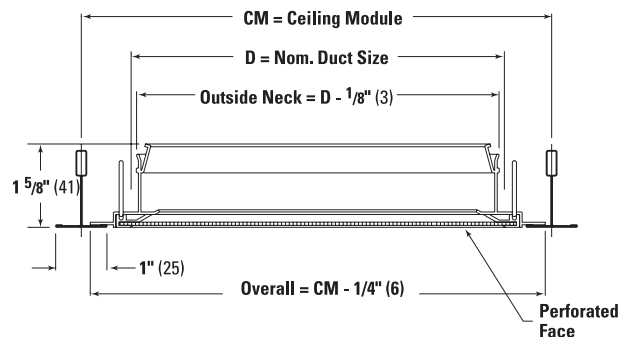
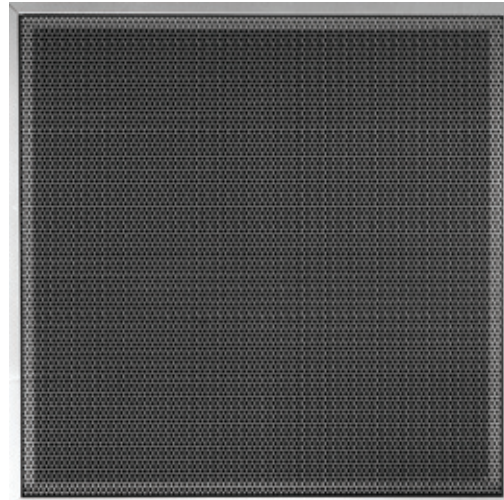
- Removable perforated faceplate with quick-release spring latches.
- Extruded aluminum border and mounting frame match seamlessly for a flush mount that blends with most ceiling tiles.
- Complete range of available accessory dampers, equalizing grids etc.
- All aluminum construction (non-magnetic) for MRI applications (PDR-MRI).

Finish

White Powder Coat **B12**
 For optional and special finishes see color matrix.

Available Module Sizes

| Imperial | Metric |
|-----------------|------------|
| 12 in. x 12 in. | 300 x 300 |
| 16 in. x 16 in. | 400 x 400 |
| 20 in. x 20 in. | 500 x 500 |
| 24 in. x 24 in. | 600 x 600 |
| 12 in. x 24 in. | 300 x 600 |
| 12 in. x 36 in. | 300 x 900 |
| 12 in. x 48 in. | 300 x 1200 |
| 24 in. x 36 in. | 600 x 900 |
| 24 in. x 48 in. | 600 x 1200 |



Dimensional Data — Imperial (in.) / Metric [mm]

| D Square Duct | H Ceiling Opening or Module | |
|----------------------|--------------------------------|------------|
| | Imperial | Metric |
| 10 x 10 [249 x 249] | 12 x 12 | 300 x 300 |
| 14 x 14 [349 x 349] | 16 x 16 | 400 x 400 |
| 18 x 18 [449 x 449] | 20 x 20 | 500 x 500 |
| 22 x 22 [549 x 549] | 24 x 24 | 600 x 600 |
| 22 x 10 [549 x 249] | 24 x 12 | 600 x 300 |
| 34 x 10 [849 x 249] | 36 x 12 | 900 x 300 |
| 46 x 10 [1149 x 249] | 48 x 12 | 1200 x 300 |
| 34 x 22 [849 x 549] | 36 x 24 | 900 x 600 |
| 46 x 22 [1149 x 549] | 48 x 24 | 1200 x 600 |

✓ Product Selection Checklist

- 1] Select Inlet Diameter or Neck Size L x W based on desired performance characteristics.
- 2] Select Face Size based on ceiling module.
- 3] Select Outlet Type by model number.
- 4] Select Border Style according to installation requirements (page C88).
- 5] Select Volume Control Accessories, if desired (page C181-C186).
- 6] Select Finish.

Example: 22 in. x 22 in. / 24 in. x 24 in. / PDR / 3 / B12

Application Recommendations:

For Border recommendations, see page C79.

CEILING DIFFUSERS

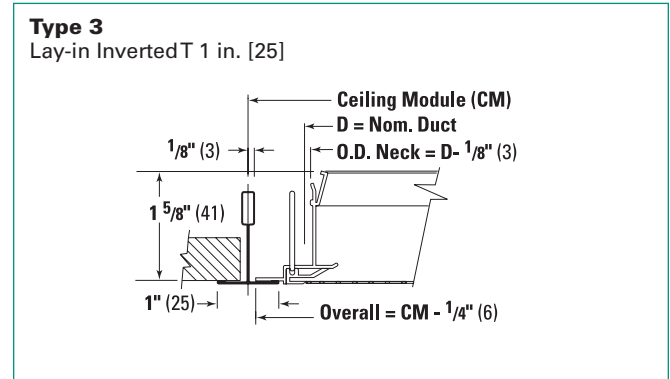
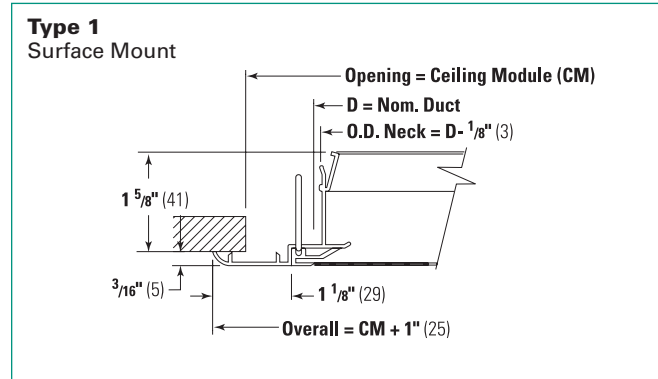
Perforated Diffusers

PDR Series

Architectural Quality – Return



Frame Selection



Performance Data - PDR Series

| Neck Size | Face Module | Neck Velocity, fpm | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|----------------|-----------------------------|----------------------|------|------|------|------|------|------|------|------|------|
| | | Neg. Static Pressure | .008 | .019 | .033 | .051 | .074 | .101 | .132 | .167 | .206 |
| | | Velocity Pressure | .002 | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 |
| 10 X 10 | 12 X 12 / 300 x 300 | Air Flow, cfm | 139 | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 |
| | | NC | — | — | — | — | 18 | 22 | 26 | 29 | 31 |
| 14 X 14 | 16 X 16 / 400 x 400 | Air Flow, cfm | 272 | 408 | 554 | 681 | 817 | 953 | 1089 | 1225 | 1361 |
| | | NC | — | — | — | 15 | 20 | 24 | 27 | 30 | 33 |
| 18 X 18 | 20 X 20 / 500 x 500 | Air Flow, cfm | 450 | 675 | 900 | 1125 | 1350 | 1575 | 1800 | 2025 | 2250 |
| | | NC | — | — | — | 16 | 21 | 25 | 28 | 31 | 34 |
| 22 X 10 | 24 X 12 / 600 x 300 | Air Flow, cfm | 306 | 458 | 611 | 764 | 917 | 1069 | 1222 | 1375 | 1528 |
| | | NC | — | — | — | 15 | 20 | 24 | 27 | 30 | 33 |
| 22 X 22 | 24 X 24 / 600 x 600 | Air Flow, cfm | 672 | 1008 | 1344 | 1681 | 2017 | 2353 | 2689 | 3025 | 3361 |
| | | NC | — | — | — | 17 | 22 | 26 | 29 | 32 | 35 |
| 34 X 10 | 36 X 12 / 900 x 300 | Air Flow, cfm | 472 | 708 | 944 | 1181 | 1417 | 1653 | 1889 | 2125 | 2361 |
| | | NC | — | — | — | 16 | 21 | 25 | 28 | 31 | 34 |
| 34 X 22 | 36 X 24 / 900 x 600 | Air Flow, cfm | 1039 | 1558 | 2078 | 2597 | 3117 | 3636 | 4156 | 4675 | 5194 |
| | | NC | — | — | — | 18 | 23 | 27 | 30 | 33 | 36 |
| 46 X 10 | 48 X 12 / 1200 x 300 | Air Flow, cfm | 639 | 958 | 1278 | 1597 | 1917 | 2236 | 2556 | 2875 | 3194 |
| | | NC | — | — | — | 17 | 22 | 26 | 29 | 32 | 35 |
| 46 X 22 | 48 X 24 / 1200 x 600 | Air Flow, cfm | 1406 | 2108 | 2811 | 3514 | 4217 | 4919 | 5622 | 6325 | 7028 |
| | | NC | — | — | — | 19 | 24 | 28 | 31 | 34 | 37 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
5. Blanks (—) indicate an NC level below 15.

Product Overview

Price offers a complete line of square and rectangular directional diffusers for a variety of applications.

Models SMD / AMD

This series of louvered face directional diffusers is available in steel (SMD) and aluminum (AMD) construction with a wide variety of air pattern core styles in square and rectangular neck styles. They can supply large volumes of air at low sound levels and pressure drops. Complete with a wide selection of frames for flush, T-bar and drop mounting, the SMD / AMD is the diffuser of choice for most architectural applications.

Models SMDA / AMDA

Matching the styling of the SMD / AMD line of diffusers, these are designed for field adjustment from horizontal to vertical air pattern and are available in steel (SMDA) or aluminum (AMDA) construction.

Models SMX / AMX

Matching the styling of the SMD / AMD line of diffusers, these are designed for high induction and rapid mixing with the addition of internally mounted discharge vanes.

Model SMDP

The SMDP design is intended to blend harmoniously with most ceiling systems, while the louvered slots supply large volumes of air at relatively low sound levels and pressure drops.

Models CSRD

These combination supply/return directional diffusers are available in louvered face extruded aluminum construction eggcrate core (CSRD) return air sections.

Models SMCD / AMCD

Designed for air pattern adjustment through field modification of louvered modular pattern controllers, Price modular core directional diffusers are available in steel (SMCD) and aluminum (AMCD) construction.

Model CVD / SCVD / ACVD

Individually adjustable curved vanes direct supply air precisely to suit the desired application in Price model CVD/ SCVD/ACVD directional diffusers. A clean, functional appearance with excellent performance characteristics, the CVD/SCVD/ ACVD provides a wide range of application versatility.

Model LCMD

Light Commercial Modular Diffuser series feature aluminum construction, 1 in. louver spacing and removable core for concealed mounting. LCMD is available in five different core styles and three frame types.

Types

Louvered Face Directional

Fixed Pattern

- Steel Construction
- Aluminum Construction
- Aluminum Construction

SMD
AMD
LCMD

Adjustable Pattern

- Steel Construction
- Aluminum Construction

SMDA
AMDA

Combination Supply / Return

- Aluminum Construction, Eggcrate Core

CSRD

High Induction Fixed Pattern

- Steel Frame
- Aluminum Construction

SMX
AMX

Plaque Face Directional

Fixed Pattern

- Steel Construction

SMDP

Modular Core

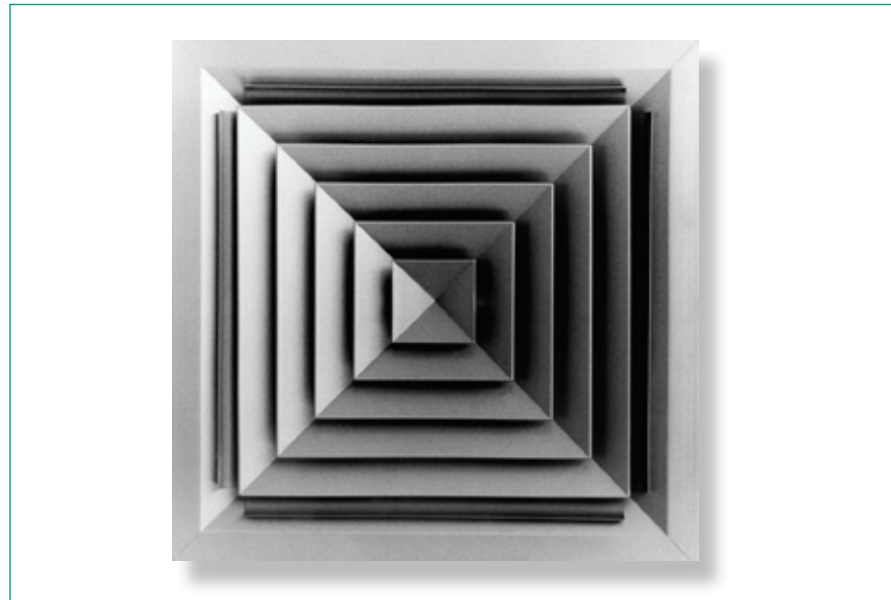
- Steel Construction
- Aluminum Construction

SMCD
AMCD




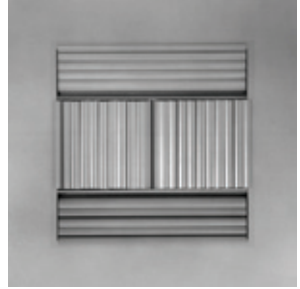


Curved Vane

- Extruded Aluminum Construction
- Formed Steel Construction
- Formed Aluminum Construction

CVD
SCVD
ACVD



Types

| | | | |
|--|--|---|---|
| <p>SMD / AMD SMDA / AMDA CSRD Louvered Face Directional</p>  <p>Pages C91 - C108 Pages C112 - C113</p> | <p>SMX / AMX High Induction Fixed Pattern</p>  <p>Pages C117 - C124</p> | <p>SMCD / AMCD Modular Core</p>  <p>Pages C125 - C132</p> | <p>CVD / SCVD / ACVD Curved Vane</p>  <p>Pages C133 - C139</p> |
| <p>SMDP Plaque Face Directional</p>  <p>Pages C109 - C111</p> | <p>LCMD Light Commercial Directional Diffuser</p>  <p>Pages C114 - C116</p> | | |

CEILING DIFFUSERS

Quick Selection Guide

| Diffuser Type | Ceiling Type | Recommended Border / Panel | |
|--------------------------|--|----------------------------|------------|
| Louvered Face | Lay-in (All diffuser types) | | |
| SMD / AMD | Inverted T 1 in. [25] | 3 | 3P |
| Modular Core | Narrow T-bar ⁹ / ₁₆ in. [14] | 17 | 17P |
| SMCD / AMCD | Concealed Spline | 4 | 4P |
| Curved Vane | Surface Mount | | |
| CVD / SCVD / ACVD | Flush Frame | 1 | |

Louvered Face Directional Diffusers

SMD / AMD Series



Product Information - Fixed Air Pattern

Models

Fixed Air Pattern

Steel Construction **SMD**
 Formed Aluminum Construction **AMD**
 Extruded Aluminum Construction **AMDE**

Price SMD / AMD / AMDE Series high capacity louvered face directional diffusers are designed to supply large volumes of air at relatively low sound levels and pressure drops. Available in a wide variety of core styles, the modular design of these diffusers allows each unit to be manufactured to suit a specified air pattern and deliver the desired amount for any requirement.

Features

- Choice of steel (SMD) or aluminum (AMD / AMDE) construction.
- Available in a wide variety of frame styles to suit most ceiling applications.
- Available with optional extended panels to suit modular ceilings.
- Specifiable core styles for 1, 2, 3 or 4 way blow in a wide selection of sizes.
- Directional core is easily removable at the diffuser face without requiring special tools.
- Optional square to round neck **SR** adaptors available. See page C184.
- Optional TRV - Throw Reducing Vanes available. (Permanently fixed core).
- Optional R6 insulation.

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.

Available Module Sizes

See Pages C95 - C96.

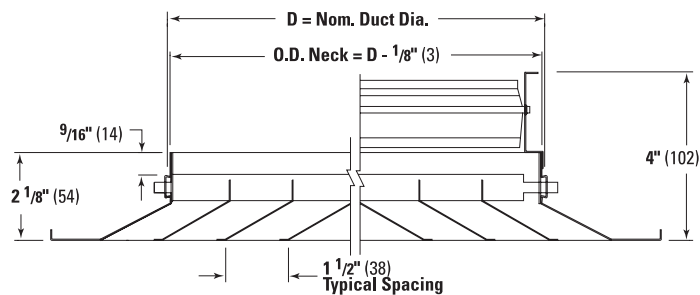
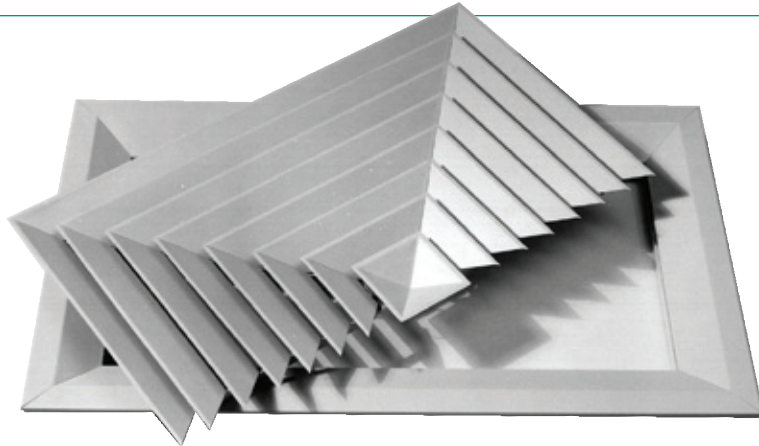
✓ Product Selection Checklist

- 1] Select Inlet Size L x W based on desired performance characteristics.
- 2] Select Face Size based on ceiling module (Lay-in applications only).
- 3] Select Outlet Type by model number (material).
- 4] Select Border / Panel Style according to installation requirements.
- 5] Select Core Style based on application.
- 6] Select Volume Control Accessories, if desired.
- 7] Select Finish.

Example: 12 in. x 12 in. / 24 in. x 24 in. / AMD / 3P / 4A / B12

Application Recommendations:

For Border and Panel recommendations, see page C90.



See Page C95 for ceiling opening and overall dimensions

Plan View

Core Styles Square Necks Rectangular Necks

| Core Styles | Square Necks | Rectangular Necks |
|---------------------|--------------|----------------------|
| One Way → | 1S | 1A, 1B |
| Two Way ↑ | 2S | 2A, 2B |
| Two Way Corner ↙ | 2G | 2C, 2D, 2E, 2F |
| Three Way ↗ | 3A | 3A1, 3A2, 3B, 3C, 3E |
| Four Way + | 4A | 4B, 4C, 4E |

2E, 2F, 3B, 3C, 3E, 4C, and 4E not available on AMDE

Fire-Rated Louvered Face Directional Diffusers SMD-FR Series



Product Information - Fixed Air Pattern

Three Hour Rating - Lay-in

Price SMD-FR high capacity louvered face directional diffusers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

SMD-FR high capacity louvered face directional diffusers are designed to supply large volumes of air at relatively low sound levels and pressure drops. Available in a wide variety of core styles, the modular design of these diffusers allows each unit to be manufactured to suit a specified air pattern and deliver the desired amount of air for any requirement.

Features

- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Specifiable core styles for 1, 2, 3 or 4 way blow in a wide selection of sizes.
- Directional core is easily removable at the diffuser face without requiring special tools. Provides access to optional volume controller.
- Optional adjustable volume controller (Allen key adjustable).
- Optional 24" x 24" (600mm x 600mm) T-bar Lay-in Panel.

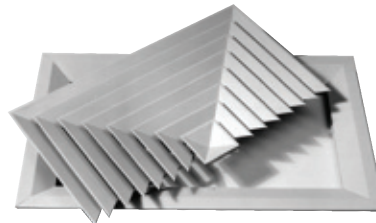
Finish

White Powder Coat **B12**
For optional and special finishes see color matrix.

✓ Product Selection Checklist

- 1] Select Inlet Size L x W.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Style by model number.
- 4] Select Panel Option according to installation requirements.
- 5] Select Core Style based on application.
- 6] Select Volume Control Accessories, if desired.
- 7] Select Finish.

Example:
12"x12" / 24"x24" / SMD-FR / 4A / B12



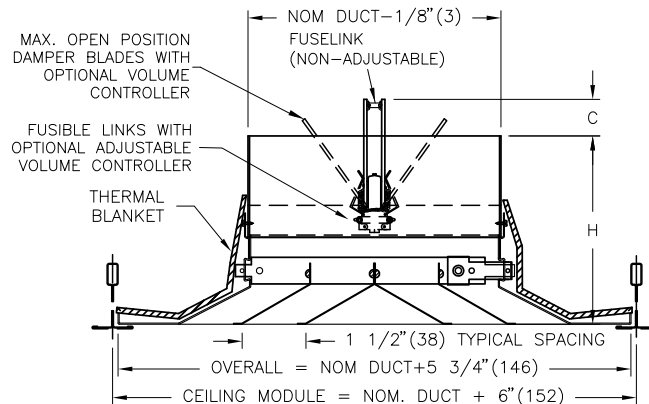
Dimensional Data — Imperial (in.)

| Ceiling Module Size | Square Duct Size | Round Duct Size* |
|---------------------|------------------|----------------------|
| 12 x 12 | 6 x 6 | 6 |
| 24 x 12 | 18 x 6 | 6 |
| 24 x 24 | 18 x 18 | 6, 8, 10, 12, 14, 15 |

Dimensional Data — Metric (mm)

| Ceiling Module Size | Square Duct Size | Round Duct Size* |
|---------------------|------------------|------------------------------|
| 305 x 305 | 152 x 152 | 152 |
| 610 x 305 | 457 x 152 | 152 |
| 610 x 610 | 457 x 457 | 152, 203, 254, 305, 357, 381 |

* Panel Option Diffuser Size = Duct + 6" up to max. 15" x 15".



Square Inlets H = 4" [101]

Round Inlets H = 6 1/2" [165]

Square Optional Volume Controller H = 4 3/4" [121]

Round Optional Volume Controller H = 6 1/2" [165]

* Adapter required and is part of the Fire-Rated Assembly.

Core Styles Square Necks Rectangular Necks

| Core Styles | Square Necks | Rectangular Necks |
|-------------------------------------|--------------|-------------------|
| One Way → | 1S | 1A, 1B |
| Two Way ↑ ↓ | 2S | 2A, 2B |
| Two Way Corner ↙ ↘ | 2G | 2E, 2F |
| Three Way ↑ → ↓ | 3A | 3A1, 3B |
| Four Way ↑ ↓ → ← | 4A | 4B |

Louvered Face Directional Diffusers SMDA / AMDA Series



Product Information - Adjustable Air Pattern

Models

Adjustable Air Pattern

Steel Construction **SMDA**
Formed Aluminum Construction **AMDA**
Extruded Aluminum Construction **AMDEA**

Price SMDA / AMDA / AMDEA Series adjustable high capacity louvered face directional diffusers include factory installed, individually adjustable vanes for field adjustment from horizontal to vertical on each directional pattern segment of the diffuser. This series matches in detail, and construction the SMD / AMD series.

Features

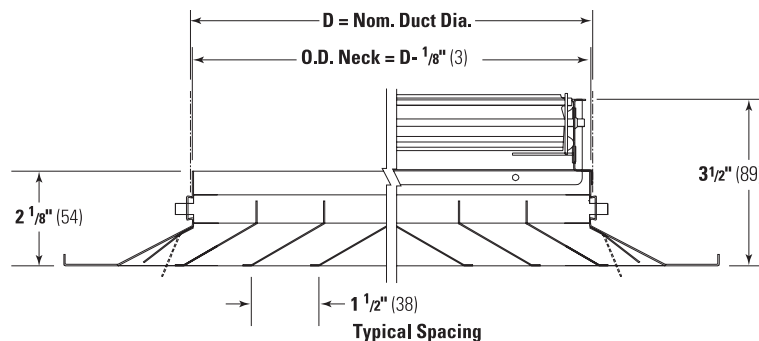
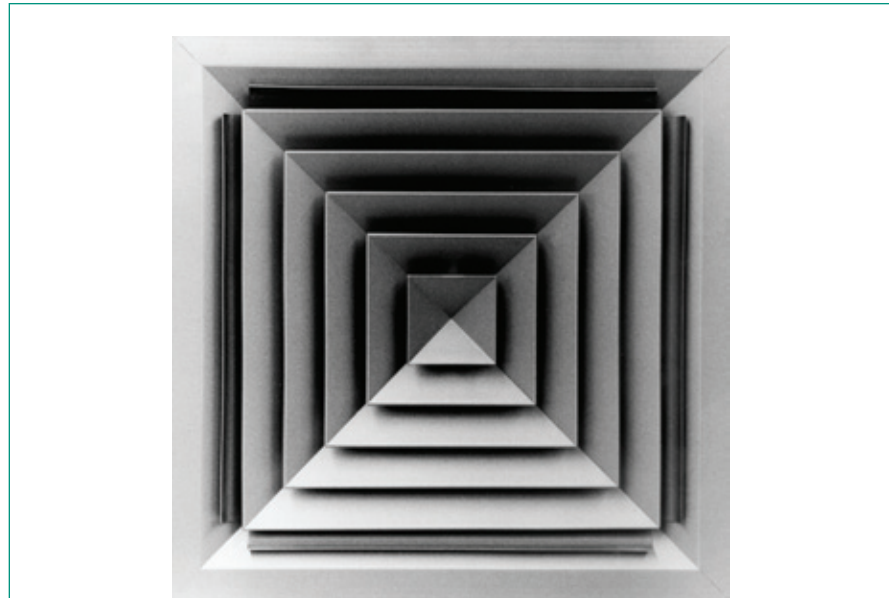
- Choice of steel (SMDA) or aluminum (AMDA / AMDEA) construction.
- Available in a wide variety of frame styles to suit most ceiling applications.
- Available with optional extended panels to suit modular ceilings.
- Specifiable core styles for 4 way blow in a wide selection of sizes.
- Recommend 4 way only with adjustable vanes.
- Directional core is easily removable at the diffuser face without requiring special tools.
- Optional square to round neck adaptors available. See page C184.

Finish

White Powder Coat **B12**
For optional and special finishes see color matrix.

Available Module Sizes

- Square duct sizes up to 24 in. x 24 in. recommended.



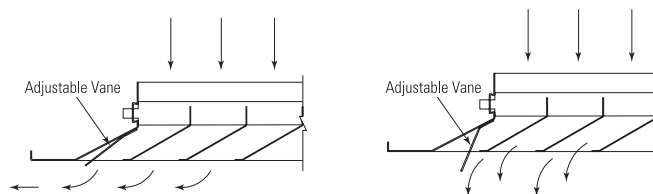
CEILING DIFFUSERS

✓ Product Selection Checklist

- 1] Select Inlet Size L x W based on desired performance characteristics.
- 2] Select Face Size based on ceiling module.
- 3] Select Outlet Type by model number (material).
- 4] Select Border / Panel Style according to installation requirements.
- 5] Select Core Style based on application.
- 6] Select Volume Control Accessories, if desired (page C181-C186).
- 7] Select Finish.

Example: 12 in. x 12 in. / 24 in. x 24 in. / SMDA / 3P / 4A / B12

Air Pattern Adjustment



SMDA/AMDA diffusers feature individually adjustable vanes on each directional pattern segment of the diffuser to permit air pattern adjustment from horizontal to vertical.

Fire-Rated Louvered Face Directional Diffusers SMDA-FR Series



Product Information - Adjustable Air Pattern

Three Hour Rating - Lay-in

Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

SMDA-FR adjustable high capacity louvered face directional diffusers include factory installed, individually adjustable vanes for field adjustment from horizontal to vertical on each directional pattern segment of the diffuser. This series matches in detail, availability and construction the SMD-FR series.

Features

- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- Specifiable core styles for 4 way blow in a wide selection of sizes.
- Recommend 4 way only with adjustable blades.
- Directional core is easily removable at the diffuser face without requiring special tools.
- Adjustable volume controller (Allen key adjustable).
- Optional 24" x 24" T-bar Lay-in Panel.

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.

✓ Product Selection Checklist

- 1] Select Inlet Size L x W.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Style by model number.
- 4] Select Panel Option according to installation requirements.
- 5] Select Core Style based on application.
- 6] Select Finish.

Example:

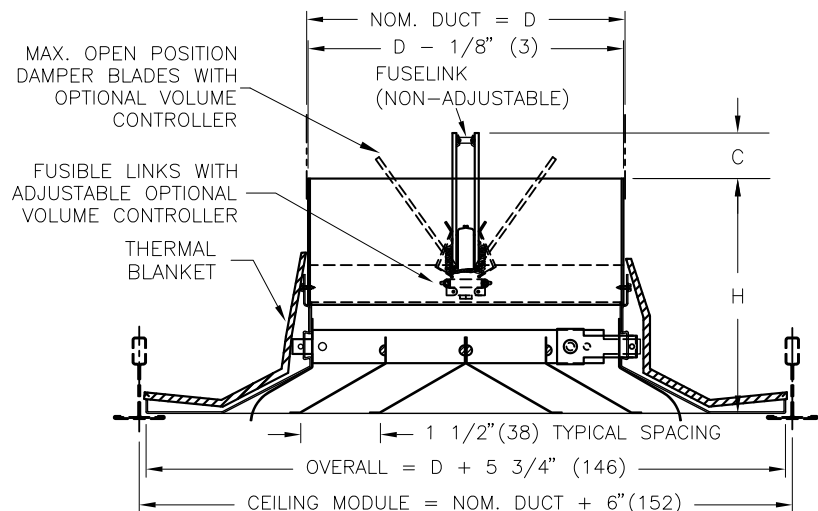
12"x12" / 24"x24" / SMDA-FR / 4A / B12



Dimensional Data - Imperial (in.) / Metric [mm]

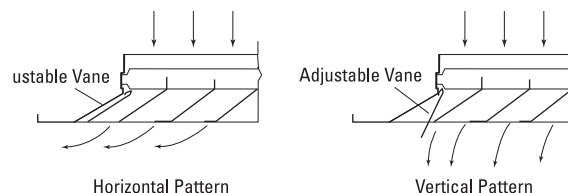
| Ceiling Module Size | Square Duct Size | Round Duct Size * |
|------------------------|------------------------|--|
| 12 x 12 [305 x 305] | 6 x 6 [152 x 152] | 6" [152] |
| 24 x 12 [610 x 305] | 18 x 6 [457 x 152] | 6" [152] |
| 24 x 24 [610 x 610] | 18 x 18 [457 x 457] | 6, 8, 10, 12, 14, 15 [152, 203, 254, 305, 357, 381] |

* Panel Option Diffuser Size = Duct + 6" up to max. 15' x 15'.



Square Inlets H = 4"
Round Inlets H = 6 1/2"
Square Optional Volume Controller H = 4 3/4"
Round Optional Volume Controller H = 6 1/2"
* Adapter required and is part of the Fire-Rated Assembly.

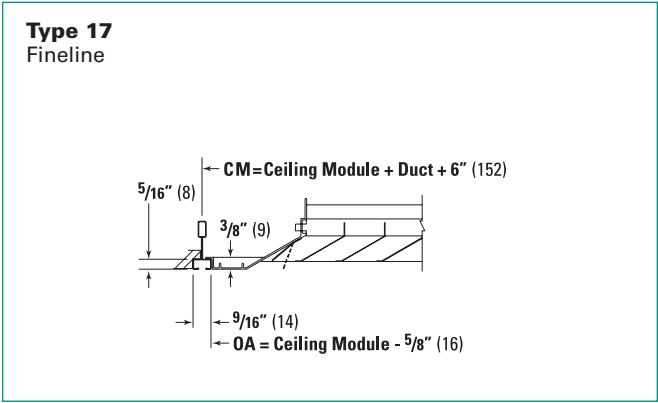
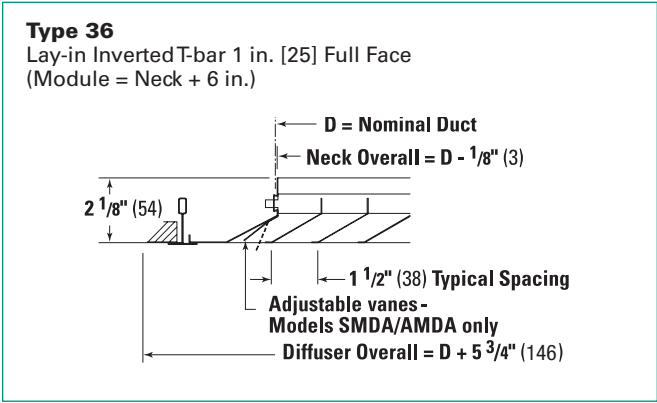
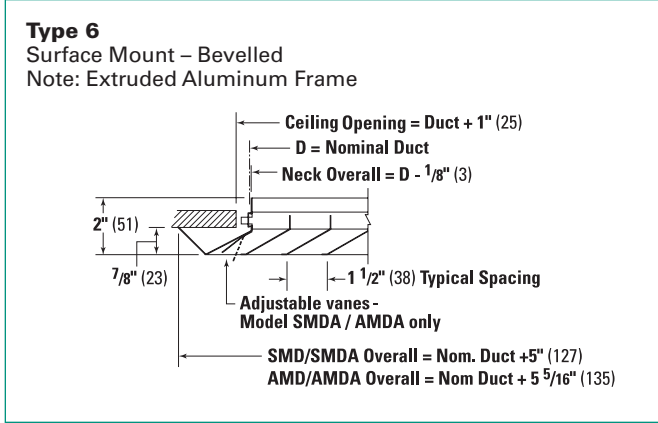
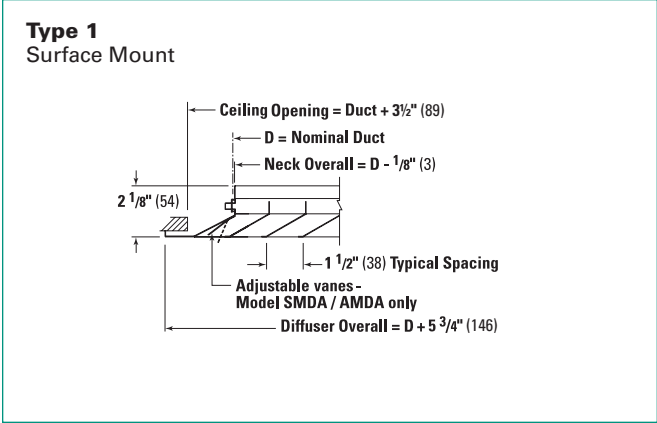
Air Pattern Adjustment



SMDA-FR diffusers feature individually adjustable vanes on each directional pattern segment of the diffuser to permit air pattern adjustment from horizontal to vertical.

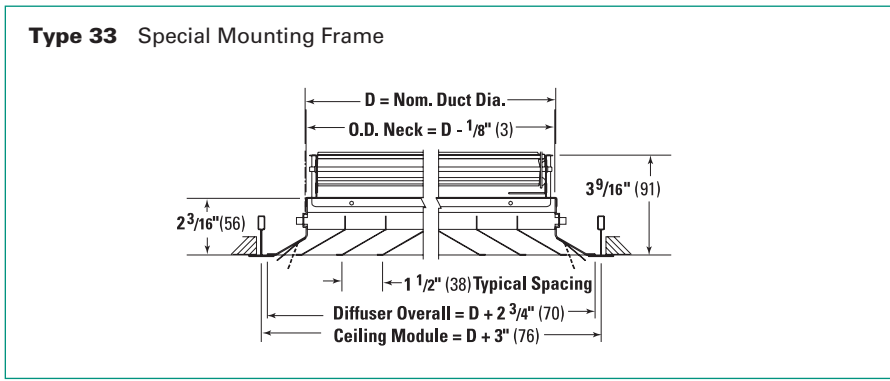
Frame and Panel Selection

CEILING DIFFUSERS



For applications where the nominal ceiling module exceeds the listed duct size by exactly 3 in. [76] in both module directions. Sized to fit common Lay-in ceiling modules.

Note: Available in square 4A core only. Extruded aluminum frame.



Recommended diffuser sizes for common T-bar Lay-in ceiling modules

| Imperial | | |
|----------------------------------|--------------------|--------------------|
| T-bar Lay-in Ceiling Module Size | Duct Size | |
| 12 x 12 | 6 x 6 - style 36 | 9 x 9 - style 33 |
| 12 x 24 | 6 x 18 - style 36 | 21 x 9 - style 33 |
| 24 x 24 | 18 x 18 - style 36 | 21 x 21 - style 33 |
| 30 x 30 | 24 x 24 - style 36 | |

| Metric | | |
|----------------------------------|----------------------|----------------------|
| T-bar Lay-in Ceiling Module Size | Duct Size | |
| 305 x 305 | 152 x 152 - style 36 | 229 x 229 - style 33 |
| 305 x 610 | 152 x 457 - style 36 | 533 x 229 - style 33 |
| 610 x 610 | 457 x 457 - style 36 | 533 x 533 - style 33 |
| 762 x 762 | 610 x 610 - style 36 | |

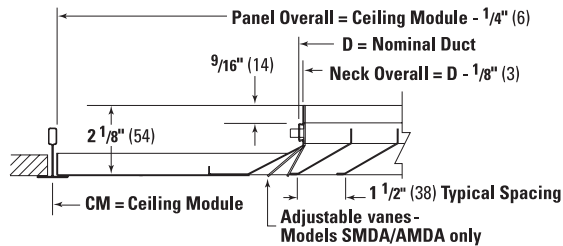
Lay-in Panel Note: When ceiling module size exceeds neck size by more than 6 in. [152], a Lay-in face panel is provided.

Louvered Face Directional Diffusers SMD / AMD Series

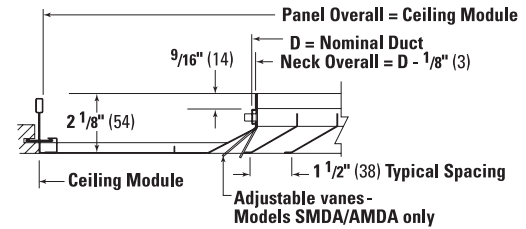


Frame and Panel Selection

Type 3P Steel Frame and Panel
Type 3PA Aluminum Frame and Panel (AMD/AMDA only)

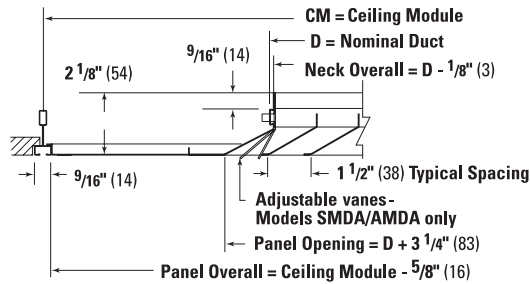


Type 4P Steel Frame and Panel
Type 4PA Aluminum Frame and Panel (AMD /AMDA only)



Frame and panel are steel construction for AMDA. Aluminum construction available as option.

Type 17P Steel Frame and Panel
Type 17PA Aluminum Frame and Panel (AMD/AMDA only)



Drop Face Frame

The SMD is available with two drop face frame styles - Type 5 Drop Face Surface Mount and Type 5TB Drop Face T-bar Mount.

Both frame styles have a 2 1/2 in. (63.5mm) drop face as standard or a 4 in. drop face as an option.

The drop face feature reduces ceiling smudging, making it ideal for high traffic commercial buildings such as big box retail outlets.

Note:

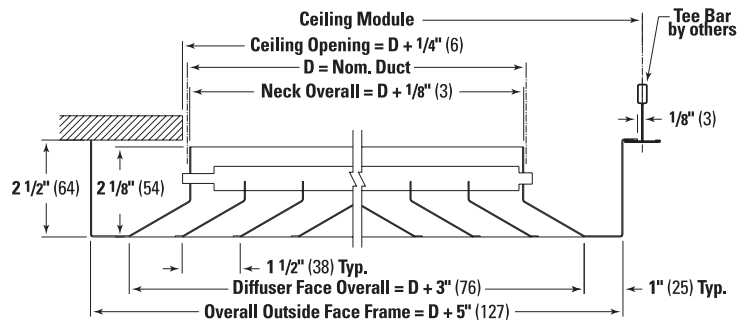
Type 5 - available in square and rectangular core styles.

Type 5TB,

18 in.x18 in. neck - available in square core styles 1S, 2S, 2G, 3A and 4A only.

42 in.x42 in. neck - available in square 4A core only.

SMD Type 5 / Type 5TB Modular Diffuser



Type 5

Available Size - Type 5 - Imperial

| Square Neck | Round Neck |
|-------------|--------------------------------|
| 6 x 6 | 4, 5, 6 |
| 9 x 9 | 6, 7, 8, 9 |
| 12 x 12 | 6, 7, 8, 9, 10, 12 |
| 15 x 15 | 8, 10, 12, 14, 15 |
| 18 x 18 | 8, 10, 12, 14, 15, 16, 18 |
| 21 x 21 | 12, 14, 15, 16, 18, 20 |
| 24 x 24 | 12, 14, 15, 16, 18, 20, 22, 24 |

Available Size - Type 5 - Metric

| Square Neck | Round Neck |
|-------------|--|
| 152 x 152 | 102, 127, 152 |
| 229 x 229 | 152, 178, 203, 229 |
| 305 x 305 | 152, 178, 203, 229, 254, 305 |
| 381 x 381 | 203, 254, 305, 357, 381 |
| 457 x 457 | 203, 254, 305, 357, 381, 406, 457 |
| 533 x 533 | 254, 305, 357, 381, 406, 457, 508 |
| 610 x 610 | 203, 254, 305, 357, 381, 406, 457, 508, 559, 610 |

Available Size - Type 5TB - Imperial

| Ceiling Module | Square Neck |
|----------------|-------------|
| 24 x 24 | 18 x 18 |
| 48 x 48 | 42 x 42 |

Available Size - Type 5TB - Metric

| Ceiling Module | Square Neck |
|----------------|-------------|
| 610 x 610 | 457 x 457 |
| 1219 x 1219 | 1067 |

Louvered Face Directional Diffusers SMDA / AMDA Series



Performance Data – SMDA / AMDA

SMDA / AMDA Performance Factors

| Duct Size | Sound NC (Add) | | Pressure TP (Multiply) | | Throw. Vertical (Multiply) | | | |
|------------------------|----------------|---|------------------------|-----|----------------------------|-----|--------------------|---------|
| | H | V | H | V | Cooling ΔT °F [°C] | | Heating ΔT °F [°C] | |
| | | | | | 20 [11] | 0 | 20 [11] | 40 [22] |
| 6 x 6 [152 x 152] | 3 | 7 | 1.3 | 1.6 | 1.3 | 1.1 | 0.8 | 0.6 |
| 9 x 9 [229 x 229] | 3 | 7 | 1.5 | 2.3 | 1.5 | 1.2 | 0.9 | 0.6 |
| 12 x 12 [305 x 305] | 3 | 7 | 1.5 | 2.3 | 1.6 | 1.3 | 1.0 | 0.6 |
| 15 x 15 [381 x 381] | 3 | 7 | 1.5 | 2.3 | 1.7 | 1.3 | 1.0 | 0.6 |
| 18 x 18 [457 x 457] | 3 | 7 | 1.5 | 2.3 | 1.7 | 1.3 | 0.9 | 0.6 |
| 21 x 21 [533 x 533] | 3 | 7 | 1.5 | 2.3 | 1.7 | 1.3 | 0.8 | 0.5 |
| 24 x 24 [610 x 610] | 3 | 7 | 1.5 | 2.3 | 1.5 | 1.1 | 0.7 | 0.5 |

Performance Notes:

To obtain performance data for the SMDA / AMDA adjustable diffuser, apply the correction factors listed opposite to the data listed for square SMD / AMD, core style 4A.

Correction factors apply as follows:

1. Sound: NC = listed + correction factor.
 2. Pressure drop: TP = listed x correction factor.
 3. Does not include effects of ceiling radiation damper(SMDA-FR)
- Note: The throw factor is applied only to the listed throw at 50 fpm terminal velocity (Vt).

Example, Imperial Units:

AMDA, 12 in. x 12 in. [305 x 305], 600 cfm, heating application, 40 °F ΔT, vertical projection.

$$NC = 30 + 7 = 37$$

$$TP = 0.144 \times 2.3 = 0.33$$

$$Throw = 27 \times 0.6 = 16ft \text{ Vt } 50 \text{ fpm.}$$

Note: Total pressure and throw obtained from performance data on page C-98.

Example, Metric Units:

AMDA, 305mm x 305mm, 283 cfm, heating application, 22 °C ΔT, vertical projection.

$$NC = 30 + 7 = 37 \text{ NC}$$

$$TP = 36 \times 2.3 = 82.8 \text{ Pa}$$

$$Throw = 8.1 \times 0.6 = 4.86m \text{ VT } 0.25 \text{ m/s.}$$

Note: Total pressure and throw obtained from performance data on page C-106.

Performance Correction Factors for SR Adaptors

| AMD SMD Size | Round Neck | TP Correction (Multiply) | NC Correction (Add) | Throw Correction (Multiply) | | |
|--------------|------------|--------------------------|---------------------|-----------------------------|--------|-------|
| | | | | VT 150 | VT 100 | VT 50 |
| 6 x 6 | 5 | 1.65 | 7 | 1.10 | 1.10 | 1.15 |
| 9 x 9 | 6 | 3.5 | 17 | 1.15 | 1.15 | 1.20 |
| 9 x 9 | 8 | 1.4 | 4 | 1.10 | 1.10 | 1.10 |
| 12 x 12 | 8 | 3.5 | 17 | 1.15 | 1.15 | 1.20 |
| 12 x 12 | 10 | 1.65 | 7 | 1.10 | 1.10 | 1.15 |
| 15 x 15 | 10 | 3.5 | 17 | 1.15 | 1.15 | 1.20 |
| 15 x 15 | 12 | 1.9 | 9 | 1.10 | 1.10 | 1.15 |
| 15 x 15 | 14 | 1.25 | 3 | 1.05 | 1.05 | 1.10 |
| 18 x 18 | 12 | 3.5 | 17 | 1.15 | 1.15 | 1.20 |
| 18 x 18 | 14 | 2.0 | 10 | 1.10 | 1.10 | 1.15 |
| 18 x 18 | 16 | 1.45 | 5 | 1.10 | 1.10 | 1.10 |
| 21 x 21 | 14 | 3.7 | 17 | 1.15 | 1.15 | 1.20 |
| 21 x 21 | 16 | 2.25 | 11 | 1.10 | 1.10 | 1.15 |
| 21 x 21 | 18 | 1.6 | 6 | 1.10 | 1.10 | 1.10 |
| 21 x 21 | 20 | 1.2 | 3 | 1.05 | 1.05 | 1.10 |
| 24 x 24 | 16 | 3.5 | 17 | 1.15 | 1.15 | 1.20 |
| 24 x 24 | 18 | 2.35 | 12 | 1.10 | 1.10 | 1.15 |
| 24 x 24 | 20 | 1.65 | 7 | 1.10 | 1.10 | 1.15 |
| 24 x 24 | 22 | 1.33 | 4 | 1.05 | 1.05 | 1.10 |

Louvered Face Directional Diffusers SMD / AMD Series



Application Notes

Square or Rectangular Necks

Model SMD / AMD ceiling diffusers can supply large volumes of conditioned air at acceptable pressure drops and sound levels when overall dimensions of the diffuser are limited by a modular ceiling system, or architectural considerations prevail. The excellent performance of these diffusers is complemented by a pleasing appearance that blends harmoniously with various architectural details, especially modular ceiling systems.

SMD / AMD directional diffusers are a popular, versatile choice for many heating, ventilating and cooling applications. There is a style, size and pattern to suit most conceivable installations and applications. The directional pattern can be selected to deliver the appropriate amount of conditioned air into areas where it is needed.

Ceiling Effect

The directional diffusers are not recommended for applications without ceilings, such as exposed duct mounting. Performance data published in this catalog

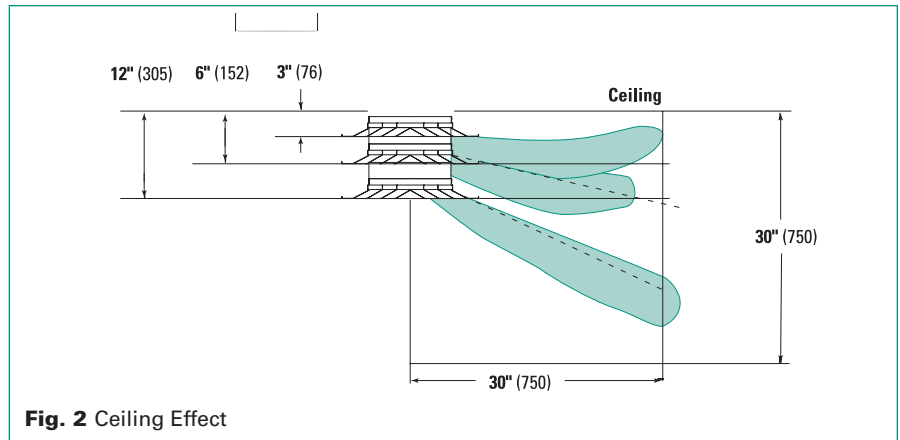


Fig. 2 Ceiling Effect

is based on the SMD / AMD being mounted in a ceiling. The published performance data for the directional air pattern benefits from the ceiling Coanda effect. When the diffuser is mounted remote from the ceiling the resultant air patterns to be anticipated are illustrated in Fig. 2.

Performance Data - Imperial Units

| | | Neck Velocity | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | | | |
|---------------|-----------|-------------------|---|----------|---|----------|---|----------|---|----------|---|----------|---|----------|---|----------|---|----------|--|
| | | Velocity Pressure | | 0.006 | | 0.01 | | 0.016 | | 0.022 | | 0.031 | | 0.040 | | 0.050 | | | |
| | | Total Pressure | | 0.036 | | 0.065 | | 0.099 | | 0.144 | | 0.196 | | 0.256 | | 0.324 | | | |
| Duct Size | Total cfm | 75 | | 100 | | 125 | | 150 | | 175 | | 200 | | 225 | | | | | |
| | | NC | | - | | 17 | | 23 | | 27 | | 31 | | 36 | | | | | |
| 6 in. x 6 in. | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | | |
| 4A | cfm/Side | 19 | | 25 | | 31 | | 38 | | 44 | | 50 | | 56 | | | | | |
| | | Throw,ft | | 4-6-12 | | 5-8-15 | | 7-10-16 | | 8-12-18 | | 9-14-19 | | 11-15-21 | | 12-16-22 | | | |
| 3A | cfm/Side | 19 | | 25 | | 31 | | 38 | | 44 | | 50 | | 56 | | 84 | | | |
| | | Throw,ft | | 4-6-12 | | 5-8-15 | | 7-10-16 | | 8-12-18 | | 9-14-19 | | 11-15-21 | | 13-16-23 | | 12-16-22 | |
| 2S | cfm/Side | 38 | | 50 | | 63 | | 75 | | 88 | | 100 | | 113 | | | | | |
| | | Throw,ft | | 6-8-15 | | 7-11-18 | | 9-14-20 | | 11-15-22 | | 13-17-24 | | 15-18-25 | | 15-19-27 | | | |
| 1S | cfm/Side | 75 | | 100 | | 125 | | 150 | | 175 | | 200 | | 225 | | | | | |
| | | Throw,ft | | 8-12-19 | | 11-15-22 | | 13-17-24 | | 15-19-27 | | 17-20-29 | | 18-22-31 | | 19-23-33 | | | |
| Duct Size | Total cfm | 169 | | 225 | | 282 | | 338 | | 394 | | 450 | | 507 | | | | | |
| | | NC | | - | | 21 | | 27 | | 31 | | 35 | | 39 | | | | | |
| 9 in. x 9 in. | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | | |
| 4A | cfm/Side | 42 | | 56 | | 71 | | 85 | | 99 | | 113 | | 127 | | | | | |
| | | Throw,ft | | 6-9-16 | | 8-12-18 | | 10-15-21 | | 12-16-23 | | 14-17-24 | | 15-18-26 | | 16-20-28 | | | |
| 3A | cfm/Side | 42 | | 56 | | 71 | | 85 | | 99 | | 113 | | 127 | | 190 | | | |
| | | Throw,ft | | 6-9-16 | | 8-12-18 | | 10-15-21 | | 12-16-23 | | 14-17-24 | | 15-18-26 | | 17-21-29 | | 16-20-28 | |
| 2S | cfm/Side | 85 | | 113 | | 141 | | 169 | | 197 | | 225 | | 254 | | | | | |
| | | Throw,ft | | 8-13-19 | | 11-16-22 | | 14-18-25 | | 16-19-28 | | 17-21-30 | | 18-22-32 | | 19-24-34 | | | |
| 1S | cfm/Side | 169 | | 225 | | 282 | | 338 | | 394 | | 450 | | 507 | | | | | |
| | | Throw,ft | | 12-17-24 | | 16-19-27 | | 18-22-31 | | 19-24-34 | | 21-26-36 | | 22-27-39 | | 21-29-41 | | | |

For Performance Notes, see page C105.
For SMD / AMD Return Factors, see page C98.

Louvered Face Directional Diffusers

SMD / AMD Series



Performance Data - Imperial Units - Square Neck

| Neck Velocity | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | | | | | | | | |
|-------------------|--------------|-------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Velocity Pressure | | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | | | | | | | | |
| Total Pressure | | 0.036 | 0.065 | 0.099 | 0.144 | 0.196 | 0.256 | 0.324 | | | | | | | | |
| Duct Size | Total cfm NC | 300 | 400 | 500 | 600 | 700 | 800 | 900 | | | | | | | | |
| | | - | 17 | 24 | 30 | 34 | 38 | 42 | | | | | | | | |
| 12 in. x 12 in. | 4A | | cfm/Side | | 75 | 100 | 125 | 150 | 175 | 200 | 225 | | | | | |
| | | | Throw,ft | | 8-12-19 | 11-15-22 | 13-17-24 | 15-19-27 | 17-20-29 | 18-22-31 | 19-23-33 | | | | | |
| | 3A | | cfm/Side | | 75 | 113 | 100 | 150 | 125 | 188 | 150 | 225 | 338 | | | |
| | | | Throw,ft | | 8-12-19 | 10-15-21 | 11-15-22 | 13-17-24 | 13-17-24 | 16-19-27 | 15-19-27 | 17-21-30 | 17-20-29 | 19-23-32 | 18-22-31 | 20-24-35 |
| | 1.00 ft² | 2S | | cfm/Side | | 150 | 200 | 250 | 300 | 350 | 400 | 450 | | | | |
| | | | | Throw,ft | | 11-16-23 | 15-19-26 | 17-21-30 | 19-23-32 | 20-25-35 | 22-26-37 | 23-28-40 | | | | |
| 1.00 ft² | 1S | | cfm/Side | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | | | | | |
| | | | Throw,ft | | 16-20-28 | 19-23-32 | 21-26-36 | 23-28-40 | 25-30-43 | 26-32-46 | 28-34-48 | | | | | |
| 15 in. x 15 in. | 4A | | Total cfm NC | | 468 | 625 | 781 | 938 | 1094 | 1250 | 1406 | | | | | |
| | | | | | - | 19 | 26 | 32 | 35 | 40 | 44 | | | | | |
| | 3A | | cfm/Side | | 117 | 156 | 195 | 234 | 273 | 313 | 352 | | | | | |
| | | | Throw,ft | | 10-15-21 | 13-17-25 | 16-20-28 | 17-21-30 | 19-23-33 | 20-25-35 | 21-26-37 | | | | | |
| | 1.56 ft² | 2S | | cfm/Side | | 117 | 176 | 156 | 234 | 195 | 293 | 234 | 352 | 527 | | |
| | | | | Throw,ft | | 10-15-21 | 12-17-24 | 13-17-25 | 16-20-28 | 16-20-28 | 18-22-31 | 17-21-30 | 20-24-34 | 19-23-33 | 21-26-37 | 23-28-39 |
| 1.56 ft² | 1S | | cfm/Side | | 234 | 313 | 391 | 469 | 547 | 625 | 703 | | | | | |
| | | | Throw,ft | | 14-18-26 | 17-21-30 | 19-24-34 | 21-26-37 | 23-28-40 | 25-30-43 | 26-32-45 | | | | | |
| 1.56 ft² | 1S | | cfm/Side | | 468 | 625 | 781 | 938 | 1094 | 1250 | 1406 | | | | | |
| | | | Throw,ft | | 18-22-32 | 21-26-37 | 24-29-41 | 26-32-45 | 28-34-48 | 30-37-52 | 32-39-55 | | | | | |
| 18 in. x 18 in. | 4A | | Total cfm NC | | 675 | 900 | 1125 | 1350 | 1575 | 1800 | 2025 | | | | | |
| | | | | | - | 21 | 28 | 34 | 38 | 42 | 46 | | | | | |
| | 3A | | cfm/Side | | 169 | 225 | 281 | 338 | 394 | 450 | 506 | | | | | |
| | | | Throw,ft | | 12-17-24 | 16-19-27 | 18-22-31 | 19-24-34 | 21-26-36 | 22-27-39 | 24-29-41 | | | | | |
| | 2.25 ft² | 2S | | cfm/Side | | 169 | 253 | 225 | 338 | 281 | 422 | 338 | 506 | 759 | | |
| | | | | Throw,ft | | 12-17-24 | 15-19-27 | 16-19-27 | 18-22-31 | 18-22-31 | 20-24-34 | 19-24-34 | 22-27-38 | 21-26-36 | 23-29-41 | 22-27-39 |
| 2.25 ft² | 1S | | cfm/Side | | 338 | 450 | 563 | 675 | 788 | 900 | 1013 | | | | | |
| | | | Throw,ft | | 17-20-29 | 19-24-33 | 22-26-37 | 24-29-41 | 25-31-44 | 27-33-47 | 29-35-50 | | | | | |
| 2.25 ft² | 1S | | cfm/Side | | 675 | 900 | 1125 | 1350 | 1575 | 1800 | 2025 | | | | | |
| | | | Throw,ft | | 20-25-35 | 23-29-41 | 26-32-45 | 29-35-50 | 31-38-54 | 33-41-58 | 35-43-61 | | | | | |
| 21 in. x 21 in. | 4A | | Total cfm NC | | 919 | 1225 | 1531 | 1838 | 2144 | 2450 | 2756 | | | | | |
| | | | | | - | 23 | 30 | 36 | 40 | 44 | 48 | | | | | |
| | 3A | | cfm/Side | | 230 | 306 | 383 | 459 | 536 | 613 | 689 | | | | | |
| | | | Throw,ft | | 14-18-26 | 17-21-30 | 19-24-33 | 21-26-37 | 23-28-40 | 24-30-42 | 26-32-45 | | | | | |
| | 3.06 ft² | 2S | | cfm/Side | | 230 | 345 | 306 | 459 | 383 | 574 | 459 | 689 | 1034 | | |
| | | | | Throw,ft | | 14-18-26 | 17-21-29 | 17-21-30 | 19-24-34 | 19-24-33 | 22-27-38 | 21-26-37 | 24-29-41 | 23-28-40 | 26-31-44 | 24-30-42 |
| 3.06 ft² | 1S | | cfm/Side | | 459 | 613 | 766 | 919 | 1072 | 1225 | 1378 | | | | | |
| | | | Throw,ft | | 18-22-32 | 21-26-36 | 24-29-41 | 26-32-45 | 28-34-48 | 30-36-52 | 32-39-55 | | | | | |
| 3.06 ft² | 1S | | cfm/Side | | 918 | 1225 | 1531 | 1837 | 2143 | 2450 | 2756 | | | | | |
| | | | Throw,ft | | 22-27-38 | 26-31-44 | 29-35-50 | 31-38-54 | 34-42-59 | 36-44-63 | 38-47-67 | | | | | |
| 24 in. x 24 in. | 4A | | Total cfm NC | | 1200 | 1600 | 2000 | 2400 | 2800 | 3200 | 3600 | | | | | |
| | | | | | 15 | 24 | 31 | 37 | 41 | 45 | 49 | | | | | |
| | 3A | | cfm/Side | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | | | | | |
| | | | Throw,ft | | 16-20-28 | 19-23-32 | 21-26-36 | 23-28-40 | 25-30-43 | 26-32-46 | 28-34-48 | | | | | |
| | 4.00 ft² | 2S | | cfm/Side | | 300 | 450 | 400 | 600 | 500 | 750 | 600 | 900 | 1350 | | |
| | | | | Throw,ft | | 16-20-28 | 18-22-31 | 19-23-32 | 21-26-36 | 21-26-36 | 23-29-41 | 23-28-40 | 26-31-44 | 25-30-43 | 28-34-48 | 26-32-46 |
| 4.00 ft² | 1S | | cfm/Side | | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 1800 | | | | | |
| | | | Throw,ft | | 20-24-34 | 23-28-39 | 25-31-44 | 28-34-48 | 30-37-52 | 32-39-56 | 34-42-59 | | | | | |
| 4.00 ft² | 1S | | cfm/Side | | 1200 | 1600 | 2000 | 2400 | 2800 | 3200 | 3600 | | | | | |
| | | | Throw,ft | | 24-29-41 | 28-34-48 | 31-38-54 | 34-41-59 | 37-45-63 | 39-48-68 | 41-51-72 | | | | | |

For Performance Notes, see page C105.

SMD / AMD Return Factors

| Duct Size | (-) SP | NC |
|-----------|------------------|---------------|
| 6 x 6 | 0.73 x Listed TP | Listed NC |
| 9 x 9 | 0.87 x Listed TP | Listed NC + 2 |
| 12 x 12 | 0.93 x Listed TP | Listed NC + 4 |
| 15 x 15 | 1.27 x Listed TP | Listed NC + 4 |
| 18 x 18 | 1.47 x Listed TP | Listed NC + 6 |
| 21 x 21 | 1.80 x Listed TP | Listed NC + 8 |
| 24 x 24 | 1.89 x Listed TP | Listed NC + 8 |

Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Imperial Units - Rectangular Neck

| Neck Velocity | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | | | | | | | | |
|----------------------------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Velocity Pressure | | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | | | | | | | | |
| Total Pressure | | 0.036 | 0.065 | 0.099 | 0.144 | 0.196 | 0.256 | 0.324 | | | | | | | | |
| Duct Size | Total cfm | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | | |
| | | NC | - | - | 150 | 20 | 225 | 263 | 300 | 337 | | | | | | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | | | |
| 9 in. x 6 in. 0.38 ft² | 4B | cfm/Side | 37 | 18 | 50 | 25 | 62 | 31 | 75 | 37 | 87 | 44 | 100 | 50 | 112 | 56 |
| | | Throw,ft | 6-8-15 | 4-6-12 | 7-11-18 | 5-8-15 | 9-14-20 | 7-10-16 | 11-15-22 | 8-12-18 | 13-17-24 | 9-14-20 | 15-18-25 | 11-15-21 | 15-19-27 | 12-16-22 |
| | 3A2 | cfm/Side | 35 | 42 | 47 | 55 | 58 | 70 | 70 | 84 | 82 | 98 | 94 | 112 | 105 | 126 |
| | | Throw,ft | 5-8-15 | 6-9-16 | 7-11-18 | 8-12-18 | 9-13-20 | 10-15-21 | 11-15-21 | 12-16-22 | 13-16-23 | 14-17-24 | 14-18-25 | 15-18-26 | 15-19-26 | 16-19-28 |
| | 2A, 2B A | cfm/Side | 56 | | 75 | | 93 | | 112 | | 131 | | 150 | | 168 | |
| | | Throw,ft | 7-10-17 | | 9-14-20 | | 11-16-22 | | 14-17-24 | | 15-19-26 | | 16-20-28 | | 17-21-30 | |
| 2E, 2F B | cfm/Side | 75 | 37 | 100 | 50 | 125 | 62 | 150 | 75 | 175 | 87 | 200 | 100 | 225 | 112 | |
| | Throw,ft | 8-12-19 | 6-8-15 | 11-15-22 | 7-11-18 | 13-17-24 | 9-14-20 | 15-19-27 | 11-15-22 | 17-20-29 | 13-17-24 | 18-22-31 | 15-18-25 | 19-23-33 | 15-19-27 | |
| 1A, 1B | cfm/Side | 112 | | 150 | | 187 | | 225 | | 263 | | 300 | | 337 | | |
| | Throw,ft | 10-14-21 | | 13-17-24 | | 16-19-27 | | 17-21-30 | | 19-23-32 | | 20-24-35 | | 21-26-37 | | |
| 12 in. x 6 in. 0.50 ft² | Total cfm | 150 | | 200 | | 250 | | 300 | | 350 | | 400 | | 450 | | |
| | | NC | - | - | 21 | 27 | 31 | 35 | 39 | | | | | | | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | | | |
| 12 in. x 6 in. 0.50 ft² | 4B | cfm/Side | 56 | 18 | 75 | 25 | 94 | 31 | 113 | 37 | 131 | 44 | 150 | 50 | 169 | 56 |
| | | Throw,ft | 7-10-17 | 4-6-12 | 9-14-20 | 5-8-15 | 12-16-22 | 7-10-16 | 14-17-25 | 8-12-18 | 15-19-27 | 9-14-20 | 16-20-28 | 11-15-21 | 17-21-30 | 12-16-22 |
| | 3A1 | cfm/Side | 66 | 18 | 87 | 25 | 109 | 31 | 131 | 37 | 153 | 44 | 175 | 50 | 197 | 56 |
| | | Throw,ft | 7-11-18 | 4-6-12 | 10-15-21 | 5-8-15 | 12-16-23 | 7-10-16 | 15-18-26 | 8-12-18 | 16-20-28 | 9-14-20 | 17-21-30 | 11-15-21 | 18-22-31 | 12-16-22 |
| | 3B | cfm/Side | 75 | 37 | 100 | 50 | 126 | 62 | 150 | 75 | 176 | 67 | 200 | 100 | 226 | 112 |
| | | Throw,ft | 8-12-19 | 6-8-15 | 11-15-22 | 7-11-18 | 13-17-24 | 9-14-20 | 15-19-27 | 11-15-22 | 17-20-29 | 10-15-21 | 18-22-31 | 15-18-25 | 19-23-33 | 15-19-27 |
| 2A, 2B A | cfm/Side | 75 | | 100 | | 125 | | 150 | | 175 | | 200 | | 225 | | |
| | Throw,ft | 8-12-19 | | 11-15-22 | | 13-17-24 | | 15-19-27 | | 17-20-29 | | 18-22-31 | | 19-23-33 | | |
| 2E, 2F B | cfm/Side | 112 | 37 | 160 | 50 | 188 | 62 | 225 | 75 | 263 | 87 | 300 | 100 | 338 | 112 | |
| | Throw,ft | 10-14-21 | 6-8-15 | 14-18-25 | 7-11-18 | 16-19-27 | 9-14-20 | 17-21-30 | 11-15-22 | 19-23-32 | 13-17-24 | 20-24-35 | 15-18-25 | 21-26-37 | 15-19-27 | |
| 1A, 1B | cfm/Side | 150 | | 200 | | 250 | | 300 | | 350 | | 400 | | 450 | | |
| | Throw,ft | 11-16-23 | | 15-19-26 | | 17-21-30 | | 19-23-32 | | 20-25-35 | | 22-26-37 | | 23-28-40 | | |
| 15 in. x 6 in. 0.63 ft² | Total cfm | 188 | | 250 | | 312 | | 375 | | 438 | | 500 | | 563 | | |
| | | NC | - | 15 | 22 | 28 | 32 | 36 | 40 | | | | | | | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | | | |
| 15 in. x 6 in. 0.63 ft² | 4B | cfm/Side | 75 | 18 | 100 | 25 | 125 | 31 | 150 | 37 | 175 | 44 | 200 | 50 | 225 | 56 |
| | | Throw,ft | 8-12-19 | 4-6-11 | 11-15-22 | 5-8-15 | 13-17-24 | 7-10-16 | 15-19-27 | 8-12-18 | 17-20-29 | 9-14-19 | 18-22-31 | 11-15-21 | 19-23-33 | 12-15-22 |
| | 3A1 | cfm/Side | 84 | 18 | 112 | 25 | 140 | 31 | 169 | 37 | 197 | 44 | 225 | 50 | 253 | 56 |
| | | Throw,ft | 8-13-19 | 4-6-11 | 11-16-22 | 5-8-15 | 14-18-25 | 7-10-16 | 16-19-28 | 8-12-18 | 17-21-30 | 9-14-19 | 18-22-32 | 11-15-21 | 19-24-34 | 12-15-22 |
| | 2A, 2B A | cfm/Side | 94 | | 125 | | 156 | | 187 | | 219 | | 250 | | 281 | |
| | | Throw,ft | 9-13-20 | | 12-16-23 | | 15-18-26 | | 16-20-28 | | 18-22-31 | | 19-23-33 | | 20-25-35 | |
| 2E, 2F B | cfm/Side | 150 | 37 | 200 | 50 | 250 | 62 | 300 | 75 | 350 | 87 | 400 | 100 | 450 | 112 | |
| | Throw,ft | 11-16-23 | 6-8-15 | 15-19-26 | 7-11-18 | 17-21-30 | 9-14-20 | 19-23-32 | 11-15-22 | 20-25-35 | 13-17-24 | 22-26-37 | 15-18-25 | 23-28-40 | 15-19-27 | |
| 1A, 1B | cfm/Side | 188 | | 250 | | 312 | | 375 | | 438 | | 500 | | 563 | | |
| | Throw,ft | 13-17-24 | | 16-20-28 | | 18-22-32 | | 20-24-35 | | 22-26-37 | | 23-28-40 | | 24-30-42 | | |
| 18 in. x 6 in. 0.75 ft² | Total cfm | 225 | | 300 | | 375 | | 450 | | 525 | | 600 | | 675 | | |
| | | NC | - | 16 | 23 | 29 | 33 | 37 | 41 | | | | | | | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | | | |
| 18 in. x 6 in. 0.75 ft² | 4B | cfm/Side | 94 | 18 | 125 | 25 | 156 | 31 | 188 | 37 | 218 | 44 | 250 | 50 | 281 | 56 |
| | | Throw,ft | 9-13-20 | 4-6-12 | 12-16-23 | 5-8-15 | 15-18-26 | 7-10-16 | 16-20-28 | 8-12-18 | 18-22-31 | 9-14-20 | 19-23-33 | 11-15-21 | 20-25-35 | 12-16-22 |
| | 3A1 | cfm/Side | 103 | 18 | 137 | 25 | 172 | 31 | 206 | 37 | 240 | 44 | 275 | 50 | 309 | 56 |
| | | Throw,ft | 9-14-21 | 4-6-12 | 12-17-24 | 5-8-15 | 15-19-27 | 7-10-16 | 17-21-29 | 8-12-18 | 18-22-31 | 9-14-20 | 19-24-34 | 11-15-21 | 21-25-36 | 12-16-22 |
| | 2A, 2B A | cfm/Side | 112 | | 150 | | 187 | | 225 | | 262 | | 300 | | 337 | |
| | | Throw,ft | 10-14-21 | | 13-17-24 | | 16-19-27 | | 17-21-30 | | 19-23-32 | | 20-24-35 | | 21-26-37 | |
| 2E, 2F B | cfm/Side | 187 | 37 | 250 | 50 | 313 | 62 | 375 | 75 | 438 | 87 | 500 | 100 | 563 | 112 | |
| | Throw,ft | 12-17-24 | 6-8-15 | 16-20-28 | 8-11-18 | 18-22-32 | 9-14-20 | 20-24-35 | 11-16-22 | 22-26-37 | 13-17-24 | 23-28-40 | 15-18-25 | 24-30-42 | 16-19-27 | |
| 1A, 1B | cfm/Side | 225 | | 300 | | 375 | | 450 | | 525 | | 600 | | 675 | | |
| | Throw,ft | 14-18-26 | | 17-21-30 | | 19-24-33 | | 21-26-36 | | 23-28-39 | | 24-30-42 | | 26-32-45 | | |

For Performance Notes, see page C105.
For SMD / AMD Return Factors, see page C100.

Louvered Face Directional Diffusers

SMD / AMD Series



Performance Data - Imperial Units - Rectangular Neck

| Neck Velocity | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | | |
|-------------------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Velocity Pressure | | 0.006 | | 0.01 | | 0.016 | | 0.022 | | 0.031 | | 0.040 | | 0.050 | | |
| Total Pressure | | 0.036 | | 0.065 | | 0.099 | | 0.144 | | 0.196 | | 0.256 | | 0.324 | | |
| Duct Size | Total cfm NC | 262 | | 350 | | 437 | | 525 | | 612 | | 700 | | 787 | | |
| | | - | | 16 | | 23 | | 29 | | 33 | | 37 | | 41 | | |
| 21 in. x 6 in. | 4B | cfm/Side | 112 | 18 | 150 | 25 | 187 | 31 | 225 | 37 | 262 | 44 | 300 | 50 | 337 | 56 |
| | | Throw,ft | 10-14-21 | 4-6-11 | 13-17-24 | 5-8-15 | 16-19-27 | 7-10-16 | 17-21-30 | 8-12-18 | 19-23-32 | 9-14-20 | 20-24-34 | 11-15-21 | 21-26-37 | 12-16-22 |
| | 3A1 | cfm/Side | 122 | 18 | 162 | 25 | 203 | 31 | 244 | 37 | 284 | 44 | 325 | 50 | 365 | 56 |
| | | Throw,ft | 10-15-22 | 4-6-11 | 13-18-25 | 5-8-15 | 16-20-28 | 7-10-16 | 18-22-31 | 8-12-18 | 19-23-33 | 9-14-20 | 20-25-35 | 11-15-21 | 22-26-37 | 12-16-22 |
| | 2A, 2B A | cfm/Side | 131 | | 175 | | 218 | | 262 | | 306 | | 350 | | 393 | |
| | | Throw,ft | 10-16-22 | | 14-18-25 | | 16-20-28 | | 18-22-31 | | 19-24-34 | | 21-25-36 | | 22-27-38 | |
| 2E, 2F | cfm/Side | 225 | 37 | 300 | 50 | 375 | 62 | 450 | 75 | 525 | 87 | 600 | 100 | 675 | 112 | |
| | Throw,ft | 14-18-26 | 6-8-15 | 17-21-30 | 8-11-18 | 19-23-33 | 9-14-20 | 21-26-36 | 11-16-22 | 23-28-39 | 13-17-24 | 24-30-42 | 15-18-25 | 26-32-45 | 15-19-27 | |
| 1A, 1B | cfm/Side | 262 | | 350 | | 437 | | 525 | | 612 | | 700 | | 787 | | |
| | Throw,ft | 15-19-27 | | 18-22-31 | | 20-25-35 | | 22-27-38 | | 24-29-41 | | 25-31-44 | | 27-33-47 | | |
| 24 in. x 6 in. | 4B | cfm/Side | 131 | 18 | 175 | 25 | 219 | 31 | 263 | 37 | 306 | 44 | 350 | 50 | 394 | 56 |
| | | Throw,ft | 10-16-22 | 4-6-12 | 14-18-25 | 5-8-15 | 16-20-28 | 7-10-16 | 18-22-31 | 8-12-18 | 19-24-34 | 9-14-20 | 21-25-36 | 11-15-21 | 22-27-38 | 12-16-22 |
| | 3A1 | cfm/Side | 141 | 18 | 187 | 25 | 234 | 31 | 281 | 37 | 328 | 44 | 375 | 50 | 422 | 56 |
| | | Throw,ft | 11-16-23 | 4-6-12 | 14-18-26 | 5-8-15 | 17-21-29 | 7-10-16 | 18-22-32 | 8-12-18 | 20-24-34 | 9-14-20 | 21-26-37 | 11-15-21 | 23-28-39 | 12-16-22 |
| | 2A, 2B A | cfm/Side | 150 | | 200 | | 250 | | 300 | | 350 | | 400 | | 450 | |
| | | Throw,ft | 11-16-23 | | 15-19-26 | | 17-21-30 | | 19-23-32 | | 20-25-35 | | 22-26-37 | | 23-28-40 | |
| 2E, 2F | cfm/Side | 260 | 37 | 350 | 50 | 438 | 62 | 525 | 75 | 613 | 87 | 700 | 100 | 788 | 112 | |
| | Throw,ft | 15-19-27 | 6-8-15 | 18-22-31 | 8-11-18 | 20-25-35 | 9-14-20 | 22-27-38 | 11-16-22 | 24-29-41 | 13-17-24 | 25-31-44 | 15-18-25 | 27-33-47 | 16-19-27 | |
| 1A, 1B | cfm/Side | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | | |
| | Throw,ft | 16-20-28 | | 19-23-32 | | 21-26-36 | | 23-28-40 | | 25-30-43 | | 26-32-46 | | 28-34-48 | | |
| 12 in. x 9 in. | 4B | cfm/Side | 70 | 42 | 94 | 56 | 117 | 70 | 141 | 84 | 164 | 98 | 188 | 112 | 211 | 126 |
| | | Throw,ft | 8-11-18 | 6-9-16 | 10-15-21 | 8-12-18 | 13-17-24 | 10-15-21 | 15-19-26 | 12-16-22 | 16-20-28 | 14-17-24 | 17-21-30 | 15-18-26 | 19-23-32 | 16-19-28 |
| | 3A1 | cfm/Side | 91 | 42 | 121 | 56 | 152 | 70 | 183 | 84 | 213 | 98 | 244 | 112 | 274 | 126 |
| | | Throw,ft | 9-13-20 | 6-9-16 | 12-16-23 | 8-12-18 | 15-18-26 | 10-15-21 | 16-20-28 | 12-16-22 | 18-22-31 | 14-17-24 | 19-23-33 | 15-18-26 | 20-24-35 | 16-19-28 |
| | 3A2 | cfm/Side | 75 | 75 | 100 | 100 | 125 | 125 | 150 | 150 | 175 | 175 | 200 | 200 | 225 | 225 |
| | | Throw,ft | 8-12-19 | 8-12-19 | 11-15-22 | 11-15-22 | 13-17-24 | 13-17-24 | 15-19-27 | 15-19-27 | 17-20-29 | 17-20-29 | 18-22-31 | 18-22-31 | 19-23-33 | 19-23-33 |
| 2A, 2B A | cfm/Side | 112 | | 150 | | 187 | | 225 | | 262 | | 300 | | 337 | | |
| | Throw,ft | 10-14-21 | | 13-17-24 | | 16-19-27 | | 17-21-30 | | 19-23-32 | | 20-24-35 | | 21-26-37 | | |
| 2E, 2F | cfm/Side | 141 | 84 | 188 | 112 | 234 | 141 | 281 | 169 | 328 | 197 | 375 | 225 | 422 | 253 | |
| | Throw,ft | 11-16-23 | 8-13-19 | 14-18-26 | 11-16-22 | 17-21-29 | 14-18-25 | 18-22-32 | 16-20-28 | 20-24-34 | 17-21-30 | 21-26-37 | 18-23-32 | 22-28-39 | 20-24-34 | |
| 1A, 1B | cfm/Side | 225 | | 300 | | 375 | | 450 | | 525 | | 600 | | 675 | | |
| | Throw,ft | 14-18-26 | | 17-21-30 | | 19-24-33 | | 21-26-36 | | 23-28-39 | | 24-30-42 | | 26-32-45 | | |

For Performance Notes, see page C105.

SMD / AMD Return Factors

| Duct Size | (-) SP | NC |
|-----------|------------------|---------------|
| 9 x 6 | 0.87 x Listed TP | Listed NC - 1 |
| 12 x 6 | 1.13 x Listed TP | Listed NC + 1 |
| 15 x 6 | 1.33 x Listed TP | Listed NC + 1 |
| 18 x 6 | 1.87 x Listed TP | Listed NC + 2 |
| 21 x 6 | 2.27 x Listed TP | Listed NC + 3 |
| 24 x 6 | 2.73 x Listed TP | Listed NC + 4 |
| 12 x 9 | 2.73 x Listed TP | Listed NC + 4 |

Louvered Face Directional Diffusers

SMD / AMD Series

Performance Data - Imperial Units - Rectangular Neck

| Neck Velocity | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | | | |
|-------------------|--------------|-------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Velocity Pressure | | 0.006 | | 0.01 | | 0.016 | | 0.022 | | 0.031 | | 0.040 | | 0.050 | | | |
| Total Pressure | | 0.036 | | 0.065 | | 0.099 | | 0.144 | | 0.196 | | 0.256 | | 0.324 | | | |
| Duct Size | Total cfm NC | 281 | | 375 | | 470 | | 563 | | 656 | | 750 | | 845 | | | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | | |
| 15 in. x 9 in. | 4B | | cfm/Side | 98 | 42 | 131 | 56 | 165 | 70 | 198 | 84 | 230 | 98 | 263 | 112 | 296 | 126 |
| | | | Throw,ft | 9-14-20 | 6-9-16 | 12-17-23 | 8-12-18 | 15-19-26 | 10-15-21 | 17-20-29 | 12-16-23 | 18-22-31 | 14-17-24 | 19-24-33 | 15-18-26 | 20-25-35 | 16-20-28 |
| Duct Area | 3A1 | | cfm/Side | 120 | 42 | 159 | 56 | 200 | 70 | 240 | 84 | 279 | 98 | 319 | 112 | 359 | 126 |
| | | | Throw,ft | 10-15-21 | 6-9-16 | 13-17-25 | 8-12-18 | 16-20-28 | 10-15-21 | 18-21-30 | 12-16-23 | 19-23-33 | 14-17-24 | 20-25-35 | 15-18-26 | 21-26-37 | 16-20-28 |
| 0.94 ft² | 3A2 | | cfm/Side | 82 | 117 | 110 | 155 | 137 | 196 | 165 | 233 | 192 | 272 | 219 | 312 | 247 | 351 |
| | | | Throw,ft | 8-12-19 | 10-15-21 | 11-16-22 | 13-17-25 | 14-18-25 | 16-20-28 | 16-19-27 | 17-21-30 | 17-21-30 | 19-23-33 | 18-22-32 | 20-25-35 | 19-24-34 | 21-26-37 |
| 2A, 2B A | | | cfm/Side | 140 | | 187 | | 235 | | 281 | | 328 | | 375 | | 422 | |
| | | | Throw,ft | 11-16-22 | | 14-18-26 | | 17-21-29 | | 18-23-32 | | 20-24-34 | | 21-26-37 | | 23-28-39 | |
| 2E, 2F B | | | cfm/Side | 197 | 84 | 263 | 112 | 329 | 141 | 394 | 169 | 459 | 197 | 525 | 225 | 592 | 253 |
| | | | Throw,ft | 13-18-25 | 8-13-19 | 17-20-29 | 11-16-22 | 19-23-32 | 14-18-25 | 20-25-35 | 16-19-28 | 22-27-38 | 17-21-30 | 23-29-40 | 18-22-32 | 25-30-43 | 19-24-34 |
| 1A, 1B | | | cfm/Side | 281 | | 375 | | 470 | | 563 | | 656 | | 750 | | 845 | |
| | | | Throw,ft | 15-19-27 | | 18-22-32 | | 20-25-35 | | 22-27-39 | | 24-30-42 | | 26-32-45 | | 27-34-48 | |
| 18 in. x 9 in. | 4B | | Total cfm NC | 337 | | 450 | | 562 | | 675 | | 787 | | 900 | | 1012 | |
| | | | | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| Duct Area | 3A1 | | cfm/Side | 126 | 42 | 169 | 56 | 211 | 70 | 254 | 84 | 296 | 98 | 338 | 112 | 380 | 126 |
| | | | Throw,ft | 10-15-22 | 6-9-16 | 14-18-25 | 8-12-19 | 16-20-28 | 10-15-21 | 18-22-31 | 12-16-23 | 19-24-34 | 14-17-25 | 21-25-36 | 15-19-26 | 22-27-38 | 16-20-28 |
| 1.13 ft² | 3B | | cfm/Side | 147 | 42 | 197 | 56 | 246 | 70 | 295 | 84 | 345 | 98 | 394 | 112 | 443 | 126 |
| | | | Throw,ft | 11-16-23 | 6-9-16 | 15-19-26 | 8-12-19 | 17-21-29 | 10-15-21 | 19-23-32 | 12-16-23 | 20-25-35 | 14-17-25 | 22-26-37 | 15-19-26 | 23-28-40 | 16-20-28 |
| 2A, 2B A | | | cfm/Side | 168 | 84 | 225 | 112 | 281 | 141 | 337 | 169 | 394 | 197 | 450 | 225 | 506 | 253 |
| | | | Throw,ft | 12-17-24 | 8-13-19 | 16-19-27 | 11-16-22 | 18-22-31 | 14-18-25 | 19-24-34 | 16-19-28 | 21-26-36 | 17-21-30 | 22-27-39 | 18-22-32 | 24-29-41 | 19-24-34 |
| 2E, 2F B | | | cfm/Side | 168 | | 225 | | 281 | | 337 | | 394 | | 450 | | 506 | |
| | | | Throw,ft | 12-17-24 | | 16-19-27 | | 18-22-31 | | 19-24-34 | | 21-26-36 | | 22-27-39 | | 24-29-41 | |
| 1A, 1B | | | cfm/Side | 253 | 84 | 338 | 112 | 421 | 141 | 506 | 169 | 591 | 197 | 675 | 225 | 759 | 253 |
| | | | Throw,ft | 15-19-27 | 8-13-19 | 18-22-31 | 11-16-22 | 20-24-34 | 14-18-25 | 22-27-38 | 16-19-28 | 23-29-41 | 17-21-30 | 25-31-43 | 18-22-32 | 27-33-46 | 19-24-34 |
| 1A, 1B | | | cfm/Side | 337 | | 450 | | 562 | | 675 | | 787 | | 900 | | 1012 | |
| | | | Throw,ft | 17-20-29 | | 19-24-33 | | 22-26-37 | | 24-29-41 | | 25-31-44 | | 27-33-47 | | 29-35-50 | |
| 21 in. x 9 in. | 4B | | Total cfm NC | 393 | | 524 | | 655 | | 786 | | 917 | | 1050 | | 1180 | |
| | | | | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| Duct Area | 3A1 | | cfm/Side | 154 | 42 | 206 | 56 | 258 | 70 | 309 | 84 | 360 | 98 | 413 | 112 | 464 | 126 |
| | | | Throw,ft | 11-16-23 | 6-9-16 | 15-19-27 | 8-12-18 | 17-21-30 | 10-14-20 | 19-23-33 | 12-16-22 | 20-25-35 | 14-17-24 | 22-27-38 | 15-18-26 | 23-28-40 | 16-19-27 |
| 1.31 ft² | 2A, 2B A | | cfm/Side | 175 | 42 | 234 | 56 | 292 | 70 | 351 | 84 | 410 | 98 | 468 | 112 | 527 | 126 |
| | | | Throw,ft | 12-17-24 | 6-9-16 | 16-20-28 | 8-12-18 | 18-22-31 | 10-14-20 | 20-24-34 | 12-16-22 | 21-26-37 | 14-17-24 | 23-28-39 | 15-18-26 | 24-29-41 | 16-19-27 |
| 2E, 2F B | | | cfm/Side | 196 | | 262 | | 327 | | 393 | | 458 | | 525 | | 590 | |
| | | | Throw,ft | 13-17-25 | | 17-20-29 | | 18-23-32 | | 20-25-35 | | 22-27-38 | | 23-29-40 | | 25-30-43 | |
| 1A, 1B | | | cfm/Side | 308 | 84 | 412 | 112 | 514 | 141 | 617 | 169 | 720 | 197 | 825 | 225 | 927 | 253 |
| | | | Throw,ft | 16-20-28 | 8-13-20 | 19-23-33 | 11-16-23 | 21-26-36 | 14-18-25 | 23-28-40 | 16-20-28 | 25-30-43 | 17-21-30 | 27-33-46 | 18-23-32 | 28-35-49 | 20-24-34 |
| 1A, 1B | | | cfm/Side | 393 | | 524 | | 655 | | 786 | | 917 | | 1050 | | 1180 | |
| | | | Throw,ft | 17-21-30 | | 20-25-35 | | 22-28-39 | | 25-30-43 | | 27-33-46 | | 28-35-49 | | 30-37-52 | |
| 24 in. x 9 in. | 4B | | Total cfm NC | 450 | | 600 | | 750 | | 900 | | 1050 | | 1200 | | 1350 | |
| | | | | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| Duct Area | 3A1 | | cfm/Side | 183 | 42 | 244 | 56 | 305 | 70 | 366 | 84 | 427 | 98 | 488 | 112 | 549 | 126 |
| | | | Throw,ft | 12-17-24 | 6-9-16 | 16-20-28 | 8-12-19 | 18-22-31 | 10-15-21 | 20-24-34 | 12-16-23 | 21-26-37 | 14-17-25 | 23-28-40 | 15-19-26 | 24-30-42 | 16-20-28 |
| 1.50 ft² | 2A, 2B A | | cfm/Side | 204 | 42 | 272 | 56 | 340 | 70 | 408 | 84 | 476 | 98 | 544 | 112 | 612 | 126 |
| | | | Throw,ft | 13-18-25 | 6-9-16 | 17-20-29 | 8-12-19 | 19-23-32 | 10-15-21 | 20-25-35 | 12-16-23 | 22-27-38 | 14-17-25 | 24-29-41 | 15-19-26 | 25-31-43 | 16-20-28 |
| 2E, 2F B | | | cfm/Side | 225 | | 300 | | 375 | | 450 | | 525 | | 600 | | 675 | |
| | | | Throw,ft | 14-18-26 | | 17-21-30 | | 19-24-33 | | 21-26-36 | | 23-28-39 | | 24-30-42 | | 26-32-45 | |
| 1A, 1B | | | cfm/Side | 365 | 84 | 488 | 112 | 609 | 141 | 731 | 169 | 853 | 197 | 975 | 225 | 1097 | 253 |
| | | | Throw,ft | 17-21-30 | 8-12-19 | 20-24-34 | 11-16-22 | 22-27-38 | 14-18-25 | 24-30-42 | 16-19-27 | 26-32-45 | 17-21-30 | 28-34-48 | 18-22-32 | 30-36-51 | 19-24-34 |
| 1A, 1B | | | cfm/Side | 450 | | 600 | | 750 | | 900 | | 1050 | | 1200 | | 1350 | |
| | | | Throw,ft | 18-22-31 | | 21-26-36 | | 23-29-41 | | 26-31-44 | | 28-34-48 | | 30-36-51 | | 31-38-54 | |

For Performance Notes, see page C105.
 For SMD / AMD Return Factors, see page C102.

Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Imperial Units - Rectangular Neck

| Neck Velocity | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | | |
|------------------------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Velocity Pressure | | 0.006 | | 0.01 | | 0.016 | | 0.022 | | 0.031 | | 0.040 | | 0.050 | | |
| Total Pressure | | 0.036 | | 0.065 | | 0.099 | | 0.144 | | 0.196 | | 0.256 | | 0.324 | | |
| Duct Size | Total cfm NC | 375 | | 500 | | 625 | | 750 | | 875 | | 1000 | | 1125 | | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | |
| 15 in. x 12 in. | | | | | | | | | | | | | | | | |
| 4B | | cfm/Side | 112 | 75 | 150 | 100 | 187 | 125 | 225 | 150 | 262 | 175 | 300 | 200 | 337 | 225 |
| | | Throw,ft | 10-14-21 | 8-12-19 | 13-17-24 | 11-15-22 | 16-19-27 | 13-17-24 | 17-21-30 | 15-19-27 | 19-23-32 | 17-20-29 | 20-24-35 | 18-22-31 | 21-26-37 | 19-23-33 |
| 3A1 | | cfm/Side | 150 | 75 | 200 | 100 | 250 | 125 | 300 | 150 | 350 | 175 | 400 | 200 | 450 | 225 |
| | | Throw,ft | 11-16-23 | 8-12-19 | 15-19-26 | 11-15-22 | 17-21-30 | 13-17-24 | 19-23-32 | 15-19-27 | 20-25-35 | 17-20-29 | 22-26-37 | 18-22-31 | 23-28-40 | 19-23-33 |
| 3A2 | | cfm/Side | 129 | 117 | 172 | 156 | 215 | 195 | 258 | 234 | 301 | 273 | 344 | 312 | 387 | 351 |
| | | Throw,ft | 10-16-22 | 10-15-21 | 14-18-25 | 13-17-25 | 16-20-28 | 16-20-28 | 18-22-31 | 17-21-30 | 19-24-34 | 19-23-33 | 21-25-36 | 20-25-35 | 22-27-38 | 21-26-37 |
| 2A, 2B A | | cfm/Side | 187 | | 250 | | 312 | | 375 | | 437 | | 500 | | 562 | |
| | | Throw,ft | 12-17-24 | | 16-20-28 | | 18-22-32 | | 20-24-35 | | 22-26-37 | | 23-28-40 | | 24-30-42 | |
| 2E, 2F | | cfm/Side | 225 | 150 | 300 | 200 | 375 | 250 | 450 | 300 | 525 | 350 | 600 | 400 | 675 | 450 |
| | | Throw,ft | 14-18-26 | 11-16-23 | 17-21-30 | 15-19-26 | 19-24-33 | 17-21-30 | 21-26-36 | 19-23-32 | 23-28-39 | 20-25-35 | 24-30-42 | 22-26-37 | 26-32-45 | 23-28-40 |
| 1A, 1B | | cfm/Side | 375 | | 500 | | 625 | | 750 | | 875 | | 1000 | | 1125 | |
| | | Throw,ft | 17-21-30 | | 20-24-34 | | 22-27-38 | | 24-30-42 | | 26-32-45 | | 28-34-49 | | 30-36-52 | |
| 18 in. x 12 in. | | | | | | | | | | | | | | | | |
| 4B | | cfm/Side | 150 | 75 | 200 | 100 | 250 | 125 | 300 | 150 | 350 | 175 | 400 | 200 | 450 | 225 |
| | | Throw,ft | 11-16-23 | 8-12-19 | 15-19-27 | 10-15-22 | 17-21-30 | 13-17-24 | 19-23-33 | 15-19-27 | 20-25-35 | 17-20-29 | 22-27-38 | 18-22-31 | 23-28-40 | 19-23-33 |
| 3A1 | | cfm/Side | 187 | 75 | 250 | 100 | 312 | 125 | 375 | 150 | 437 | 175 | 500 | 200 | 562 | 225 |
| | | Throw,ft | 12-17-24 | 8-12-19 | 16-20-28 | 10-15-22 | 18-22-31 | 13-17-24 | 20-24-35 | 15-19-27 | 22-26-37 | 17-20-29 | 23-28-40 | 18-22-31 | 24-30-42 | 19-23-33 |
| 3A2 | | cfm/Side | 141 | 168 | 187 | 225 | 234 | 281 | 281 | 337 | 328 | 394 | 375 | 450 | 422 | 506 |
| | | Throw,ft | 11-16-23 | 12-17-24 | 14-18-26 | 16-19-27 | 17-21-29 | 18-22-31 | 18-23-32 | 19-24-34 | 20-24-34 | 21-26-36 | 21-26-37 | 22-27-39 | 23-28-39 | 24-29-41 |
| 2A, 2B A | | cfm/Side | 225 | | 300 | | 375 | | 450 | | 525 | | 600 | | 675 | |
| | | Throw,ft | 14-18-26 | | 17-21-30 | | 19-24-33 | | 21-26-36 | | 23-28-39 | | 24-30-42 | | 26-32-45 | |
| 2E, 2F | | cfm/Side | 300 | 150 | 400 | 200 | 500 | 250 | 600 | 300 | 700 | 350 | 800 | 400 | 900 | 450 |
| | | Throw,ft | 16-20-28 | 11-16-23 | 19-23-32 | 15-19-27 | 21-25-36 | 17-21-30 | 23-28-39 | 19-23-33 | 25-30-43 | 20-25-35 | 26-32-46 | 22-27-38 | 28-34-48 | 23-28-40 |
| 1A, 1B | | cfm/Side | 450 | | 600 | | 750 | | 900 | | 1050 | | 1200 | | 1350 | |
| | | Throw,ft | 18-22-31 | | 21-26-36 | | 23-29-41 | | 26-31-44 | | 28-34-48 | | 30-36-51 | | 31-38-54 | |
| 21 in. x 12 in. | | | | | | | | | | | | | | | | |
| 4B | | cfm/Side | 187 | 75 | 250 | 100 | 312 | 125 | 375 | 150 | 437 | 175 | 500 | 200 | 562 | 225 |
| | | Throw,ft | 12-17-24 | 8-12-19 | 16-20-28 | 11-15-22 | 18-22-31 | 13-17-24 | 20-24-35 | 15-19-27 | 22-26-37 | 17-20-29 | 23-28-40 | 18-22-31 | 24-30-42 | 19-23-33 |
| 3A1 | | cfm/Side | 225 | 75 | 300 | 100 | 375 | 125 | 450 | 150 | 525 | 175 | 600 | 200 | 675 | 225 |
| | | Throw,ft | 14-18-26 | 8-12-19 | 17-21-30 | 11-15-22 | 19-23-33 | 13-17-24 | 21-26-36 | 15-19-27 | 23-28-39 | 17-20-29 | 24-30-42 | 18-22-31 | 26-32-45 | 19-23-33 |
| 3A2 | | cfm/Side | 148 | 230 | 197 | 306 | 246 | 382 | 295 | 460 | 345 | 535 | 394 | 612 | 443 | 688 |
| | | Throw,ft | 11-16-23 | 14-18-26 | 15-19-26 | 17-21-30 | 17-21-30 | 19-24-33 | 19-23-32 | 21-26-37 | 20-25-35 | 23-28-39 | 22-26-37 | 24-30-42 | 23-28-40 | 26-32-45 |
| 2A, 2B A | | cfm/Side | 262 | | 350 | | 437 | | 525 | | 612 | | 700 | | 787 | |
| | | Throw,ft | 15-19-27 | | 18-22-31 | | 20-25-35 | | 22-27-38 | | 24-29-41 | | 25-31-44 | | 27-33-47 | |
| 2E, 2F | | cfm/Side | 375 | 150 | 500 | 200 | 625 | 250 | 750 | 300 | 875 | 350 | 1000 | 400 | 1125 | 450 |
| | | Throw,ft | 17-21-30 | 11-16-23 | 20-24-34 | 15-19-26 | 22-27-39 | 17-21-30 | 24-30-42 | 19-23-32 | 26-32-46 | 20-25-35 | 28-34-49 | 22-26-37 | 30-37-52 | 23-28-40 |
| 1A, 1B | | cfm/Side | 525 | | 700 | | 875 | | 1050 | | 1225 | | 1400 | | 1575 | |
| | | Throw,ft | 19-23-33 | | 22-27-38 | | 24-30-42 | | 27-33-46 | | 29-35-50 | | 31-38-54 | | 33-40-57 | |

For Performance Notes, see page C105.



















SMD / AMD Return Factors

| Duct Size | (-) SP | NC |
|-----------|------------------|---------------|
| 15 x 9 | 1.20 x Listed TP | Listed NC + 3 |
| 18 x 9 | 1.47 x Listed TP | Listed NC + 3 |
| 21 x 9 | 1.73 x Listed TP | Listed NC + 4 |
| 24 x 9 | 2.00 x Listed TP | Listed NC + 4 |
| 15 x 12 | 1.13 x Listed TP | Listed NC + 2 |
| 18 x 12 | 1.33 x Listed TP | Listed NC + 3 |
| 21 x 12 | 1.53 x Listed TP | Listed NC + 5 |

Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Imperial Units - Rectangular Neck

| Neck Velocity | | 300 | 400 | 500 | 600 | 700 | 800 | 900 | | | | | | | | |
|--|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Velocity Pressure | | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | | | | | | | | |
| Total Pressure | | 0.036 | 0.065 | 0.099 | 0.144 | 0.196 | 0.256 | 0.324 | | | | | | | | |
| Duct Size | Total cfm NC | 600 | | 800 | | 1000 | | 1200 | | 1400 | | 1600 | | 1800 | | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | |
| 24 in. x 12 in. | 4B  | cfm/Side | 225 | 75 | 300 | 100 | 375 | 125 | 450 | 150 | 525 | 175 | 600 | 200 | 675 | 225 |
| | | Throw,ft | 14-18-26 | 8-12-19 | 17-21-30 | 10-15-22 | 19-23-33 | 13-17-24 | 21-26-36 | 15-19-26 | 23-28-39 | 16-20-29 | 24-30-42 | 18-22-30 | 26-31-44 | 19-23-32 |
| | 3A1  | cfm/Side | 262 | 75 | 350 | 100 | 437 | 175 | 525 | 150 | 612 | 175 | 700 | 200 | 787 | 225 |
| | | Throw,ft | 15-19-27 | 8-12-19 | 18-22-31 | 10-15-22 | 20-25-35 | 16-20-29 | 22-27-38 | 15-19-26 | 24-29-41 | 16-20-29 | 25-31-44 | 18-22-30 | 27-33-47 | 19-23-32 |
| | 3B  | cfm/Side | 300 | 150 | 400 | 200 | 500 | 250 | 600 | 300 | 700 | 350 | 800 | 400 | 900 | 450 |
| | | Throw,ft | 16-20-28 | 11-16-23 | 19-23-32 | 15-19-26 | 21-26-36 | 17-21-30 | 23-28-40 | 19-23-32 | 25-30-43 | 20-25-35 | 26-32-46 | 22-26-37 | 28-34-48 | 23-28-40 |
| | 2A, 2B  | cfm/Side | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | |
| Throw,ft | 16-20-28 | | 19-23-32 | | 21-26-36 | | 23-28-40 | | 25-30-43 | | 26-32-46 | | 28-34-48 | | | |
| 2E, 2F  | cfm/Side | 450 | 150 | 600 | 200 | 750 | 250 | 900 | 300 | 1050 | 350 | 1200 | 400 | 1350 | 450 | |
| Throw,ft | 18-22-31 | 11-16-23 | 21-26-36 | 15-19-26 | 23-29-41 | 17-21-30 | 26-31-44 | 19-23-32 | 28-34-48 | 20-25-35 | 30-36-51 | 22-26-37 | 31-38-54 | 23-28-40 | | |
| 1A, 1B  | cfm/Side | 600 | | 800 | | 1000 | | 1200 | | 1400 | | 1600 | | 1800 | | |
| Throw,ft | 20-24-34 | | 23-28-39 | | 25-31-44 | | 28-34-48 | | 30-37-52 | | 32-39-56 | | 34-42-59 | | | |
| 18 in. x 15 in. | 4B  | cfm/Side | 164 | 117 | 219 | 156 | 273 | 195 | 328 | 234 | 383 | 273 | 438 | 312 | 492 | 351 |
| | | Throw,ft | 12-17-24 | 10-15-21 | 16-19-27 | 13-17-25 | 18-21-30 | 16-19-28 | 19-24-33 | 17-21-30 | 21-25-36 | 19-23-33 | 22-27-38 | 20-25-35 | 24-29-41 | 21-26-37 |
| | 3A1  | cfm/Side | 222 | 117 | 297 | 156 | 371 | 195 | 445 | 234 | 519 | 273 | 594 | 312 | 668 | 351 |
| | | Throw,ft | 14-18-26 | 10-15-21 | 17-21-30 | 13-17-25 | 19-23-33 | 16-19-28 | 21-26-36 | 17-21-30 | 23-28-39 | 19-23-33 | 24-30-42 | 20-25-35 | 26-31-44 | 21-26-37 |
| | 3A2  | cfm/Side | 197 | 168 | 262 | 225 | 328 | 281 | 394 | 337 | 459 | 394 | 525 | 450 | 590 | 506 |
| | | Throw,ft | 13-18-25 | 12-17-24 | 17-20-29 | 16-19-27 | 18-23-32 | 18-22-31 | 20-25-35 | 19-24-34 | 22-27-38 | 21-26-36 | 23-29-40 | 22-27-39 | 25-30-43 | 24-29-41 |
| | 2A, 2B  | cfm/Side | 281 | | 375 | | 468 | | 562 | | 656 | | 750 | | 843 | |
| Throw,ft | 15-19-27 | | 18-22-32 | | 20-25-35 | | 22-27-39 | | 24-30-42 | | 26-32-45 | | 27-34-48 | | | |
| 2E, 2F  | cfm/Side | 329 | 234 | 438 | 312 | 547 | 390 | 657 | 468 | 766 | 546 | 876 | 624 | 985 | 702 | |
| Throw,ft | 16-20-29 | 14-18-26 | 19-23-33 | 17-21-30 | 21-26-37 | 19-24-34 | 23-29-40 | 21-26-37 | 25-31-44 | 23-28-40 | 27-33-47 | 24-30-42 | 29-35-50 | 26-32-45 | | |
| 1A, 1B  | cfm/Side | 562 | | 750 | | 937 | | 1125 | | 1312 | | 1500 | | 1687 | | |
| Throw,ft | 19-24-33 | | 22-27-39 | | 25-31-43 | | 27-33-47 | | 29-36-51 | | 32-39-55 | | 33-41-58 | | | |
| 21 in. x 15 in. | 4B  | cfm/Side | 210 | 117 | 281 | 156 | 351 | 195 | 422 | 234 | 493 | 273 | 563 | 312 | 634 | 351 |
| | | Throw,ft | 13-18-25 | 10-15-21 | 17-21-29 | 13-17-25 | 19-23-33 | 16-19-28 | 21-25-36 | 17-21-30 | 22-27-39 | 19-23-33 | 24-29-41 | 20-25-35 | 25-31-44 | 21-26-37 |
| | 3A1  | cfm/Side | 269 | 117 | 359 | 156 | 448 | 195 | 539 | 234 | 629 | 273 | 719 | 312 | 809 | 351 |
| | | Throw,ft | 15-19-27 | 10-15-21 | 18-22-31 | 13-17-25 | 20-25-35 | 16-19-28 | 22-27-38 | 17-21-30 | 24-29-41 | 19-23-33 | 26-31-44 | 20-25-35 | 27-33-47 | 21-26-37 |
| | 3A2  | cfm/Side | 213 | 230 | 284 | 306 | 355 | 382 | 426 | 460 | 498 | 535 | 569 | 612 | 641 | 688 |
| | | Throw,ft | 13-18-25 | 14-18-26 | 17-21-29 | 17-21-30 | 19-23-33 | 19-24-33 | 21-25-36 | 21-26-37 | 22-27-39 | 23-28-40 | 24-29-41 | 24-30-42 | 25-31-44 | 26-32-45 |
| | 2A, 2B  | cfm/Side | 327 | | 437 | | 596 | | 656 | | 766 | | 875 | | 985 | |
| Throw,ft | 16-20-29 | | 19-23-33 | | 22-27-39 | | 23-29-41 | | 25-31-44 | | 27-33-47 | | 29-35-50 | | | |
| 2E, 2F  | cfm/Side | 422 | 234 | 563 | 312 | 702 | 390 | 844 | 468 | 986 | 546 | 1126 | 624 | 1268 | 702 | |
| Throw,ft | 18-22-31 | 14-18-26 | 21-25-36 | 17-21-30 | 23-28-40 | 19-24-34 | 25-31-44 | 21-26-37 | 27-33-47 | 23-28-40 | 29-36-50 | 24-30-42 | 31-38-53 | 26-32-45 | | |
| 1A, 1B  | cfm/Side | 655 | | 875 | | 1092 | | 1312 | | 1532 | | 1750 | | 1970 | | |
| Throw,ft | 20-25-35 | | 23-29-40 | | 26-32-45 | | 29-35-49 | | 31-38-53 | | 33-40-57 | | 35-43-61 | | | |

For Performance Notes, see page C105.

SMD / AMD Return Factors

























| Duct Size | (-) SP | NC |
|-----------|------------------|---------------|
| 24 x 12 | 1.80 x Listed TP | Listed NC + 5 |
| 18 x 15 | 1.40 x Listed TP | Listed NC + 4 |
| 21 x 15 | 1.47 x Listed TP | Listed NC + 5 |
| 24 x 15 | 1.80 x Listed TP | Listed NC + 6 |
| 21 x 18 | 1.53 x Listed TP | Listed NC + 5 |
| 24 x 18 | 1.73 x Listed TP | Listed NC + 6 |
| 24 x 21 | 1.47 x Listed TP | Listed NC + 7 |

Louvered Face Directional Diffusers

SMD / AMD Series



Performance Data - Imperial Units - Rectangular Neck

| Neck Velocity | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | | |
|--|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Velocity Pressure | | 0.006 | | 0.01 | | 0.016 | | 0.022 | | 0.031 | | 0.040 | | 0.050 | | |
| Total Pressure | | 0.036 | | 0.065 | | 0.099 | | 0.144 | | 0.196 | | 0.256 | | 0.324 | | |
| Duct Size | Total cfm | 750 | | 1000 | | 1250 | | 1500 | | 1750 | | 2000 | | 2250 | | |
| | NC | - | | 22 | | 29 | | 35 | | 39 | | 43 | | 47 | | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | |
| 24 in. x 15 in. | 4B  | cfm/Side | 258 | 117 | 344 | 156 | 430 | 195 | 516 | 234 | 602 | 273 | 688 | 312 | 774 | 351 |
| | | Throw,ft | 15-19-27 | 10-15-21 | 18-22-31 | 13-17-25 | 20-25-35 | 16-19-27 | 22-27-38 | 17-21-30 | 24-29-41 | 19-23-32 | 25-31-44 | 20-25-35 | 27-33-46 | 21-26-37 |
| | 3A1  | cfm/Side | 316 | 117 | 422 | 156 | 527 | 195 | 633 | 234 | 738 | 273 | 844 | 312 | 949 | 351 |
| | | Throw,ft | 16-20-28 | 10-15-21 | 19-23-33 | 13-17-25 | 21-26-37 | 16-19-27 | 23-28-40 | 17-21-30 | 25-31-43 | 19-23-32 | 27-33-46 | 20-25-35 | 28-35-49 | 21-26-37 |
| | 3A2  | cfm/Side | 225 | 300 | 300 | 400 | 375 | 500 | 450 | 600 | 525 | 700 | 600 | 800 | 675 | 900 |
| | | Throw,ft | 14-18-26 | 16-20-28 | 17-21-30 | 19-23-32 | 19-24-33 | 21-26-36 | 21-26-36 | 23-28-40 | 23-28-39 | 25-30-43 | 24-30-42 | 26-32-46 | 26-32-45 | 28-34-48 |
| | 2A, 2B  | cfm/Side | 375 | | 500 | | 625 | | 750 | | 875 | | 1000 | | 1125 | |
| | | Throw,ft | 17-21-30 | | 20-24-34 | | 22-27-38 | | 24-30-42 | | 26-32-45 | | 28-34-49 | | 30-36-52 | |
| | 2E, 2F  | cfm/Side | 516 | 234 | 688 | 312 | 860 | 390 | 1032 | 468 | 1204 | 546 | 1376 | 624 | 1548 | 702 |
| | | Throw,ft | 19-23-33 | 14-18-26 | 22-27-38 | 17-21-30 | 24-30-42 | 19-24-34 | 27-33-46 | 21-26-37 | 29-35-50 | 23-28-40 | 31-38-53 | 25-30-43 | 33-40-56 | 26-32-45 |
| 1A, 1B  | cfm/Side | 750 | | 1000 | | 1250 | | 1500 | | 1750 | | 2000 | | 2250 | | |
| | Throw,ft | 21-26-36 | | 24-30-42 | | 27-33-47 | | 30-36-51 | | 32-39-55 | | 34-42-59 | | 36-44-63 | | |
| Duct Size | Total cfm | 787 | | 1050 | | 1310 | | 1575 | | 1840 | | 2100 | | 2360 | | |
| | NC | - | | 22 | | 29 | | 36 | | 39 | | 43 | | 47 | | |
| 21 in. x 18 in. | 4B  | cfm/Side | 225 | 169 | 300 | 225 | 374 | 281 | 450 | 337 | 526 | 394 | 600 | 450 | 674 | 506 |
| | | Throw,ft | 14-18-26 | 12-17-24 | 17-21-30 | 16-19-28 | 19-23-33 | 18-22-31 | 21-26-36 | 19-24-34 | 23-28-39 | 21-26-36 | 24-30-42 | 22-28-39 | 26-31-44 | 24-29-41 |
| | 3A1  | cfm/Side | 309 | 169 | 412 | 225 | 514 | 281 | 619 | 337 | 723 | 394 | 825 | 450 | 927 | 506 |
| | | Throw,ft | 16-20-28 | 12-17-24 | 19-23-33 | 16-19-28 | 21-26-36 | 18-22-31 | 23-28-40 | 19-24-34 | 25-31-43 | 21-26-36 | 27-33-46 | 22-28-39 | 28-35-49 | 24-29-41 |
| | 3A2  | cfm/Side | 279 | 230 | 372 | 306 | 464 | 382 | 557 | 460 | 652 | 535 | 744 | 612 | 836 | 688 |
| | | Throw,ft | 15-19-27 | 14-18-26 | 18-22-32 | 17-21-30 | 20-25-35 | 19-24-33 | 22-27-39 | 21-26-37 | 24-30-42 | 23-28-40 | 26-32-45 | 24-30-42 | 27-34-48 | 26-32-45 |
| | 2A, 2B  | cfm/Side | 393 | | 525 | | 655 | | 787 | | 920 | | 1050 | | 1180 | |
| | | Throw,ft | 17-21-30 | | 20-25-35 | | 22-28-39 | | 25-30-43 | | 27-33-46 | | 28-35-49 | | 30-37-52 | |
| | 2E, 2F  | cfm/Side | 450 | 338 | 600 | 450 | 750 | 560 | 900 | 675 | 1060 | 790 | 1200 | 900 | 1350 | 1010 |
| | | Throw,ft | 18-22-31 | 17-20-29 | 21-26-36 | 19-24-33 | 23-29-41 | 21-26-37 | 26-31-44 | 24-29-41 | 28-34-48 | 26-31-44 | 30-36-51 | 27-33-47 | 31-38-54 | 29-35-50 |
| 1A, 1B  | cfm/Side | 787 | | 1050 | | 1310 | | 1575 | | 1840 | | 2100 | | 2360 | | |
| | Throw,ft | 21-26-37 | | 25-30-42 | | 27-34-47 | | 30-37-52 | | 32-40-56 | | 35-42-60 | | 37-45-64 | | |
| Duct Size | Total cfm | 900 | | 1200 | | 1500 | | 1800 | | 2100 | | 2400 | | 2700 | | |
| | NC | - | | 23 | | 30 | | 36 | | 40 | | 44 | | 48 | | |
| 24 in. x 18 in. | 4B  | cfm/Side | 281 | 169 | 375 | 225 | 469 | 281 | 563 | 337 | 656 | 394 | 750 | 450 | 844 | 506 |
| | | Throw,ft | 15-19-27 | 12-17-24 | 18-22-32 | 16-19-27 | 20-25-35 | 18-22-31 | 22-27-39 | 19-24-33 | 24-30-42 | 21-26-36 | 26-32-45 | 22-27-39 | 27-34-48 | 24-29-41 |
| | 3A1  | cfm/Side | 366 | 169 | 487 | 225 | 609 | 281 | 731 | 337 | 853 | 394 | 975 | 450 | 1098 | 506 |
| | | Throw,ft | 17-21-30 | 12-17-24 | 20-24-34 | 16-19-27 | 22-27-38 | 18-22-31 | 24-30-42 | 19-24-33 | 26-32-45 | 21-26-36 | 28-34-48 | 22-27-39 | 30-36-51 | 24-29-41 |
| | 3A2  | cfm/Side | 300 | 300 | 400 | 400 | 500 | 500 | 600 | 600 | 700 | 700 | 800 | 800 | 900 | 900 |
| | | Throw,ft | 16-20-28 | 16-20-28 | 19-23-32 | 19-23-32 | 21-26-36 | 21-26-36 | 23-28-40 | 23-28-40 | 25-30-43 | 25-30-43 | 26-32-46 | 26-32-46 | 28-34-49 | 28-34-49 |
| | 2A, 2B  | cfm/Side | 450 | | 600 | | 750 | | 900 | | 1050 | | 1200 | | 1350 | |
| | | Throw,ft | 18-22-31 | | 21-26-36 | | 23-29-41 | | 26-31-44 | | 28-34-48 | | 30-36-51 | | 31-38-54 | |
| | 2E, 2F  | cfm/Side | 562 | 338 | 750 | 450 | 938 | 562 | 1125 | 675 | 1313 | 787 | 1500 | 900 | 1688 | 1012 |
| | | Throw,ft | 19-24-33 | 17-20-29 | 22-27-39 | 19-24-33 | 25-31-43 | 21-26-37 | 27-33-47 | 24-29-41 | 30-36-51 | 25-31-44 | 32-39-55 | 27-33-47 | 33-41-58 | 29-35-50 |
| 1A, 1B  | cfm/Side | 900 | | 1200 | | 1500 | | 1800 | | 2100 | | 2400 | | 2700 | | |
| | Throw,ft | 22-27-38 | | 25-31-44 | | 28-35-49 | | 31-38-54 | | 34-41-58 | | 36-44-62 | | 38-47-66 | | |
| Duct Size | Total cfm | 1050 | | 1400 | | 1750 | | 2100 | | 2450 | | 2800 | | 3150 | | |
| | NC | 15 | | 24 | | 31 | | 37 | | 41 | | 45 | | 49 | | |
| 24 in. x 21 in. | 4B  | cfm/Side | 295 | 230 | 394 | 306 | 493 | 382 | 590 | 460 | 690 | 535 | 788 | 612 | 887 | 688 |
| | | Throw,ft | 16-20-28 | 14-18-26 | 19-23-32 | 17-21-30 | 21-25-36 | 19-24-33 | 23-28-39 | 21-26-37 | 25-30-43 | 23-28-39 | 26-32-45 | 24-30-42 | 28-34-48 | 26-32-45 |
| | 3A1  | cfm/Side | 410 | 230 | 547 | 306 | 684 | 382 | 820 | 460 | 957 | 535 | 1094 | 612 | 1231 | 688 |
| | | Throw,ft | 18-22-31 | 14-18-26 | 20-25-35 | 17-21-30 | 23-28-39 | 19-24-33 | 25-31-43 | 21-26-37 | 27-33-47 | 23-28-39 | 29-35-50 | 24-30-42 | 31-37-53 | 26-32-45 |
| | 3A2  | cfm/Side | 375 | 300 | 500 | 400 | 625 | 400 | 750 | 600 | 875 | 700 | 1000 | 800 | 1125 | 900 |
| | | Throw,ft | 17-21-30 | 16-20-28 | 20-24-34 | 19-23-32 | 22-27-38 | 19-23-32 | 24-30-42 | 23-28-39 | 26-32-45 | 25-30-43 | 28-34-49 | 26-32-45 | 30-36-52 | 28-34-48 |
| | 2A, 2B  | cfm/Side | 525 | | 700 | | 875 | | 1050 | | 1225 | | 1400 | | 1575 | |
| | | Throw,ft | 19-23-33 | | 22-27-38 | | 24-30-42 | | 27-33-46 | | 29-35-50 | | 31-38-54 | | 33-40-57 | |
| | 2E, 2F  | cfm/Side | 591 | 459 | 788 | 612 | 986 | 764 | 1180 | 920 | 1380 | 1070 | 1576 | 1224 | 1774 | 1376 |
| | | Throw,ft | 20-24-34 | 18-22-32 | 23-28-39 | 21-26-36 | 25-31-44 | 23-29-41 | 28-34-48 | 26-32-45 | 30-37-52 | 28-34-48 | 32-39-55 | 30-36-51 | 34-42-59 | 31-39-55 |
| 1A, 1B  | cfm/Side | 1050 | | 1400 | | 1750 | | 2100 | | 2450 | | 2800 | | 3150 | | |
| | Throw,ft | 23-28-40 | | 27-33-46 | | 30-36-52 | | 33-40-56 | | 35-43-61 | | 38-46-65 | | 40-49-69 | | |

For Performance Notes, see page C105.
For SMD / AMD Return Factors, see page C103.

Performance Data

Performance Notes:

1. All units are tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
TP = Total Pressure.
(-) SP = Negative Static Pressure.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10^{-12} Watts and one diffuser.
7. Blanks (—) indicate an NC level below 15.
8. Performance Data is tabulated for supply air applications.
9. Performance Data assumes the SMD / AMD is ceiling mounted for maximum ceiling effect. When no ceiling is present, the horizontal flow will be reduced by approximately 25%, producing a downward projection.
10. Does not include effects of ceiling radiation damper (SMD-FR)

Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Metric Units - Square Neck

| Neck Velocity (m/s) | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | | |
|-----------------------------------|-----------|-----------------------|----------------------------------|-----------------------------------|-----------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Velocity Pressure (Pa) | 1 | 2 | 4 | 6 | 8 | 10 | 13 | | |
| Total Pressure (Pa) | 9 | 16 | 25 | 36 | 48 | 63 | 80 | | |
| Duct Size | L/s NC | 35 -- | 47 -- | 59 17 | 71 22 | 83 27 | 94 31 | 106 35 | |
| 150 x 150 | A | B | A | B | A | B | A | B | |
| | 4A | L/s/side Throw (m) | 9 1.2-1.8-3.6 | 12 1.9-2.9-4.5 | 15 2.8-3.5-5.0 | 18 3.2-3.9-5.5 | 21 3.4-4.2-5.9 | 24 3.6-4.5-6.3 | 26 3.9-4.7-6.7 |
| Duct Area 0.023 m ² | 3A | L/s/side Throw (m) | 9 13 1.2-1.8-3.6 1.5-2.2-4.3 | 12 17 1.6-2.4-4.5 2.0-2.9-5.0 | 15 22 2.0-3.0-5.0 2.5-3.7-5.6 | 18 26 2.4-3.6-5.5 2.9-4.3-6.1 | 21 31 2.8-4.2-5.9 3.5-4.7-6.6 | 24 35 3.2-4.5-6.3 3.9-5.0-7.1 | 26 40 3.6-4.7-6.7 4.3-5.3-7.5 |
| | 2S, 2G | L/s/side Throw (m) | 18 1.7-2.6-4.7 | 24 2.7-3.8-5.4 | 30 3.5-4.3-6.1 | 35 3.8-4.7-6.7 | 42 4.2-5.1-7.2 | 47 4.4-5.4-7.7 | 53 4.7-5.8-8.2 |
| Duct Size 230 x 230 | 1S | L/s/side Throw (m) | 35 2.4-3.6-5.7 | 47 3.8-4.7-6.6 | 59 4.3-5.2-7.4 | 71 4.7-5.7-8.1 | 83 5.1-6.2-8.8 | 94 5.4-6.6-9.4 | 106 5.7-7.0-9.9 |
| | L/s NC | 80 -- | 106 -- | 133 21 | 159 26 | 186 31 | 212 35 | 239 39 | |
| Duct Area 0.052 m ² | 4A | L/s/side Throw (m) | 20 1.8-2.7-4.9 | 26 2.9-4.0-5.6 | 33 3.6-4.4-6.3 | 40 4.0-4.9-6.9 | 46 4.3-5.3-7.4 | 53 4.6-5.6-8.0 | 60 4.9-6.0-8.4 |
| | 3A | L/s/side Throw (m) | 20 30 1.8-2.7-4.9 2.2-3.3-5.5 | 26 40 2.4-3.6-5.6 2.9-4.4-6.3 | 33 50 3.0-4.4-6.3 3.7-5.0-7.0 | 40 60 3.6-4.9-6.9 4.4-5.5-7.7 | 46 70 4.2-5.3-7.4 4.8-5.9-8.4 | 53 80 4.6-5.6-8.0 5.2-6.3-8.9 | 60 90 4.9-6.0-8.4 5.5-6.7-9.5 |
| Duct Size 305 x 305 | 2S, 2G | L/s/side Throw (m) | 40 2.6-3.8-5.9 | 53 4.0-4.9-6.9 | 67 4.4-5.4-7.7 | 80 4.8-5.9-8.4 | 93 5.2-6.4-9.1 | 106 5.6-6.9-9.7 | 119 5.9-7.3-10.3 |
| | 1S | L/s/side Throw (m) | 80 3.6-5.1-7.2 | 106 4.8-5.9-8.3 | 133 5.4-6.6-9.3 | 159 5.9-7.2-10.2 | 186 6.4-7.8-11.0 | 212 6.8-8.3-11.8 | 239 7.2-8.9-12.5 |
| Duct Area 0.093 m ² | L/s NC | 142 -- | 189 17 | 236 24 | 283 29 | 330 34 | 378 38 | 425 42 | |
| | 4A | L/s/side Throw (m) | 35 2.4-3.6-5.7 | 47 3.8-4.7-6.6 | 59 4.3-5.2-7.4 | 71 4.7-5.7-8.1 | 83 5.1-6.2-8.8 | 94 5.4-6.6-9.4 | 106 5.7-7.0-9.9 |
| Duct Size 380 x 380 | 3A | L/s/side Throw (m) | 35 53 2.4-3.6-5.7 2.9-4.4-6.4 | 47 71 3.2-4.7-6.6 3.9-5.3-7.4 | 59 88 4.0-5.2-7.4 4.8-5.9-8.3 | 71 106 4.7-5.7-8.1 5.3-6.4-9.1 | 83 124 5.1-6.2-8.8 5.7-7.0-9.8 | 94 142 5.4-6.6-9.4 6.1-7.4-10.5 | 106 159 5.7-7.0-9.9 6.4-7.9-11.2 |
| | 2S, 2G | L/s/side Throw (m) | 71 3.4-4.9-7.0 | 94 4.7-5.7-8.1 | 118 5.2-6.4-9.0 | 142 5.7-7.0-9.9 | 165 6.2-7.6-10.7 | 189 6.6-8.1-11.4 | 212 7.0-8.6-12.1 |
| Duct Area 0.145 m ² | 1S | L/s/side Throw (m) | 142 4.8-6.0-8.5 | 189 5.7-7.0-9.8 | 236 6.3-7.8-11.0 | 283 7.0-8.5-12.0 | 330 7.5-9.2-13.0 | 378 8.0-9.8-13.9 | 425 8.5-10.4-14.8 |
| | L/s NC | 221 -- | 295 19 | 369 26 | 443 32 | 516 36 | 590 41 | 664 44 | |
| Duct Size 380 x 380 | 4A | L/s/side Throw (m) | 55 3.0-4.5-6.5 | 74 4.3-5.3-7.5 | 92 4.9-5.9-8.4 | 110 5.3-6.5-9.2 | 129 5.7-7.0-10.0 | 148 6.1-7.5-10.6 | 166 6.5-8.0-11.3 |
| | 3A | L/s/side Throw (m) | 55 83 3.0-4.5-6.5 3.7-5.2-7.3 | 74 110 4.0-5.3-7.5 4.9-6.0-8.4 | 92 138 4.9-5.9-8.4 5.5-6.7-9.4 | 110 166 5.3-6.5-9.2 6.0-7.3-10.3 | 129 194 5.7-7.0-10.0 6.5-7.9-11.2 | 148 221 6.1-7.5-10.6 6.9-8.4-11.9 | 166 249 6.5-8.0-11.3 7.3-9.0-12.7 |
| Duct Area 0.145 m ² | 2S, 2G | L/s/side Throw (m) | 110 4.3-5.6-7.9 | 148 5.3-6.5-9.2 | 185 5.9-7.3-10.3 | 221 6.5-7.9-11.2 | 258 7.0-8.6-12.1 | 295 7.5-9.2-13.0 | 332 7.9-9.7-13.8 |
| | 1S | L/s/side Throw (m) | 221 5.6-6.8-9.7 | 295 6.4-7.9-11.2 | 369 7.2-8.8-12.5 | 443 7.9-9.7-13.7 | 516 8.5-10.4-14.8 | 590 9.1-11.2-15.8 | 664 9.7-11.8-16.8 |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series

Performance Data - Metric Units - Square Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | |
|------------------------|-----------|------------------|---------------------|----------------------|----------------------|------------------------|------------------------|------------------------|------------------------|---------------------|---------------------|----------------------|---------------------|----------------------|----------------------|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 36 | | 48 | | 63 | | 80 | | |
| Duct Size | L/s NC | | 425 21 | | 531 28 | | 637 34 | | 743 38 | | 850 42 | | 956 46 | | |
| 455 x 455 | A B | | A B | | A B | | A B | | A B | | A B | | A B | | |
| | 4A | L/s Throw (m) | 80 3.6-5.1-7.2 | 106 4.8-5.9-8.3 | 133 5.4-6.6-9.3 | 160 5.9-7.2-10.2 | 186 6.4-7.8-11.0 | 212 6.8-8.3-11.8 | 239 7.2-8.9-12.5 | | | | | | |
| | 3A | L/s Throw (m) | 80 3.6-5.1-7.2 | 119 4.4-5.7-8.1 | 106 4.8-5.9-8.3 | 159 5.4-6.6-9.4 | 133 5.4-6.6-9.3 | 199 6.1-7.4-10.5 | 160 5.9-7.2-10.2 | 239 6.6-8.1-11.5 | 186 6.4-7.8-11.0 | 279 7.2-8.8-12.4 | 212 6.8-8.3-11.8 | 319 7.7-9.4-13.3 | 239 7.2-8.9-12.5 |
| 0.209 m ² | 2S, 2G | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | |
| | 2S, 2G | L/s Throw (m) | 160 5.1-6.2-8.8 | 212 5.9-7.2-10.2 | 266 6.6-8.0-11.4 | 319 7.2-8.8-12.5 | 372 7.8-9.5-13.5 | 425 8.3-10.2-14.4 | 478 8.8-10.8-15.3 | | | | | | |
| | 1S | L/s Throw (m) | 319 6.2-7.6-10.7 | 425 7.2-8.8-12.4 | 531 8.0-9.8-13.9 | 637 8.8-10.7-15.2 | 743 9.5-11.6-16.4 | 850 10.1-12.4-17.5 | 956 10.7-13.1-18.6 | | | | | | |
| 535 x 535 | A B | | A B | | A B | | A B | | A B | | A B | | A B | | |
| | 4A | L/s Throw (m) | 109 4.2-5.6-7.9 | 144 5.3-6.4-9.1 | 181 5.9-7.2-10.2 | 217 6.4-7.9-11.2 | 253 7.0-8.5-12.1 | 289 7.4-9.1-12.9 | 325 7.9-9.7-13.7 | | | | | | |
| | 3A | L/s Throw (m) | 109 4.2-5.6-7.9 | 163 5.1-6.3-8.9 | 144 5.3-6.4-9.1 | 217 5.9-7.2-10.2 | 181 5.9-7.2-10.2 | 271 6.6-8.1-11.4 | 217 6.4-7.9-11.2 | 325 7.2-8.9-12.5 | 253 7.0-8.5-12.1 | 379 7.8-9.6-13.5 | 289 7.4-9.1-12.9 | 434 8.4-10.2-14.5 | 325 7.9-9.7-13.7 |
| 0.284 m ² | 2S, 2G | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | |
| | 2S, 2G | L/s Throw (m) | 217 5.6-6.8-9.6 | 289 6.4-7.9-11.1 | 362 7.2-8.8-12.4 | 434 7.9-9.6-13.6 | 506 8.5-10.4-14.7 | 578 9.1-11.1-15.7 | 650 9.6-11.8-16.7 | | | | | | |
| | 1S | L/s Throw (m) | 434 6.8-8.3-11.7 | 578 7.8-9.6-13.5 | 723 8.7-10.7-15.1 | 867 9.6-11.7-16.6 | 1012 10.3-12.7-17.9 | 1156 11.0-13.5-19.1 | 1301 11.7-14.4-20.3 | | | | | | |
| 610 x 610 | A B | | A B | | A B | | A B | | A B | | A B | | A B | | |
| | 4A | L/s Throw (m) | 142 4.8-6.0-8.5 | 189 5.7-7.0-9.8 | 236 6.3-7.8-11.0 | 283 7.0-8.5-12.0 | 330 7.5-9.2-13.0 | 378 8.0-9.8-13.9 | 425 8.5-10.4-14.8 | | | | | | |
| | 3A | L/s Throw (m) | 142 4.8-6.0-8.5 | 212 5.5-6.8-9.6 | 189 5.7-7.0-9.8 | 283 6.4-7.8-11.0 | 236 6.3-7.8-11.0 | 354 7.1-8.7-12.3 | 283 7.0-8.5-12.0 | 425 7.8-9.6-13.5 | 330 7.5-9.2-13.0 | 496 8.4-10.3-14.6 | 378 8.0-9.8-13.9 | 566 9.0-11.0-15.6 | 425 8.5-10.4-14.8 |
| 0.372 m ² | 2S, 2G | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | L/s Throw (m) | | |
| | 2S, 2G | L/s Throw (m) | 283 6.0-7.3-10.4 | 378 6.9-8.5-12.0 | 472 7.7-9.5-13.4 | 566 8.5-10.4-14.7 | 661 9.2-11.2-15.9 | 755 9.8-12.0-16.9 | 850 10.4-12.7-18.0 | | | | | | |
| | 1S | L/s Throw (m) | 566 7.3-8.9-12.6 | 755 8.4-10.3-14.6 | 944 9.4-11.5-16.3 | 1133 10.3-12.6-17.9 | 1322 11.2-13.7-19.3 | 1510 11.9-14.6-20.7 | 1699 12.6-15.5-21.9 | | | | | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series

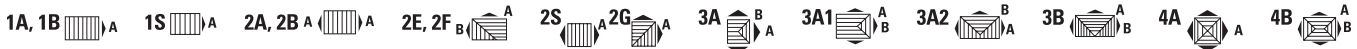


Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | |
|------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | |
| Duct Size | L/s NC | | 71 | | 89 | | 106 | | 124 | | 142 | | 159 | | |
| 230 x 150 | -- | | -- | | 19 | | 24 | | 29 | | 33 | | 37 | | |
| 4B | L/s/side | A | B | A | B | A | B | A | B | A | B | A | B | | |
| | Throw (m) | 18 | 9 | 24 | 12 | 30 | 15 | 35 | 18 | 42 | 21 | 47 | 24 | 53 | 26 |
| 3A2 | L/s/side | 17 | 20 | 22 | 26 | 28 | 33 | 33 | 40 | 39 | 46 | 44 | 53 | 50 | 60 |
| | Throw (m) | 1.7-2.6-4.7 | 1.2-1.8-3.7 | 2.3-3.4-5.4 | 1.5-2.4-4.6 | 2.9-4.3-6.1 | 2.1-3.0-4.9 | 3.4-4.7-6.7 | 2.4-3.7-5.5 | 4.0-5.1-7.2 | 2.7-4.3-6.1 | 4.4-5.4-7.7 | 3.4-4.6-6.4 | 4.7-5.8-8.2 | 3.7-4.9-6.7 |
| 2A, 2B | L/s/side | 26 | | 35 | | 44 | | 53 | | 62 | | 71 | | 80 | |
| | Throw (m) | 2.1-3.1-5.3 | | 2.8-4.2-6.1 | | 3.5-4.8-6.8 | | 4.2-5.3-7.5 | | 4.7-5.7-8.1 | | 5.0-6.1-8.6 | | 5.3-6.5-9.2 | |
| 2E, 2F | L/s/side | 35 | 17 | 48 | 24 | 59 | 29 | 71 | 35 | 83 | 41 | 95 | 47 | 107 | 52 |
| | Throw (m) | 2.4-3.6-5.7 | 1.8-2.4-4.6 | 3.2-4.7-6.6 | 2.1-3.4-5.5 | 4.0-5.3-7.4 | 2.7-4.3-6.1 | 4.7-5.7-8.1 | 3.4-4.6-6.7 | 5.1-6.2-8.8 | 4.0-5.2-7.3 | 5.4-6.6-9.4 | 4.6-5.5-7.6 | 5.7-7.0-10.0 | 4.6-5.8-8.2 |
| 1A, 1B | L/s/side | 53 | | 71 | | 89 | | 106 | | 124 | | 142 | | 160 | |
| | Throw (m) | 3.0-4.4-6.4 | | 3.9-5.3-7.4 | | 4.8-5.9-8.3 | | 5.3-6.4-9.1 | | 5.7-7.0-9.8 | | 6.1-7.4-10.5 | | 6.4-7.9-11.2 | |
| 305 x 150 | L/s NC | 71 | | 94 | | 118 | | 142 | | 165 | | 189 | | 212 | |
| | | -- | | -- | | 20 | | 26 | | 31 | | 35 | | 38 | |
| 4B | L/s/side | 24 | 12 | 32 | 16 | 39 | 20 | 47 | 24 | 55 | 27 | 63 | 32 | 71 | 35 |
| | Throw (m) | 2.0-3.0-5.1 | 1.2-1.8-3.7 | 2.6-3.9-5.9 | 1.5-2.4-4.6 | 3.3-4.7-6.6 | 2.1-3.0-4.9 | 3.9-5.1-7.2 | 2.4-3.7-5.5 | 4.5-5.5-7.8 | 2.7-4.3-6.1 | 4.8-5.9-8.3 | 3.4-4.6-6.4 | 5.1-6.3-8.9 | 3.7-4.9-6.7 |
| 3A1 | L/s/side | 30 | 12 | 39 | 16 | 49 | 20 | 59 | 24 | 69 | 27 | 79 | 32 | 89 | 35 |
| | Throw (m) | 2.2-3.3-5.5 | 1.2-1.8-3.7 | 2.9-4.4-6.3 | 1.5-2.4-4.6 | 3.7-5.0-7.0 | 2.1-3.0-4.9 | 4.4-5.4-7.7 | 2.4-3.7-5.5 | 4.8-5.9-8.3 | 2.7-4.3-6.1 | 5.1-6.3-8.9 | 3.4-4.6-6.4 | 5.5-6.7-9.4 | 3.7-4.9-6.7 |
| 3B | L/s/side | 35 | 18 | 47 | 24 | 59 | 30 | 71 | 35 | 83 | 42 | 94 | 47 | 106 | 53 |
| | Throw (m) | 2.4-3.6-5.7 | 1.8-2.4-4.6 | 3.2-4.7-6.6 | 2.1-3.4-5.5 | 4.0-5.2-7.4 | 2.7-4.3-6.1 | 4.7-5.7-8.1 | 3.4-4.6-6.7 | 5.1-6.2-8.8 | 3.0-4.6-6.4 | 5.4-6.6-9.4 | 4.6-5.5-7.6 | 5.7-7.0-9.9 | 4.6-5.8-8.2 |
| 2A, 2B | L/s/side | 35 | | 47 | | 59 | | 71 | | 83 | | 94 | | 106 | |
| | Throw (m) | 2.4-3.6-5.7 | | 3.2-4.7-6.6 | | 4.0-5.2-7.4 | | 4.7-5.7-8.1 | | 5.1-6.2-8.8 | | 5.4-6.6-9.4 | | 5.7-7.0-9.9 | |
| 2E, 2F | L/s/side | 48 | 24 | 63 | 31 | 79 | 39 | 95 | 47 | 111 | 55 | 126 | 62 | 143 | 70 |
| | Throw (m) | 2.8-4.2-6.2 | 1.8-2.4-4.6 | 3.7-5.1-7.2 | 2.1-3.4-5.5 | 4.7-5.7-8.1 | 2.7-4.3-6.1 | 5.1-6.2-8.8 | 3.4-4.6-6.7 | 5.5-6.7-9.5 | 4.0-5.2-7.3 | 5.9-7.2-10.2 | 4.6-5.5-7.6 | 6.2-7.6-10.8 | 4.6-5.8-8.2 |
| 1A, 1B | L/s/side | 71 | | 94 | | 118 | | 142 | | 165 | | 189 | | 212 | |
| | Throw (m) | 3.4-4.9-7.0 | | 4.5-5.7-8.1 | | 5.2-6.4-9.0 | | 5.7-7.0-9.9 | | 6.2-7.6-10.7 | | 6.6-8.1-11.4 | | 7.0-8.6-12.1 | |
| 380 x 150 | L/s NC | 89 | | 118 | | 148 | | 177 | | 207 | | 236 | | 266 | |
| | | -- | | -- | | 21 | | 27 | | 32 | | 36 | | 39 | |
| 4B | L/s/side | 30 | 15 | 39 | 20 | 49 | 25 | 59 | 30 | 69 | 34 | 79 | 39 | 89 | 44 |
| | Throw (m) | 2.2-3.3-5.5 | 1.1-1.6-3.3 | 2.9-4.4-6.3 | 1.5-2.2-4.4 | 3.7-5.0-7.0 | 1.8-2.7-5.0 | 4.4-5.4-7.7 | 2.2-3.3-5.5 | 4.8-5.9-8.3 | 2.6-3.9-5.9 | 5.1-6.3-8.9 | 2.9-4.4-6.3 | 5.5-6.7-9.4 | 3.3-4.7-6.7 |
| 3A1 | L/s/side | 37 | 15 | 49 | 20 | 61 | 25 | 74 | 30 | 86 | 34 | 98 | 39 | 110 | 44 |
| | Throw (m) | 2.5-3.7-5.8 | 1.2-1.8-3.4 | 3.3-4.7-6.7 | 1.5-2.4-4.6 | 4.1-5.3-7.5 | 2.1-3.0-4.9 | 4.7-5.8-8.2 | 2.4-3.7-5.5 | 5.1-6.3-8.9 | 2.7-4.3-5.8 | 5.5-6.7-9.5 | 3.4-4.6-6.4 | 5.8-7.1-10.1 | 3.7-4.6-6.7 |
| 2A, 2B | L/s/side | 44 | | 59 | | 74 | | 89 | | 103 | | 118 | | 133 | |
| | Throw (m) | 2.7-4.0-6.1 | | 3.6-5.0-7.1 | | 4.5-5.6-7.9 | | 5.0-6.1-8.7 | | 5.4-6.6-9.3 | | 5.8-7.1-10.0 | | 6.1-7.5-10.6 | |
| 2E, 2F | L/s/side | 59 | 29 | 79 | 39 | 99 | 49 | 118 | 59 | 138 | 68 | 158 | 78 | 178 | 88 |
| | Throw (m) | 3.4-4.9-7.0 | 1.8-2.4-4.6 | 4.6-5.8-7.9 | 2.1-3.4-5.5 | 5.2-6.4-9.1 | 2.7-4.3-6.1 | 5.8-7.0-9.8 | 3.4-4.6-6.7 | 6.1-7.6-10.7 | 4.0-5.2-7.3 | 6.7-7.9-11.3 | 4.6-5.5-7.6 | 7.0-8.5-12.2 | 4.6-5.8-8.2 |
| 1A, 1B | L/s/side | 89 | | 118 | | 148 | | 177 | | 207 | | 236 | | 266 | |
| | Throw (m) | 3.8-5.3-7.5 | | 5.0-6.1-8.6 | | 5.6-6.8-9.6 | | 6.1-7.5-10.5 | | 6.6-8.1-11.4 | | 7.0-8.6-12.2 | | 7.5-9.1-12.9 | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series

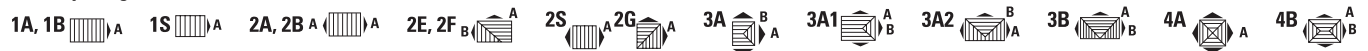


Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | |
|------------------------|-----------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|-------------|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | |
| Duct Size | L/s | NC | 106 | | 142 | | 177 | | 212 | | 248 | | 283 | | 319 | |
| | | | -- | | 16 | | 22 | | 28 | | 33 | | 37 | | 40 | |
| 455 x 150 | 4B | L/s | 35 | 18 | 47 | 24 | 59 | 30 | 71 | 35 | 83 | 42 | 94 | 47 | 106 | 53 |
| | | Throw (m) | 2.7-4.0-6.1 | 1.2-1.8-3.7 | 3.7-4.9-7.0 | 1.6-2.4-4.7 | 4.6-5.5-7.9 | 2.0-3.0-5.3 | 4.9-6.1-8.5 | 2.4-3.6-5.7 | 5.5-6.7-9.4 | 2.8-4.2-6.2 | 5.8-7.0-10.1 | 3.2-4.7-6.6 | 6.1-7.6-10.7 | 3.6-5.0-7.0 |
| | 3A1 | L/s | 44 | 18 | 59 | 24 | 74 | 30 | 89 | 35 | 103 | 42 | 118 | 47 | 133 | 53 |
| | | Throw (m) | 2.7-4.0-6.1 | 1.2-1.8-3.7 | 3.6-5.0-7.1 | 1.5-2.4-4.6 | 4.5-5.6-7.9 | 2.1-3.0-4.9 | 5.0-6.1-8.7 | 2.4-3.7-5.5 | 5.4-6.6-9.3 | 2.7-4.3-6.1 | 5.8-7.1-10.0 | 3.4-4.6-6.4 | 6.1-7.5-10.6 | 3.7-4.9-6.7 |
| 0.070 m ² | 2A, 2B | L/s | 53 | | 71 | | 89 | | 106 | | 124 | | 142 | | 160 | |
| | | Throw (m) | 3.0-4.4-6.4 | | 3.9-5.3-7.4 | | 4.8-5.9-8.3 | | 5.3-6.4-9.1 | | 5.7-7.0-9.8 | | 6.1-7.4-10.5 | | 6.4-7.9-11.2 | |
| | 2E, 2F | L/s | 71 | 35 | 95 | 47 | 118 | 59 | 143 | 70 | 166 | 82 | 190 | 93 | 213 | 105 |
| | | Throw (m) | 3.7-5.2-7.3 | 1.8-2.4-4.6 | 4.9-6.1-8.5 | 2.4-3.4-5.5 | 5.5-6.7-9.8 | 2.7-4.3-6.1 | 6.1-7.3-10.7 | 3.4-4.9-6.7 | 6.7-7.9-11.3 | 4.0-5.2-7.3 | 7.0-8.5-12.2 | 4.6-5.5-7.6 | 7.3-9.1-12.8 | 4.9-5.8-8.2 |
| 1A, 1B | L/s | 106 | | 142 | | 177 | | 212 | | 248 | | 283 | | 319 | | |
| | Throw (m) | 4.2-5.5-7.8 | | 5.2-6.4-9.1 | | 5.8-7.2-10.1 | | 6.4-7.8-11.1 | | 6.9-8.5-12.0 | | 7.4-9.1-12.8 | | 7.8-9.6-13.6 | | |
| 535 x 150 | 4B | L/s | 124 | | 165 | | 207 | | 248 | | 289 | | 330 | | 372 | |
| | | NC | -- | | 16 | | 23 | | 29 | | 33 | | 38 | | 41 | |
| | 4B | L/s | 42 | 21 | 55 | 27 | 69 | 34 | 83 | 42 | 96 | 48 | 110 | 55 | 124 | 62 |
| | | Throw (m) | 3.0-4.3-6.4 | 1.2-1.8-3.4 | 4.0-5.2-7.3 | 1.5-2.4-4.6 | 4.9-5.8-8.2 | 2.1-3.0-4.9 | 5.2-6.4-9.1 | 2.4-3.7-5.5 | 5.8-7.0-9.8 | 2.7-4.3-6.1 | 6.1-7.3-10.4 | 3.4-4.6-6.4 | 6.4-7.9-11.3 | 3.7-4.9-6.7 |
| 3A1 | L/s | 51 | 21 | 69 | 27 | 86 | 34 | 103 | 42 | 120 | 48 | 138 | 55 | 155 | 62 | |
| | Throw (m) | 3.0-4.6-6.7 | 1.2-1.8-3.4 | 4.0-5.5-7.6 | 1.5-2.4-4.6 | 4.9-6.1-8.5 | 2.1-3.0-4.9 | 5.5-6.7-9.4 | 2.4-3.7-5.5 | 5.8-7.0-10.1 | 2.7-4.3-6.1 | 6.1-7.6-10.7 | 3.4-4.6-6.4 | 6.7-7.9-11.3 | 3.7-4.9-6.7 | |
| 0.082 m ² | 2A, 2B | L/s | 62 | | 83 | | 103 | | 124 | | 144 | | 165 | | 186 | |
| | | Throw (m) | 3.2-4.8-6.7 | | 4.3-5.5-7.8 | | 5.0-6.1-8.7 | | 5.5-6.7-9.5 | | 5.9-7.3-10.3 | | 6.3-7.8-11.0 | | 6.7-8.2-11.7 | |
| | 2E, 2F | L/s | 83 | 41 | 111 | 55 | 138 | 68 | 166 | 82 | 194 | 95 | 221 | 109 | 249 | 123 |
| | | Throw (m) | 4.3-5.5-7.9 | 1.8-2.4-4.6 | 5.2-6.4-9.1 | 2.4-3.4-5.5 | 5.8-7.0-10.1 | 2.7-4.3-6.1 | 6.4-7.9-11.0 | 3.4-4.9-6.7 | 7.0-8.5-11.9 | 4.0-5.2-7.3 | 7.3-9.1-12.8 | 4.6-5.5-7.6 | 7.9-9.8-13.7 | 4.6-5.8-8.2 |
| 1A, 1B | L/s | 124 | | 165 | | 207 | | 248 | | 289 | | 330 | | 372 | | |
| | Throw (m) | 4.5-5.8-8.2 | | 5.5-6.7-9.5 | | 6.1-7.5-10.6 | | 6.7-8.2-11.6 | | 7.2-8.9-12.5 | | 7.7-9.5-13.4 | | 8.2-10.0-14.2 | | |
| 610 x 150 | 4B | L/s | 142 | | 189 | | 236 | | 283 | | 330 | | 378 | | 425 | |
| | | NC | -- | | 17 | | 24 | | 29 | | 34 | | 38 | | 42 | |
| | 4B | L/s | 47 | 24 | 63 | 32 | 79 | 39 | 94 | 47 | 110 | 55 | 126 | 63 | 142 | 71 |
| | | Throw (m) | 3.0-4.9-6.7 | 1.2-1.8-3.7 | 4.3-5.5-7.6 | 1.5-2.4-4.6 | 4.9-6.1-8.5 | 2.1-3.0-4.9 | 5.5-6.7-9.4 | 2.4-3.7-5.5 | 5.8-7.3-10.4 | 2.7-4.3-6.1 | 6.4-7.6-11.0 | 3.4-4.6-6.4 | 6.7-8.2-11.6 | 3.7-4.9-6.7 |
| 3A1 | L/s | 59 | 24 | 79 | 32 | 98 | 39 | 118 | 47 | 138 | 55 | 157 | 63 | 177 | 71 | |
| | Throw (m) | 3.4-4.9-7.0 | 1.2-1.8-3.7 | 4.3-5.5-7.9 | 1.5-2.4-4.6 | 5.2-6.4-8.8 | 2.1-3.0-4.9 | 5.5-6.7-9.8 | 2.4-3.7-5.5 | 6.1-7.3-10.4 | 2.7-4.3-6.1 | 6.4-7.9-11.3 | 3.4-4.6-6.4 | 7.0-8.5-11.9 | 3.7-4.9-6.7 | |
| 0.093 m ² | 2A, 2B | L/s | 71 | | 94 | | 118 | | 142 | | 165 | | 189 | | 212 | |
| | | Throw (m) | 3.4-4.9-7.0 | | 4.5-5.7-8.1 | | 5.2-6.4-9.0 | | 5.7-7.0-9.9 | | 6.2-7.6-10.7 | | 6.6-8.1-11.4 | | 7.0-8.6-12.1 | |
| | 2E, 2F | L/s | 95 | 47 | 126 | 62 | 158 | 78 | 190 | 93 | 221 | 109 | 253 | 125 | 285 | 140 |
| | | Throw (m) | 4.6-5.8-8.2 | 1.8-2.4-4.6 | 5.5-6.7-9.4 | 2.4-3.4-5.5 | 6.1-7.6-10.7 | 2.7-4.3-6.1 | 6.7-8.2-11.6 | 3.4-4.9-6.7 | 7.3-8.8-12.5 | 4.0-5.2-7.3 | 7.6-9.4-13.4 | 4.6-5.5-7.6 | 8.2-10.1-14.3 | 4.9-5.8-8.2 |
| 1A, 1B | L/s | 142 | | 189 | | 236 | | 283 | | 330 | | 378 | | 425 | | |
| | Throw (m) | 4.8-6.0-8.5 | | 5.7-7.0-9.8 | | 6.3-7.8-11.0 | | 7.0-8.5-12.0 | | 7.5-9.2-13.0 | | 8.0-9.8-13.9 | | 8.5-10.4-14.8 | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | | |
|-----------------------------------|--------|-----------|-------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|--------------|---------------|--------------|---------------|--------------|--|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | | |
| Duct Size | L/s NC | | 106 | | 142 | | 177 | | 212 | | 248 | | 283 | | 319 | | |
| 305 x 230 | -- | | 16 | | 16 | | 22 | | 28 | | 33 | | 37 | | 40 | | |
| Duct Area 0.070 m ² | 4B | L/s/side | 35 | 18 | 47 | 24 | 59 | 30 | 71 | 35 | 83 | 42 | 94 | 47 | 106 | 53 | |
| | | Throw (m) | 2.4-3.6-5.7 | 1.8-2.7-4.9 | 3.2-4.7-6.6 | 2.4-3.7-5.5 | 4.0-5.2-7.4 | 3.0-4.6-6.4 | 4.7-5.7-8.1 | 3.7-4.9-6.7 | 5.1-6.2-8.8 | 4.3-5.2-7.3 | 5.4-6.6-9.4 | 4.6-5.5-7.9 | 5.7-7.0-9.9 | 4.9-5.8-8.5 | |
| | 3A1 | L/s/side | 44 | 18 | 59 | 24 | 74 | 30 | 89 | 35 | 103 | 42 | 118 | 47 | 133 | 53 | |
| | | Throw (m) | 2.7-4.0-6.1 | 1.8-4.9-2.7 | 3.6-5.0-7.1 | 2.4-3.7-5.5 | 4.5-5.6-7.9 | 3.0-4.6-6.4 | 5.0-6.1-8.7 | 3.7-4.9-6.7 | 5.4-6.6-9.3 | 4.3-5.2-7.3 | 5.8-7.1-10.0 | 4.6-5.5-7.9 | 6.1-7.5-10.6 | 4.9-5.8-8.5 | |
| | 3A2 | L/s/side | 33 | 40 | 44 | 53 | 55 | 67 | 67 | 80 | 77 | 93 | 89 | 106 | 100 | 119 | |
| | | Throw (m) | 2.3-3.5-5.6 | 2.3-3.5-5.6 | 3.1-4.6-6.5 | 3.1-4.6-6.5 | 3.9-5.1-7.3 | 3.9-5.1-7.3 | 4.6-5.6-8.0 | 4.6-5.6-8.0 | 5.0-6.1-8.6 | 5.0-6.1-8.6 | 5.3-6.5-9.2 | 5.3-6.5-9.2 | 5.6-6.9-9.8 | 5.6-6.9-9.8 | |
| Duct Size 380 x 230 | 2A, 2B | L/s/side | 53 | | 71 | | 89 | | 106 | | 124 | | 142 | | 160 | | |
| | | Throw (m) | 3.0-4.4-6.4 | | 3.9-5.3-7.4 | | 4.8-5.9-8.3 | | 5.3-6.4-9.1 | | 5.7-7.0-9.8 | | 6.1-7.4-10.5 | | 6.4-7.9-11.2 | | |
| | 2E, 2F | L/s/side | 71 | 35 | 95 | 47 | 118 | 59 | 143 | 70 | 166 | 82 | 190 | 93 | 213 | 105 | |
| | | Throw (m) | 3.4-5.0-7.0 | 2.4-4.0-5.8 | 4.6-5.7-8.1 | 3.4-4.9-6.7 | 5.2-6.4-9.0 | 4.3-5.5-7.6 | 5.7-7.0-9.9 | 4.9-6.1-8.5 | 6.2-7.6-10.7 | 5.2-6.4-9.1 | 6.6-8.1-11.4 | 5.5-7.0-9.8 | 7.0-8.6-12.1 | 6.1-7.3-10.4 | |
| | 1A, 1B | L/s/side | 106 | | 142 | | 177 | | 212 | | 248 | | 283 | | 319 | | |
| | | Throw (m) | 4.2-5.5-7.8 | | 5.2-6.4-9.1 | | 5.8-7.2-10.1 | | 6.4-7.8-11.1 | | 6.9-8.5-12.0 | | 7.4-9.1-12.8 | | 7.8-9.6-13.6 | | |
| Duct Area 0.087 m ² | 4B | L/s/side | 44 | 22 | 59 | 30 | 74 | 37 | 89 | 44 | 103 | 51 | 118 | 59 | 133 | 67 | |
| | | Throw (m) | 2.7-4.0-6.1 | 1.8-2.7-4.9 | 3.6-5.0-7.1 | 2.4-3.7-5.5 | 4.5-5.6-7.9 | 3.0-4.6-6.4 | 5.0-6.1-8.7 | 3.7-4.9-7.0 | 5.4-6.6-9.3 | 4.3-5.2-7.3 | 5.8-7.1-10.0 | 4.6-5.5-7.9 | 6.1-7.5-10.6 | 4.9-6.1-8.5 | |
| | 3A1 | L/s/side | 55 | 22 | 74 | 30 | 92 | 37 | 110 | 44 | 129 | 51 | 148 | 59 | 166 | 67 | |
| | | Throw (m) | 3.0-4.5-6.5 | 1.8-2.7-4.9 | 4.0-5.3-7.5 | 2.4-3.7-5.5 | 4.9-5.9-8.4 | 3.0-4.6-6.4 | 5.3-6.5-9.2 | 3.7-4.9-7.0 | 5.7-7.0-10.0 | 4.3-5.2-7.3 | 6.1-7.5-10.6 | 4.6-5.5-7.9 | 6.5-8.0-11.3 | 4.9-6.1-8.5 | |
| | 3A2 | L/s/side | 42 | 50 | 55 | 67 | 69 | 83 | 83 | 100 | 97 | 116 | 110 | 133 | 125 | 149 | |
| | | Throw (m) | 2.6-3.9-6.0 | 3.1-4.6-6.6 | 3.5-4.9-6.9 | 4.2-5.4-7.6 | 4.3-5.5-7.7 | 4.9-6.0-8.5 | 4.9-6.0-8.5 | 5.4-6.6-9.3 | 5.3-6.5-9.2 | 5.8-7.1-10.0 | 5.7-6.9-9.8 | 6.2-7.6-10.7 | 6.0-7.4-10.4 | 6.6-8.0-11.4 | |
| Duct Size 455 x 230 | 2A, 2B | L/s/side | 67 | | 89 | | 110 | | 133 | | 155 | | 177 | | 199 | | |
| | | Throw (m) | 3.3-4.9-6.9 | | 4.4-5.6-7.9 | | 5.1-6.3-8.9 | | 5.6-6.9-9.7 | | 6.1-7.4-10.5 | | 6.5-7.9-11.2 | | 6.9-8.4-11.9 | | |
| | 2E, 2F | L/s/side | 89 | 44 | 118 | 59 | 148 | 73 | 178 | 88 | 208 | 102 | 237 | 117 | 267 | 131 | |
| | | Throw (m) | 3.8-5.3-7.5 | 2.4-4.0-5.8 | 5.0-6.1-8.6 | 3.4-4.9-6.7 | 5.6-6.8-9.6 | 4.3-5.5-7.6 | 6.1-7.5-10.6 | 4.9-5.8-8.5 | 6.6-8.1-11.4 | 5.2-6.4-9.1 | 7.0-8.6-12.2 | 5.5-6.7-9.8 | 7.5-9.1-12.9 | 5.8-7.3-10.4 | |
| | 1A, 1B | L/s/side | 133 | | 177 | | 221 | | 266 | | 310 | | 354 | | 398 | | |
| | | Throw (m) | 4.7-5.9-8.4 | | 5.6-6.8-9.7 | | 6.2-7.6-10.8 | | 6.8-8.4-11.8 | | 7.4-9.0-12.8 | | 7.9-9.7-13.7 | | 8.4-10.2-14.5 | | |
| Duct Area 0.105 m ² | 4B | L/s/side | 53 | 26 | 71 | 35 | 89 | 44 | 106 | 53 | 124 | 62 | 142 | 71 | 160 | 80 | |
| | | Throw (m) | 3.0-4.4-6.4 | 1.8-2.7-4.9 | 3.9-5.3-7.4 | 2.4-3.7-5.8 | 4.8-5.9-8.3 | 3.0-4.6-6.4 | 5.3-6.4-9.1 | 3.7-4.9-7.0 | 5.7-7.0-9.8 | 4.3-5.2-7.6 | 6.1-7.4-10.5 | 4.6-5.8-7.9 | 6.4-7.9-11.2 | 4.9-6.1-8.5 | |
| | 3A1 | L/s/side | 67 | 26 | 89 | 35 | 110 | 44 | 133 | 53 | 155 | 62 | 177 | 71 | 199 | 80 | |
| | | Throw (m) | 3.3-4.9-6.9 | 1.8-2.7-4.9 | 4.4-5.6-7.9 | 2.4-3.7-5.8 | 5.1-6.3-8.9 | 3.0-4.6-6.4 | 5.6-6.9-9.7 | 3.7-4.9-7.0 | 6.1-7.4-10.5 | 4.3-5.2-7.6 | 6.5-7.9-11.2 | 4.6-5.8-7.9 | 6.9-8.4-11.9 | 4.9-6.1-8.5 | |
| | 3B | L/s/side | 80 | 40 | 106 | 53 | 133 | 67 | 160 | 80 | 186 | 93 | 212 | 106 | 239 | 119 | |
| | | Throw (m) | 3.6-5.1-7.2 | 2.4-4.0-5.8 | 4.8-5.9-8.3 | 3.4-4.9-6.7 | 5.4-6.6-9.3 | 4.3-5.5-7.6 | 5.9-7.2-10.2 | 4.9-5.8-8.5 | 6.4-7.8-11.0 | 5.2-6.4-9.1 | 6.8-8.3-11.8 | 5.5-6.7-9.8 | 7.2-8.9-12.5 | 5.8-7.3-10.4 | |
| Duct Size 455 x 230 | 2A, 2B | L/s/side | 80 | | 106 | | 133 | | 160 | | 186 | | 212 | | 239 | | |
| | | Throw (m) | 3.6-5.1-7.2 | | 4.8-5.9-8.3 | | 5.4-6.6-9.3 | | 5.9-7.2-10.2 | | 6.4-7.8-11.0 | | 6.8-8.3-11.8 | | 7.2-8.9-12.5 | | |
| | 2E, 2F | L/s/side | 107 | 52 | 143 | 70 | 178 | 88 | 213 | 105 | 249 | 123 | 285 | 140 | 320 | 158 | |
| | | Throw (m) | 4.2-5.6-7.9 | 2.4-4.0-5.8 | 5.2-6.4-9.1 | 3.4-4.9-6.7 | 5.9-7.2-10.1 | 4.3-5.5-7.6 | 6.4-7.9-11.1 | 4.9-5.8-8.5 | 6.9-8.5-12.0 | 5.2-6.4-9.1 | 7.4-9.1-12.8 | 5.5-6.7-9.8 | 7.9-9.6-13.6 | 5.8-7.3-10.4 | |
| | 1A, 1B | L/s/side | 160 | | 212 | | 266 | | 319 | | 372 | | 425 | | 478 | | |
| | | Throw (m) | 5.1-6.2-8.8 | | 5.9-7.2-10.2 | | 6.6-8.0-11.4 | | 7.2-8.8-12.5 | | 7.8-9.5-13.5 | | 8.3-10.2-14.4 | | 8.8-10.8-15.3 | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | |
|------------------------|-----------|-------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|---------------|--------------|---------------|--------------|---------------|--------------|
| Velocity Pressure (Pa) | | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | |
| Total Pressure (Pa) | | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | |
| Duct Size | L/s NC | 186 | | 248 | | 310 | | 372 | | 434 | | 496 | | 558 | |
| 535 x 230 | NC | -- | | 19 | | 25 | | 31 | | 36 | | 40 | | 43 | |
| 4B | L/s/side | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| | Throw (m) | 62 | 31 | 83 | 42 | 103 | 51 | 124 | 62 | 144 | 72 | 165 | 83 | 186 | 93 |
| 3A1 | L/s/side | 77 | 31 | 103 | 42 | 129 | 51 | 155 | 62 | 181 | 72 | 207 | 83 | 232 | 93 |
| | Throw (m) | 3.2-4.8-6.7 | 1.8-2.7-4.9 | 4.3-5.5-7.8 | 2.4-3.7-5.5 | 5.0-6.1-8.7 | 3.0-4.3-6.1 | 5.5-6.7-9.5 | 3.7-4.9-6.7 | 5.9-7.3-10.3 | 4.3-5.2-7.3 | 6.3-7.8-11.0 | 4.6-5.5-7.9 | 6.7-8.2-11.7 | 4.9-5.8-8.2 |
| 2A, 2B | L/s/side | 93 | | 124 | | 155 | | 186 | | 217 | | 248 | | 279 | |
| | Throw (m) | 3.6-5.1-7.2 | 1.8-2.7-4.9 | 4.8-5.9-8.3 | 2.4-3.7-5.5 | 5.3-6.5-9.3 | 3.0-4.3-6.1 | 5.9-7.2-10.1 | 3.7-4.9-6.7 | 6.3-7.7-11.0 | 4.3-5.2-7.3 | 6.8-8.3-11.7 | 4.6-5.5-7.9 | 7.2-8.8-12.4 | 4.9-5.8-8.2 |
| 2E, 2F | L/s/side | 125 | 61 | 166 | 82 | 208 | 102 | 249 | 123 | 291 | 143 | 332 | 164 | 373 | 184 |
| | Throw (m) | 3.9-5.3-7.6 | | 5.0-6.2-8.7 | | 5.6-6.9-9.8 | | 6.2-7.6-10.7 | | 6.7-8.2-11.5 | | 7.1-8.7-12.3 | | 7.6-9.3-13.1 | |
| 1A, 1B | L/s/side | 186 | | 248 | | 310 | | 372 | | 434 | | 496 | | 557 | |
| | Throw (m) | 4.5-5.8-8.2 | 2.4-4.0-6.1 | 5.5-6.7-9.5 | 3.4-4.9-7.0 | 6.1-7.5-10.6 | 4.3-5.5-7.6 | 6.7-8.2-11.6 | 4.9-6.1-8.5 | 7.2-8.9-12.5 | 5.2-6.4-9.1 | 7.7-9.5-13.4 | 5.5-7.0-9.8 | 8.2-10.1-14.2 | 6.1-7.3-10.4 |
| Duct Size | L/s NC | 212 | | 283 | | 354 | | 425 | | 496 | | 566 | | 637 | |
| 610 x 230 | NC | -- | | 19 | | 26 | | 32 | | 36 | | 40 | | 44 | |
| 4B | L/s/side | 71 | 35 | 94 | 47 | 118 | 59 | 142 | 71 | 165 | 83 | 189 | 94 | 212 | 106 |
| | Throw (m) | 3.4-4.9-7.0 | 1.8-2.7-4.0 | 4.5-5.7-8.1 | 2.4-3.7-5.8 | 5.2-6.4-9.0 | 3.0-4.6-6.4 | 5.7-7.0-9.9 | 3.7-4.9-7.0 | 6.2-7.6-10.7 | 4.3-5.2-7.6 | 6.6-8.1-11.4 | 4.6-5.8-7.9 | 7.0-8.6-12.1 | 4.9-6.1-8.5 |
| 3A1 | L/s/side | 89 | 35 | 118 | 47 | 148 | 59 | 177 | 71 | 207 | 83 | 236 | 94 | 266 | 106 |
| | Throw (m) | 3.8-5.3-7.5 | 1.8-2.7-4.0 | 5.0-6.1-8.6 | 2.4-3.7-5.8 | 5.6-6.8-9.6 | 3.0-4.6-6.4 | 6.1-7.5-10.5 | 3.7-4.9-7.0 | 6.6-8.1-11.4 | 4.3-5.2-7.6 | 7.0-8.6-12.2 | 4.6-5.8-7.9 | 7.5-9.1-12.9 | 4.9-6.1-8.5 |
| 2A, 2B | L/s/side | 106 | | 142 | | 177 | | 212 | | 248 | | 283 | | 319 | |
| | Throw (m) | 4.2-5.5-7.8 | | 5.2-6.4-9.1 | | 5.8-7.2-10.1 | | 6.4-7.8-11.1 | | 6.9-8.5-12.0 | | 7.4-9.1-12.8 | | 7.8-9.6-13.6 | |
| 2E, 2F | L/s/side | 143 | 70 | 190 | 93 | 237 | 117 | 285 | 140 | 332 | 164 | 379 | 187 | 427 | 211 |
| | Throw (m) | 4.8-6.0-8.5 | 2.4-3.7-5.8 | 5.7-7.0-9.9 | 3.4-4.9-6.7 | 6.4-7.8-11.0 | 4.3-5.5-7.6 | 7.0-8.5-12.1 | 4.9-5.8-8.2 | 7.2-8.9-12.5 | 5.2-6.4-9.1 | 8.0-9.9-13.9 | 5.5-6.7-9.8 | 8.5-10.5-14.8 | 5.8-7.3-10.4 |
| 1A, 1B | L/s/side | 212 | | 283 | | 354 | | 425 | | 496 | | 566 | | 637 | |
| | Throw (m) | 5.5-6.8-9.6 | | 6.4-7.8-11.0 | | 7.1-8.7-12.3 | | 7.8-9.6-13.5 | | 8.4-10.3-14.6 | | 9.0-11.0-15.6 | | 9.6-11.7-16.6 | |
| Duct Size | L/s NC | 177 | | 236 | | 295 | | 354 | | 413 | | 472 | | 531 | |
| 380 x 305 | NC | -- | | 18 | | 25 | | 31 | | 35 | | 39 | | 43 | |
| 4B | L/s/side | 59 | 30 | 79 | 39 | 98 | 49 | 118 | 59 | 138 | 69 | 157 | 79 | 177 | 89 |
| | Throw (m) | 3.1-4.7-6.6 | 2.4-3.7-5.8 | 4.2-5.4-7.7 | 3.4-4.6-6.7 | 4.9-6.1-8.6 | 4.0-5.2-7.3 | 5.4-6.6-9.4 | 4.6-5.8-8.2 | 5.9-7.2-10.1 | 5.2-6.1-8.8 | 6.3-7.7-10.8 | 5.5-6.7-9.4 | 6.6-8.1-11.5 | 5.8-7.0-10.1 |
| 3A1 | L/s/side | 74 | 30 | 98 | 39 | 123 | 49 | 148 | 59 | 172 | 69 | 197 | 79 | 221 | 89 |
| | Throw (m) | 3.5-5.0-7.1 | 2.4-3.7-5.8 | 4.6-5.8-8.2 | 3.4-4.6-6.7 | 5.3-6.5-9.1 | 4.0-5.2-7.3 | 5.8-7.1-10.0 | 4.6-5.8-8.2 | 6.2-7.6-10.8 | 5.2-6.1-8.8 | 6.7-8.2-11.6 | 5.5-6.7-9.4 | 7.1-8.7-12.3 | 5.8-7.0-10.1 |
| 3A2 | L/s/side | 55 | 67 | 74 | 89 | 92 | 110 | 110 | 133 | 129 | 155 | 148 | 177 | 166 | 199 |
| | Throw (m) | 3.0-4.5-6.5 | 3.0-4.6-6.4 | 4.0-5.3-7.5 | 4.0-5.2-7.6 | 4.9-5.9-8.4 | 4.9-6.1-8.5 | 5.3-6.5-9.2 | 5.2-6.4-9.1 | 5.7-7.0-10.0 | 5.8-7.0-10.1 | 6.1-7.5-10.6 | 6.1-7.6-10.7 | 6.5-8.0-11.3 | 6.4-7.9-11.3 |
| 2A, 2B | L/s/side | 89 | | 118 | | 148 | | 177 | | 207 | | 236 | | 266 | |
| | Throw (m) | 3.8-5.3-7.5 | | 5.0-6.1-8.6 | | 5.6-6.8-9.6 | | 6.1-7.5-10.5 | | 6.6-8.1-11.4 | | 7.0-8.6-12.2 | | 7.5-9.1-12.9 | |
| 2E, 2F | L/s/side | 118 | 59 | 158 | 78 | 198 | 97 | 237 | 117 | 277 | 136 | 316 | 156 | 356 | 175 |
| | Throw (m) | 4.4-5.7-8.1 | 3.4-4.9-7.0 | 5.4-6.6-9.4 | 4.6-5.8-7.0 | 6.0-7.4-10.5 | 5.2-6.4-9.1 | 6.6-8.1-11.5 | 5.8-7.0-9.8 | 7.1-8.7-12.4 | 6.1-7.6-10.7 | 7.6-9.4-13.2 | 6.7-7.9-11.3 | 8.1-9.9-14.0 | 7.0-8.5-12.2 |
| 1A, 1B | L/s/side | 177 | | 236 | | 295 | | 354 | | 413 | | 472 | | 531 | |
| | Throw (m) | 5.2-6.4-9.1 | | 6.1-7.4-10.5 | | 6.8-8.3-11.7 | | 7.4-9.1-12.8 | | 8.0-9.8-13.9 | | 8.6-10.5-14.8 | | 9.1-11.1-15.7 | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers

SMD / AMD Series



Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | |
|------------------------|-----------|--------------|-------------|--------------|-------------|--------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|----------------|--------------|-----|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | |
| Duct Size | L/s NC | | 212 | | 283 | | 354 | | 425 | | 496 | | 566 | | 637 | |
| 455 x 305 | -- | | 19 | | 26 | | 32 | | 36 | | 40 | | 44 | | 48 | |
| 4B | L/s/side | 71 | 35 | 94 | 47 | 118 | 59 | 142 | 71 | 165 | 83 | 189 | 94 | 212 | 106 | |
| | Throw (m) | 3.4-4.9-7.0 | 2.4-3.7-5.8 | 4.5-5.7-8.1 | 3.0-4.6-6.7 | 5.2-6.4-9.0 | 4.0-5.2-7.3 | 5.7-7.0-9.9 | 4.6-5.8-8.2 | 6.2-7.6-10.7 | 5.2-6.1-8.8 | 6.6-8.1-11.4 | 5.5-6.7-9.4 | 7.0-8.6-12.1 | 5.8-7.0-9.8 | |
| 3A1 | L/s/side | 89 | 35 | 118 | 47 | 148 | 59 | 177 | 71 | 207 | 83 | 236 | 94 | 266 | 106 | |
| | Throw (m) | 3.8-5.3-7.5 | 2.4-3.7-5.8 | 5.0-6.1-8.6 | 3.0-4.6-6.7 | 5.6-6.8-9.6 | 4.0-5.2-7.3 | 6.1-7.5-10.5 | 4.6-5.8-8.2 | 6.6-8.1-11.4 | 5.2-6.1-8.8 | 7.0-8.6-12.2 | 5.5-6.7-9.4 | 7.5-9.1-12.9 | 5.8-7.0-9.8 | |
| 3A2 | L/s/side | 67 | 80 | 89 | 106 | 110 | 133 | 133 | 160 | 155 | 186 | 177 | 212 | 199 | 239 | |
| | Throw (m) | 3.3-4.9-6.9 | 3.7-5.2-7.3 | 4.4-5.6-7.9 | 4.9-5.8-8.2 | 5.1-6.3-8.9 | 5.5-6.7-9.4 | 5.6-6.9-9.7 | 5.8-7.3-10.4 | 6.1-7.4-10.5 | 6.4-7.9-11.0 | 6.5-7.9-11.2 | 6.7-8.2-11.9 | 6.9-8.4-11.9 | 7.3-8.8-12.5 | |
| 0.139 m ² | L/s/side | 106 | | 142 | | 177 | | 212 | | 248 | | 283 | | 319 | | |
| | Throw (m) | 4.2-5.5-7.8 | | 5.2-6.4-9.1 | | 5.8-7.2-10.1 | | 6.4-7.8-11.1 | | 6.9-8.5-12.0 | | 7.4-9.1-12.8 | | 7.8-9.6-13.6 | | |
| 2A, 2B | L/s/side | 143 | 70 | 190 | 93 | 237 | 117 | 285 | 140 | 332 | 164 | 379 | 187 | 427 | 211 | |
| | Throw (m) | 4.8-6.0-8.5 | 3.4-4.9-7.0 | 5.7-7.0-9.9 | 4.6-5.8-8.2 | 6.4-7.8-11.0 | 5.2-6.4-9.1 | 7.0-8.5-12.1 | 5.8-7.0-10.1 | 7.5-9.2-13.0 | 6.1-7.6-10.7 | 8.0-9.9-13.9 | 6.7-8.2-11.6 | 8.5-10.5-14.8 | 7.0-8.5-12.2 | |
| 2E, 2F | L/s/side | 212 | | 283 | | 354 | | 425 | | 496 | | 566 | | 637 | | |
| | Throw (m) | 5.5-6.8-9.6 | | 6.4-7.8-11.0 | | 7.1-8.7-12.3 | | 7.8-9.6-13.5 | | 8.4-10.3-14.6 | | 9.0-11.0-15.6 | | 9.6-11.7-16.6 | | |
| 1A, 1B | L/s/side | 248 | | 330 | | 413 | | 496 | | 578 | | 661 | | 743 | | |
| | Throw (m) | 5.5-6.8-9.6 | | 6.4-7.8-11.0 | | 7.1-8.7-12.3 | | 7.8-9.6-13.5 | | 8.4-10.3-14.6 | | 9.0-11.0-15.6 | | 9.6-11.7-16.6 | | |
| 535 x 305 | L/s NC | -- | | 20 | | 27 | | 32 | | 37 | | 41 | | 45 | | |
| | 4B | L/s/side | 83 | 42 | 110 | 55 | 138 | 69 | 165 | 83 | 193 | 96 | 220 | 110 | 248 | 124 |
| 3A1 | L/s/side | 103 | 42 | 138 | 55 | 172 | 69 | 207 | 83 | 241 | 96 | 275 | 110 | 310 | 124 | |
| | Throw (m) | 4.1-5.5-7.8 | 2.4-3.7-5.8 | 5.2-6.4-9.0 | 3.4-4.6-6.7 | 5.8-7.1-10.1 | 4.0-5.2-7.3 | 6.4-7.8-11.0 | 4.6-5.8-8.2 | 6.9-8.4-11.9 | 5.2-6.1-8.8 | 7.3-9.0-12.7 | 5.5-6.7-9.4 | 7.8-9.5-13.5 | 5.8-7.0-10.1 | |
| 3A2 | L/s/side | 77 | 93 | 103 | 124 | 129 | 155 | 155 | 186 | 181 | 217 | 207 | 248 | 232 | 279 | |
| | Throw (m) | 3.6-5.1-7.2 | 4.3-5.5-7.9 | 4.8-5.9-8.3 | 5.2-6.4-9.1 | 5.3-6.5-9.3 | 5.8-7.3-10.1 | 5.9-7.2-10.1 | 6.4-7.9-11.3 | 6.3-7.7-11.0 | 7.0-8.5-11.9 | 6.8-8.3-11.7 | 7.3-9.1-12.8 | 7.2-8.8-12.4 | 7.9-9.8-13.7 | |
| 0.163 m ² | L/s/side | 124 | | 165 | | 207 | | 248 | | 289 | | 330 | | 372 | | |
| | Throw (m) | 4.5-5.8-8.2 | | 5.5-6.7-9.5 | | 6.1-7.5-10.6 | | 6.7-8.2-11.6 | | 7.2-8.9-12.5 | | 7.7-9.5-13.4 | | 8.2-10.0-14.2 | | |
| 2A, 2B | L/s/side | 166 | 82 | 221 | 109 | 277 | 136 | 332 | 164 | 388 | 191 | 443 | 218 | 498 | 245 | |
| | Throw (m) | 5.1-6.3-8.9 | 3.4-4.9-7.0 | 5.9-7.3-10.3 | 4.6-5.8-7.9 | 6.6-8.1-11.5 | 5.2-6.4-9.1 | 7.3-8.9-12.6 | 5.8-7.0-9.8 | 7.9-9.6-13.6 | 6.1-7.6-10.7 | 8.4-10.3-14.6 | 6.7-7.9-11.3 | 8.9-10.9-15.4 | 7.0-8.5-12.2 | |
| 2E, 2F | L/s/side | 248 | | 330 | | 413 | | 496 | | 578 | | 661 | | 743 | | |
| | Throw (m) | 5.8-7.1-10.0 | | 6.7-8.2-11.5 | | 7.4-9.1-12.9 | | 8.2-10.0-14.1 | | 8.8-10.8-15.3 | | 9.4-11.5-16.3 | | 10.0-12.2-17.3 | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



CEILING DIFFUSERS

Louvered Face Directional Diffusers SMD / AMD Series

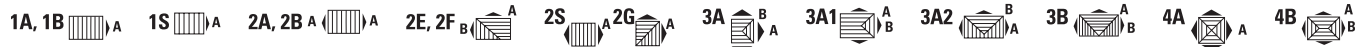


Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | |
|-----------------------------------|------------------|--------------|-------------|--------------|-------------|--------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|----------------|--------------|--|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | |
| Duct Size | L/s NC | | 283 | | 378 | | 472 | | 566 | | 661 | | 755 | | 850 | |
| 610 x 305 | -- | | 21 | | 28 | | 33 | | 38 | | 42 | | 45 | | | |
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | | |
| Duct Area 0.186 m ² | 4B L/s/side | 94 | 47 | 126 | 63 | 157 | 79 | 189 | 94 | 220 | 110 | 252 | 126 | 283 | 142 | |
| | 4B Throw (m) | 3.9-5.4-7.6 | 2.4-3.7-5.8 | 5.1-6.2-8.8 | 3.0-4.6-6.7 | 5.7-6.9-9.8 | 4.0-5.2-7.3 | 6.2-7.6-10.7 | 4.6-5.8-7.9 | 6.7-8.2-11.6 | 4.9-6.1-8.8 | 7.2-8.8-12.4 | 5.5-6.7-9.1 | 7.6-9.3-13.1 | 5.8-7.0-9.8 | |
| | 3A1 L/s/side | 118 | 47 | 157 | 63 | 197 | 79 | 236 | 94 | 275 | 110 | 315 | 126 | 354 | 142 | |
| | 3A1 Throw (m) | 4.4-5.7-8.1 | 2.4-3.7-5.8 | 5.4-6.6-9.3 | 3.0-4.6-6.7 | 6.0-7.4-10.4 | 4.0-5.2-7.3 | 6.6-8.1-11.4 | 4.6-5.8-7.9 | 7.1-8.7-12.4 | 4.9-6.1-8.8 | 7.6-9.3-13.2 | 5.5-6.7-9.1 | 8.1-9.9-14.0 | 5.8-7.0-9.8 | |
| | 3B L/s/side | 142 | 71 | 189 | 94 | 236 | 118 | 283 | 142 | 330 | 165 | 378 | 189 | 425 | 212 | |
| | 3B Throw (m) | 4.8-6.0-8.5 | 3.4-4.9-7.0 | 5.7-7.0-9.8 | 4.6-5.8-7.9 | 6.3-7.8-11.0 | 5.2-6.4-9.1 | 7.0-8.5-12.0 | 5.8-7.0-9.8 | 7.5-9.2-13.0 | 6.1-7.6-10.7 | 8.0-9.8-13.9 | 6.7-7.9-11.3 | 8.5-10.4-14.8 | 7.0-8.5-12.2 | |
| | 2A, 2B L/s/side | 142 | | 189 | | 236 | | 283 | | 330 | | 378 | | 425 | | |
| | 2A, 2B Throw (m) | 4.8-6.0-8.5 | | 5.7-7.0-9.8 | | 6.3-7.8-11.0 | | 7.0-8.5-12.0 | | 7.5-9.2-13.0 | | 8.0-9.8-13.9 | | 8.5-10.4-14.8 | | |
| | 2E, 2F L/s/side | 190 | 93 | 253 | 125 | 316 | 156 | 379 | 187 | 443 | 218 | 506 | 249 | 569 | 280 | |
| | 2E, 2F Throw (m) | 5.3-6.5-9.3 | 3.4-4.9-7.0 | 6.2-7.6-10.7 | 4.6-5.8-7.9 | 6.9-8.5-12.0 | 5.2-6.4-9.1 | 7.6-9.3-13.1 | 5.8-7.0-9.8 | 8.2-10.0-14.1 | 6.1-7.6-10.7 | 8.7-10.7-15.1 | 6.7-7.9-11.3 | 9.3-11.3-16.0 | 7.0-8.5-12.2 | |
| | 1A, 1B L/s/side | 283 | | 378 | | 472 | | 566 | | 661 | | 755 | | 850 | | |
| | 1A, 1B Throw (m) | 6.0-7.3-10.4 | | 6.9-8.5-12.0 | | 7.7-9.5-13.4 | | 8.5-10.4-14.7 | | 9.2-11.2-15.9 | | 9.8-12.0-16.9 | | 10.4-12.7-18.0 | | |
| Duct Size 455 x 380 | L/s NC | | 266 | | 354 | | 443 | | 531 | | 620 | | 708 | | 797 | |
| | -- | | 20 | | 27 | | 33 | | 37 | | 41 | | 45 | | | |
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | | |
| Duct Area 0.175 m ² | 4B L/s/side | 89 | 44 | 118 | 59 | 148 | 74 | 177 | 89 | 207 | 103 | 236 | 118 | 266 | 133 | |
| | 4B Throw (m) | 3.8-5.3-7.5 | 3.0-4.6-6.4 | 5.0-6.1-8.6 | 4.0-5.2-7.6 | 5.6-6.8-9.6 | 4.9-5.8-8.5 | 6.1-7.5-10.5 | 5.2-6.4-9.1 | 6.6-8.1-11.4 | 5.8-7.0-10.1 | 7.0-8.6-12.2 | 6.1-7.6-10.7 | 7.5-9.1-12.9 | 6.4-7.9-11.3 | |
| | 3A1 L/s/side | 110 | 44 | 148 | 59 | 185 | 74 | 221 | 89 | 258 | 103 | 295 | 118 | 332 | 133 | |
| | 3A1 Throw (m) | 4.3-5.6-7.9 | 3.0-4.6-6.4 | 5.3-6.5-9.2 | 4.0-5.2-7.6 | 5.9-7.3-10.3 | 4.9-5.8-8.5 | 6.5-7.9-11.2 | 5.2-6.4-9.1 | 7.0-8.6-12.1 | 5.8-7.0-10.1 | 7.5-9.2-13.0 | 6.1-7.6-10.7 | 7.9-9.7-13.8 | 6.4-7.9-11.3 | |
| | 3A2 L/s/side | 83 | 100 | 110 | 133 | 138 | 166 | 166 | 199 | 194 | 232 | 221 | 266 | 249 | 299 | |
| | 3A2 Throw (m) | 3.7-5.2-7.3 | 3.7-5.2-7.3 | 4.9-6.0-8.4 | 4.9-5.8-8.2 | 5.5-6.7-9.4 | 5.5-6.7-9.4 | 6.0-7.3-10.3 | 5.8-7.3-10.4 | 6.5-7.9-11.2 | 6.4-7.9-11.0 | 6.9-8.4-11.9 | 6.7-8.2-11.9 | 7.3-9.0-12.7 | 7.3-8.8-12.5 | |
| | 2A, 2B L/s/side | 133 | | 177 | | 221 | | 266 | | 310 | | 354 | | 398 | | |
| | 2A, 2B Throw (m) | 4.7-5.9-8.4 | | 5.6-6.8-9.7 | | 6.2-7.6-10.8 | | 6.8-8.4-11.8 | | 7.4-9.0-12.8 | | 7.9-9.7-13.7 | | 8.4-10.2-14.5 | | |
| | 2E, 2F L/s/side | 178 | 88 | 237 | 117 | 296 | 146 | 356 | 175 | 415 | 204 | 474 | 234 | 534 | 263 | |
| | 2E, 2F Throw (m) | 5.2-6.4-9.1 | 4.3-5.5-7.9 | 6.1-7.4-10.5 | 5.2-6.4-9.1 | 6.8-8.3-11.7 | 5.8-7.3-10.4 | 7.4-9.1-12.9 | 6.4-7.9-11.3 | 8.0-9.8-13.9 | 7.0-8.5-12.2 | 8.6-10.5-14.8 | 7.3-9.1-12.8 | 9.1-11.1-15.7 | 7.9-9.8-13.7 | |
| | 1A, 1B L/s/side | 266 | | 354 | | 443 | | 531 | | 620 | | 708 | | 797 | | |
| | 1A, 1B Throw (m) | 5.9-7.2-10.2 | | 6.8-8.3-11.8 | | 7.6-9.3-13.2 | | 8.3-10.2-14.4 | | 9.0-11.0-15.6 | | 9.6-11.8-16.6 | | 10.2-12.5-17.7 | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | |
|------------------------|-----------|--------------|-------------|--------------|-------------|---------------|--------------|---------------|--------------|---------------|--------------|----------------|--------------|----------------|---------------|--|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | |
| Duct Size | L/s NC | | 310 | | 413 | | 516 | | 620 | | 723 | | 826 | | 929 | |
| 535 x 380 | -- | | 21 | | 28 | | 34 | | 38 | | 42 | | 46 | | | |
| 4B | L/s/side | 103 | 51 | 138 | 69 | 172 | 86 | 207 | 103 | 241 | 120 | 275 | 138 | 310 | 155 | |
| | Throw (m) | 4.1-5.5-7.8 | 3.0-4.6-6.4 | 5.2-6.4-9.0 | 4.0-5.2-7.6 | 5.8-7.1-10.1 | 4.9-5.8-8.5 | 6.4-7.8-11.0 | 5.2-6.4-9.1 | 6.9-8.4-11.9 | 5.8-7.0-10.1 | 7.3-9.0-12.7 | 6.1-7.6-10.7 | 7.8-9.5-13.5 | 6.4-7.9-11.3 | |
| 3A1 | L/s/side | 129 | 51 | 172 | 69 | 215 | 86 | 258 | 103 | 301 | 120 | 344 | 138 | 387 | 155 | |
| | Throw (m) | 4.6-5.9-8.3 | 3.0-4.6-6.4 | 5.5-6.8-9.6 | 4.0-5.2-7.6 | 6.2-7.6-10.7 | 4.9-5.8-8.5 | 6.8-8.3-11.7 | 5.2-6.4-9.1 | 7.3-9.0-12.7 | 5.8-7.0-10.1 | 7.8-9.6-13.5 | 6.1-7.6-10.7 | 8.3-10.2-14.4 | 6.4-7.9-11.3 | |
| 3A2 | L/s/side | 97 | 116 | 129 | 155 | 161 | 194 | 194 | 232 | 226 | 271 | 258 | 310 | 290 | 348 | |
| | Throw (m) | 4.0-5.4-7.6 | 4.3-5.5-7.9 | 5.1-6.2-8.8 | 5.2-6.4-9.1 | 5.7-7.0-9.9 | 5.8-7.3-10.1 | 6.2-7.6-10.8 | 6.4-7.9-11.3 | 6.7-8.3-11.7 | 7.0-8.5-12.2 | 7.2-8.8-12.5 | 7.3-9.1-12.8 | 7.6-9.4-13.2 | 7.9-9.8-13.7 | |
| 2A, 2B | L/s/side | 155 | | 207 | | 258 | | 310 | | 362 | | 413 | | 464 | | |
| | Throw (m) | 5.0-6.2-8.7 | | 5.8-7.1-10.1 | | 6.5-8.0-11.3 | | 7.1-8.7-12.4 | | 7.7-9.4-13.4 | | 8.2-10.1-14.3 | | 8.7-10.7-15.1 | | |
| 2E, 2F | L/s/side | 208 | 102 | 277 | 136 | 346 | 170 | 415 | 204 | 484 | 238 | 554 | 273 | 623 | 307 | |
| | Throw (m) | 5.5-6.7-9.5 | 4.3-5.5-7.9 | 6.3-7.8-11.0 | 5.2-6.4-9.1 | 7.1-8.7-12.3 | 5.8-7.3-10.1 | 7.8-9.5-13.4 | 6.4-7.9-11.3 | 8.4-10.3-14.5 | 7.0-8.5-12.2 | 9.0-11.0-15.5 | 7.3-9.1-12.8 | 9.5-11.6-16.5 | 7.9-9.8-13.7 | |
| 1A, 1B | L/s/side | 310 | | 413 | | 516 | | 620 | | 723 | | 826 | | 929 | | |
| | Throw (m) | 6.1-7.5-10.6 | | 7.1-8.7-12.3 | | 7.9-9.7-13.7 | | 8.7-10.6-15.1 | | 9.4-11.5-16.3 | | 10.0-12.3-17.4 | | 10.6-13.0-18.4 | | |
| 610 x 380 | L/s NC | 354 | | 472 | | 590 | | 708 | | 826 | | 944 | | 1062 | | |
| | | -- | | 22 | | 29 | | 34 | | 39 | | 43 | | 47 | | |
| 4B | L/s/side | 118 | 59 | 157 | 79 | 197 | 98 | 236 | 118 | 275 | 138 | 315 | 157 | 354 | 177 | |
| | Throw (m) | 4.4-5.7-8.1 | 3.0-4.6-6.4 | 5.4-6.6-9.3 | 4.0-5.2-7.6 | 6.0-7.4-10.4 | 4.9-5.8-8.2 | 6.6-8.1-11.4 | 5.2-6.4-9.1 | 7.1-8.7-12.4 | 5.8-7.0-9.8 | 7.6-9.3-13.2 | 6.1-7.6-10.7 | 8.1-9.9-14.0 | 6.4-7.9-11.3 | |
| 3A1 | L/s/side | 148 | 59 | 197 | 79 | 246 | 98 | 295 | 118 | 344 | 138 | 393 | 157 | 443 | 177 | |
| | Throw (m) | 4.9-6.1-8.6 | 3.0-4.6-6.4 | 5.7-7.0-10.0 | 4.0-5.2-7.6 | 6.4-7.9-11.1 | 4.9-5.8-8.2 | 7.0-8.6-12.2 | 5.2-6.4-9.1 | 7.6-9.3-13.2 | 5.8-7.0-9.8 | 8.1-10.0-14.1 | 6.1-7.6-10.7 | 8.6-10.6-14.9 | 6.4-7.9-11.3 | |
| 3A2 | L/s/side | 110 | 133 | 148 | 177 | 185 | 221 | 221 | 266 | 258 | 310 | 295 | 354 | 332 | 398 | |
| | Throw (m) | 4.3-5.6-7.9 | 4.9-6.1-8.5 | 5.3-6.5-9.2 | 5.8-7.0-9.8 | 5.9-7.3-10.3 | 6.4-7.9-11.0 | 6.5-7.9-11.2 | 7.0-8.5-12.2 | 7.0-8.6-12.1 | 7.6-9.1-13.1 | 7.5-9.2-13.0 | 7.9-9.8-14.0 | 7.9-9.7-13.8 | 8.5-10.4-14.6 | |
| 2A, 2B | L/s/side | 177 | | 236 | | 295 | | 354 | | 413 | | 472 | | 531 | | |
| | Throw (m) | 5.2-6.4-9.1 | | 6.1-7.4-10.5 | | 6.8-8.3-11.7 | | 7.4-9.1-12.8 | | 8.0-9.8-13.9 | | 8.6-10.5-14.8 | | 9.1-11.1-15.7 | | |
| 2E, 2F | L/s/side | 237 | 117 | 316 | 156 | 396 | 195 | 474 | 234 | 554 | 273 | 632 | 312 | 712 | 351 | |
| | Throw (m) | 5.7-7.0-9.9 | 4.3-5.5-7.9 | 6.6-8.1-11.4 | 5.2-6.4-9.1 | 7.4-9.0-12.7 | 5.8-7.3-10.4 | 8.1-9.9-14.0 | 6.4-7.9-11.3 | 8.7-10.7-15.1 | 7.0-8.5-12.2 | 9.3-11.4-16.1 | 7.6-9.1-13.1 | 9.9-12.1-17.1 | 7.9-9.8-13.7 | |
| 1A, 1B | L/s/side | 354 | | 472 | | 590 | | 708 | | 826 | | 944 | | 1062 | | |
| | Throw (m) | 6.4-7.8-11.1 | | 7.4-9.0-12.8 | | 8.2-10.1-14.3 | | 9.0-11.1-15.6 | | 9.8-11.9-16.9 | | 10.4-12.8-18.1 | | 11.1-13.5-19.2 | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series

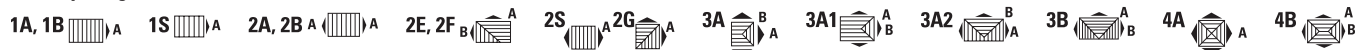


Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | | |
|------------------------|-----------------------------------|-----------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|----------------|---------------|----------------|----------------|----------------|----------------|---------------|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | | |
| Duct Size | L/s NC | | 372 -- | | 496 22 | | 620 29 | | 743 35 | | 867 39 | | 991 43 | | 1115 47 | | |
| 535 x 455 | 4B | L/s/side | 124 | 62 | 165 | 83 | 207 | 103 | 248 | 124 | 289 | 144 | 330 | 165 | 372 | 186 | |
| | | Throw (m) | 4.5-5.8-8.2 | 3.7-5.2-7.3 | 5.5-6.7-9.5 | 4.9-5.8-8.5 | 6.1-7.5-10.6 | 5.5-6.7-9.4 | 6.7-8.2-11.6 | 5.8-7.3-10.4 | 7.2-8.9-12.5 | 6.4-7.9-11.0 | 7.7-9.5-13.4 | 6.7-8.5-11.9 | 8.2-10.0-14.2 | 7.3-8.8-12.5 | |
| | 3A1 | L/s/side | 155 | 62 | 207 | 83 | 258 | 103 | 310 | 124 | 362 | 144 | 413 | 165 | 464 | 186 | |
| | | Throw (m) | 5.0-6.2-8.7 | 3.7-5.2-7.3 | 5.8-7.1-10.1 | 4.9-5.8-8.5 | 6.5-8.0-11.3 | 5.5-6.7-9.4 | 7.1-8.7-12.4 | 5.8-7.3-10.4 | 7.7-9.4-13.4 | 6.4-7.9-11.0 | 8.2-10.1-14.3 | 6.7-8.5-11.9 | 8.7-10.7-15.1 | 7.3-8.8-12.5 | |
| | 3A2 | L/s/side | 116 | 139 | 155 | 186 | 194 | 232 | 232 | 279 | 271 | 325 | 310 | 372 | 348 | 418 | |
| | | Throw (m) | 4.4-5.7-8.1 | 4.3-5.5-7.9 | 5.4-6.6-9.3 | 5.2-6.4-9.1 | 6.0-7.3-10.4 | 5.8-7.3-10.1 | 6.6-8.1-11.4 | 6.4-7.9-11.3 | 7.1-8.7-12.3 | 7.0-8.5-12.2 | 7.6-9.3-13.1 | 7.3-9.1-12.8 | 8.1-9.9-13.9 | 7.9-9.8-13.7 | |
| | Duct Area 0.244 m ² | 2A, 2B | L/s/side | 186 | | 248 | | 310 | | 372 | | 434 | | 496 | | 557 | |
| | | | Throw (m) | 5.3-6.5-9.2 | | 6.1-7.5-10.6 | | 6.9-8.4-11.9 | | 7.5-9.2-13.0 | | 8.1-9.9-14.1 | | 8.7-10.6-15.0 | | 9.2-11.3-15.9 | |
| | | 2E, 2F | L/s/side | 249 | 123 | 332 | 164 | 415 | 204 | 498 | 245 | 581 | 286 | 664 | 327 | 747 | 368 |
| | | | Throw (m) | 5.8-7.1-10.0 | 5.2-6.1-8.8 | 6.7-8.2-11.6 | 5.8-7.3-10.1 | 7.5-9.1-12.9 | 6.4-7.9-11.3 | 8.2-10.0-14.1 | 7.3-8.8-12.5 | 8.8-10.8-15.3 | 7.9-9.4-13.4 | 9.4-11.6-16.3 | 8.2-10.1-14.3 | 10.0-12.3-17.3 | 8.8-10.7-15.2 |
| | | 1A, 1B | L/s/side | 372 | | 496 | | 620 | | 743 | | 868 | | 991 | | 1115 | |
| | | | Throw (m) | 6.5-7.9-11.2 | | 7.5-9.2-13.0 | | 8.4-10.2-14.5 | | 9.2-11.2-15.9 | | 9.9-12.1-17.1 | | 10.6-13.0-18.3 | | 11.2-13.7-19.4 | |
| Duct Size 610 x 455 | | 4B | L/s NC | 425 -- | | 566 23 | | 708 30 | | 850 35 | | 991 40 | | 1133 44 | | 1274 48 | |
| | | | L/s/side | 142 | 71 | 189 | 94 | 236 | 118 | 283 | 142 | 330 | 165 | 378 | 189 | 425 | 212 |
| | | 3A1 | Throw (m) | 4.8-6.0-8.5 | 3.7-5.2-7.3 | 5.7-7.0-9.8 | 4.9-5.8-8.2 | 6.3-7.8-11.0 | 5.5-6.7-9.4 | 7.0-8.5-12.0 | 5.8-7.3-10.1 | 7.5-9.2-13.0 | 6.4-7.9-11.0 | 8.0-9.8-13.9 | 6.7-8.2-11.9 | 8.5-10.4-14.8 | 7.3-8.8-12.5 |
| | | | L/s/side | 177 | 71 | 236 | 94 | 295 | 118 | 354 | 142 | 413 | 165 | 472 | 189 | 531 | 212 |
| | | 3A2 | Throw (m) | 5.2-6.4-9.1 | 3.7-5.2-7.3 | 6.1-7.4-10.5 | 4.9-5.8-8.2 | 6.8-8.3-11.7 | 5.5-6.7-9.4 | 7.4-9.1-12.8 | 5.8-7.3-10.1 | 8.0-9.8-13.9 | 6.4-7.9-11.0 | 8.6-10.5-14.8 | 6.7-8.2-11.9 | 9.1-11.1-15.7 | 7.3-8.8-12.5 |
| | | | L/s/side | 133 | 160 | 177 | 212 | 221 | 266 | 266 | 319 | 310 | 372 | 354 | 425 | 398 | 478 |
| | Duct Area 0.279 m ² | 2A, 2B | Throw (m) | 4.7-5.9-8.4 | 4.7-5.9-8.4 | 5.6-6.8-9.7 | 5.6-6.8-9.7 | 6.2-7.6-10.8 | 6.2-7.6-10.8 | 6.8-8.4-11.8 | 6.8-8.4-11.8 | 7.4-9.0-12.8 | 7.4-9.0-12.8 | 7.9-9.7-13.7 | 7.9-9.7-13.7 | 8.4-10.2-14.5 | 8.4-10.2-14.5 |
| | | | L/s/side | 212 | | 283 | | 354 | | 425 | | 496 | | 566 | | 637 | |
| | | 2E, 2F | Throw (m) | 5.5-6.8-9.6 | | 6.4-7.8-11.0 | | 7.1-8.7-12.3 | | 7.8-9.6-13.5 | | 8.4-10.3-14.6 | | 9.0-11.0-15.6 | | 9.6-11.7-16.6 | |
| | | | L/s/side | 285 | 140 | 379 | 187 | 474 | 234 | 569 | 280 | 664 | 327 | 759 | 374 | 854 | 421 |
| | | 1A, 1B | Throw (m) | 6.0-7.3-10.4 | 5.2-6.1-8.8 | 6.9-8.5-12.0 | 5.8-7.3-10.1 | 7.7-9.5-13.4 | 6.4-7.9-11.3 | 8.5-10.4-14.7 | 7.3-8.8-12.5 | 9.2-11.2-15.9 | 7.6-9.4-13.4 | 9.8-12.0-17.0 | 8.2-10.1-14.3 | 10.4-12.7-18.0 | 8.8-10.7-15.2 |
| | | | L/s/side | 425 | | 566 | | 708 | | 850 | | 991 | | 1133 | | 1274 | |
| 1A, 1B | | Throw (m) | 6.7-8.2-11.7 | | 7.8-9.5-13.5 | | 8.7-10.6-15.0 | | 9.5-11.7-16.5 | | 10.3-12.6-17.8 | | 11.0-13.5-19.0 | | 11.7-14.3-20.2 | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | |
|------------------------------|-----------------|--------------|-------------|--------------|--------------|---------------|--------------|---------------|--------------|----------------|---------------|----------------|---------------|----------------|---------------|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | |
| Duct | L/s | | 661 | | 826 | | 991 | | 1156 | | 1322 | | 1487 | | |
| 610 x 535 | NC | | 24 | | 30 | | 36 | | 41 | | 45 | | 48 | | |
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | |
| Duct 0.325 m ² | 4B L/s/side | 165 | 83 | 220 | 110 | 275 | 138 | 330 | 165 | 386 | 193 | 440 | 220 | 496 | 248 |
| | Throw (m) | 5.1-6.3-8.9 | 4.3-5.5-7.9 | 5.9-7.3-10.3 | 5.2-6.4-9.1 | 6.6-8.1-11.5 | 5.8-7.3-10.1 | 7.3-8.9-12.6 | 6.4-7.9-11.3 | 7.9-9.6-13.6 | 7.0-8.5-11.9 | 8.4-10.3-14.5 | 7.3-9.1-12.8 | 8.9-10.9-15.4 | 7.9-9.8-13.7 |
| | 3A1 L/s/side | 207 | 83 | 275 | 110 | 344 | 138 | 413 | 165 | 482 | 193 | 551 | 220 | 620 | 248 |
| | Throw (m) | 5.5-6.7-9.5 | 4.3-5.5-7.9 | 6.3-7.7-11.0 | 5.2-6.4-9.1 | 7.1-8.7-12.2 | 5.8-7.3-10.1 | 7.7-9.5-13.4 | 6.4-7.9-11.3 | 8.4-10.2-14.5 | 7.0-8.5-11.9 | 8.9-11.0-15.5 | 7.3-9.1-12.8 | 9.5-11.6-16.4 | 7.9-9.8-13.7 |
| | 3A2 L/s/side | 155 | 186 | 207 | 248 | 258 | 310 | 310 | 372 | 362 | 434 | 413 | 496 | 464 | 557 |
| | Throw (m) | 5.0-6.2-8.7 | 4.9-6.1-8.5 | 5.8-7.1-10.1 | 5.8-7.0-9.8 | 6.5-8.0-11.3 | 5.8-7.0-9.8 | 7.1-8.7-12.4 | 7.0-8.5-11.9 | 7.7-9.4-13.4 | 7.6-9.1-13.1 | 8.2-10.1-14.3 | 7.9-9.8-13.7 | 8.7-10.7-15.1 | 8.5-10.4-14.6 |
| Duct 0.325 m ² | 2A, 2B L/s/side | 248 | | 330 | | 413 | | 496 | | 578 | | 661 | | 743 | |
| | Throw (m) | 5.8-7.1-10.0 | | 6.7-8.2-11.5 | | 7.4-9.1-12.9 | | 8.2-10.0-14.1 | | 8.8-10.8-15.3 | | 9.4-11.5-16.3 | | 10.0-12.2-17.3 | |
| | 2E, 2F L/s/side | 332 | 164 | 443 | 218 | 554 | 273 | 664 | 327 | 775 | 382 | 885 | 436 | 996 | 491 |
| | Throw (m) | 6.1-7.3-10.4 | 5.5-6.7-9.8 | 7.0-8.5-11.9 | 6.4-7.9-11.0 | 7.6-9.4-13.4 | 7.0-8.8-12.5 | 8.5-10.4-14.6 | 7.9-9.8-13.7 | 9.1-11.3-15.8 | 8.5-10.4-14.6 | 9.8-11.9-16.8 | 9.1-11.0-15.5 | 10.4-12.8-18.0 | 9.4-11.9-16.8 |
| | 1A, 1B L/s/side | 496 | | 661 | | 826 | | 991 | | 1156 | | 1322 | | 1487 | |
| | Throw (m) | 7.0-8.6-12.2 | | 8.1-9.9-14.1 | | 9.1-11.1-15.7 | | 9.9-12.2-17.2 | | 10.7-13.1-18.6 | | 11.5-14.1-19.9 | | 12.2-14.9-21.1 | |
| Duct 760 x 150 | L/s | 177 | | 236 | | 295 | | 354 | | 413 | | 472 | | 531 | |
| | NC | -- | | 18 | | 25 | | 31 | | 35 | | 39 | | 43 | |
| | 4B L/s/side | 59 | 30 | 79 | 39 | 98 | 49 | 118 | 59 | 138 | 69 | 157 | 79 | 177 | 89 |
| | Throw (m) | 3.7-5.2-7.3 | 1.2-1.8-3.4 | 4.9-5.8-8.2 | 1.5-2.4-4.6 | 5.5-6.7-9.4 | 2.1-3.0-4.9 | 5.8-7.3-10.4 | 2.4-3.7-5.5 | 6.4-7.9-11.0 | 2.7-4.3-5.8 | 6.7-8.2-11.9 | 3.4-4.6-6.4 | 7.3-8.8-12.5 | 3.7-4.6-6.7 |
| | 3A1 L/s/side | 74 | 30 | 98 | 39 | 123 | 49 | 148 | 59 | 172 | 69 | 197 | 79 | 221 | 89 |
| | Throw (m) | 3.7-5.2-7.3 | 1.2-1.8-3.4 | 4.9-6.1-8.5 | 1.5-2.4-4.6 | 5.5-6.7-9.4 | 2.1-3.0-4.9 | 6.1-7.3-10.4 | 2.4-3.7-5.5 | 6.4-7.9-11.3 | 2.7-4.3-5.8 | 7.0-8.5-11.9 | 3.4-4.6-6.4 | 7.3-9.1-12.8 | 3.7-4.6-6.7 |
| Duct 0.116 m ² | 2A, 2B L/s/side | 89 | | 118 | | 148 | | 177 | | 207 | | 236 | | 266 | |
| | Throw (m) | 3.8-5.3-7.5 | | 5.0-6.1-8.6 | | 5.6-6.8-9.6 | | 6.1-7.5-10.5 | | 6.6-8.1-11.4 | | 7.0-8.6-12.2 | | 7.5-9.1-12.9 | |
| | 2E, 2F L/s/side | 118 | 59 | 158 | 78 | 198 | 97 | 237 | 117 | 277 | 136 | 316 | 156 | 356 | 175 |
| | Throw (m) | 5.2-6.1-8.8 | 1.8-2.4-4.6 | 5.8-7.3-10.1 | 2.1-3.4-5.5 | 6.7-7.9-11.3 | 2.7-4.3-6.1 | 7.3-8.8-12.5 | 3.4-4.6-6.7 | 7.6-9.4-13.4 | 4.0-5.2-7.3 | 8.2-10.1-14.3 | 4.6-5.5-7.6 | 8.8-10.7-15.2 | 4.6-5.8-8.2 |
| | 1A, 1B L/s/side | 177 | | 236 | | 295 | | 354 | | 413 | | 472 | | 531 | |
| | Throw (m) | 5.2-6.4-9.1 | | 6.1-7.4-10.5 | | 6.8-8.3-11.7 | | 7.4-9.1-12.8 | | 8.0-9.8-13.9 | | 8.6-10.5-14.8 | | 9.1-11.1-15.7 | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series

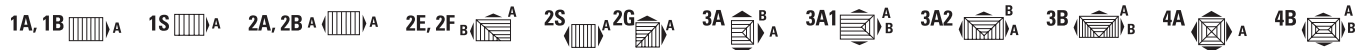


Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | |
|------------------------|-----------|--------------|-------------|--------------|-------------|---------------|-------------|---------------|-------------|---------------|--------------|----------------|--------------|----------------|--------------|--|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | |
| Duct 760 x 230 | L/s NC | | 266 -- | | 354 20 | | 443 27 | | 531 33 | | 620 37 | | 708 41 | | 797 45 | |
| 4B | L/s/side | 89 | 44 | 118 | 59 | 148 | 74 | 177 | 89 | 207 | 103 | 236 | 118 | 266 | 133 | |
| | Throw (m) | 4.3-5.8-7.9 | 1.8-2.7-4.9 | 5.5-6.4-9.1 | 2.4-3.7-5.8 | 6.1-7.3-10.4 | 3.0-4.6-6.4 | 6.4-7.9-11.3 | 3.7-4.9-7.0 | 7.0-8.5-12.2 | 4.3-5.2-7.6 | 7.6-9.4-13.4 | 4.6-5.8-7.9 | 7.9-9.8-13.7 | 4.9-6.1-8.5 | |
| 3A1 | L/s/side | 110 | 44 | 148 | 59 | 185 | 74 | 221 | 89 | 258 | 103 | 295 | 118 | 332 | 133 | |
| | Throw (m) | 4.3-5.6-7.9 | 1.7-2.6-5.0 | 5.3-6.5-9.2 | 2.3-3.4-5.8 | 5.9-7.3-10.3 | 2.8-4.3-6.5 | 6.5-7.9-11.2 | 3.4-5.0-7.1 | 7.0-8.6-12.1 | 4.0-5.4-7.7 | 7.5-9.2-13.0 | 4.5-5.8-8.2 | 7.9-9.7-13.8 | 5.0-6.1-8.7 | |
| 2A, 2B | L/s/side | 133 | | 177 | | 221 | | 266 | | 310 | | 354 | | 398 | | |
| | Throw (m) | 4.7-5.9-8.4 | | 5.6-6.8-9.7 | | 6.2-7.6-10.8 | | 6.8-8.4-11.8 | | 7.4-9.0-12.8 | | 7.9-9.7-13.7 | | 8.4-10.2-14.5 | | |
| 2E, 2F | L/s/side | 178 | 88 | 237 | 117 | 296 | 146 | 356 | 175 | 415 | 204 | 474 | 234 | 534 | 263 | |
| | Throw (m) | 5.5-7.0-9.8 | 2.4-4.0-5.8 | 6.4-7.9-11.3 | 3.4-4.9-6.7 | 7.3-8.8-12.5 | 4.3-5.5-7.6 | 7.9-9.8-13.7 | 4.9-5.8-8.5 | 8.5-10.4-14.9 | 5.2-6.4-9.1 | 9.1-11.3-15.8 | 5.5-6.7-9.8 | 9.8-11.9-16.8 | 5.8-7.3-10.4 | |
| 1A, 1B | L/s/side | 266 | | 354 | | 443 | | 531 | | 620 | | 708 | | 797 | | |
| | Throw (m) | 5.9-7.2-10.2 | | 6.8-8.3-11.8 | | 7.6-9.3-13.2 | | 8.3-10.2-14.4 | | 9.0-11.0-15.6 | | 9.6-11.8-16.6 | | 10.2-12.5-17.7 | | |
| Duct 760 x 305 | L/s NC | | 354 -- | | 472 22 | | 590 29 | | 708 34 | | 826 39 | | 944 43 | | 1062 47 | |
| 4B | L/s/side | 118 | 59 | 157 | 79 | 197 | 98 | 236 | 118 | 275 | 138 | 315 | 157 | 354 | 177 | |
| | Throw (m) | 4.9-6.1-8.5 | 2.4-3.7-5.8 | 5.8-7.0-9.8 | 3.4-4.6-6.7 | 6.4-7.9-11.0 | 4.0-5.2-7.3 | 7.0-8.5-12.2 | 4.6-5.8-8.2 | 7.6-9.1-13.1 | 5.2-6.1-8.8 | 7.9-9.8-14.0 | 5.5-6.7-9.4 | 8.5-10.4-14.6 | 5.8-7.0-10.1 | |
| 3A1 | L/s/side | 148 | 59 | 197 | 79 | 246 | 98 | 295 | 118 | 344 | 138 | 393 | 157 | 443 | 177 | |
| | Throw (m) | 4.9-6.1-8.6 | 2.4-3.7-5.8 | 5.7-7.0-10.0 | 3.4-4.6-6.7 | 6.4-7.9-11.1 | 4.0-5.2-7.3 | 7.0-8.6-12.2 | 4.6-5.8-8.2 | 7.6-9.3-13.2 | 5.2-6.1-8.8 | 8.1-10.0-14.1 | 5.5-6.7-9.4 | 8.6-10.6-14.9 | 5.8-7.0-10.1 | |
| 2A, 2B | L/s/side | 177 | | 236 | | 295 | | 354 | | 413 | | 472 | | 531 | | |
| | Throw (m) | 5.2-6.4-9.1 | | 6.1-7.4-10.5 | | 6.8-8.3-11.7 | | 7.4-9.1-12.8 | | 8.0-9.8-13.9 | | 8.6-10.5-14.8 | | 9.1-11.1-15.7 | | |
| 2E, 2F | L/s/side | 237 | 117 | 316 | 156 | 396 | 195 | 474 | 234 | 554 | 273 | 632 | 312 | 712 | 351 | |
| | Throw (m) | 6.1-7.3-10.4 | 3.4-4.9-7.0 | 7.0-8.5-11.9 | 4.6-5.8-7.9 | 7.6-9.4-13.4 | 5.2-6.4-9.1 | 8.5-10.4-14.6 | 5.8-7.0-9.8 | 9.1-11.3-15.8 | 6.1-7.6-10.7 | 9.8-11.9-17.1 | 6.7-7.9-11.3 | 10.4-12.8-18.0 | 7.0-8.5-12.2 | |
| 1A, 1B | L/s/side | 354 | | 472 | | 590 | | 708 | | 826 | | 944 | | 1062 | | |
| | Throw (m) | 6.4-7.8-11.1 | | 7.4-9.0-12.8 | | 8.2-10.1-14.3 | | 9.0-11.1-15.6 | | 9.8-11.9-16.9 | | 10.4-12.8-18.1 | | 11.1-13.5-19.2 | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



CEILING DIFFUSERS

Louvered Face Directional Diffusers SMD / AMD Series

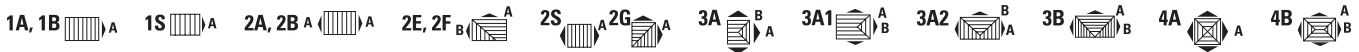


Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | |
|------------------------|-----------|--------------|--------------|---------------|--------------|---------------|---------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | |
| Duct | L/s NC | | 443 -- | | 590 23 | | 738 30 | | 885 35 | | 1033 40 | | 1180 44 | | 1328 48 | |
| 760 x 380 | 4B | L/s/side | 148 | 74 | 197 | 98 | 246 | 123 | 295 | 148 | 344 | 172 | 393 | 197 | 443 | 221 |
| | | Throw (m) | 5.2-6.4-8.8 | 3.0-4.6-6.7 | 5.8-7.3-10.4 | 4.0-5.5-7.6 | 6.7-8.2-11.6 | 4.9-6.1-8.5 | 7.3-8.8-12.5 | 5.5-6.7-9.1 | 7.9-9.8-13.7 | 5.8-7.0-10.1 | 8.2-10.4-14.6 | 6.1-7.6-10.7 | 8.8-11.0-15.2 | 6.7-7.9-11.3 |
| | 3A1 | L/s/side | 185 | 74 | 246 | 98 | 307 | 123 | 369 | 148 | 430 | 172 | 492 | 197 | 553 | 221 |
| | | Throw (m) | 5.5-6.7-9.4 | 3.0-4.6-6.7 | 6.1-7.6-10.7 | 4.0-5.5-7.6 | 7.0-8.5-11.9 | 4.9-6.1-8.5 | 7.6-9.4-13.1 | 5.5-6.7-9.1 | 8.2-10.1-14.3 | 5.8-7.0-10.1 | 8.8-10.7-15.2 | 6.1-7.6-10.7 | 9.1-11.3-16.2 | 6.7-7.9-11.3 |
| | 3B | L/s/side | 221 | 110 | 295 | 148 | 369 | 185 | 443 | 221 | 516 | 258 | 590 | 295 | 664 | 332 |
| | | Throw (m) | 5.6-6.8-9.7 | 4.3-5.5-7.9 | 6.4-7.9-11.2 | 5.2-6.4-9.1 | 7.2-8.8-12.5 | 5.8-7.3-10.4 | 7.9-9.7-13.7 | 6.4-7.9-11.3 | 8.5-10.5-14.8 | 7.0-8.5-12.2 | 9.1-11.2-15.8 | 7.6-9.1-13.1 | 9.7-11.8-16.8 | 7.9-9.8-13.7 |
| 0.291 m ² | 2A, 2B | L/s/side | 221 | | 295 | | 369 | | 443 | | 516 | | 590 | | 664 | |
| | | Throw (m) | 5.5-6.7-9.8 | | 6.4-7.9-11.3 | | 7.3-8.8-12.5 | | 7.9-9.8-13.7 | | 8.5-10.4-14.9 | | 9.1-11.3-15.8 | | 9.8-11.9-16.8 | |
| | 2E, 2F | L/s/side | 296 | 146 | 396 | 195 | 494 | 244 | 593 | 292 | 692 | 341 | 791 | 389 | 889 | 438 |
| | | Throw (m) | 6.4-7.6-11.0 | 4.3-5.5-7.9 | 7.3-8.8-12.5 | 5.2-6.4-9.1 | 8.2-10.1-14.0 | 5.8-7.3-10.4 | 8.8-11.0-15.2 | 6.4-7.9-11.3 | 9.4-11.9-16.5 | 7.0-8.5-12.2 | 10.4-12.5-17.7 | 7.6-9.1-13.1 | 11.0-13.4-18.9 | 7.9-9.8-13.7 |
| | 1A, 1B | L/s/side | 443 | | 590 | | 738 | | 885 | | 1033 | | 1180 | | 1328 | |
| | | Throw (m) | 6.7-8.2-11.9 | | 7.9-9.8-13.7 | | 8.8-10.7-15.2 | | 9.8-11.9-16.8 | | 10.4-12.8-18.0 | | 11.0-13.7-19.2 | | 11.9-14.3-20.4 | |
| 760 x 455 | 4B | L/s/side | 531 15 | | 708 24 | | 885 31 | | 1062 36 | | 1239 41 | | 1416 45 | | 1593 49 | |
| | | Throw (m) | 177 | 89 | 236 | 118 | 295 | 148 | 354 | 177 | 413 | 207 | 472 | 236 | 531 | 266 |
| | 3A1 | L/s/side | 177 | 89 | 236 | 118 | 295 | 148 | 354 | 177 | 413 | 207 | 472 | 236 | 531 | 266 |
| | | Throw (m) | 5.2-6.4-9.1 | 3.7-5.2-7.3 | 6.1-7.4-10.5 | 4.9-5.8-8.2 | 6.8-8.3-11.7 | 5.5-6.7-9.4 | 7.4-9.1-12.8 | 5.8-7.3-10.4 | 8.0-9.8-13.9 | 6.4-7.9-11.0 | 8.6-10.5-14.8 | 6.7-8.2-11.9 | 9.1-11.1-15.7 | 7.3-8.8-12.5 |
| | 3A2 | L/s/side | 221 | 89 | 295 | 118 | 369 | 148 | 443 | 177 | 516 | 207 | 590 | 236 | 664 | 266 |
| | | Throw (m) | 5.6-6.8-9.7 | 3.7-5.2-7.3 | 6.4-7.9-11.2 | 4.9-5.8-8.2 | 7.2-8.8-12.5 | 5.5-6.7-9.4 | 7.9-9.7-13.7 | 5.8-7.3-10.4 | 8.5-10.5-14.8 | 6.4-7.9-11.0 | 9.1-11.2-15.8 | 6.7-8.2-11.9 | 9.7-11.8-16.8 | 7.3-8.8-12.5 |
| 0.348 m ² | 2A, 2B | L/s/side | 166 | 199 | 221 | 266 | 277 | 332 | 332 | 398 | 387 | 464 | 443 | 531 | 498 | 598 |
| | | Throw (m) | 5.1-6.3-8.9 | 5.5-6.7-9.8 | 5.9-7.3-10.3 | 6.4-7.9-11.3 | 6.6-8.1-11.5 | 7.3-8.8-12.5 | 7.3-8.9-12.6 | 7.9-9.8-13.7 | 7.9-9.6-13.6 | 8.5-10.4-14.6 | 8.4-10.3-14.6 | 9.1-11.3-15.8 | 8.9-10.9-15.4 | 9.8-11.9-16.8 |
| | 2E, 2F | L/s/side | 266 | | 354 | | 443 | | 531 | | 620 | | 708 | | 797 | |
| | | Throw (m) | 5.9-7.2-10.2 | | 6.8-8.3-11.8 | | 7.6-9.3-13.2 | | 8.3-10.2-14.4 | | 9.0-11.0-15.6 | | 9.6-11.8-16.6 | | 10.2-12.5-17.7 | |
| | 1A, 1B | L/s/side | 356 | 175 | 474 | 234 | 593 | 292 | 712 | 351 | 830 | 409 | 949 | 467 | 1067 | 526 |
| | | Throw (m) | 6.4-7.8-11.1 | 5.2-6.1-8.8 | 7.4-9.0-12.8 | 5.8-7.3-10.1 | 8.3-10.1-14.3 | 6.7-7.9-11.3 | 9.0-11.1-15.7 | 7.3-8.8-12.5 | 9.8-12.0-16.9 | 7.6-9.4-13.4 | 10.4-12.8-18.1 | 8.2-10.1-14.3 | 11.1-13.6-19.2 | 8.8-10.7-15.2 |
| 1A, 1B | L/s/side | 531 | | 708 | | 885 | | 1062 | | 1239 | | 1416 | | 1593 | | |
| | Throw (m) | 7.2-8.8-12.4 | | 8.3-10.1-14.3 | | 9.3-11.3-16.0 | | 10.1-12.4-17.6 | | 10.9-13.4-19.0 | | 11.7-14.3-20.3 | | 12.4-15.2-21.5 | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | | |
|------------------------|-----------|--------------|--------------|---------------|--------------|----------------|--------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|----------------|---|---|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | | |
| Duct | L/s | NC | 620 | | 826 | | 1033 | | 1239 | | 1446 | | 1652 | | 1859 | | |
| 760 x 535 | 16 | | 25 | | 32 | | 37 | | 42 | | 46 | | 49 | | | | |
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | |
| 4B | L/s/side | 207 | 103 | 275 | 138 | 344 | 172 | 413 | 207 | 482 | 241 | 551 | 275 | 620 | 310 | | |
| | Throw (m) | 5.5-6.7-9.5 | 4.3-5.5-7.9 | 6.3-7.7-11.0 | 5.2-6.4-9.1 | 7.1-8.7-12.2 | 5.8-7.0-10.1 | 7.7-9.5-13.4 | 6.4-7.9-11.0 | 8.4-10.2-14.5 | 7.0-8.5-11.9 | 8.9-11.0-15.5 | 7.3-9.1-12.8 | 9.5-11.6-16.4 | 7.9-9.8-13.7 | | |
| | L/s/side | 258 | 103 | 344 | 138 | 430 | 172 | 516 | 207 | 602 | 241 | 688 | 275 | 775 | 310 | | |
| 3A1 | L/s/side | 5.8-7.1-10.1 | 4.3-5.5-7.9 | 6.7-8.3-11.7 | 5.2-6.4-9.1 | 7.5-9.2-13.0 | 5.8-7.0-10.1 | 8.3-10.1-14.3 | 6.4-7.9-11.0 | 8.9-10.9-15.4 | 7.0-8.5-11.9 | 9.5-11.7-16.5 | 7.3-9.1-12.8 | 10.1-12.4-17.5 | 7.9-9.8-13.7 | | |
| | Throw (m) | 194 | 232 | 258 | 310 | 323 | 387 | 387 | 464 | 452 | 542 | 516 | 620 | 581 | 697 | | |
| 3A2 | L/s/side | 5.4-6.6-9.3 | 5.5-6.7-9.8 | 6.2-7.6-10.8 | 6.4-7.9-11.3 | 6.9-8.5-12.0 | 7.3-8.8-12.5 | 7.6-9.3-13.2 | 7.9-9.8-13.7 | 8.2-10.1-14.2 | 8.5-10.4-14.6 | 8.8-10.8-15.2 | 9.1-11.3-15.8 | 9.3-11.4-16.1 | 9.8-11.9-16.8 | | |
| | Throw (m) | 310 | | 413 | | 516 | | 620 | | 723 | | 826 | | 929 | | | |
| 2A, 2B | L/s/side | 6.1-7.5-10.6 | | 7.1-8.7-12.3 | | 7.9-9.7-13.7 | | 8.7-10.6-15.1 | | 9.4-11.5-16.3 | | 10.0-12.3-17.4 | | 10.6-13.0-18.4 | | | |
| | Throw (m) | 415 | 204 | 554 | 273 | 692 | 341 | 830 | 409 | 969 | 477 | 1107 | 545 | 1245 | 613 | | |
| 2E, 2F | L/s/side | 6.7-8.2-11.6 | 5.5-6.7-9.4 | 7.7-9.5-13.4 | 6.4-7.9-11.0 | 8.6-10.6-14.9 | 7.0-8.8-12.5 | 9.5-11.6-16.4 | 7.9-9.8-13.7 | 10.2-12.5-17.7 | 8.5-10.4-14.6 | 10.9-13.4-18.9 | 9.1-11.0-15.8 | 11.6-14.2-20.0 | 9.8-11.9-16.8 | | |
| | Throw (m) | 620 | | 826 | | 1033 | | 1239 | | 1446 | | 1652 | | 1859 | | | |
| 1A, 1B | L/s/side | 7.5-9.2-13.0 | | 8.6-10.6-15.0 | | 9.7-11.8-16.8 | | 10.6-13.0-18.3 | | 11.4-14.0-19.8 | | 12.2-15.0-21.2 | | 13.0-15.9-22.5 | | | |
| | Throw (m) | | 708 | | 944 | | 1180 | | 1416 | | 1652 | | 1888 | | 2124 | | |
| 760 x 610 | L/s | 17 | | 26 | | 32 | | 38 | | 43 | | 47 | | 50 | | | |
| | NC | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| 4B | L/s/side | 236 | 118 | 315 | 157 | 393 | 197 | 472 | 236 | 551 | 275 | 629 | 315 | 708 | 354 | | |
| | Throw (m) | 5.7-7.0-9.9 | 4.9-6.1-8.5 | 6.6-8.0-11.4 | 5.8-7.0-9.8 | 7.3-9.0-12.7 | 6.4-7.9-11.0 | 8.0-9.9-13.9 | 7.0-8.5-12.2 | 8.7-10.6-15.1 | 7.6-9.1-13.1 | 9.3-11.4-16.1 | 7.9-9.8-14.0 | 9.9-12.1-17.1 | 8.5-10.4-14.6 | | |
| 3A1 | L/s/side | 295 | 118 | 393 | 157 | 492 | 197 | 590 | 236 | 688 | 275 | 787 | 315 | 885 | 354 | | |
| | Throw (m) | 6.1-7.4-10.5 | 4.9-6.1-8.5 | 7.0-8.6-12.1 | 5.8-7.0-9.8 | 7.8-9.6-13.6 | 6.4-7.9-11.0 | 8.6-10.5-14.9 | 7.0-8.5-12.2 | 9.3-11.3-16.0 | 7.6-9.1-13.1 | 9.9-12.1-17.1 | 7.9-9.8-14.0 | 10.5-12.9-18.2 | 8.5-10.4-14.6 | | |
| 3A2 | L/s/side | 221 | 266 | 295 | 354 | 369 | 443 | 443 | 531 | 516 | 620 | 590 | 708 | 664 | 797 | | |
| | Throw (m) | 5.8-7.0-10.1 | 5.5-7.0-9.8 | 6.7-8.2-11.6 | 6.4-7.9-11.3 | 7.3-9.1-12.8 | 7.3-8.8-12.5 | 8.2-10.1-14.0 | 7.9-9.8-13.7 | 8.8-10.7-15.2 | 8.5-10.4-14.9 | 9.4-11.6-16.2 | 9.1-11.3-15.8 | 10.1-12.2-17.4 | 9.8-11.9-16.8 | | |
| 2A, 2B | L/s/side | 354 | | 472 | | 590 | | 708 | | 826 | | 944 | | 1062 | | | |
| | Throw (m) | 6.4-7.8-11.1 | | 7.4-9.0-12.8 | | 8.2-10.1-14.3 | | 9.0-11.1-15.6 | | 9.8-11.9-16.9 | | 10.4-12.8-18.1 | | 11.1-13.5-19.2 | | | |
| 2E, 2F | L/s/side | 474 | 234 | 632 | 312 | 791 | 389 | 949 | 467 | 1107 | 545 | 1265 | 623 | 1423 | 701 | | |
| | Throw (m) | 6.7-8.2-11.6 | 6.1-7.3-10.4 | 7.6-9.4-13.4 | 7.0-8.5-11.9 | 8.5-10.7-14.9 | 7.6-9.4-13.4 | 9.4-11.6-16.5 | 8.5-10.4-14.6 | 10.4-12.5-17.7 | 9.1-11.3-15.8 | 11.0-13.4-18.9 | 9.8-11.9-17.1 | 11.6-14.3-20.1 | 10.4-12.8-18.0 | | |
| 1A, 1B | L/s/side | 708 | | 944 | | 1180 | | 1416 | | 1652 | | 1888 | | 2124 | | | |
| | Throw (m) | 7.8-9.5-13.5 | | 9.0-11.0-15.6 | | 10.0-12.3-17.4 | | 11.0-13.5-19.1 | | 11.9-14.6-20.6 | | 12.7-15.6-22.0 | | 13.5-16.5-23.3 | | | |

For Performance Notes and Return Factors, see page C120.

Core Style Legend



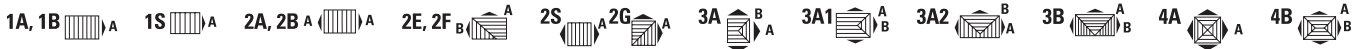
Louvered Face Directional Diffusers SMD / AMD Series



Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | | | |
|---------------------------|-----------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | | | |
| Total Pressure (Pa) | 9 | | 16 | | 25 | | 35 | | 48 | | 63 | | 80 | | | | |
| Duct 760 x 760 | L/s | 885 | 1180 | 1475 | 1770 | 2065 | 2360 | 2655 | NC | 18 | 27 | 33 | 39 | 44 | 48 | 51 | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | |
| Duct 0.581 m ² | 4A | L/s | 221 | 295 | 369 | 443 | 516 | 590 | 664 | 738 | 812 | 885 | 959 | 1033 | 1107 | 1181 | |
| | | Throw (m) | 5.6-6.8-9.7 | 6.4-7.9-11.2 | 7.2-8.8-12.5 | 7.9-9.7-13.7 | 8.5-10.5-14.8 | 9.1-11.2-15.8 | 9.7-11.8-16.8 | 10.3-12.4-17.4 | 10.9-13.0-18.0 | 11.5-13.6-18.6 | 12.1-14.2-19.2 | 12.7-14.8-19.8 | 13.3-15.4-20.4 | 13.9-16.0-21.0 | 14.5-16.6-21.6 |
| | 3A | L/s | 221 | 332 | 295 | 443 | 369 | 553 | 443 | 664 | 516 | 775 | 590 | 885 | 664 | 995 | |
| | | Throw (m) | 5.6-6.8-9.7 | 6.4-7.6-11.0 | 6.4-7.9-11.2 | 7.3-8.8-12.5 | 7.2-8.8-12.5 | 8.2-10.1-14.0 | 7.9-9.7-13.7 | 8.8-11.0-15.2 | 8.5-10.5-14.8 | 9.4-11.6-16.5 | 9.1-11.2-15.8 | 10.4-12.5-17.7 | 9.7-11.8-16.8 | 11.0-13.4-18.9 | |
| Duct 0.581 m ² | 2S | L/s | 443 | 590 | 738 | 885 | 1033 | 1181 | 1328 | 1475 | 1622 | 1770 | 1917 | 2065 | 2212 | 2360 | |
| | | Throw (m) | 6.8-8.3-11.8 | 7.9-9.6-13.6 | 8.8-10.8-15.2 | 9.6-11.8-16.7 | 10.4-12.7-18.0 | 11.1-13.6-19.2 | 11.8-14.4-20.4 | 12.5-15.0-21.6 | 13.2-15.7-22.8 | 13.9-16.4-24.0 | 14.6-17.1-25.2 | 15.3-17.8-26.4 | 16.0-18.5-27.6 | 16.7-19.2-28.8 | 17.4-20.9-30.0 |
| | 1S | L/s | 885 | 1180 | 1475 | 1770 | 2065 | 2360 | 2655 | 2950 | 3245 | 3540 | 3835 | 4130 | 4425 | 4720 | |
| | Throw (m) | 8.3-10.2-14.4 | 9.6-11.7-16.6 | 10.7-13.1-18.5 | 11.7-14.4-20.3 | 12.7-15.5-21.9 | 13.5-16.6-23.5 | 14.4-17.6-24.9 | | | | | | | | | |

Core Style Legend



SMD/AMD Return Factors

| Duct Size | (-) SP | NC |
|-----------|------------------|---------------|
| 150 x 150 | 0.73 x Listed TP | Listed NC |
| 230 x 230 | 0.87 x Listed TP | Listed NC + 2 |
| 305 x 305 | 0.93 x Listed TP | Listed NC + 4 |
| 380 x 380 | 1.27 x Listed TP | Listed NC + 4 |
| 455 x 455 | 1.47 x Listed TP | Listed NC + 6 |
| 535 x 535 | 1.80 x Listed TP | Listed NC + 8 |
| 610 x 610 | 1.89 x Listed TP | Listed NC + 8 |
| 230 x 150 | 0.87 x Listed TP | Listed NC - 1 |
| 305 x 150 | 1.13 x Listed TP | Listed NC + 1 |
| 380 x 150 | 1.33 x Listed TP | Listed NC + 1 |
| 455 x 150 | 1.87 x Listed TP | Listed NC + 2 |
| 535 x 150 | 2.27 x Listed TP | Listed NC + 3 |
| 610 x 150 | 2.73 x Listed TP | Listed NC + 4 |
| 305 x 230 | 2.73 x Listed TP | Listed NC + 4 |
| 380 x 230 | 1.20 x Listed TP | Listed NC + 3 |
| 455 x 230 | 1.47 x Listed TP | Listed NC + 3 |
| 535 x 230 | 1.73 x Listed TP | Listed NC + 4 |
| 610 x 230 | 2.00 x Listed TP | Listed NC + 4 |

| Duct Size | (-) SP | NC |
|-----------|------------------|---------------|
| 380 x 305 | 1.13 x Listed TP | Listed NC + 2 |
| 455 x 305 | 1.33 x Listed TP | Listed NC + 3 |
| 535 x 305 | 1.53 x Listed TP | Listed NC + 5 |
| 610 x 305 | 1.80 x Listed TP | Listed NC + 5 |
| 455 x 380 | 1.40 x Listed TP | Listed NC + 4 |
| 535 x 380 | 1.47 x Listed TP | Listed NC + 5 |
| 610 x 380 | 1.80 x Listed TP | Listed NC + 6 |
| 535 x 455 | 1.53 x Listed TP | Listed NC + 5 |
| 610 x 455 | 1.73 x Listed TP | Listed NC + 6 |
| 610 x 535 | 1.47 x Listed TP | Listed NC + 7 |
| 760 x 150 | 2.70 x Listed TP | Listed NC + 3 |
| 760 x 230 | 2.73 x Listed TP | Listed NC + 6 |
| 760 x 305 | 2.27 x Listed TP | Listed NC + 6 |
| 760 x 380 | 2.13 x Listed TP | Listed NC + 7 |
| 760 x 455 | 2.13 x Listed TP | Listed NC + 7 |
| 760 x 535 | 2.13 x Listed TP | Listed NC + 8 |
| 760 x 610 | 2.12 x Listed TP | Listed NC + 8 |
| 760 x 760 | 2.20 x Listed TP | Listed NC + 8 |

Performance Notes:

- All units are tested in accordance with ASHRAE Standard 70-2006.
- All pressures are in Pascals (Pa).
- Throw data is listed in meters to terminal velocities (VT) as listed below:
Minimum Throw to VT 0.75 m/s
Middle Throw to VT 0.5 m/s
Maximum Throw to VT 0.25 m/s
- Throw data is based on supply air and room air being at isothermal conditions.
- Sound data NC values are based on a room absorption of -10dB, re 10⁻¹² watts.
- Blanks (-) indicate an NC level below 15.
- Performance data is tabulated for supply air applications.
- Performance data assumes the diffuser is ceiling mounted for maximum ceiling effect.
When no ceiling is present, the horizontal flow will be reduced by approximately 25%, producing a downward projection.

CEILING DIFFUSERS

Plaque Face Ceiling Diffusers SMDP Series

Product Information - Fixed Air Pattern

Models

Fixed Air Pattern

Steel Construction

SMDP

Price SMDP Series louvered plaque ceiling diffusers are designed to satisfy both architectural appeal and engineering performance criteria. The simple and unobtrusive plaque design is intended to blend harmoniously with most ceiling systems, while the louvered slots supply large volumes of air at relatively low sound levels and pressure drops.

The louvered plaque ceiling diffuser is offered in 1, 2 or 3 slot models in order to meet a wide range of performance requirements.

Features

- All steel construction.
- Available in 24x24 nominal size only.
- Fits 24x24 inch ceiling grid or surface mount.
- Available in 1, 2, and 3 slot models.
- The core is easily removable at the diffuser face without requiring special tools.

Options

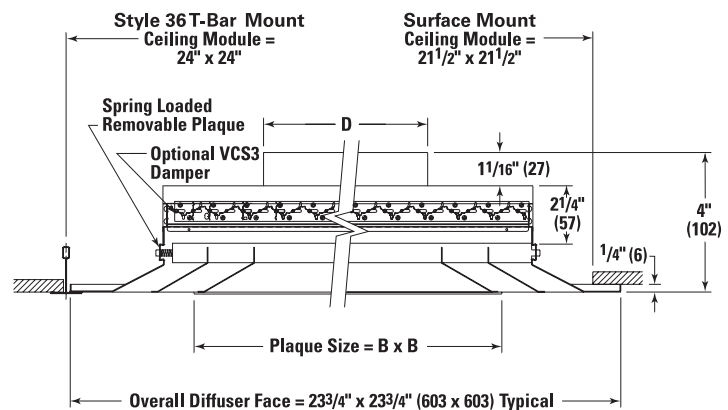
- Optional square to round neck adaptors available in 6 in., 8 in., 9 in., 10 in., 12 in., 14 in. and 15 in. inlet sizes.
- Round (VCR8E and VCR9) and square (VCS3) dampers available.

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.



| Slot Qty. | A | B |
|-----------|-----------|--|
| 1 Slot | 1½" (38) | 18 ¹¹ / ₁₆ " (475) |
| 2 Slot | 3" (76) | 15 ¹¹ / ₁₆ " (398) |
| 3 Slot | 4½" (114) | 12 ¹¹ / ₁₆ " (322) |

✓ Product Selection Checklist

- 1] Select frame Style based on installation requirements.
- 2] Select Inlet Size.
- 3] Select Number of Slots required.
- 4] Select Volume Control Accessories, if desired.
- 5] Select Finish.

Example: 24 in. x 24 in. / SMDP / 3P / 4A / B12

Plaque Face Ceiling Diffusers SMDP Series



Performance Data – 24 x 24 / 600 x 600 Face Size, 1 Slot

| | | | | | | | | | | |
|----|-----------------------------|-------|--------|--------|--------|---------|---------|----------|----------|----------|
| 6 | Air Flow, cfm | 39 | 59 | 79 | 98 | 118 | 137 | 157 | 196 | 236 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.006 | 0.014 | 0.025 | 0.039 | 0.056 | 0.077 | 0.100 | 0.156 | 0.225 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | -- | -- | -- | -- | -- | 18 | 22 | 28 | 33 |
| | Throw 150, 100, 50 | 0-1-2 | 1-1-4 | 1-2-5 | 2-3-7 | 2-4-8 | 3-5-9 | 4-5-10 | 4-7-11 | 5-8-13 |
| 8 | Air Flow, cfm | 70 | 105 | 140 | 174 | 209 | 244 | 279 | 349 | 419 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.014 | 0.032 | 0.058 | 0.090 | 0.130 | 0.176 | 0.230 | 0.360 | 0.518 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | -- | -- | -- | 21 | 26 | 30 | 33 | 40 | 45 |
| | Throw 150, 100, 50 | 1-2-5 | 2-4-7 | 3-5-9 | 4-6-11 | 5-7-12 | 5-8-13 | 6-9-14 | 8-11-15 | 9-12-17 |
| 10 | Air Flow, cfm | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 545 | 654 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.027 | 0.062 | 0.110 | 0.172 | 0.247 | 0.337 | 0.440 | 0.687 | 0.990 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | -- | 16 | 24 | 30 | 35 | 39 | 43 | 49 | 54 |
| | Throw 150, 100, 50 | 2-4-7 | 4-5-10 | 5-7-12 | 6-9-14 | 7-10-15 | 9-11-16 | 10-12-17 | 11-14-19 | 12-15-21 |

Performance Data – 24 x 24 / 600 x 600 Face Size, 2 Slot

| | | | | | | | | | | |
|----|-----------------------------|-------|--------|--------|--------|---------|---------|----------|----------|----------|
| 6 | Air Flow, cfm | 39 | 59 | 79 | 98 | 118 | 137 | 157 | 196 | 236 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.004 | 0.009 | 0.016 | 0.025 | 0.036 | 0.049 | 0.064 | 0.100 | 0.144 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | --- | --- | --- | --- | --- | --- | 16 | 22 | 27 |
| | Throw 150, 100, 50 | 0-0-1 | 0-0-2 | 0-1-3 | 0-1-4 | 1-2-5 | 1-2-6 | 1-3-7 | 2-4-9 | 3-5-11 |
| 8 | Air Flow, cfm | 70 | 105 | 140 | 174 | 209 | 244 | 279 | 349 | 419 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.007 | 0.016 | 0.028 | 0.044 | 0.063 | 0.086 | 0.112 | 0.175 | 0.252 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | --- | --- | --- | --- | 18 | 22 | 26 | 32 | 37 |
| | Throw 150, 100, 50 | 0-1-2 | 1-1-5 | 1-2-6 | 2-3-8 | 2-5-10 | 3-6-11 | 4-6-13 | 5-8-15 | 6-10-17 |
| 10 | Air Flow, cfm | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 545 | 654 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.011 | 0.024 | 0.043 | 0.067 | 0.097 | 0.132 | 0.172 | 0.269 | 0.387 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | --- | --- | 15 | 21 | 26 | 30 | 34 | 39 | 44 |
| | Throw 150, 100, 50 | 1-1-5 | 1-3-7 | 2-5-10 | 4-6-12 | 5-7-15 | 6-9-16 | 7-10-17 | 8-12-19 | 10-15-21 |
| 12 | Air Flow, cfm | 157 | 236 | 314 | 393 | 471 | 550 | 628 | 785 | 942 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.015 | 0.034 | 0.061 | 0.096 | 0.138 | 0.187 | 0.245 | 0.382 | 0.550 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | --- | --- | 21 | 27 | 32 | 36 | 40 | 46 | 51 |
| | Throw 150, 100, 50 | 1-3-7 | 3-5-11 | 5-7-14 | 6-9-16 | 7-11-18 | 8-13-19 | 10-14-21 | 12-16-23 | 14-18-25 |

Performance Notes:

- All units are tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in inches of water in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air being at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks (—) indicate an NC level below 15.

Performance Data – 24 x 24 / 600 x 600 Face Size, 3 Slot

| | | | | | | | | | | |
|--------------------|-----------------------------|-------|--------|--------|---------|---------|----------|----------|----------|----------|
| 8 | Air Flow, cfm | 70 | 105 | 140 | 174 | 209 | 244 | 279 | 349 | 419 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.006 | 0.013 | 0.023 | 0.035 | 0.051 | 0.069 | 0.090 | 0.141 | 0.203 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | --- | --- | --- | 16 | 21 | 25 | 29 | 35 | 40 |
| Throw 150, 100, 50 | | 0-0-2 | 0-1-4 | 1-2-6 | 1-3-7 | 2-4-9 | 2-5-10 | 3-6-12 | 5-7-15 | 6-9-17 |
| 10 | Air Flow, cfm | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 545 | 654 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.007 | 0.017 | 0.030 | 0.046 | 0.067 | 0.091 | 0.119 | 0.186 | 0.268 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | --- | --- | --- | 19 | 24 | 28 | 32 | 37 | 42 |
| Throw 150, 100, 50 | | 0-1-4 | 1-2-7 | 2-4-9 | 3-6-12 | 4-7-14 | 5-8-16 | 6-9-17 | 8-12-19 | 9-14-21 |
| 12 | Air Flow, cfm | 157 | 236 | 314 | 393 | 471 | 550 | 628 | 785 | 942 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.009 | 0.021 | 0.037 | 0.058 | 0.084 | 0.114 | 0.149 | 0.233 | 0.335 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | --- | --- | 16 | 21 | 26 | 30 | 34 | 40 | 45 |
| Throw 150, 100, 50 | | 1-2-7 | 2-5-10 | 4-7-13 | 6-8-16 | 7-10-18 | 8-12-19 | 9-13-21 | 11-16-23 | 13-18-25 |
| 14 | Air Flow, cfm | 214 | 321 | 427 | 534 | 641 | 748 | 855 | 1068 | 1282 |
| | Neck Velocity | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 1000 | 1200 |
| | Total Pressure, in. w.g. | 0.011 | 0.025 | 0.045 | 0.070 | 0.101 | 0.138 | 0.180 | 0.281 | 0.405 |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.062 | 0.090 |
| | NC | --- | --- | 17 | 23 | 28 | 32 | 36 | 42 | 47 |
| Throw 150, 100, 50 | | 2-4-9 | 4-7-14 | 6-9-17 | 8-11-19 | 9-14-21 | 11-16-22 | 12-17-24 | 15-19-27 | 17-21-29 |

Performance Notes:

- All units are tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in inches of water in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air being at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks (—) indicate an NC level below 15.

Louvered Face Directional Diffusers CSRD Series



Product Information - Combination Supply / Return

Price CSRD Series combination supply / return directional diffusers are available with extruded aluminum louvered blades for supply air and an eggcrate core for return air. Extruded aluminum construction matches the AMD series in detail and styling. The performance characteristics are excellent; the diffuser handles a large amount of air for a given set of outside dimensions with low pressure drops and noise levels. The CSRD is sized to match rooftop air conditioners in the most popular capacities.

Features

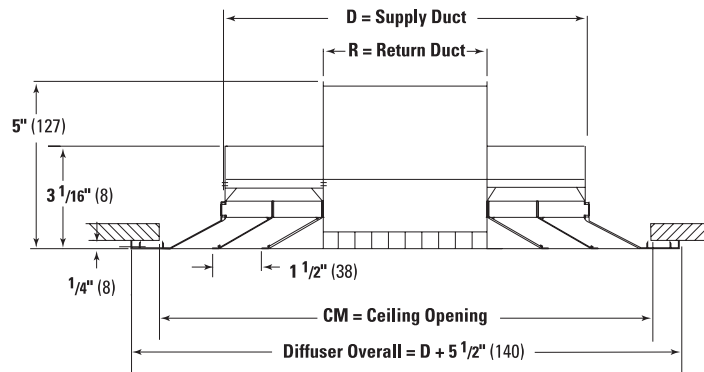
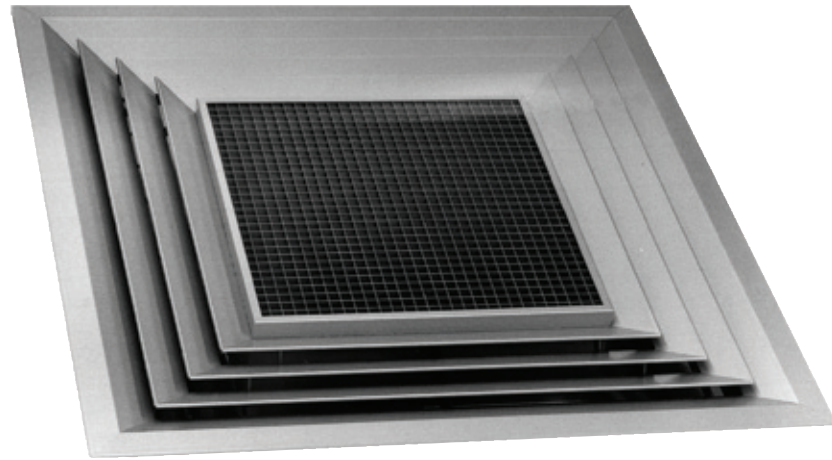
- Extruded aluminum construction.
- Return air core is aluminum eggcrate, minimizing see-through and maximizing free area.
- Surface mounting flange is applicable to most ceiling types.

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.



CSRD Selection Criteria — Imperial (in.) / Metric [mm]

| CSRD | D Supply Duct Size | R Return Duct Opening | CM Ceiling Opening |
|------|--------------------------|-----------------------------|---|
| 20 | 21 x 21 [533 x 533] | 12 x 12 [301 x 301] | 24 ¹ / ₂ x 24 ¹ / ₂ [622 x 622] |
| 30 | 24 x 24 [610 x 610] | 15 x 15 [381 x 381] | 27 ¹ / ₂ x 27 ¹ / ₂ [699 x 699] |
| 40 | 30 x 30 [762 x 762] | 18 x 18 [457 x 457] | 33 ¹ / ₂ x 33 ¹ / ₂ [851 x 851] |
| 50 | 33 x 33 [838 x 838] | 18 x 18 [457 x 457] | 36 ¹ / ₂ x 36 ¹ / ₂ [927 x 927] |
| 75 | 36 x 36 [914 x 914] | 21 x 21 [533 x 533] | 39 ¹ / ₂ x 39 ¹ / ₂ [1003 x 1003] |
| 100 | 48 x 48 [1219 x 1219] | 27 x 27 [686 x 686] | 51 ¹ / ₂ x 51 ¹ / ₂ [1308 x 1308] |

✓ Product Selection Checklist

- 1] Select Supply Inlet Size L x W based on desired performance characteristics.
- 2] Select Outlet Type by model number.
- 3] Select Finish.

Example: 12 in. x 12 in. / CSRD 30 / B12

Louvered Face Directional Diffusers CSR Series



Performance Data

| cfm / ton | | | 300 | 350 | 400 | 450 | 500 | 550 | 600 |
|---------------------------|------------------|--|----------|----------|----------|----------|----------|----------|----------|
| CSR 20 2 TONS | cfm | | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 |
| | Throw, ft | | 7-8-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 9-12-16 | 10-12-17 |
| | T.P. | | .036 | .049 | .064 | .081 | .099 | .124 | .148 |
| | (-S.P.) | | .056 | .075 | .099 | .123 | .150 | .190 | .230 |
| | NC | | 20 | 25 | 30 | 34 | 37 | 40 | 43 |
| CSR 30 3 TONS | cfm | | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 |
| | Throw, ft | | 8-10-14 | 9-11-15 | 10-12-17 | 10-13-18 | 11-13-19 | 11-14-19 | 12-14-20 |
| | T.P. | | .055 | .076 | .100 | .126 | .154 | .184 | .220 |
| | (-S.P.) | | .050 | .069 | .091 | .113 | .140 | .167 | .200 |
| | NC | | 23 | 28 | 33 | 37 | 40 | 43 | 46 |
| CSR 40 4 TONS | cfm | | 1200 | 1400 | 1600 | 1800 | 2000 | 2200 | 2400 |
| | Throw, ft | | 9-11-15 | 10-12-17 | 10-13-18 | 11-13-19 | 12-14-20 | 12-15-21 | 13-16-22 |
| | T.P. | | .042 | .057 | .073 | .090 | .111 | .136 | .162 |
| | (-S.P.) | | .062 | .084 | .108 | .135 | .165 | .205 | .245 |
| | NC | | 26 | 31 | 36 | 40 | 43 | 46 | 49 |
| CSR 50 5 TONS | cfm | | 1500 | 1750 | 2000 | 2250 | 2500 | 2750 | 3000 |
| | Throw, ft | | 9-11-16 | 10-12-17 | 11-13-18 | 12-14-20 | 12-15-21 | 13-16-22 | 13-16-23 |
| | T.P. | | .031 | .043 | .057 | .072 | .090 | .109 | .131 |
| | (-S.P.) | | .067 | .091 | .116 | .150 | .190 | .230 | .265 |
| | NC | | 28 | 33 | 38 | 42 | 45 | 48 | 51 |
| CSR 75 7.5 TONS | cfm | | 2250 | 2675 | 3000 | 3375 | 3750 | 4125 | 4500 |
| | Throw, ft | | 11-13-19 | 12-15-21 | 13-16-22 | 13-17-23 | 14-18-25 | 15-18-26 | 16-19-27 |
| | T.P. | | .056 | .077 | .100 | .126 | .154 | .184 | .220 |
| | (-S.P.) | | .079 | .110 | .140 | .175 | .215 | .260 | .305 |
| | NC | | 34 | 39 | 44 | 48 | 51 | 54 | 57 |
| CSR 100 10 TONS | cfm | | 3000 | 3500 | 4000 | 4500 | 5000 | 5500 | 6000 |
| | Throw, ft | | 11-14-20 | 12-15-21 | 13-16-23 | 14-17-24 | 15-18-26 | 16-19-27 | 16-20-28 |
| | T.P. | | .031 | .044 | .057 | .072 | .090 | .109 | .131 |
| | (-S.P.) | | .053 | .071 | .092 | .115 | .145 | .175 | .215 |
| | NC | | 32 | 37 | 42 | 45 | 49 | 52 | 59 |

Performance Notes:

- All units are tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in inches of water in in. w.g.
TP = Total Pressure.
(-) SP = Negative Static Pressure.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air being at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks (—) indicate an NC level below 15.

Light Commercial Directional Diffuser LCMD Series



Product Information

Price LCMD Light Commercial Directional Diffuser features rugged extruded aluminum construction and 1" blade spacing. The diffuser is available in five different core styles, giving you the opportunity to choose between 1, 2, 2 way corner, 3 and 4 way air discharge patterns to best suit space requirements and occupants' comfort. The spring loaded core is easily removable from the face of the diffuser without use of any tools. The LCMD is available with optional face adjustable opposed blade damper.

Features

- Rugged all-extruded aluminum construction.
- Removable face for concealed mounting application.
- 1" blade spacing.
- Optional face adjustable damper.
- Five air discharge patterns.

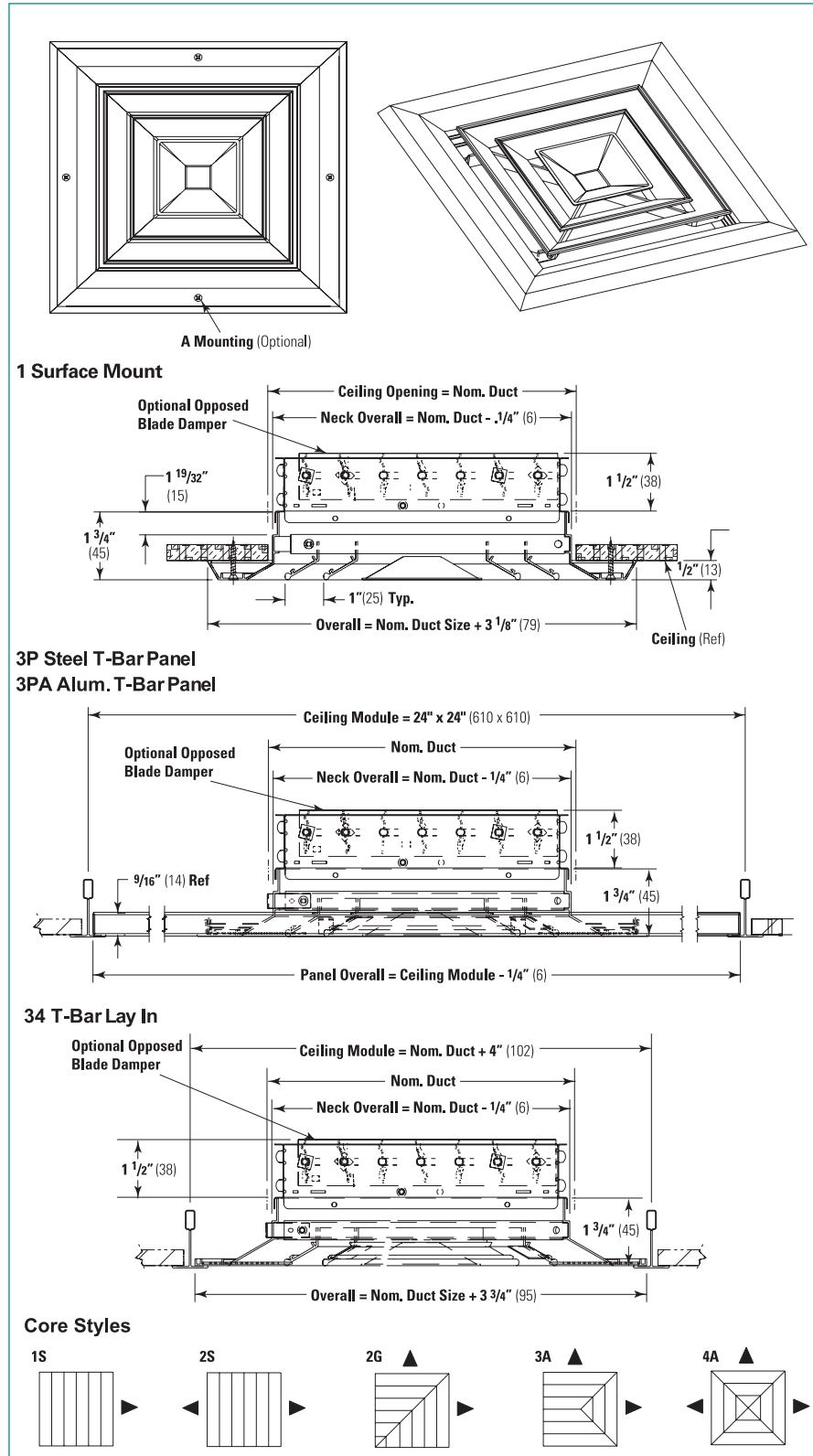
Finish

White Powder Coat

B12

For optional and special finishes see color matrix.

CEILING DIFFUSERS



✓ Product Selection Checklist

- 1) Select Inlet Size based on desired performance characteristics.
- 2) Select Border according to installation requirements.
- 3) Select Core Style based on application.
- 4) Select Damper Options and Accessories, if desired.
- 5) Select Fastening Option.
- 6) Select Finish.

Example:

LCMD / 1 / 12 x 12 / 1 / 4A / / / 3 / / / B12

Light Commercial Directional Diffuser LCMD Series



Performance Data

| Neck Velocity | | 300 | 400 | 500 | 600 | 700 | 800 | 900 |
|---------------------|-----------|-------|-------|-------|-------|-------|-------|-------|
| Velocity Pressure | | 0.006 | 0.01 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 |
| Total Pressure | | 0.049 | 0.086 | 0.135 | 0.195 | 0.265 | 0.346 | 0.438 |
| Duct Size | Total cfm | 75 | 100 | 125 | 150 | 175 | 200 | 225 |
| | NC | -- | 18 | 23 | 26 | 30 | 33 | 35 |
| 6" x 6" | 4A | 19 | 25 | 31 | 38 | 44 | 50 | 56 |
| | 3A | 19 | 25 | 31 | 38 | 44 | 50 | 56 |
| Duct Area 0.25 ft² | 2S, 2G | 38 | 50 | 63 | 75 | 88 | 100 | 113 |
| | 1S | 75 | 100 | 125 | 150 | 175 | 200 | 225 |
| 8" x 8" | 4A | 33 | 45 | 56 | 67 | 78 | 89 | 100 |
| | 3A | 33 | 45 | 56 | 67 | 78 | 89 | 100 |
| Duct Area 0.444 ft² | 2S, 2G | 67 | 89 | 111 | 133 | 156 | 178 | 200 |
| | 1S | 133 | 178 | 222 | 266 | 311 | 355 | 400 |
| 10" x 10" | 4A | 52 | 70 | 87 | 104 | 122 | 139 | 156 |
| | 3A | 52 | 70 | 87 | 104 | 122 | 139 | 156 |
| Duct Area 0.694 ft² | 2S, 2G | 104 | 139 | 174 | 208 | 243 | 278 | 313 |
| | 1S | 208 | 278 | 347 | 416 | 486 | 555 | 625 |
| 12" x 12" | 4A | 75 | 100 | 125 | 150 | 175 | 200 | 225 |
| | 3A | 75 | 100 | 125 | 150 | 175 | 200 | 225 |
| Duct Area 1 ft² | 2S, 2G | 150 | 200 | 250 | 300 | 350 | 400 | 450 |
| | 1S | 300 | 400 | 500 | 600 | 700 | 800 | 900 |
| 14" x 14" | 4A | 102 | 136 | 170 | 204 | 238 | 272 | 306 |
| | 3A | 102 | 136 | 170 | 204 | 238 | 272 | 306 |
| Duct Area 1.36 ft² | 2S, 2G | 204 | 272 | 340 | 408 | 476 | 544 | 612 |
| | 1S | 408 | 544 | 680 | 816 | 952 | 1088 | 1224 |
| 16" x 16" | 4A | 133 | 177 | 221 | 266 | 310 | 354 | 398 |
| | 3A | 133 | 177 | 221 | 266 | 310 | 354 | 398 |
| Duct Area 1.77 ft² | 2S, 2G | 266 | 354 | 443 | 531 | 620 | 708 | 797 |
| | 1S | 531 | 708 | 885 | 1062 | 1239 | 1416 | 1593 |

CEILING DIFFUSERS

Light Commercial Directional Diffuser LCMD Series

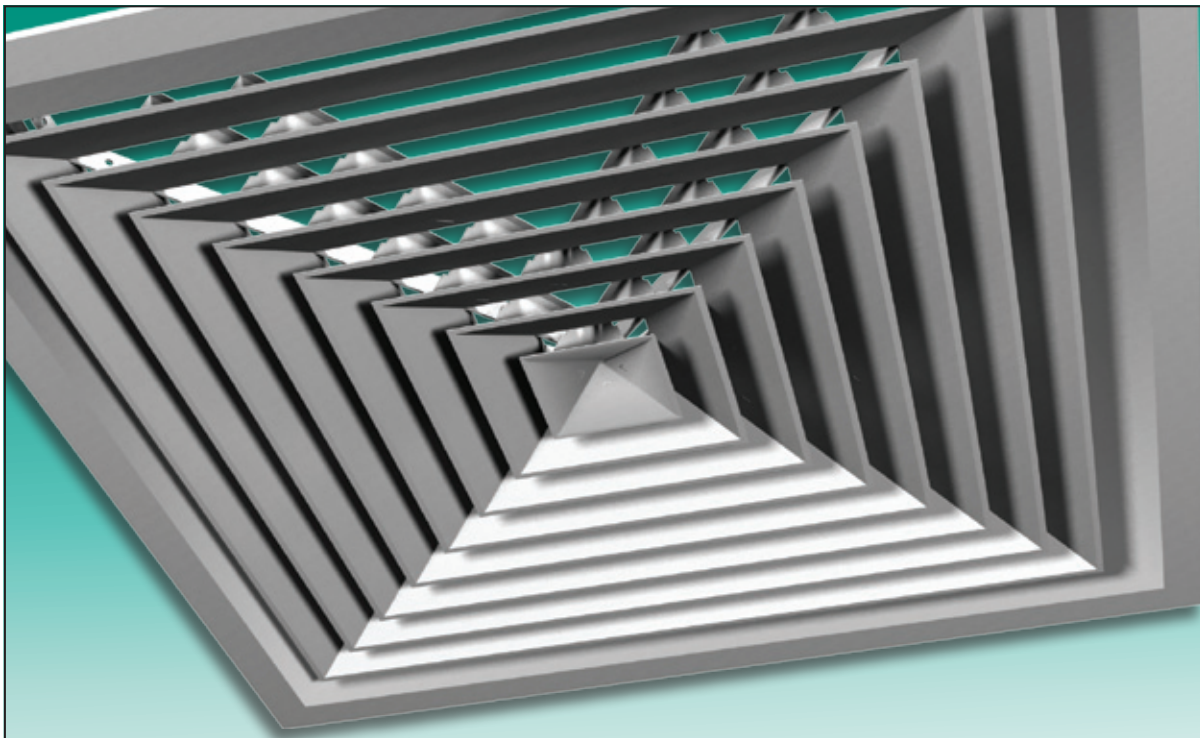


Performance Data

| | | Neck Velocity | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | |
|-----------|----------------------|-------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | Velocity Pressure | | 0.006 | | 0.01 | | 0.016 | | 0.022 | | 0.031 | | 0.040 | | 0.050 | |
| | | Total Pressure | | 0.049 | | 0.086 | | 0.135 | | 0.195 | | 0.265 | | 0.346 | | 0.438 | |
| Duct Size | 18" x 18" | Total cfm | | 675 | | 900 | | 1125 | | 1350 | | 1575 | | 1800 | | 2025 | |
| | | NC | | 24 | | 30 | | 35 | | 38 | | 42 | | 45 | | 47 | |
| Duct Area | 18" x 18" | 4A | cfm/Side | 169 | 225 | 281 | 338 | 394 | 450 | 506 | 562 | 618 | 675 | 731 | 788 | 844 | 900 |
| | | 3A | Throw,ft | 9-13-25 | 12-17-28 | 15-22-32 | 17-25-35 | 20-27-38 | 23-28-40 | 25-30-43 | 28-31-45 | 30-33-47 | 32-35-49 | 34-37-51 | 36-39-53 | 38-41-55 | 40-43-57 |
| Duct Area | 2.25 ft ² | 2S 2G | cfm/Side | 338 | 450 | 563 | 675 | 788 | 900 | 1013 | 1125 | 1238 | 1350 | 1463 | 1575 | 1688 | 1800 |
| | | 1S | Throw,ft | 12-19-30 | 16-24-35 | 21-27-39 | 24-30-42 | 26-32-46 | 28-35-49 | 30-37-52 | 32-39-55 | 34-42-58 | 36-45-61 | 38-48-64 | 40-51-67 | 42-54-70 | 44-57-73 |
| Duct Size | 20" x 20" | Total cfm | | 831 | | 1108 | | 1385 | | 1662 | | 1939 | | 2216 | | 2493 | |
| | | NC | | 25 | | 31 | | 36 | | 40 | | 43 | | 46 | | 48 | |
| Duct Area | 2.77 ft ² | 4A | cfm/Side | 208 | 277 | 346 | 416 | 485 | 554 | 623 | 692 | 761 | 830 | 899 | 968 | 1037 | 1106 |
| | | 3A | Throw,ft | 10-15-26 | 13-19-30 | 16-24-34 | 19-26-37 | 23-28-40 | 25-30-43 | 28-34-48 | 30-37-52 | 32-40-55 | 34-43-58 | 36-46-61 | 38-49-64 | 40-52-67 | 42-55-70 |
| Duct Area | 2.77 ft ² | 2S 2G | cfm/Side | 416 | 554 | 693 | 831 | 970 | 1108 | 1247 | 1385 | 1524 | 1662 | 1800 | 1939 | 2078 | 2216 |
| | | 1S | Throw,ft | 14-21-32 | 18-26-37 | 23-29-41 | 26-32-45 | 28-34-48 | 30-37-52 | 32-39-55 | 34-42-59 | 36-45-63 | 38-48-67 | 40-51-71 | 42-54-75 | 44-57-79 | 46-60-83 |
| Duct Size | 22" x 22" | Total cfm | | 1008 | | 1344 | | 1680 | | 2016 | | 2352 | | 2688 | | 3024 | |
| | | NC | | 26 | | 32 | | 37 | | 41 | | 44 | | 47 | | 49 | |
| Duct Area | 3.36 ft ² | 4A | cfm/Side | 252 | 336 | 420 | 504 | 588 | 672 | 756 | 840 | 924 | 1008 | 1092 | 1176 | 1260 | 1344 |
| | | 3A | Throw,ft | 11-16-28 | 14-21-32 | 18-25-36 | 21-28-39 | 24-30-42 | 26-32-45 | 29-36-50 | 31-39-53 | 33-42-56 | 35-45-59 | 37-48-62 | 39-51-65 | 41-54-68 | 43-57-71 |
| Duct Area | 3.36 ft ² | 2S 2G | cfm/Side | 504 | 672 | 840 | 1008 | 1176 | 1344 | 1512 | 1680 | 1848 | 2016 | 2184 | 2352 | 2520 | 2688 |
| | | 1S | Throw,ft | 15-23-34 | 20-27-39 | 25-31-43 | 27-34-47 | 30-36-51 | 32-39-55 | 34-41-58 | 36-44-62 | 38-46-66 | 40-49-70 | 42-51-74 | 44-54-78 | 46-57-82 | 48-60-86 |
| Duct Size | 24" x 24" | Total cfm | | 1200 | | 1600 | | 2000 | | 2400 | | 2800 | | 3200 | | 3600 | |
| | | NC | | 27 | | 33 | | 38 | | 42 | | 45 | | 48 | | 50 | |
| Duct Area | 4 ft ² | 4A | cfm/Side | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 |
| | | 3A | Throw,ft | 12-17-29 | 16-23-33 | 19-26-37 | 23-29-41 | 26-31-44 | 27-33-47 | 29-35-50 | 31-38-54 | 33-41-58 | 35-44-62 | 37-47-61 | 39-50-64 | 41-53-67 | 43-56-70 |
| Duct Area | 4 ft ² | 2S 2G | cfm/Side | 600 | 800 | 1000 | 1200 | 1400 | 1600 | 1800 | 2000 | 2200 | 2400 | 2600 | 2800 | 3000 | 3200 |
| | | 1S | Throw,ft | 16-25-35 | 22-29-41 | 26-32-46 | 29-35-50 | 31-38-54 | 33-41-58 | 35-44-62 | 37-47-61 | 39-50-64 | 41-53-67 | 43-56-70 | 45-59-73 | 47-62-76 | 49-65-79 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are given in feet to terminal velocities of 150-100-50 fpm.
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks "--" indicate an NC level below 15.

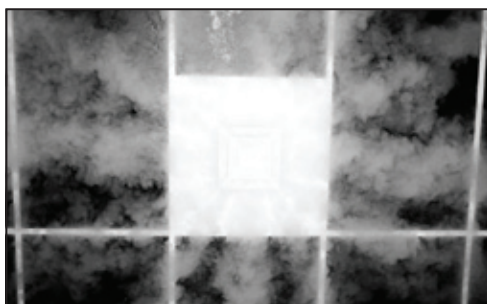


SMX / AMX Series

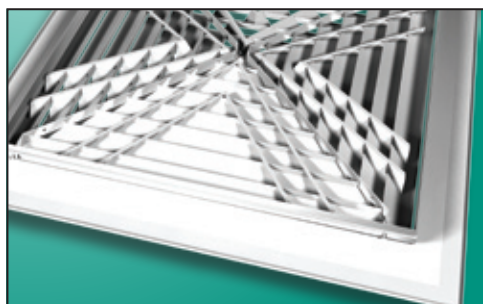
HIGH INDUCTION MODULAR CORE DIFFUSER

Specifically designed to provide rapid mixing of supply and room air without generating drafts or excessive noise, the Price SMX / AMX series is ideally suited to high cooling load commercial applications such as perimeter zone office spaces, auditoriums and health care facilities.

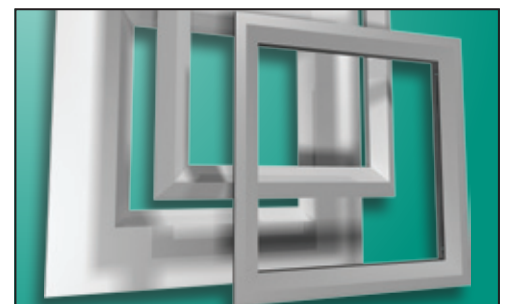
Provides solutions
for the most difficult
high cooling load
problems



Efficient air distribution



Removable core



Large selection of
frame and core styles

Louvered High Induction Directional Diffusers SMX / AMX Series



Product Information

Models

Fixed Air Pattern

Steel Construction

SMX

Aluminum Construction

AMX

The **Price SMX / AMX** Series of louvered high induction directional diffusers are specifically designed to solve difficult high cooling load problems. Internally mounted discharge vanes are engineered to create a high rate of induction that will rapidly mix warm room air with cool supply air. This rapid mixing quickly equalizes the temperature differential between the two air masses, thus minimizing the chance of uncomfortable drafts.

One, 2, 3 and 4 way blows are available in a variety of sizes to ensure the right amount of air is delivered where it is needed, with comfort.

Application

- This diffuser is ideally suited to any high cooling load commercial application, such as perimeter zone office spaces, auditoriums, convention centers, meeting rooms, restaurants, health care facilities etc.

Construction

- SMX - Steel construction (except style **6**, **33** frames - extruded aluminum frame).
- AMX - Extruded aluminum construction. For styles **3P**, **4P**, **17P** steel frame and panel standard. Optional aluminum frame and panel in style **3PAL**, **4PAL**, **17PAL**.
- Steel (**SMX**) and aluminum (**AMX**) mixing vanes are fixed to the back of louvers.
- Optional opposed blade damper in steel (**3**) or aluminum (**3AL** - AMX only) construction.
- Optional rounded core corners eliminate sharp corners on diffuser face.
- Optional offset neck (steel - **SMX**, aluminum - **AMX**) fits outside duct.
- Optional **SR** / **SR3** square to round adaptor, coated steel.

Finish

White Powder Coat

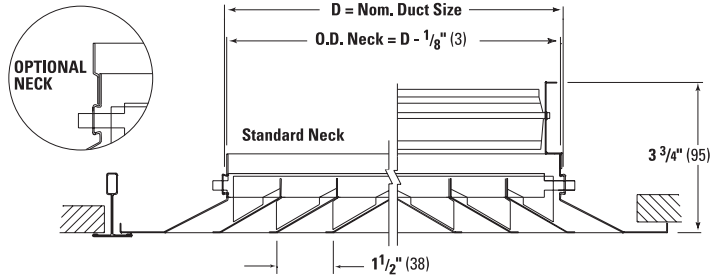
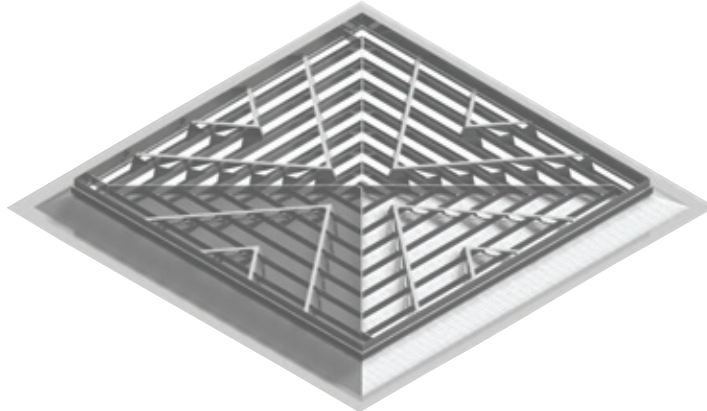
B12

Optional Damper - steel

B17

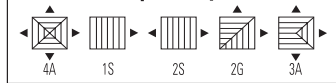
For optional and special finishes see color matrix.

Inlet View

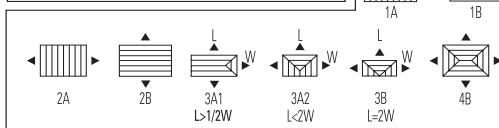


Core Styles

Available in Square Styles



Available in Rectangular Styles



Available Duct Sizes

Price SMX / AMX louvered high induction directional diffusers are available in duct sizes from 6 in. x 6 in. to 24 in. x 24 in. in 3 in. increments. Round inlet sizes are available

by utilizing the square to round neck adaptor type SR and SR3 (see page C184). Diffuser size recommendations for T-bar Lay-in applications are listed on page C120.

✓ Product Selection Checklist

- Select Duct Size based on desired performance characteristics.
- Select Face Size based on ceiling module (Lay-in applications only).
- Select Diffuser Type by model number (SMX - Steel, AMX - Aluminum).
- Select Frame / Panel Style according to installation requirements.
- Select Core Style based on application.
- Select Opposed Blade Damper (3 - Steel, 3AL - Aluminum, AMX only), Square to Round adaptor (SR) or both (SR3 - Steel damper, 3AL - aluminum damper, AMX only).
- Select Inlet Diameter for square to round adaptor.
- Select Rounded Core Corners (RCC), Offset Neck (ON) or oth (RCCON).
- Select Finish.

Example: 12 in. x 12 in. / SMX / 1 / 4A / B12

All Metric dimensions () are soft conversion.

Imperial dimensions are converted to metric and rounded to the nearest millimeter.

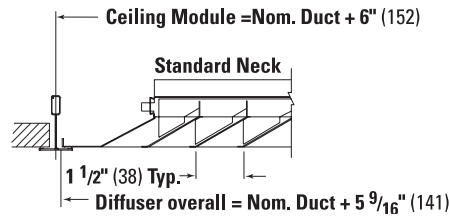
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Louvered High Induction Directional Diffusers SMX / AMX Series

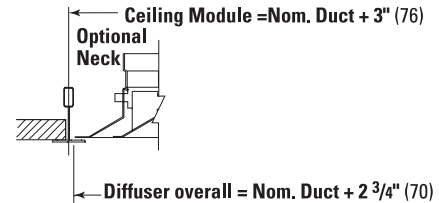


Frame / Panel Selection

Type 36
T-bar Lay-in

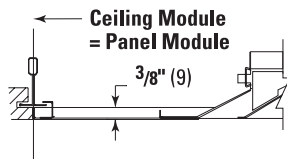


Type 33
T-bar

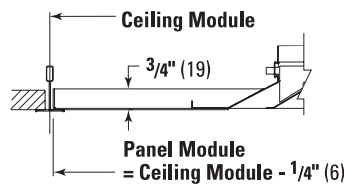


* Note: Available in square 4A core only.

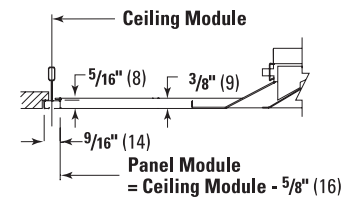
Type 4P Steel Frame and Panel
Type 4PA Aluminum Frame and Panel (AMX only)



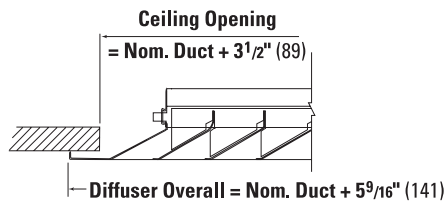
Type 3P Steel Frame and Panel
Type 3PA Aluminum Frame and Panel (AMX only)



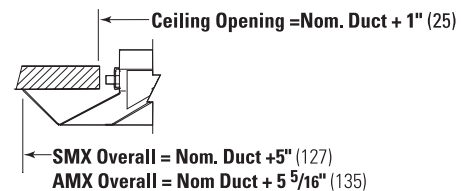
Type 17P Steel Frame and Panel
Type 17PA Aluminum Frame and Panel (AMX only)



Type 1
Surface Mount



Type 6
Surface Mount - Bevelled



Recommended Diffuser Sizes for T-bar Lay-in Applications

Imperial (in.)

Metric [mm]

| T-bar Lay-in ceiling module size: | Diffuser Size: | T-bar Lay-in ceiling module size: | Diffuser Size: |
|-----------------------------------|--|-----------------------------------|--|
| 12 x 12 | 6 x 6 - Style 36, 9 x 9 - Style 33 | 305 x 305 | 152 x 152 - Style 36, 229 x 229 - Style 33 |
| 12 x 24 | 6 x 18 - Style 36 | 305 x 610 | 152 x 457 - Style 36 |
| 24 x 24 | 18 x 18 - Style 36, 21 x 21 - Style 33 | 610 x 610 | 457 x 457 - Style 36, 533 x 533 - Style 33 |
| 30 x 30 | 24 x 24 - Style 36 | 762 x 762 | 610 x 610 - Style 36 |

When ceiling module exceeds neck size by more than 6 in. [152] a Lay-in panel is provided.

Options:

Rounded Core Corners - A radius is provided on diffuser core corners to eliminate sharp edges on the diffuser face.

Suitable in applications where cleanability and wipe down of the diffuser face is important. This reduces the risk of cleaning materials catching and tearing on corners.

Offset Neck - This optional diffuser neck opening is sized to fit nominal duct + 1/16 in. instead of the standard neck opening, nominal - 1/8 in.. This can reduce the risk of excessive air leakage by fastening the duct inside the diffuser neck.

Notes:

Cores only available in increments of 3 in. [76] in both directions.

For all styles: minimum nominal duct size 6 x 6 [152 x 152], maximum nominal duct size 24 x 24 [610 x 610].

Neck overall sizes:

Standard: Nominal Duct - 1/8 [2]

Optional: Nominal Duct + 1/16 [1]

Fire-Rated Louvered High Induction Directional Diffusers SMX-FR Series



Product Information

Three Hour Rating - Lay-in

Price SMX-FR Series of louvered high induction directional diffusers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

The **SMX-FR Series** of louvered high induction directional diffusers are specifically designed to solve difficult high cooling load problems in places such as perimeter zone office spaces, auditoriums, convention centers, meeting rooms, restaurants, health care facilities, etc.

Internally mounted discharge vanes are engineered to create a high rate of induction that will rapidly mix warm room air with the cool, conditioned supply air. This rapid mixing (induction) quickly equalizes the temperature differential between the two air masses, thus minimizing the chances of uncomfortable drafts when dealing with large air volumes.

Features

- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165 °F [74 °C] fusible link, optional 212 °F [100 °C] fusible link.
- One, 2, 3 and 4 way blows available in a variety of sizes.
- Optional adjustable volume controller (Allen key adjustable).
- Optional rounded core corners eliminate sharp corners on diffuser face.
- Optional T-bar Lay-in Panel 24" x 24" (610mm x 610mm) only.

Construction

- Steel construction.
- Steel mixing vanes fixed to the back of louvers.

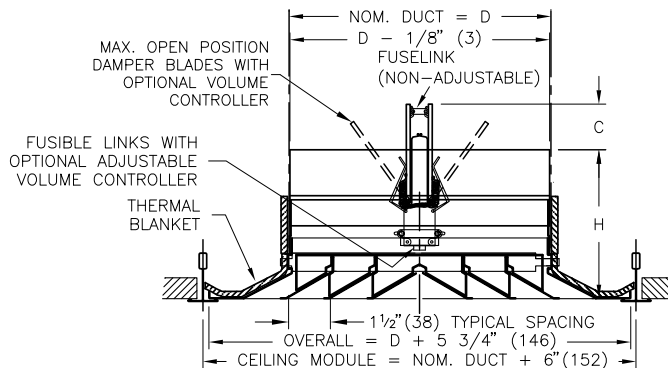
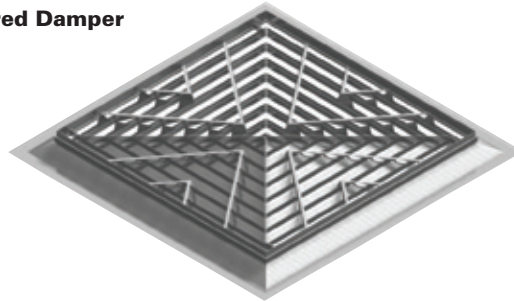
Finish

White Powder Coat

B12

For optional and special finishes see color matrix.

Inlet View Without Required Damper



Dimensional Data - Imperial (in.)

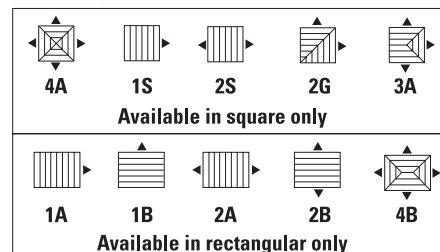
| Ceiling Module Size | Square Duct Size | Round Duct Size * |
|---------------------|------------------|----------------------|
| 12" x 12" | 6" x 6" | 6" |
| 24" x 12" | 18" x 6" | 6" |
| 24" x 24" | 18" x 18" | 6, 8, 10, 12, 14, 15 |

Dimensional Data - Metric (mm)

| Ceiling Module Size | Square Duct Size | Round Duct Size * |
|---------------------|------------------|------------------------------|
| 305 x 305 | 152 x 152 | 152 |
| 610 x 305 | 457 x 152 | 152 |
| 610 x 610 | 457 x 457 | 152, 203, 254, 305, 357, 381 |

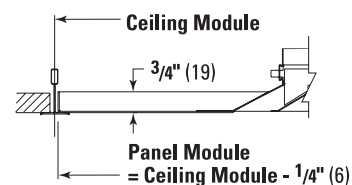
Square Inlets H = 4"
 Round Inlets H = 6 1/2"
 Square Optional Volume Controller H = 4 3/4"
 Round Optional Volume Controller H = 6 1/2"
 * Adapter required and is part of the Fire-Rated Assembly.
 * Panel option diffuser inlet sizes 6 x 6 [152 x 152], 9 x 9 [229 x 229], 12 x 12 [305 x 305], 15 x 15 [381 x 381] available.

Core Styles



Type 3P

Lay-in Inverted T-bar 1" [25]



✓ Product Selection Checklist

- 1) Select Duct Size.
- 2) Select Face Size based on ceiling module.
- 3) Select Diffuser Style by model number.
- 4) Select Panel Option according to installation requirements.
- 5) Select Core Style based on application.
- 6) Select Inlet Diameter for square to round adaptor.
- 7) Select Rounded Core Corners (RCC).
- 8) Select Finish.

Example: 6" x 6" / SMX-FR / 4A / B12

Louvered High Induction Directional Diffusers SMX / AMX Series









Performance Data - Imperial Units - Square Neck

| Neck Velocity Velocity Pressure Total Pressure | | 300 0.006 0.038 | | 400 0.01 0.068 | | 500 0.016 0.106 | | 600 0.022 0.153 | | 700 0.031 0.208 | | 800 0.040 0.272 | | 900 0.050 0.344 | |
|--|-----------|-----------------------|---------|----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|
| Duct Size 6 in. x 6 in. | Total cfm | 75 | | 100 | | 125 | | 150 | | 175 | | 200 | | 225 | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| Duct Area 0.25 ft ² | cfm/Side | 19 | | 25 | | 31 | | 38 | | 44 | | 50 | | 56 | |
| | NC | - | | - | | - | | 20 | | 25 | | 30 | | 33 | |
| | Throw,ft | 3-4-8 | | 3-5-10 | | 4-6-13 | | 5-8-14 | | 6-9-15 | | 7-10-16 | | 8-11-17 | |
| | 3A | cfm/Side | 19 | 28 | 25 | 38 | 31 | 47 | 38 | 56 | 44 | 66 | 50 | 75 | 56 |
| 3A | NC | - | | - | | - | | 20 | | 25 | | 30 | | 33 | |
| 3A | Throw,ft | 3-4-8 | 3-5-9 | 3-5-10 | 4-6-12 | 4-6-13 | 5-8-14 | 5-8-14 | 6-9-16 | 6-9-15 | 7-11-17 | 7-10-16 | 8-12-18 | 8-11-17 | 9-14-19 |
| 2S | cfm/Side | 38 | | 50 | | 63 | | 75 | | 88 | | 100 | | 113 | |
| | NC | - | | - | | 20 | | 26 | | 30 | | 35 | | 38 | |
| | Throw,ft | 4-5-11 | | 5-7-14 | | 6-9-16 | | 7-11-17 | | 8-13-19 | | 10-14-20 | | 11-15-21 | |
| | 2G | cfm/Side | 75 | | 100 | | 125 | | 150 | | 175 | | 200 | | 225 |
| 2G | NC | - | | - | | 21 | | 27 | | 32 | | 36 | | 40 | |
| 2G | Throw,ft | 5-8-15 | | 7-10-17 | | 8-13-19 | | 10-15-21 | | 12-16-23 | | 14-17-24 | | 15-18-26 | |
| Duct Size 9 in. x 9 in. | Total cfm | 169 | | 225 | | 281 | | 338 | | 394 | | 450 | | 506 | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| Duct Area 0.56 ft ² | cfm/Side | 42 | | 56 | | 70 | | 84 | | 98 | | 113 | | 127 | |
| | NC | - | | - | | 21 | | 27 | | 32 | | 37 | | 41 | |
| | Throw,ft | 4-6-11 | | 5-8-15 | | 6-10-16 | | 8-11-18 | | 9-13-19 | | 10-15-21 | | 11-15-22 | |
| | 3A | cfm/Side | 42 | 63 | 56 | 84 | 70 | 105 | 84 | 127 | 98 | 148 | 113 | 169 | 127 |
| 3A | NC | - | | - | | 21 | | 27 | | 32 | | 37 | | 41 | |
| 3A | Throw,ft | 4-6-11 | 5-7-14 | 5-8-15 | 6-9-16 | 6-10-16 | 8-12-18 | 8-11-18 | 9-14-20 | 9-13-19 | 11-15-22 | 10-15-21 | 12-16-23 | 11-15-22 | 14-17-25 |
| 2S | cfm/Side | 84 | | 113 | | 141 | | 169 | | 197 | | 225 | | 253 | |
| | NC | - | | 19 | | 26 | | 32 | | 37 | | 41 | | 45 | |
| | Throw,ft | 5-8-15 | | 7-11-18 | | 9-13-20 | | 11-15-22 | | 13-17-24 | | 14-18-25 | | 15-19-27 | |
| | 2G | cfm/Side | 169 | | 225 | | 281 | | 338 | | 394 | | 450 | | 506 |
| 2G | NC | - | | 20 | | 27 | | 33 | | 38 | | 42 | | 45 | |
| 2G | Throw,ft | 8-11-19 | | 10-15-22 | | 13-17-25 | | 15-19-27 | | 17-21-29 | | 18-22-31 | | 19-23-33 | |
| Duct Size 12 in. x 12 in. | Total cfm | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| Duct Area 1.00 ft ² | cfm/Side | 75 | | 100 | | 125 | | 150 | | 175 | | 200 | | 225 | |
| | NC | - | | 19 | | 26 | | 32 | | 37 | | 42 | | 46 | |
| | Throw,ft | 5-8-15 | | 7-10-17 | | 8-13-19 | | 10-15-21 | | 12-16-23 | | 14-17-24 | | 15-18-26 | |
| | 3A | cfm/Side | 75 | 113 | 100 | 150 | 125 | 188 | 150 | 225 | 175 | 263 | 200 | 300 | 225 |
| 3A | NC | - | | 19 | | 26 | | 32 | | 37 | | 42 | | 46 | |
| 3A | Throw,ft | 5-8-15 | 6-9-17 | 7-10-17 | 8-12-19 | 8-13-19 | 10-15-22 | 10-15-21 | 12-17-24 | 12-16-23 | 14-18-26 | 14-17-24 | 16-19-28 | 15-18-26 | 17-21-29 |
| 2S | cfm/Side | 150 | | 200 | | 250 | | 300 | | 350 | | 400 | | 450 | |
| | NC | - | | 23 | | 30 | | 36 | | 41 | | 45 | | 49 | |
| | Throw,ft | 7-11-18 | | 10-14-21 | | 12-17-24 | | 14-18-26 | | 16-20-28 | | 17-21-30 | | 18-23-32 | |
| | 2G | cfm/Side | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 |
| 2G | NC | 15 | | 24 | | 31 | | 36 | | 41 | | 46 | | 49 | |
| 2G | Throw,ft | 10-15-23 | | 14-18-26 | | 17-21-29 | | 18-23-32 | | 20-24-35 | | 21-26-37 | | 23-28-39 | |
| Duct Size 15 in. x 15 in. | Total cfm | 469 | | 625 | | 781 | | 938 | | 1094 | | 1250 | | 1406 | |
| | | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| Duct Area 1.56 ft ² | cfm/Side | 117 | | 156 | | 195 | | 234 | | 273 | | 313 | | 352 | |
| | NC | - | | 23 | | 30 | | 36 | | 41 | | 46 | | 50 | |
| | Throw,ft | 6-10-17 | | 8-13-20 | | 11-16-22 | | 13-17-24 | | 15-18-26 | | 16-20-28 | | 17-21-30 | |
| | 3A | cfm/Side | 117 | 176 | 156 | 234 | 195 | 293 | 234 | 352 | 273 | 410 | 313 | 469 | 352 |
| 3A | NC | - | | 23 | | 30 | | 36 | | 41 | | 46 | | 50 | |
| 3A | Throw,ft | 6-10-17 | 8-12-19 | 8-13-20 | 10-16-22 | 11-16-22 | 13-18-25 | 13-17-24 | 16-19-27 | 15-18-26 | 17-21-29 | 16-20-28 | 18-22-31 | 17-21-30 | 19-24-33 |
| 2S | cfm/Side | 234 | | 313 | | 391 | | 469 | | 547 | | 625 | | 703 | |
| | NC | 18 | | 27 | | 34 | | 39 | | 44 | | 49 | | 52 | |
| | Throw,ft | 9-13-21 | | 12-17-24 | | 15-19-27 | | 17-21-30 | | 19-23-32 | | 20-24-34 | | 21-26-36 | |
| | 2G | cfm/Side | 469 | | 625 | | 781 | | 938 | | 1094 | | 1250 | | 1406 |
| 2G | NC | 18 | | 27 | | 34 | | 39 | | 44 | | 49 | | 52 | |
| 2G | Throw,ft | 13-18-26 | | 17-21-30 | | 19-24-33 | | 21-26-37 | | 23-28-40 | | 24-30-42 | | 26-32-45 | |

Louvered High Induction Directional Diffusers SMX / AMX Series



Performance Data - Imperial Units - Square Neck

| Neck Velocity | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | |
|------------------------------|---|-------|-----|-------|-----|-------|-----|-------|-----|-------|------|-------|------|-------|------|
| Velocity Pressure | | 0.006 | | 0.01 | | 0.016 | | 0.022 | | 0.031 | | 0.040 | | 0.050 | |
| Total Pressure | | 0.038 | | 0.068 | | 0.106 | | 0.153 | | 0.208 | | 0.272 | | 0.344 | |
| Duct Size 18 in. x 18 in. | Total cfm | 675 | | 900 | | 1125 | | 1350 | | 1575 | | 1800 | | 2025 | |
| |  cfm/Side NC Throw,ft | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| | | 169 | | 225 | | 281 | | 338 | | 394 | | 450 | | 506 | |
| | | 17 | | 26 | | 34 | | 40 | | 45 | | 49 | | 53 | |
| Duct Area 2.25 ft² | Total cfm | 675 | | 900 | | 1125 | | 1350 | | 1575 | | 1800 | | 2025 | |
| |  cfm/Side NC Throw,ft | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| | | 169 | 253 | 225 | 338 | 281 | 422 | 338 | 506 | 394 | 591 | 450 | 675 | 506 | 759 |
| | | 17 | | 26 | | 34 | | 40 | | 45 | | 49 | | 53 | |
| Duct Size 21 in. x 21 in. | Total cfm | 919 | | 1225 | | 1532 | | 1838 | | 2144 | | 2450 | | 2757 | |
| |  cfm/Side NC Throw,ft | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| | | 230 | | 306 | | 383 | | 459 | | 536 | | 613 | | 689 | |
| | | 19 | | 29 | | 36 | | 42 | | 48 | | 52 | | 56 | |
| Duct Area 3.06 ft² | Total cfm | 919 | | 1225 | | 1532 | | 1838 | | 2144 | | 2450 | | 2757 | |
| |  cfm/Side NC Throw,ft | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| | | 230 | 345 | 306 | 459 | 383 | 574 | 459 | 689 | 536 | 804 | 613 | 919 | 689 | 1034 |
| | | 19 | | 29 | | 36 | | 42 | | 48 | | 52 | | 56 | |
| Duct Size 24 in. x 24 in. | Total cfm | 1200 | | 1600 | | 2000 | | 2400 | | 2800 | | 3200 | | 3600 | |
| |  cfm/Side NC Throw,ft | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | |
| | | 22 | | 31 | | 39 | | 45 | | 50 | | 54 | | 58 | |
| Duct Area 4.00 ft² | Total cfm | 1200 | | 1600 | | 2000 | | 2400 | | 2800 | | 3200 | | 3600 | |
| |  cfm/Side NC Throw,ft | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| | | 300 | 450 | 400 | 600 | 500 | 750 | 600 | 900 | 700 | 1050 | 800 | 1200 | 900 | 1350 |
| | | 22 | | 31 | | 39 | | 45 | | 50 | | 54 | | 58 | |













Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks "--" indicate an NC level below 15.
- Additional performance data for other patterns and rectangular sizes available upon request.
- Does not include effects of ceiling radiation damper (SMX-FR)

Louvered High Induction Directional Diffusers SMX / AMX Series



Performance Data - Imperial Units - Rectangular Neck

| Neck Velocity | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | |
|-----------------------------------|--|---------|--------|----------|--------|----------|---------|----------|---------|----------|---------|----------|----------|----------|----------|
| Velocity Pressure | | 0.006 | | 0.01 | | 0.016 | | 0.022 | | 0.031 | | 0.040 | | 0.050 | |
| Total Pressure | | 0.038 | | 0.068 | | 0.106 | | 0.153 | | 0.208 | | 0.272 | | 0.344 | |
| Duct Size 9 in. x 6 in. | Total cfm | 113 | | 150 | | 188 | | 225 | | 263 | | 300 | | 338 | |
| |  cfm/Side | 37 | 18 | 50 | 24 | 62 | 30 | 74 | 36 | 87 | 42 | 99 | 48 | 111 | 54 |
| | NC | - | - | - | - | 18 | 24 | 24 | 29 | 29 | 33 | 33 | 37 | 37 | 37 |
| | Throw,ft | 4-5-11 | 2-4-7 | 5-7-14 | 3-5-10 | 6-9-16 | 4-6-12 | 7-11-17 | 5-7-14 | 8-12-18 | 6-9-15 | 10-14-20 | 7-10-16 | 11-15-21 | 7-11-17 |
| |  cfm/Side | 35 | 43 | 47 | 57 | 58 | 71 | 70 | 86 | 81 | 100 | 93 | 114 | 105 | 128 |
| | NC | - | - | - | - | 18 | 24 | 24 | 29 | 29 | 33 | 33 | 37 | 37 | 37 |
| | Throw,ft | 3-5-10 | 4-6-11 | 5-7-14 | 5-8-15 | 6-9-15 | 6-10-16 | 7-10-17 | 8-11-18 | 8-12-18 | 9-13-19 | 9-14-19 | 10-15-21 | 10-15-21 | 11-15-22 |
| Duct Area 0.38 ft ² |  cfm/Side | 56 | - | 75 | - | 94 | - | 113 | - | 131 | - | 150 | - | 169 | - |
| | NC | - | - | 16 | - | 23 | - | 29 | - | 34 | - | 38 | - | 41 | - |
| | Throw,ft | 4-7-13 | - | 6-9-16 | - | 7-11-18 | - | 9-13-19 | - | 10-15-21 | - | 12-16-22 | - | 13-17-24 | - |
| |  cfm/Side | 113 | - | 150 | - | 188 | - | 225 | - | 263 | - | 300 | - | 338 | - |
| | NC | - | - | 17 | - | 24 | - | 30 | - | 35 | - | 39 | - | 43 | - |
| | Throw,ft | 6-9-17 | - | 8-12-19 | - | 10-15-22 | - | 12-17-24 | - | 14-18-26 | - | 16-19-28 | - | 17-21-29 | - |
| Duct Size 12 in. x 6 in. | Total cfm | 150 | | 200 | | 250 | | 300 | | 350 | | 400 | | 450 | |
| |  cfm/Side | 56 | 18 | 74 | 24 | 93 | 30 | 111 | 36 | 130 | 42 | 148 | 48 | 167 | 54 |
| | NC | - | - | - | - | 20 | 30 | 26 | 36 | 31 | 42 | 36 | 48 | 40 | 54 |
| | Throw,ft | 4-7-13 | 2-4-7 | 6-9-16 | 3-5-10 | 7-11-18 | 4-6-12 | 9-13-19 | 5-7-14 | 10-15-21 | 6-9-15 | 12-16-22 | 7-10-16 | 13-17-24 | 7-11-17 |
| |  cfm/Side | 75 | 38 | 100 | 50 | 125 | 63 | 150 | 75 | 175 | 88 | 200 | 100 | 225 | 113 |
| | NC | - | - | - | - | 20 | 30 | 26 | 36 | 31 | 42 | 36 | 48 | 40 | 54 |
| | Throw,ft | 5-8-15 | 4-5-11 | 7-10-17 | 5-7-14 | 8-13-19 | 6-9-16 | 10-15-21 | 7-11-17 | 12-16-23 | 8-13-19 | 14-17-24 | 10-14-20 | 15-18-26 | 11-15-21 |
| Duct Area 0.50 ft ² |  cfm/Side | 75 | - | 100 | - | 125 | - | 150 | - | 175 | - | 200 | - | 225 | - |
| | NC | - | - | 18 | - | 25 | - | 31 | - | 36 | - | 40 | - | 44 | - |
| | Throw,ft | 5-8-15 | - | 7-10-17 | - | 8-13-19 | - | 10-15-21 | - | 12-16-23 | - | 14-17-24 | - | 15-18-26 | - |
| |  cfm/Side | 150 | - | 200 | - | 250 | - | 300 | - | 350 | - | 400 | - | 450 | - |
| | NC | - | - | 19 | - | 26 | - | 32 | - | 37 | - | 41 | - | 45 | - |
| | Throw,ft | 7-11-18 | - | 10-14-21 | - | 12-17-24 | - | 14-18-26 | - | 16-20-28 | - | 17-21-30 | - | 18-23-32 | - |
| Duct Size 15 in. x 6 in. | Total cfm | 188 | | 250 | | 313 | | 375 | | 438 | | 500 | | 563 | |
| |  cfm/Side | 75 | 19 | 100 | 25 | 125 | 31 | 150 | 38 | 175 | 44 | 200 | 50 | 225 | 56 |
| | NC | - | - | 15 | 25 | 22 | 31 | 28 | 38 | 33 | 44 | 38 | 50 | 42 | 56 |
| | Throw,ft | 5-8-15 | 3-4-8 | 7-10-17 | 3-5-10 | 8-13-19 | 4-6-13 | 10-15-21 | 5-8-14 | 12-16-23 | 6-9-15 | 14-17-24 | 7-10-16 | 15-18-26 | 8-11-17 |
| |  cfm/Side | 84 | 19 | 113 | 25 | 141 | 31 | 169 | 38 | 197 | 44 | 225 | 50 | 253 | 56 |
| | NC | - | - | 15 | 25 | 22 | 31 | 28 | 38 | 33 | 44 | 38 | 50 | 42 | 56 |
| | Throw,ft | 5-8-15 | 3-4-8 | 7-11-18 | 3-5-10 | 9-13-20 | 4-6-13 | 11-15-22 | 5-8-14 | 13-17-24 | 6-9-15 | 14-18-25 | 7-10-16 | 15-19-27 | 8-11-17 |
| Duct Area 0.63 ft ² |  cfm/Side | 94 | - | 125 | - | 156 | - | 188 | - | 219 | - | 250 | - | 281 | - |
| | NC | - | - | 20 | - | 27 | - | 32 | - | 37 | - | 42 | - | 45 | - |
| | Throw,ft | 6-9-16 | - | 8-11-18 | - | 9-14-21 | - | 11-16-23 | - | 13-17-24 | - | 15-18-26 | - | 16-20-28 | - |
| |  cfm/Side | 188 | - | 250 | - | 313 | - | 375 | - | 438 | - | 500 | - | 563 | - |
| | NC | - | - | 21 | - | 28 | - | 33 | - | 38 | - | 42 | - | 46 | - |
| | Throw,ft | 8-12-20 | - | 11-16-23 | - | 13-18-25 | - | 16-20-28 | - | 17-21-30 | - | 19-23-32 | - | 20-24-34 | - |








Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks "-" indicate an NC level below 15.
- Additional performance data for other patterns and rectangular sizes available upon request.
- Does not include effects of ceiling radiation damper (SMX-FR)

Louvered High Induction Directional Diffusers SMX / AMX Series



Performance Data - Imperial Units - Rectangular Neck

| Neck Velocity | | 300 | | 400 | | 500 | | 600 | | 700 | | 800 | | 900 | |
|--|---|--------|----------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Velocity Pressure | | 0.006 | | 0.01 | | 0.016 | | 0.022 | | 0.031 | | 0.040 | | 0.050 | |
| Total Pressure | | 0.038 | | 0.068 | | 0.106 | | 0.153 | | 0.208 | | 0.272 | | 0.344 | |
| Duct Size 18 in. x 6 in. | Total cfm | 225 | | 300 | | 375 | | 450 | | 525 | | 600 | | 675 | |
| |  cfm/Side | 95 | 18 | 126 | 24 | 158 | 30 | 189 | 36 | 221 | 42 | 252 | 48 | 284 | 54 |
| | NC | - | - | 16 | - | 24 | - | 30 | - | 35 | - | 39 | - | 43 | - |
| | Throw,ft | 6-9-16 | 2-4-7 | 8-11-18 | 3-5-10 | 9-14-21 | 4-6-12 | 11-16-23 | 5-7-14 | 13-17-24 | 6-9-15 | 15-18-26 | 7-10-16 | 16-20-28 | 7-11-17 |
| Duct Area 0.75 ft ² |  cfm/Side | 104 | 18 | 138 | 24 | 173 | 30 | 207 | 36 | 242 | 42 | 276 | 48 | 311 | 54 |
| | NC | - | - | 16 | - | 24 | - | 30 | - | 35 | - | 39 | - | 43 | - |
| | Throw,ft | 6-9-16 | 2-4-7 | 8-12-19 | 3-5-10 | 10-15-21 | 4-6-12 | 12-16-23 | 5-7-14 | 14-18-25 | 6-9-15 | 16-19-27 | 7-10-16 | 16-20-28 | 7-11-17 |
| |  cfm/Side | 113 | - | 150 | - | 188 | - | 225 | - | 263 | - | 300 | - | 338 | - |
| Duct Size 12 in. x 9 in. | Total cfm | 225 | | 300 | | 375 | | 450 | | 525 | | 600 | | 675 | |
| |  cfm/Side | 70 | 43 | 93 | 57 | 116 | 71 | 140 | 86 | 163 | 100 | 186 | 114 | 209 | 128 |
| | NC | - | - | 16 | - | 24 | - | 30 | - | 35 | - | 39 | - | 43 | - |
| | Throw,ft | 5-7-15 | 4-6-11 | 7-10-17 | 5-8-15 | 8-12-19 | 6-10-16 | 10-15-21 | 8-11-18 | 11-16-22 | 9-13-19 | 13-17-24 | 10-15-21 | 15-18-25 | 11-15-22 |
| Duct Area 0.75 ft ² |  cfm/Side | 74 | 74 | 99 | 99 | 124 | 124 | 149 | 149 | 173 | 173 | 198 | 198 | 223 | 223 |
| | NC | - | - | 16 | - | 24 | - | 30 | - | 35 | - | 39 | - | 43 | - |
| | Throw,ft | 5-8-15 | 5-8-15 | 7-10-17 | 7-10-17 | 8-13-19 | 8-13-19 | 10-15-21 | 10-15-21 | 12-16-23 | 12-16-23 | 13-17-24 | 13-17-24 | 15-18-26 | 15-18-26 |
| |  cfm/Side | 113 | - | 150 | - | 188 | - | 225 | - | 263 | - | 300 | - | 338 | - |
| Duct Area 0.75 ft ² | NC | - | - | 21 | - | 28 | - | 34 | - | 39 | - | 43 | - | 47 | - |
| | Throw,ft | 6-9-17 | - | 8-12-19 | - | 10-15-22 | - | 12-17-24 | - | 14-18-26 | - | 16-19-28 | - | 17-21-29 | - |
| |  cfm/Side | 225 | - | 300 | - | 375 | - | 450 | - | 525 | - | 600 | - | 675 | - |
| | NC | - | - | 22 | - | 29 | - | 35 | - | 39 | - | 44 | - | 47 | - |
| Throw,ft | 9-13-21 | - | 12-17-24 | - | 15-19-27 | - | 17-21-29 | - | 18-22-32 | - | 20-24-34 | - | 21-25-36 | - | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks "--" indicate an NC level below 15.
8. Additional performance data for other patterns and rectangular sizes available upon request.
9. Does not include effects of ceiling radiation damper (SMX-FR)

Louvered High Induction Directional Diffusers SMX / AMX Series



Performance Data - Metric Units - Square Neck

| Neck Velocity (m/s) | | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | |
|-----------------------------------|-----------|-------------------------|--|-------------------------|--|-------------------------|--|-------------------------|--|-------------------------|--|-------------------------|--|-------------------------|--|
| Velocity Pressure (Pa) | | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | |
| Total Pressure (Pa) | | 9 | | 17 | | 26 | | 38 | | 52 | | 68 | | 86 | |
| Duct Size | | 35 | | 47 | | 59 | | 71 | | 83 | | 94 | | 106 | |
| 150 x 150 | | A B | | A B | | A B | | A B | | A B | | A B | | A B | |
| Duct Area 0.023 m ² | L/s/side | 9 | | 12 | | 15 | | 18 | | 21 | | 24 | | 26 | |
| | NC | -- | | -- | | -- | | 20 | | 25 | | 30 | | 33 | |
| | Throw (m) | 0.8-1.2-2.3 | | 1.0-1.5-3.1 | | 1.3-1.9-3.8 | | 1.6-2.3-4.3 | | 1.8-2.7-4.6 | | 2.1-3.1-4.9 | | 2.3-3.5-5.2 | |
| | L/s/side | 9 13 | | 12 17 | | 15 22 | | 18 26 | | 21 31 | | 24 35 | | 26 40 | |
| | NC | -- | | -- | | -- | | 20 | | 25 | | 30 | | 33 | |
| | Throw (m) | 0.8-1.2-2.3 1.6-2.4-3.4 | | 2.0-2.5-3.5 2.3-2.8-3.9 | | 2.2-2.7-3.9 2.5-3.1-4.4 | | 2.5-3.0-4.3 2.8-3.4-4.8 | | 2.7-3.2-4.6 3.0-3.7-5.2 | | 2.8-3.5-4.9 3.2-3.9-5.5 | | 3.0-3.7-5.2 3.4-4.1-5.9 | |
| Duct Size 230 x 230 | L/s/side | 18 | | 24 | | 30 | | 35 | | 42 | | 47 | | 53 | |
| | NC | -- | | -- | | 21 | | 27 | | 32 | | 36 | | 40 | |
| | Throw (m) | 1.1-1.7-3.3 | | 1.9-2.9-4.3 | | 2.8-3.4-4.8 | | 3.0-3.7-5.2 | | 3.3-4.0-5.7 | | 3.5-4.3-6.0 | | 3.7-4.5-6.4 | |
| | L/s/side | 35 | | 47 | | 59 | | 71 | | 83 | | 94 | | 106 | |
| | NC | -- | | -- | | 20 | | 26 | | 30 | | 35 | | 38 | |
| | Throw (m) | 1.5-2.3-4.6 | | 9-12-17 | | 11-14-19 | | 12-15-21 | | 13-16-23 | | 14-17-24 | | 15-18-26 | |
| Duct Area 0.052 m ² | L/s/side | 80 | | 106 | | 133 | | 159 | | 186 | | 212 | | 239 | |
| | NC | -- | | -- | | 21 | | 27 | | 32 | | 37 | | 41 | |
| | Throw (m) | 1.2-1.7-3.5 | | 1.5-2.3-4.4 | | 1.9-2.9-4.9 | | 2.3-3.5-5.4 | | 2.7-4.0-5.8 | | 3.1-4.4-6.3 | | 3.5-4.7-6.6 | |
| | L/s/side | 20 30 | | 26 40 | | 33 50 | | 40 60 | | 46 70 | | 53 80 | | 60 90 | |
| | NC | -- | | -- | | 21 | | 27 | | 32 | | 37 | | 41 | |
| | Throw (m) | 1.2-1.7-3.5 2.4-3.1-4.3 | | 2.5-3.1-4.4 2.9-3.5-5.0 | | 2.9-3.5-4.9 3.2-3.9-5.6 | | 3.1-3.8-5.4 3.5-4.3-6.1 | | 3.4-4.1-5.8 3.8-4.7-6.6 | | 3.6-4.4-6.3 4.1-5.0-7.1 | | 3.8-4.7-6.6 4.3-5.3-7.5 | |
| Duct Size 305 x 305 | L/s/side | 40 | | 53 | | 67 | | 80 | | 93 | | 106 | | 119 | |
| | NC | -- | | 20 | | 27 | | 33 | | 38 | | 42 | | 45 | |
| | Throw (m) | 1.6-2.5-4.7 | | 2.9-3.9-5.5 | | 3.5-4.3-6.1 | | 3.9-4.7-6.7 | | 4.2-5.1-7.2 | | 4.4-5.4-7.7 | | 4.7-5.8-8.2 | |
| | L/s/side | 80 | | 106 | | 133 | | 159 | | 186 | | 212 | | 239 | |
| | NC | -- | | 19 | | 26 | | 32 | | 37 | | 41 | | 45 | |
| | Throw (m) | 2.3-3.5-5.8 | | 13-16-22 | | 14-17-25 | | 16-19-27 | | 17-21-29 | | 18-22-31 | | 19-23-33 | |
| Duct Area 0.093 m ² | L/s/side | 142 | | 189 | | 236 | | 283 | | 330 | | 378 | | 425 | |
| | NC | 35 | | 47 | | 59 | | 71 | | 83 | | 94 | | 106 | |
| | Throw (m) | 1.5-2.3-4.6 | | 2.1-3.1-5.3 | | 2.6-3.9-5.9 | | 3.1-4.6-6.4 | | 3.6-4.9-7.0 | | 4.1-5.3-7.4 | | 4.6-5.6-7.9 | |
| | L/s/side | 35 53 | | 47 71 | | 59 88 | | 71 106 | | 83 124 | | 94 142 | | 106 159 | |
| | NC | -- | | 19 | | 26 | | 32 | | 37 | | 42 | | 46 | |
| | Throw (m) | 1.5-2.3-4.6 3.0-3.6-5.1 | | 3.0-3.7-5.3 3.4-4.2-5.9 | | 3.4-4.2-5.9 3.8-4.7-6.6 | | 3.7-4.6-6.4 4.2-5.1-7.3 | | 4.0-4.9-7.0 4.5-5.5-7.8 | | 4.3-5.3-7.4 4.8-5.9-8.4 | | 4.6-5.6-7.9 5.1-6.3-8.9 | |
| Duct Size 305 x 305 | L/s/side | 71 | | 94 | | 118 | | 142 | | 165 | | 189 | | 212 | |
| | NC | -- | | 24 | | 31 | | 36 | | 41 | | 46 | | 49 | |
| | Throw (m) | 2.2-3.3-5.6 | | 3.7-4.6-6.5 | | 4.2-5.1-7.2 | | 4.6-5.6-7.9 | | 4.9-6.1-8.6 | | 5.3-6.5-9.2 | | 5.6-6.9-9.7 | |
| | L/s/side | 142 | | 189 | | 236 | | 283 | | 330 | | 378 | | 425 | |
| | NC | -- | | 23 | | 30 | | 36 | | 41 | | 45 | | 49 | |
| | Throw (m) | 3.1-4.6-6.9 | | 15-18-26 | | 17-21-29 | | 18-23-32 | | 20-24-35 | | 21-26-37 | | 23-28-39 | |

For Performance Notes, see page C140.

CEILING DIFFUSERS

Louvered High Induction Directional Diffusers SMX / AMX Series



Performance Data - Metric Units - Square Neck

| Neck Velocity (m/s) | | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | |
|------------------------|----------|-------------|-----|-------------|------|-------------|------|-------------|------|--------------|------|--------------|------|--------------|------|-----|
| Velocity Pressure (Pa) | | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | |
| Total Pressure (Pa) | | 9 | | 17 | | 26 | | 38 | | 52 | | 68 | | 86 | | |
| Duct Size | | 380x380 | | 455x455 | | 535x535 | | 610x610 | | 710x710 | | 810x810 | | 910x910 | | |
| Total L/s | | 221 | | 295 | | 369 | | 443 | | 516 | | 590 | | 664 | | |
| Duct Area 0.145 m² | | L/s/side | 55 | 74 | 92 | 110 | 129 | 148 | 166 | 185 | 211 | 239 | 267 | 295 | 323 | |
| | | NC | -- | 23 | 30 | 36 | 41 | 46 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | |
| | | L/s/side | 55 | 83 | 74 | 110 | 92 | 138 | 110 | 166 | 129 | 194 | 148 | 221 | 166 | 249 |
| | | NC | -- | 23 | 30 | 36 | 41 | 46 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | |
| | | L/s/side | 110 | 148 | 185 | 221 | 258 | 295 | 332 | 369 | 406 | 443 | 480 | 516 | 553 | 590 |
| | | NC | 17 | 27 | 34 | 39 | 44 | 49 | 52 | 57 | 60 | 63 | 66 | 69 | 72 | 75 |
| | L/s/side | 221 | 295 | 369 | 443 | 516 | 590 | 664 | 738 | 812 | 886 | 960 | 1034 | 1108 | 1182 | |
| | NC | 18 | 27 | 34 | 39 | 44 | 49 | 52 | 57 | 60 | 63 | 66 | 69 | 72 | 75 | |
| Throw (m) | | 1.9-2.9-5.2 | | 2.6-3.9-6.0 | | 3.2-4.7-6.7 | | 3.9-5.2-7.4 | | 4.5-5.6-7.9 | | 4.9-6.0-8.5 | | 5.2-6.4-9.0 | | |
| Duct Area 0.209 m² | | L/s/side | 80 | 106 | 133 | 160 | 186 | 212 | 239 | 265 | 291 | 317 | 343 | 369 | 395 | |
| | | NC | 17 | 26 | 34 | 40 | 45 | 49 | 53 | 57 | 61 | 65 | 69 | 73 | 77 | |
| | | L/s/side | 80 | 119 | 106 | 159 | 133 | 199 | 160 | 239 | 186 | 279 | 212 | 319 | 239 | 358 |
| | | NC | 17 | 26 | 34 | 40 | 45 | 49 | 53 | 57 | 61 | 65 | 69 | 73 | 77 | |
| | | L/s/side | 160 | 212 | 266 | 319 | 372 | 425 | 478 | 531 | 584 | 637 | 690 | 743 | 796 | 849 |
| | | NC | 20 | 29 | 36 | 42 | 47 | 51 | 55 | 59 | 63 | 67 | 71 | 75 | 79 | |
| | L/s/side | 319 | 425 | 531 | 637 | 743 | 850 | 956 | 1062 | 1168 | 1274 | 1380 | 1486 | 1592 | | |
| | NC | 20 | 29 | 36 | 42 | 47 | 51 | 55 | 59 | 63 | 67 | 71 | 75 | 79 | | |
| Throw (m) | | 2.3-4.1-6.4 | | 3.1-4.6-6.7 | | 3.9-5.3-7.5 | | 4.6-5.8-8.2 | | 5.1-6.3-8.9 | | 5.5-6.7-9.5 | | 5.8-7.1-10.1 | | |
| Duct Area 0.284 m² | | L/s/side | 109 | 144 | 181 | 217 | 253 | 289 | 325 | 361 | 397 | 433 | 469 | 505 | 541 | |
| | | NC | 19 | 29 | 36 | 42 | 48 | 52 | 56 | 60 | 64 | 68 | 72 | 76 | 80 | |
| | | L/s/side | 109 | 163 | 144 | 217 | 181 | 271 | 217 | 325 | 253 | 379 | 289 | 434 | 325 | 488 |
| | | NC | 19 | 29 | 36 | 42 | 48 | 52 | 56 | 60 | 64 | 68 | 72 | 76 | 80 | |
| | | L/s/side | 217 | 289 | 362 | 434 | 506 | 578 | 650 | 722 | 794 | 866 | 938 | 1010 | 1082 | |
| | | NC | 22 | 31 | 38 | 44 | 49 | 53 | 57 | 61 | 65 | 69 | 73 | 77 | 81 | |
| | L/s/side | 434 | 578 | 722 | 867 | 1012 | 1156 | 1301 | 1446 | 1591 | 1736 | 1881 | 2026 | 2171 | | |
| | NC | 23 | 32 | 39 | 45 | 49 | 54 | 57 | 61 | 65 | 69 | 73 | 77 | 81 | | |
| Throw (m) | | 2.7-4.1-6.4 | | 3.6-5.2-7.4 | | 4.5-5.8-8.2 | | 5.2-6.4-9.0 | | 5.6-6.9-9.7 | | 6.0-7.4-10.4 | | 6.4-7.8-11.0 | | |
| Duct Area 0.372 m² | | L/s/side | 142 | 189 | 236 | 283 | 330 | 378 | 425 | 472 | 519 | 566 | 613 | 660 | 707 | |
| | | NC | 22 | 31 | 39 | 45 | 50 | 54 | 58 | 62 | 66 | 70 | 74 | 78 | 82 | |
| | | L/s/side | 142 | 212 | 189 | 283 | 236 | 354 | 283 | 425 | 330 | 496 | 378 | 566 | 425 | 637 |
| | | NC | 22 | 31 | 39 | 45 | 50 | 54 | 58 | 62 | 66 | 70 | 74 | 78 | 82 | |
| | | L/s/side | 283 | 378 | 472 | 566 | 661 | 755 | 850 | 944 | 1038 | 1132 | 1226 | 1320 | 1414 | |
| | | NC | 24 | 33 | 40 | 46 | 51 | 55 | 59 | 63 | 67 | 71 | 75 | 79 | 83 | |
| | L/s/side | 566 | 755 | 944 | 1133 | 1322 | 1510 | 1699 | 1888 | 2077 | 2266 | 2455 | 2644 | 2833 | | |
| | NC | 25 | 34 | 41 | 47 | 51 | 56 | 59 | 63 | 67 | 71 | 75 | 79 | 83 | | |
| Throw (m) | | 3.1-4.6-6.9 | | 4.1-5.6-8.0 | | 5.1-6.3-8.9 | | 5.6-6.9-9.8 | | 6.1-7.5-10.5 | | 6.5-8.0-11.3 | | 6.9-8.4-11.9 | | |

Performance Notes:

- All units are tested in accordance with ASHRAE Standard 70-2006.
- All pressures are in Pascals (Pa).
- Throw data is listed in meters to terminal velocities (VT) as listed below:
 Minimum Throw to VT 0.75 m/s
 Middle Throw to VT 0.5 m/s
 Maximum Throw to VT 0.25 m/s
- Throw data is based on supply air and room air being at isothermal conditions.
- Sound data NC values are based on a room absorption of -10dB, re 10⁻¹² watts.
- Blanks (--) indicate an NC level below 15.
- Additional performance data for other patterns and rectangular sizes available upon request.

CEILING DIFFUSERS

Louvered High Induction Directional Diffusers SMX / AMX Series



Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | |
|--|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | |
| Total Pressure (Pa) | 9 | | 17 | | 26 | | 38 | | 52 | | 68 | | 86 | | |
| Duct Size | L/s | | L/s | | L/s | | L/s | | L/s | | L/s | | L/s | | |
| 230x150 | A | B | A | B | A | B | A | B | A | B | A | B | A | B | |
| Duct Area 0.035 m ² | | L/s/side | 13 | 18 | 22 | 26 | 31 | 35 | 40 | | | | | | |
| | | NC | -- | -- | 18 | 24 | 29 | 33 | 37 | | | | | | |
| | | Throw (m) | 0.9-1.4-2.8 | 1.3-1.9-3.8 | 1.6-2.4-4.4 | 1.9-2.8-4.8 | 2.2-3.3-5.2 | 2.5-3.8-5.5 | 2.8-4.1-5.9 | | | | | | |
| | | L/s/side | 13 | 20 | 18 | 26 | 22 | 33 | 26 | 40 | 31 | 46 | 35 | 53 | 40 |
| | | NC | -- | -- | 18 | 24 | 29 | 33 | 37 | | | | | | |
| | | Throw (m) | 0.9-1.4-2.8 | 1.9-2.7-3.8 | 2.3-2.8-3.9 | 2.5-3.1-4.4 | 2.5-3.1-4.4 | 2.9-3.5-4.9 | 2.8-3.4-4.8 | 3.1-3.8-5.4 | 3.0-3.7-5.2 | 3.4-4.1-5.8 | 3.2-3.9-5.5 | 3.6-4.4-6.2 | 3.4-4.1-5.9 |
| | | L/s/side | 26 | 35 | 44 | 53 | 62 | 71 | 80 | | | | | | |
| | | NC | -- | 17 | 24 | 30 | 35 | 39 | 43 | | | | | | |
| | | Throw (m) | 1.3-2.0-4.0 | 2.4-3.4-4.8 | 3.1-3.8-5.4 | 3.4-4.2-5.9 | 3.7-4.5-6.4 | 3.9-4.8-6.8 | 4.2-5.1-7.2 | | | | | | |
| | | L/s/side | 53 | 71 | 89 | 106 | 124 | 142 | 159 | | | | | | |
| | | NC | -- | 16 | 23 | 29 | 34 | 38 | 41 | | | | | | |
| | | Throw (m) | 1.9-2.8-5.1 | 11-14-19 | 13-15-22 | 14-17-24 | 15-18-26 | 16-19-28 | 17-21-29 | | | | | | |
| Duct Size 305x150 | L/s | | 71 | | 94 | | 118 | | 142 | | 165 | | 189 | | |
| | | L/s/side | 18 | 24 | 30 | 35 | 42 | 47 | 53 | | | | | | |
| | | NC | -- | -- | 20 | 26 | 31 | 36 | 40 | | | | | | |
| | | Throw (m) | 1.1-1.7-3.3 | 1.5-2.2-4.3 | 1.8-2.7-4.8 | 2.2-3.3-5.2 | 2.6-3.8-5.7 | 2.9-4.3-6.0 | 3.3-4.5-6.4 | | | | | | |
| | | L/s/side | 18 | 26 | 24 | 35 | 30 | 44 | 35 | 53 | 42 | 62 | 47 | 71 | 53 |
| | | NC | -- | -- | 20 | 26 | 31 | 36 | 40 | | | | | | |
| | | Throw (m) | 1.1-1.7-3.3 | 2.2-2.9-4.2 | 2.5-3.0-4.3 | 2.8-3.4-4.8 | 3.1-3.8-5.4 | 3.0-3.7-5.2 | 3.4-4.2-5.9 | 3.3-4.0-5.7 | 3.7-4.5-6.4 | 3.5-4.3-6.0 | 3.9-4.8-6.8 | 3.7-4.5-6.4 | 4.2-5.1-7.2 |
| | | L/s/side | 35 | 47 | 59 | 71 | 83 | 94 | 106 | | | | | | |
| | | NC | -- | 19 | 26 | 32 | 37 | 41 | 45 | | | | | | |
| | | Throw (m) | 1.5-2.3-4.6 | 2.7-3.7-5.3 | 3.4-4.2-5.9 | 3.7-4.6-6.4 | 4.0-4.9-7.0 | 4.3-5.3-7.4 | 4.6-5.6-7.9 | | | | | | |
| | | L/s/side | 71 | 94 | 118 | 142 | 165 | 189 | 212 | | | | | | |
| | | NC | -- | 18 | 25 | 31 | 36 | 40 | 44 | | | | | | |
| Throw (m) | | 2.2-3.3-5.6 | 12-15-21 | 14-17-24 | 15-18-26 | 16-20-28 | 17-21-30 | 18-23-32 | | | | | | | |

For Performance Notes, see page C140.

CEILING DIFFUSERS

Louvered High Induction Directional Diffusers SMX / AMX Series



Performance Data - Metric Units - Rectangular Neck

| Neck Velocity (m/s) | 1.5 | | 2.0 | | 2.5 | | 3.0 | | 3.5 | | 4.0 | | 4.5 | | |
|------------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|-------------|
| Velocity Pressure (Pa) | 1 | | 2 | | 4 | | 6 | | 8 | | 10 | | 13 | | |
| Total Pressure (Pa) | 9 | | 17 | | 26 | | 38 | | 52 | | 68 | | 86 | | |
| Duct Size | L/s | | L/s | | L/s | | L/s | | L/s | | L/s | | L/s | | |
| 380x150 | A | B | A | B | A | B | A | B | A | B | A | B | A | B | |
| | L/s/side | 22 | 30 | 37 | 44 | 51 | 59 | 67 | 77 | 88 | 100 | 119 | 133 | 151 | |
| | NC | -- | -- | 22 | 28 | 33 | 38 | 42 | 46 | 50 | 54 | 58 | 62 | 66 | |
| | Throw (m) | 1.2-1.8-3.7 | 1.6-2.5-4.6 | 2.0-3.1-5.1 | 2.4-3.7-5.6 | 2.8-4.3-6.0 | 3.3-4.6-6.5 | 3.7-4.8-6.9 | 4.2-5.2-7.3 | 4.7-5.5-7.7 | 5.1-6.0-8.4 | 5.5-6.3-8.9 | 5.9-6.8-9.4 | 6.3-7.2-9.8 | |
| | L/s/side | 22 | 33 | 37 | 55 | 44 | 67 | 51 | 77 | 59 | 88 | 67 | 100 | 77 | |
| | L/s/side | 22 | 33 | 37 | 55 | 44 | 67 | 51 | 77 | 59 | 88 | 67 | 100 | 77 | |
| | NC | -- | -- | 22 | 28 | 33 | 38 | 42 | 46 | 50 | 54 | 58 | 62 | 66 | |
| | Throw (m) | 1.2-1.8-3.7 | 2.5-3.2-4.5 | 2.6-3.2-4.6 | 3.0-3.6-5.2 | 2.9-3.6-5.1 | 3.3-4.1-5.8 | 3.2-4.0-5.6 | 3.6-4.5-6.3 | 3.5-4.3-6.0 | 3.9-4.8-6.8 | 3.7-4.6-6.5 | 4.2-5.2-7.3 | 4.0-4.8-6.9 | 4.5-5.5-7.7 |
| | L/s/side | 44 | 59 | 74 | 89 | 89 | 103 | 103 | 118 | 118 | 133 | 133 | 148 | 163 | |
| | L/s/side | 44 | 59 | 74 | 89 | 89 | 103 | 103 | 118 | 118 | 133 | 133 | 148 | 163 | |
| | NC | -- | 21 | 28 | 33 | 38 | 42 | 46 | 50 | 54 | 58 | 62 | 66 | 70 | |
| | Throw (m) | 1.7-2.6-4.9 | 3.1-4.0-5.6 | 3.6-4.4-6.3 | 4.0-4.9-6.9 | 4.3-5.3-7.4 | 4.6-5.6-7.9 | 4.9-6.0-8.4 | 5.2-6.2-8.6 | 5.5-6.5-8.9 | 5.8-6.8-9.3 | 6.1-7.1-9.5 | 6.4-7.4-9.8 | 6.7-7.7-10.1 | |
| | L/s/side | 89 | 118 | 148 | 177 | 177 | 207 | 207 | 236 | 236 | 266 | 266 | 296 | 325 | |
| | L/s/side | 89 | 118 | 148 | 177 | 177 | 207 | 207 | 236 | 236 | 266 | 266 | 296 | 325 | |
| | NC | -- | 20 | 27 | 32 | 37 | 42 | 45 | 49 | 53 | 57 | 61 | 65 | 69 | |
| | Throw (m) | 2.4-3.7-6.0 | 13-16-23 | 15-18-25 | 16-20-28 | 17-21-30 | 19-23-32 | 20-24-34 | 21-25-36 | 22-26-38 | 23-27-40 | 24-28-42 | 25-29-44 | 26-30-46 | |
| | L/s | 106 | 142 | 177 | 212 | 248 | 283 | 319 | 354 | 389 | 424 | 459 | 494 | 529 | |
| | L/s | 106 | 142 | 177 | 212 | 248 | 283 | 319 | 354 | 389 | 424 | 459 | 494 | 529 | |
| | NC | -- | 16 | 24 | 30 | 35 | 39 | 43 | 47 | 50 | 54 | 58 | 62 | 66 | |
| | Throw (m) | 1.3-2.0-4.0 | 1.8-2.7-4.8 | 2.2-3.4-5.4 | 2.7-4.0-5.9 | 3.1-4.5-6.4 | 3.6-4.8-6.8 | 4.0-5.1-7.2 | 4.5-5.5-8.2 | 4.9-6.0-8.4 | 5.3-6.3-8.9 | 5.7-6.7-9.4 | 6.1-7.1-9.8 | 6.5-7.5-10.1 | |
| | L/s/side | 26 | 35 | 44 | 53 | 62 | 71 | 80 | 89 | 98 | 106 | 119 | 128 | 137 | |
| | L/s/side | 26 | 35 | 44 | 53 | 62 | 71 | 80 | 89 | 98 | 106 | 119 | 128 | 137 | |
| | NC | -- | 16 | 24 | 30 | 35 | 39 | 43 | 47 | 50 | 54 | 58 | 62 | 66 | |
| | Throw (m) | 1.3-2.0-4.0 | 2.7-3.3-4.7 | 2.8-3.4-4.8 | 3.1-3.8-5.4 | 3.5-4.3-6.1 | 3.4-4.2-5.9 | 3.9-4.7-6.7 | 3.7-4.5-6.4 | 4.2-5.1-7.2 | 3.9-4.8-6.8 | 4.4-5.4-7.7 | 4.2-5.1-7.2 | 4.7-5.8-8.2 | |
| | L/s/side | 53 | 71 | 89 | 106 | 124 | 142 | 160 | 177 | 195 | 212 | 230 | 248 | 266 | |
| | L/s/side | 53 | 71 | 89 | 106 | 124 | 142 | 160 | 177 | 195 | 212 | 230 | 248 | 266 | |
| | NC | -- | 22 | 29 | 35 | 39 | 44 | 47 | 50 | 54 | 58 | 62 | 66 | 70 | |
| | Throw (m) | 1.9-2.8-5.1 | 3.4-4.2-5.9 | 3.8-4.7-6.6 | 4.2-5.1-7.3 | 4.5-5.6-7.9 | 4.8-5.9-8.4 | 5.1-6.3-8.9 | 5.4-6.5-9.1 | 5.7-6.8-9.4 | 6.0-7.1-9.7 | 6.3-7.4-10.0 | 6.6-7.7-10.3 | 6.9-8.0-10.6 | |
| | L/s/side | 106 | 142 | 177 | 212 | 248 | 283 | 319 | 354 | 389 | 424 | 459 | 494 | 529 | |
| | L/s/side | 106 | 142 | 177 | 212 | 248 | 283 | 319 | 354 | 389 | 424 | 459 | 494 | 529 | |
| | NC | -- | 21 | 28 | 34 | 39 | 43 | 47 | 50 | 54 | 58 | 62 | 66 | 70 | |
| | Throw (m) | 2.7-4.0-6.3 | 14-17-24 | 15-19-27 | 17-21-29 | 18-22-32 | 20-24-34 | 21-25-36 | 22-26-38 | 23-27-40 | 24-28-42 | 25-29-44 | 26-30-46 | 27-31-48 | |
| | L/s | 106 | 142 | 177 | 212 | 248 | 283 | 319 | 354 | 389 | 424 | 459 | 494 | 529 | |
| | L/s | 106 | 142 | 177 | 212 | 248 | 283 | 319 | 354 | 389 | 424 | 459 | 494 | 529 | |
| | NC | -- | 16 | 24 | 30 | 35 | 39 | 43 | 47 | 50 | 54 | 58 | 62 | 66 | |
| | Throw (m) | 1.3-2.0-4.0 | 1.8-2.7-4.8 | 2.2-3.4-5.4 | 2.7-4.0-5.9 | 3.1-4.5-6.4 | 3.6-4.8-6.8 | 4.0-5.1-7.2 | 4.5-5.5-8.2 | 4.9-6.0-8.4 | 5.3-6.3-8.9 | 5.7-6.7-9.4 | 6.1-7.1-9.8 | 6.5-7.5-10.1 | |
| | L/s/side | 26 | 35 | 44 | 53 | 62 | 71 | 80 | 89 | 98 | 106 | 119 | 128 | 137 | |
| | L/s/side | 26 | 35 | 44 | 53 | 62 | 71 | 80 | 89 | 98 | 106 | 119 | 128 | 137 | |
| | NC | -- | 16 | 24 | 30 | 35 | 39 | 43 | 47 | 50 | 54 | 58 | 62 | 66 | |
| | Throw (m) | 1.3-2.0-4.0 | 2.7-3.3-4.7 | 2.8-3.4-4.8 | 3.1-3.8-5.4 | 3.5-4.3-6.1 | 3.4-4.2-5.9 | 3.9-4.7-6.7 | 3.7-4.5-6.4 | 4.2-5.1-7.2 | 3.9-4.8-6.8 | 4.4-5.4-7.7 | 4.2-5.1-7.2 | 4.7-5.8-8.2 | |
| | L/s/side | 53 | 71 | 89 | 106 | 124 | 142 | 160 | 177 | 195 | 212 | 230 | 248 | 266 | |
| | L/s/side | 53 | 71 | 89 | 106 | 124 | 142 | 160 | 177 | 195 | 212 | 230 | 248 | 266 | |
| | NC | -- | 22 | 29 | 35 | 39 | 44 | 47 | 50 | 54 | 58 | 62 | 66 | 70 | |
| | Throw (m) | 1.9-2.8-5.1 | 3.4-4.2-5.9 | 3.8-4.7-6.6 | 4.2-5.1-7.3 | 4.5-5.6-7.9 | 4.8-5.9-8.4 | 5.1-6.3-8.9 | 5.4-6.5-9.1 | 5.7-6.8-9.4 | 6.0-7.1-9.7 | 6.3-7.4-10.0 | 6.6-7.7-10.3 | 6.9-8.0-10.6 | |
| | L/s/side | 106 | 142 | 177 | 212 | 248 | 283 | 319 | 354 | 389 | 424 | 459 | 494 | 529 | |
| | L/s/side | 106 | 142 | 177 | 212 | 248 | 283 | 319 | 354 | 389 | 424 | 459 | 494 | 529 | |
| | NC | -- | 21 | 28 | 34 | 39 | 43 | 47 | 50 | 54 | 58 | 62 | 66 | 70 | |
| | Throw (m) | 2.7-4.0-6.3 | 14-17-24 | 15-19-27 | 17-21-29 | 18-22-32 | 20-24-34 | 21-25-36 | 22-26-38 | 23-27-40 | 24-28-42 | 25-29-44 | 26-30-46 | 27-31-48 | |
| | L/s | 106 | 142 | 177 | 212 | 248 | 283 | 319 | 354 | 389 | 424 | 459 | 494 | 529 | |

Performance Notes:

- All units are tested in accordance with ASHRAE Standard 70-2006.
- All pressures are in Pascals (Pa).
- Throw data is listed in meters to terminal velocities (VT) as listed below:

| | |
|---------------------|----------|
| Minimum Throw to VT | 0.75 m/s |
| Middle Throw to VT | 0.5 m/s |
| Maximum Throw to VT | 0.25 m/s |
- Throw data is based on supply air and room air being at isothermal conditions.
- Sound data NC values are based on a room absorption of -10dB, re 10⁻¹² watts.
- Blanks (--) indicate an NC level below 15.
- Additional performance data for other patterns and rectangular sizes available upon request.

Modular Core Directional Diffusers SMCD Series

Product Information

Models

Modular Core

Steel Construction

SMCD

Price SMCD Series high capacity modular core directional diffusers are designed to supply large volumes of air at low sound levels and pressure drops. The Steel Modular Core Diffuser design enables a quick and easy re-configuration of the air discharge pattern by repositioning the individual cores. The excellent horizontal discharge pattern, maintained at low volumes, makes this diffuser ideal for VAV applications.

Features

- Steel construction.
- Four louvered air pattern modules can be repositioned in the field simply and quickly without tools.
- Adjustable for 1, 2, 2 way corner, 3 and 4 way blow in a wide selection of sizes.
- Removable air pattern modules can be removed for access to optional **VCS3** opposed blade damper.
- Square to round adaptors **SR / SR3** are available as an accessory (see page C184).

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.


Available Module Sizes

See Pages C126 - C127.

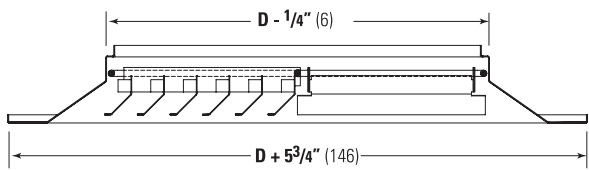
✓ Product Selection Checklist

- 1] Select Square Inlet Size based on desired performance characteristics.
- 2] Select Face Size based on square ceiling module.
- 3] Select Border / Panel Style according to installation requirements.
- 4] Select Volume Control Accessories, if desired (pages C181 - C186).
- 5] Select Finish.

Example: 12 in. x 12 in. / 24 in. x 24 in. / SMCD / 3P / 4 / B12




SMCD Type 1

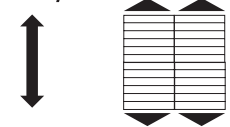


Available Air Pattern Settings

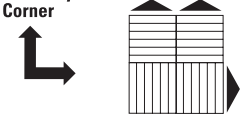
One Way



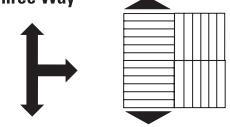
Two Way




Two Way Corner



Three Way



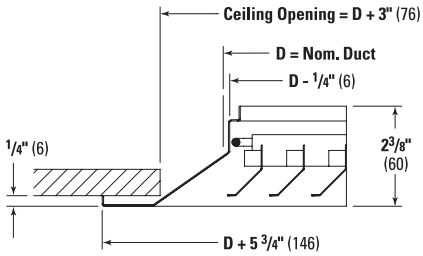
Four Way



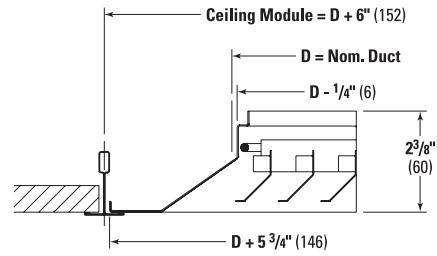
Frame Selection

CEILING DIFFUSERS

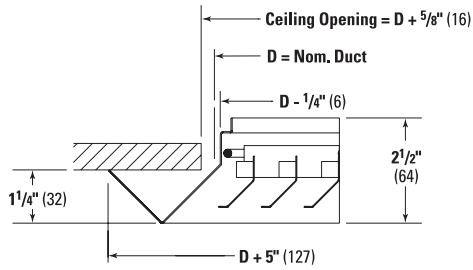
Type 1
Surface Mount



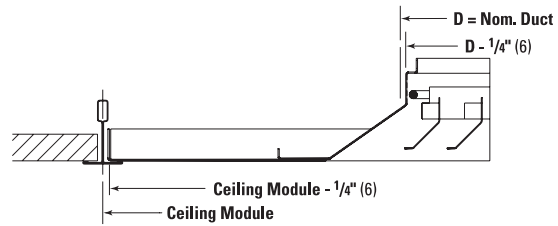
Type 36
Lay-in Inverted T-bar 1 in. [25]



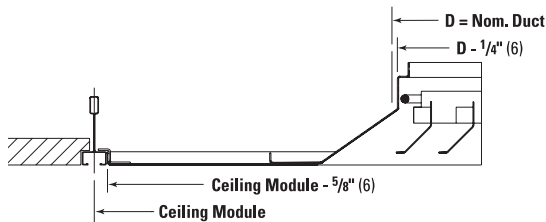
Type 6
Surface Mount - Bevelled



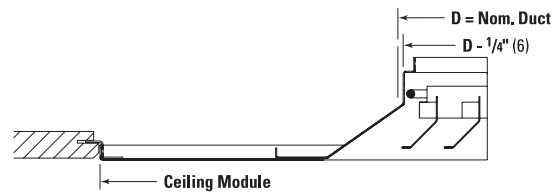
Type 3P
Inverted T-bar 1 in. [25] Lay-in Panel



Type 17P
Narrow Member 9/16 in. [14] Lay-in Panel



Type 4P
Concealed Spline Lay-in Panel



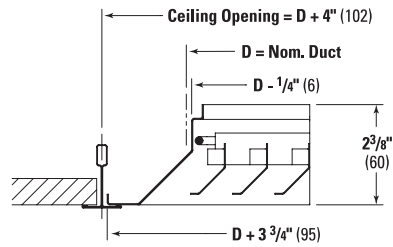
Splines on two opposite sides only;
specify which sides.

Modular Core Directional Diffusers SMCD Series



Frame Selection

Type 34
T-bar Lay-in



Surface Mount Application

| | |
|---------------------------------|--|
| Style 1 - Surface Mount | Min. 6x6 [152x152] Max. 24x24 [610x610] |
| Style 6 - Bevelled Frame | Available in 2 in. [51] increments |

T-bar Lay-in Application

| | Nom. Duct Size | Ceiling Module |
|--------------------------------|-----------------|-----------------|
| Style 36 - T-bar Lay-in | 6x6 [152x152] | 12x12 [305x305] |
| | 18x18 [457x457] | 24x24 [610x610] |
| | 24x24 [610x610] | 30x30 [762x762] |
| Style 34 - T-bar Lay-in | 8x8 [203x203] | 12x12 [305x305] |
| | 20x20 [508x508] | 24x24 [610x610] |

Panel Lay-in Application

| | Module Size | Nom. Duct Size |
|----------------------------------|-----------------|------------------------------------|
| Style 3P - T-bar Panel | 24x24 [610x610] | Min. 6x6 [152x152] |
| Style 4P - Spline Panel | | Max. 16x16 [406x406] |
| Style 17P - Finline Panel | | Available in 2 in. [51] increments |

Performance Data

| Inlet Size | Neck Velocity, fpm | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | |
|------------|-----------------------------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | 0.062 | |
| | Total Pressure, in. w.g. | 0.009 | 0.020 | 0.036 | 0.057 | 0.082 | 0.112 | 0.146 | 0.184 | 0.228 | |
| 6 x 6 | Flow Rate, cfm | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | |
| | NC | - | - | - | - | 17 | 22 | 27 | 30 | 34 | |
| | Throw (150, 100, 50) | 4 Way | 0-0-1 | 1-3-6 | 4-5-9 | 6-8-12 | 7-9-14 | 8-11-16 | 9-12-17 | 10-13-18 | 11-14-20 |
| | | 3 Way "A" | 4-6-12 | 8-10-18 | 10-14-22 | 13-16-25 | 14-18-27 | 16-20-29 | 17-22-31 | 18-23-33 | 19-24-34 |
| | | 3 Way "B" | 0-0-1 | 1-3-6 | 4-5-9 | 6-8-12 | 7-9-14 | 8-11-16 | 9-12-17 | 10-13-18 | 11-14-20 |
| | | 2 Way | 4-6-12 | 8-10-18 | 10-14-22 | 13-16-25 | 14-18-27 | 16-20-29 | 17-22-31 | 18-23-33 | 19-24-34 |
| 1 Way | | 12-16-27 | 16-21-34 | 20-25-39 | 22-28-43 | 24-31-46 | 26-33-48 | 28-35-50 | 29-36-52 | 30-38-54 | |
| 8 x 8 | Flow Rate, cfm | 89 | 133 | 178 | 222 | 267 | 311 | 356 | 400 | 444 | |
| | NC | - | - | - | - | 20 | 25 | 29 | 33 | 36 | |
| | Throw (150, 100, 50) | 4 Way | 1-2-5 | 4-6-10 | 6-8-13 | 8-10-16 | 10-12-18 | 11-14-19 | 12-15-21 | 13-16-22 | 14-17-24 |
| | | 3 Way "A" | 7-9-17 | 11-14-22 | 13-17-26 | 16-20-29 | 17-22-32 | 19-24-34 | 20-25-36 | 21-26-38 | 22-28-39 |
| | | 3 Way "B" | 1-2-5 | 4-6-10 | 6-8-13 | 8-10-16 | 10-12-18 | 11-14-19 | 12-15-21 | 13-16-22 | 14-17-24 |
| | | 2 Way | 7-9-17 | 11-14-22 | 13-17-26 | 16-20-29 | 17-22-32 | 19-24-34 | 20-25-36 | 21-26-38 | 22-28-39 |
| 1 Way | | 15-20-33 | 20-25-40 | 23-29-45 | 26-32-48 | 28-35-51 | 30-37-54 | 31-39-56 | 33-40-58 | 34-42-60 | |
| 10 x 10 | Flow Rate, cfm | 139 | 208 | 278 | 347 | 417 | 486 | 556 | 625 | 694 | |
| | NC | - | - | - | 16 | 22 | 27 | 31 | 35 | 38 | |
| | Throw (150, 100, 50) | 4 Way | 3-4-8 | 6-8-13 | 8-11-16 | 10-13-19 | 11-14-21 | 13-16-23 | 14-17-24 | 15-18-25 | 16-19-27 |
| | | 3 Way "A" | 9-12-20 | 13-17-26 | 16-20-30 | 18-22-33 | 20-25-36 | 21-26-38 | 22-28-40 | 24-29-41 | 25-30-43 |
| | | 3 Way "B" | 3-4-8 | 6-8-13 | 8-11-16 | 10-13-19 | 11-14-21 | 13-16-23 | 14-17-24 | 15-18-25 | 16-19-27 |
| | | 2 Way | 9-12-20 | 13-17-26 | 16-20-30 | 18-22-33 | 20-25-36 | 21-26-38 | 22-28-40 | 24-29-41 | 25-30-43 |
| 1 Way | | 18-23-37 | 23-29-44 | 26-33-49 | 28-36-53 | 31-38-56 | 32-40-58 | 34-42-60 | 35-44-62 | 37-45-64 | |
| 12 x 12 | Flow Rate, cfm | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | |
| | NC | - | - | - | 18 | 24 | 28 | 33 | 36 | 40 | |
| | Throw (150, 100, 50) | 4 Way | 4-6-11 | 7-10-15 | 10-12-19 | 12-14-21 | 13-16-23 | 14-18-25 | 15-19-27 | 16-20-28 | 17-21-29 |
| | | 3 Way "A" | 11-14-23 | 15-19-29 | 18-22-33 | 20-25-36 | 21-27-39 | 23-28-41 | 24-30-43 | 25-31-44 | 26-33-46 |
| | | 3 Way "B" | 4-6-11 | 7-10-15 | 10-12-19 | 12-14-21 | 13-16-23 | 14-18-25 | 15-19-27 | 16-20-28 | 17-21-29 |
| | | 2 Way | 11-14-23 | 15-19-29 | 18-22-33 | 20-25-36 | 21-27-39 | 23-28-41 | 24-30-43 | 25-31-44 | 26-33-46 |
| 1 Way | | 20-26-41 | 25-31-48 | 28-35-53 | 31-38-56 | 33-41-59 | 35-43-62 | 36-45-64 | 38-46-66 | 39-48-68 | |

For Performance Notes, see page C128.

Modular Core Directional Diffusers

SMCD Series



Performance Data

| | | | | | | | | | | | |
|------------|-----------------------------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 14 x 14 | Flow Rate, cfm | 272 | 408 | 544 | 681 | 817 | 953 | 1089 | 1225 | 1361 | |
| | NC | - | - | - | 19 | 25 | 30 | 34 | 38 | 41 | |
| | Throw (150, 100, 50) | 4 Way | 5-7-13 | 9-11-17 | 11-14-21 | 13-16-23 | 14-18-25 | 16-19-27 | 17-20-29 | 18-22-30 | 18-23-31 |
| | | 3 Way "A" | 12-16-26 | 16-21-32 | 19-24-36 | 21-26-39 | 23-29-41 | 25-30-43 | 26-32-45 | 27-33-47 | 28-34-48 |
| | | 3 Way "B" | 5-7-13 | 9-11-17 | 11-14-21 | 13-16-23 | 14-18-25 | 16-19-27 | 17-20-29 | 18-22-30 | 18-23-31 |
| 2 Way | | 12-16-26 | 16-21-32 | 19-24-36 | 21-26-39 | 23-29-41 | 25-30-43 | 26-32-45 | 27-33-47 | 28-34-48 | |
| 1 Way | 22-28-44 | 27-34-51 | 30-37-56 | 33-40-59 | 35-43-62 | 37-45-65 | 38-47-67 | 39-48-69 | 41-50-71 | | |
| 16 x 16 | Flow Rate, cfm | 356 | 533 | 711 | 889 | 1067 | 1244 | 1422 | 1600 | 1778 | |
| | NC | - | - | - | 20 | 26 | 31 | 35 | 39 | 42 | |
| | Throw (150, 100, 50) | 4 Way | 7-9-14 | 10-13-19 | 12-15-22 | 14-17-25 | 15-19-27 | 17-21-29 | 18-22-31 | 19-23-32 | 20-24-33 |
| | | 3 Way "A" | 14-18-28 | 18-22-34 | 20-26-38 | 23-28-41 | 24-30-43 | 26-32-46 | 27-33-47 | 28-35-49 | 29-36-50 |
| | | 3 Way "B" | 7-9-14 | 10-13-19 | 12-15-22 | 14-17-25 | 15-19-27 | 17-21-29 | 18-22-31 | 19-23-32 | 20-24-33 |
| 2 Way | | 14-18-28 | 18-22-34 | 20-26-38 | 23-28-41 | 24-30-43 | 26-32-46 | 27-33-47 | 28-35-49 | 29-36-50 | |
| 1 Way | 24-30-47 | 28-35-53 | 32-39-58 | 34-42-62 | 36-45-65 | 38-47-68 | 40-49-70 | 41-50-72 | 42-52-73 | | |
| 18 x 18 | Flow Rate, cfm | 450 | 675 | 900 | 1125 | 1350 | 1575 | 1800 | 2025 | 2250 | |
| | NC | - | - | - | 21 | 27 | 32 | 36 | 40 | 43 | |
| | Throw (150, 100, 50) | 4 Way | 8-10-16 | 11-14-21 | 13-16-24 | 15-19-27 | 16-20-29 | 18-22-31 | 19-23-32 | 20-24-33 | 21-25-35 |
| | | 3 Way "A" | 15-19-30 | 19-24-36 | 22-27-40 | 24-30-43 | 26-32-45 | 27-33-47 | 28-35-49 | 30-36-51 | 31-37-52 |
| | | 3 Way "B" | 8-10-16 | 11-14-21 | 13-16-24 | 15-19-27 | 16-20-29 | 18-22-31 | 19-23-32 | 20-24-33 | 21-25-35 |
| 2 Way | | 15-19-30 | 19-24-36 | 22-27-40 | 24-30-43 | 26-32-45 | 27-33-47 | 28-35-49 | 30-36-51 | 31-37-52 | |
| 1 Way | 25-32-49 | 30-37-56 | 33-41-61 | 36-44-64 | 38-47-67 | 40-49-70 | 41-51-72 | 43-52-74 | 44-54-76 | | |
| Inlet Size | Neck Velocity, fpm | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | |
| | TP/VP | 3.650 | 3.650 | 3.650 | 3.650 | 3.650 | 3.650 | 3.650 | 3.650 | 3.650 | |
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | 0.062 | |
| | Total Pressure, in. w.g. | 0.009 | 0.020 | 0.036 | 0.057 | 0.082 | 0.112 | 0.146 | 0.184 | 0.228 | |
| 20 x 20 | Flow Rate, cfm | 556 | 833 | 1111 | 1389 | 1667 | 1944 | 2222 | 2500 | 2778 | |
| | NC | - | - | 15 | 22 | 28 | 33 | 37 | 41 | 44 | |
| | Throw (150, 100, 50) | 4 Way | 8-11-18 | 12-15-22 | 14-17-26 | 16-20-28 | 17-21-30 | 19-23-32 | 20-24-34 | 21-25-35 | 21-26-36 |
| | | 3 Way "A" | 16-20-32 | 20-25-37 | 23-28-41 | 25-31-45 | 27-33-47 | 28-35-49 | 29-36-51 | 31-37-53 | 32-39-54 |
| | | 3 Way "B" | 8-11-18 | 12-15-22 | 14-17-26 | 16-20-28 | 17-21-30 | 19-23-32 | 20-24-34 | 21-25-35 | 21-26-36 |
| 2 Way | | 16-20-32 | 20-25-37 | 23-28-41 | 25-31-45 | 27-33-47 | 28-35-49 | 29-36-51 | 31-37-53 | 32-39-54 | |
| 1 Way | 26-33-51 | 31-39-58 | 34-43-63 | 37-46-66 | 39-48-69 | 41-50-72 | 42-52-74 | 44-54-76 | 45-55-78 | | |
| 22 x 22 | Flow Rate, cfm | 672 | 1008 | 1344 | 1681 | 2017 | 2353 | 2689 | 3025 | 3361 | |
| | NC | - | - | 16 | 23 | 29 | 34 | 38 | 42 | 45 | |
| | Throw (150, 100, 50) | 4 Way | 9-12-19 | 13-16-24 | 15-18-27 | 17-21-29 | 18-22-32 | 19-24-33 | 20-25-35 | 21-26-36 | 22-27-37 |
| | | 3 Way "A" | 17-21-33 | 21-26-39 | 24-29-43 | 26-32-46 | 28-34-49 | 29-36-51 | 30-37-53 | 32-39-54 | 33-40-56 |
| | | 3 Way "B" | 9-12-19 | 13-16-24 | 15-18-27 | 17-21-29 | 18-22-32 | 19-24-33 | 20-25-35 | 21-26-36 | 22-27-37 |
| 2 Way | | 17-21-33 | 21-26-39 | 24-29-43 | 26-32-46 | 28-34-49 | 29-36-51 | 30-37-53 | 32-39-54 | 33-40-56 | |
| 1 Way | 27-34-53 | 32-40-60 | 35-44-64 | 38-47-68 | 40-49-71 | 42-52-74 | 44-53-76 | 45-55-78 | 46-56-80 | | |
| 24 x 24 | Flow Rate, cfm | 800 | 1200 | 1600 | 2000 | 2400 | 2800 | 3200 | 3600 | 4000 | |
| | NC | - | - | 17 | 24 | 30 | 35 | 39 | 42 | 46 | |
| | Throw (150, 100, 50) | 4 Way | 10-13-20 | 13-17-25 | 16-19-28 | 17-21-31 | 19-23-33 | 20-25-35 | 21-26-36 | 22-27-37 | 23-28-39 |
| | | 3 Way "A" | 18-23-35 | 22-27-40 | 25-30-44 | 27-33-47 | 29-35-50 | 30-37-52 | 31-38-54 | 32-40-56 | 34-41-57 |
| | | 3 Way "B" | 10-13-20 | 13-17-25 | 16-19-28 | 17-21-31 | 19-23-33 | 20-25-35 | 21-26-36 | 22-27-37 | 23-28-39 |
| 2 Way | | 18-23-35 | 22-27-40 | 25-30-44 | 27-33-47 | 29-35-50 | 30-37-52 | 31-38-54 | 32-40-56 | 34-41-57 | |
| 1 Way | 28-36-55 | 33-41-61 | 37-45-66 | 39-48-70 | 41-51-73 | 43-53-75 | 45-55-78 | 46-56-80 | 47-58-81 | | |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks "--" indicate an NC level below 15.

Modular Core Directional Diffusers AMCD Series

Product Information

Models

Modular Core

Aluminum Construction

AMCD

Price AMCD Series high capacity modular core directional diffusers are designed to supply large volumes of air at low sound levels and pressure drops. Field adjustment of the air pattern is fast and easy by repositioning the louvered modular pattern controllers to suit the desired application. The excellent horizontal discharge pattern, maintained at low volumes, makes this diffuser ideal for VAV applications.

Features

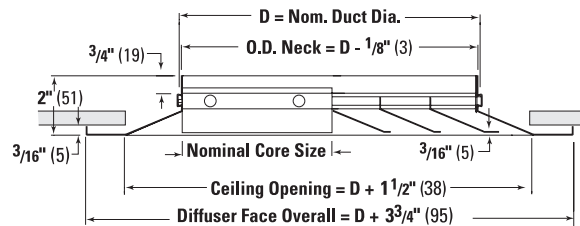
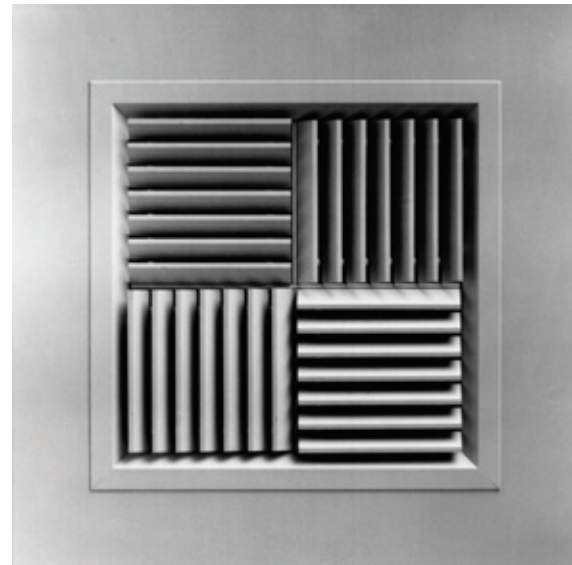
- Aluminum construction.
- Stamped aluminum core.
- Four louvered air pattern modules can be repositioned in the field simply and quickly without tools.
- Adjustable for 1, 2, 2 way corner, 3 and 4 way blow in a wide selection of sizes.
- Removable air pattern modules can be removed for access to optional **VCS3 / VCS3AL** opposed blade damper.
- Square to round adaptors **SR / SR3** are available as an accessory (see page C184).

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.



✓ Product Selection Checklist

- 1] Select Square Inlet Size based on desired performance characteristics.
- 2] Select Face Size based on square ceiling module.
- 3] Select Border / Panel Style according to installation requirements (page C130).
- 4] Select Volume Control Accessories, if desired (pages C181 - C186).
- 5] Select Finish.

Example: 12 in. x 12 in. / 24 in. x 24 in. / AMCD / 3P / 4 / B12

Application Recommendations:

For Border and Panel recommendations, see page C90.

Available Air Pattern Settings

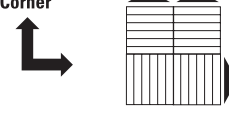
One Way



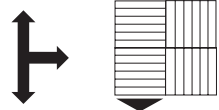
Two Way



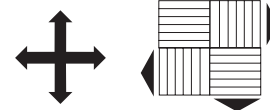
Two Way Corner



Three Way



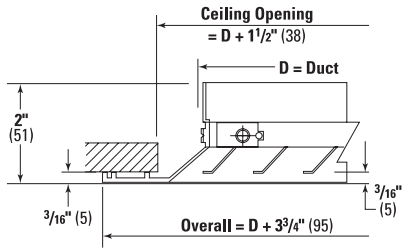
Four Way



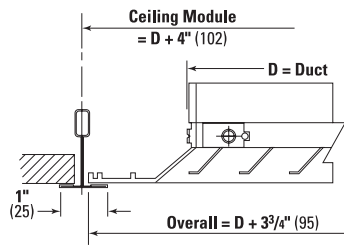
Frame Selection

CEILING DIFFUSERS

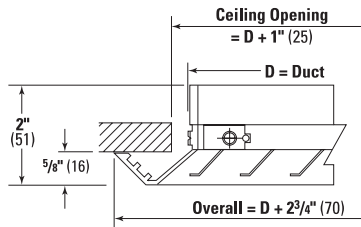
Type 1
Surface Mount



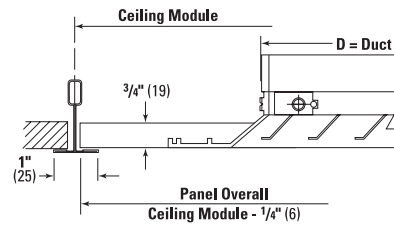
Type 34
Lay-in Inverted T-bar 1 in. [25]



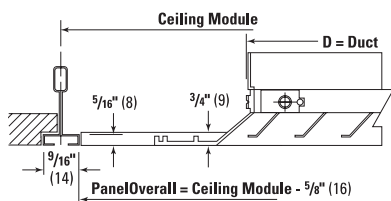
Type 6
Surface Mount - Bevelled



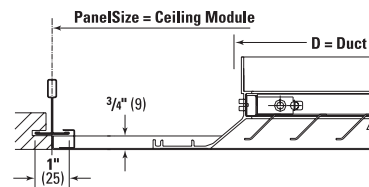
Type 3P - Steel Panel
Type 3PA - Aluminum Panel
Inverted T-bar 1 in. [25] Lay-in Panel



Type 17P - Steel Panel
Type 17PA - Aluminum Panel
Narrow Member $\frac{9}{16}$ in. [14] Lay-in Panel



Type 4P - Steel Panel
Type 4PA - Aluminum Panel
Concealed Spline Lay-in Panel



Splines on two opposite sides only specify which sides.

Size Limitations – Lay-in

| Ceiling Module | Minimum Neck Size | Type 34 | Maximum Type 4P, 17P, 3P |
|----------------|-------------------|---------|--------------------------|
| 12 x 12 | 6 x 6 | 8 x 8 | 6 x 6 |
| 24 x 24 | 6 x 6 | 20 x 20 | 18 x 18 |

Modular Core Directional Diffusers AMCD Series



Performance Data

| Inlet Size | Neck Velocity, fpm | | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|------------|-----------------------------|-------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | | .002 | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 |
| | Total Pressure, in. w.g. | | .013 | .040 | .066 | .106 | .145 | .205 | .264 | .330 | .409 |
| | Flow Rate, cfm | | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
| | NC | | - | - | 15 | 21 | 26 | 30 | 33 | 36 | 39 |
| 6 x 6 | Throw (150, 100, 50) | 4 Way | 1-1-6 | 1-3-7 | 2-6-8 | 4-6-9 | 6-7-10 | 6-7-10 | 6-8-11 | 7-8-12 | 7-9-12 |
| | Throw | 3 Way | 1-2-8 | 2-4-10 | 3-8-11 | 5-9-12 | 8-10-14 | 8-10-15 | 9-11-16 | 10-12-17 | 10-12-17 |
| | Throw | 2 Way | 1-2-8 | 2-4-10 | 3-8-11 | 5-9-12 | 8-10-14 | 8-10-15 | 9-11-16 | 10-12-17 | 10-12-17 |
| | Throw | 1 Way | 1-3-11 | 3-6-14 | 5-11-16 | 8-12-18 | 11-14-19 | 12-15-21 | 13-16-22 | 14-17-24 | 14-18-25 |
| | Flow Rate, cfm | NC | 89 | 133 | 178 | 222 | 266 | 311 | 355 | 400 | 444 |
| 8 x 8 | Throw (150, 100, 50) | 4 Way | 1-2-7 | 2-5-9 | 4-7-10 | 6-8-12 | 7-9-13 | 8-10-14 | 9-10-15 | 9-11-16 | 10-12-17 |
| | Throw | 3 Way | 1-3-10 | 3-7-13 | 5-10-15 | 8-12-16 | 10-13-18 | 11-14-19 | 12-15-21 | 13-16-22 | 13-16-23 |
| | Throw | 2 Way | 1-3-10 | 3-7-13 | 5-10-15 | 8-12-16 | 10-13-18 | 11-14-19 | 12-15-21 | 13-16-22 | 13-16-23 |
| | Throw | 1 Way | 2-4-15 | 4-10-18 | 8-15-21 | 12-17-23 | 15-18-26 | 16-20-28 | 17-21-30 | 18-22-31 | 19-23-33 |
| | Flow Rate, cfm | NC | 139 | 208 | 278 | 347 | 416 | 486 | 555 | 625 | 694 |
| 10 x 10 | Throw (150, 100, 50) | 4 Way | 1-2-7 | 2-5-10 | 4-7-12 | 6-9-13 | 7-10-14 | 9-11-16 | 10-12-17 | 10-12-18 | 11-13-19 |
| | Throw | 3 Way | 1-3-10 | 3-6-14 | 5-10-16 | 8-13-18 | 10-14-20 | 12-15-22 | 13-16-23 | 14-17-25 | 15-18-26 |
| | Throw | 2 Way | 1-3-10 | 3-6-14 | 5-10-16 | 8-13-18 | 10-14-20 | 12-15-22 | 13-16-23 | 14-17-25 | 15-18-26 |
| | Throw | 1 Way | 2-4-15 | 4-9-20 | 7-15-23 | 11-18-26 | 15-20-29 | 17-22-31 | 19-23-33 | 20-25-35 | 21-26-37 |
| | Flow Rate, cfm | NC | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| 12 x 12 | Throw (150, 100, 50) | 4 Way | 2-4-11 | 4-8-14 | 7-11-16 | 9-12-18 | 11-14-19 | 12-15-21 | 13-16-22 | 14-17-24 | 14-18-25 |
| | Throw | 3 Way | 3-6-15 | 6-11-19 | 10-15-22 | 13-17-25 | 15-19-27 | 17-21-29 | 18-22-31 | 19-23-33 | 20-25-35 |
| | Throw | 2 Way | 3-6-15 | 6-11-19 | 10-15-22 | 13-17-25 | 15-19-27 | 17-21-29 | 18-22-31 | 19-23-33 | 20-25-35 |
| | Throw | 1 Way | 4-8-22 | 8-16-27 | 14-22-31 | 18-25-35 | 22-27-38 | 24-29-42 | 26-31-44 | 27-33-47 | 29-35-50 |
| | Flow Rate, cfm | NC | 272 | 408 | 544 | 681 | 817 | 953 | 1089 | 1225 | 1361 |
| 14 x 14 | Throw (150, 100, 50) | 4 Way | 2-5-13 | 5-9-16 | 8-13-18 | 10-14-20 | 13-16-22 | 14-17-24 | 15-18-26 | 16-19-27 | 17-20-29 |
| | Throw | 3 Way | 3-7-18 | 7-13-22 | 12-18-26 | 15-20-29 | 18-22-31 | 20-24-34 | 21-26-36 | 22-27-38 | 23-29-41 |
| | Throw | 2 Way | 3-7-18 | 7-13-22 | 12-18-26 | 15-20-29 | 18-22-31 | 20-24-34 | 21-26-36 | 22-27-38 | 23-29-41 |
| | Throw | 1 Way | 5-11-25 | 11-19-32 | 17-25-37 | 21-29-41 | 25-32-45 | 28-34-48 | 30-37-52 | 32-39-55 | 33-41-58 |
| | Flow Rate, cfm | NC | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks "--" indicate an NC level below 15.

Modular Core Directional Diffusers AMCD Series



Performance Data

| Inlet Size | Neck Velocity, fpm | | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|------------|-----------------------------|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure, in. w.g. | | .002 | .006 | .010 | .016 | .022 | .031 | .040 | .050 | .062 |
| | Total Pressure, in. w.g. | | .013 | .040 | .066 | .106 | .145 | .205 | .264 | .330 | .409 |
| | Flow Rate, cfm | | 356 | 533 | 711 | 889 | 1067 | 1245 | 1422 | 1600 | 1778 |
| | NC | | - | - | 21 | 27 | 32 | 36 | 39 | 43 | 45 |
| 16 x 16 | Throw (150, 100, 50) | 4 Way | 3-7-14 | 7-11-18 | 10-14-21 | 12-17-23 | 14-18-26 | 16-20-28 | 17-21-30 | 18-22-31 | 19-23-33 |
| | Throw | 3 Way | 4-9-20 | 9-15-25 | 13-20-29 | 17-23-33 | 20-25-36 | 22-27-39 | 24-29-41 | 25-31-44 | 27-33-46 |
| | Throw | 2 Way | 4-9-20 | 9-15-25 | 13-20-29 | 17-23-33 | 20-25-36 | 22-27-39 | 24-29-41 | 25-31-44 | 27-33-46 |
| | Throw | 1 Way | 6-13-29 | 13-21-36 | 19-29-42 | 24-33-47 | 29-36-51 | 32-39-55 | 34-42-59 | 36-44-63 | 38-47-66 |
| | Flow Rate, cfm | | 450 | 675 | 900 | 1125 | 1350 | 1575 | 1800 | 2025 | 2250 |
| | NC | | - | - | 21 | 27 | 32 | 37 | 40 | 43 | 46 |
| 18 x 18 | Throw (150, 100, 50) | 4 Way | 3-8-16 | 8-12-20 | 11-16-24 | 13-19-26 | 16-20-29 | 18-22-31 | 19-24-33 | 20-25-35 | 22-26-37 |
| | Throw | 3 Way | 5-11-22 | 11-17-29 | 15-22-33 | 19-26-37 | 22-29-40 | 25-31-44 | 27-33-47 | 29-35-49 | 30-37-52 |
| | Throw | 2 Way | 5-11-22 | 11-17-29 | 15-22-33 | 19-26-37 | 22-29-40 | 25-31-44 | 27-33-47 | 29-35-49 | 30-37-52 |
| | Throw | 1 Way | 7-16-32 | 16-24-41 | 21-32-47 | 27-37-53 | 32-41-58 | 36-44-62 | 38-47-67 | 41-50-71 | 43-53-74 |
| | Flow Rate, cfm | | 556 | 833 | 1111 | 1389 | 1667 | 1945 | 2222 | 2500 | 2778 |
| | NC | | - | - | 22 | 28 | 33 | 37 | 41 | 44 | 47 |
| 20 x 20 | Throw (150, 100, 50) | 4 Way | 4-9-18 | 9-13-23 | 12-18-26 | 15-21-29 | 18-23-32 | 20-24-35 | 21-26-37 | 23-28-39 | 24-29-41 |
| | Throw | 3 Way | 6-12-25 | 12-19-32 | 16-25-37 | 21-29-41 | 25-32-45 | 28-34-48 | 30-37-52 | 32-39-55 | 33-41-58 |
| | Throw | 2 Way | 6-12-25 | 12-19-32 | 16-25-37 | 21-29-41 | 25-32-45 | 28-34-48 | 30-37-52 | 32-39-55 | 33-41-58 |
| | Throw | 1 Way | 8-18-35 | 18-26-45 | 24-35-52 | 29-41-58 | 35-45-64 | 40-49-69 | 43-52-74 | 45-55-78 | 48-58-83 |
| | Flow Rate, cfm | | 672 | 1008 | 1344 | 1681 | 2017 | 2353 | 2689 | 3025 | 3361 |
| | NC | | - | 15 | 23 | 29 | 34 | 38 | 41 | 45 | 47 |
| 22 x 22 | Throw (150, 100, 50) | 4 Way | 4-10-19 | 10-15-25 | 13-19-29 | 16-23-32 | 19-25-35 | 22-27-38 | 23-29-41 | 25-31-43 | 26-32-45 |
| | Throw | 3 Way | 6-14-27 | 14-20-35 | 18-27-40 | 23-32-45 | 27-35-49 | 31-38-53 | 33-40-57 | 35-43-60 | 37-45-64 |
| | Throw | 2 Way | 6-14-27 | 14-20-35 | 18-27-40 | 23-32-45 | 27-35-49 | 31-38-53 | 33-40-57 | 35-43-60 | 37-45-64 |
| | Throw | 1 Way | 9-19-39 | 19-29-50 | 26-39-58 | 32-45-64 | 39-50-70 | 44-54-76 | 47-58-81 | 50-61-86 | 53-64-91 |
| | Flow Rate, cfm | | 800 | 1200 | 1600 | 2000 | 2400 | 2800 | 3200 | 3600 | 4000 |
| | NC | | - | 16 | 23 | 29 | 34 | 38 | 42 | 45 | 48 |
| 24 x 24 | Throw (150, 100, 50) | 4 Way | 5-11-21 | 11-16-27 | 14-21-31 | 18-25-35 | 21-27-38 | 24-29-42 | 26-31-44 | 27-33-47 | 29-35-50 |
| | Throw | 3 Way | 8-15-29 | 15-22-38 | 20-29-44 | 25-35-49 | 29-38-54 | 34-41-58 | 36-44-62 | 38-47-66 | 40-49-69 |
| | Throw | 2 Way | 8-15-29 | 15-22-38 | 20-29-44 | 25-35-49 | 29-38-54 | 34-41-58 | 36-44-62 | 38-47-66 | 40-49-69 |
| | Throw | 1 Way | 11-21-42 | 21-32-54 | 28-42-63 | 35-50-70 | 42-54-77 | 48-59-83 | 51-63-89 | 54-67-94 | 57-70-99 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks "--" indicate an NC level below 15.

Curved Vane Diffusers CVD, SCVD, ACVD Series

Product Information

Models

Curved Vane

Extruded Aluminum Construction **CVD**
 Formed Steel Construction **SCVD**
 Formed Aluminum Construction **ACVD**

Price CVD/SCVD/ACVD Series

curved vane directional diffusers feature individually adjustable curved vanes to direct supply air precisely to suit the desired application. A clean, functional appearance with excellent performance characteristics, the CVD/SCVD/ACVD can be installed in ceiling or sidewall locations, and provides a wide range of application versatility.

Features

- Choice of extruded aluminum, roll-formed aluminum or roll-formed steel construction.
- Curved vanes provide superior air control.
- Curved vanes are individually adjustable from the grille face.
- Six mounting styles are available.
- Countersunk screwholes with factory painted oval head screws are supplied (Type C and F only).
- Mullion supports supplied when vanes exceed 20 in. [508] for strength and stability.

Finish

White Powder Coat **B12**
 For optional and special finishes see color matrix.

✓ Product Selection Checklist

- 1] Select Inlet Size L x W based on desired performance characteristics.
- 2] Select Face Size based on ceiling module (n/a type C or F).
- 3] Select Outlet Type by model number.
- 4] Select Border / Panel Style according to installation requirements (page C134).
- 5] Select Core Style based on application.
- 6] Select Volume Control Accessories, if desired (pages C181-C186).
- 7] Select Fastening Desired (type C or F only).
- 8] Select Finish.

Example:

24 in. x 24 in. / CVD / C / 2S / A / B12

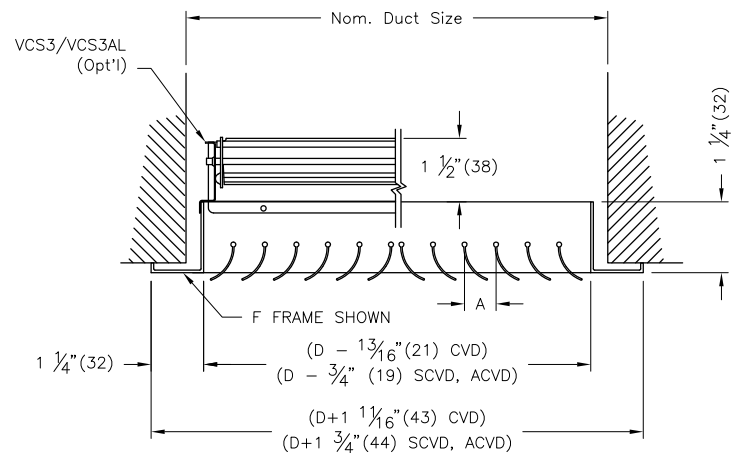
Application Recommendations:

For Border and Panel recommendations, see page C90.

Model CVD Shown

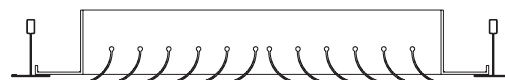


CVD / SCVD / ACVD Series

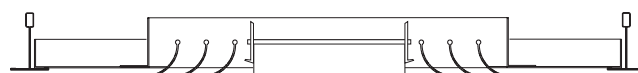


Surface Mount Application

| | |
|-------------|------------------|
| CVD | A = 3/4 in. [19] |
| SCVD | A = 1 in. [25] |
| ACVD | A = 1 in. [25] |



Full Face Lay-in Application



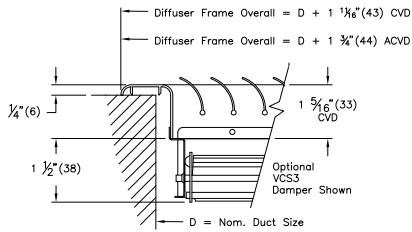
Panel Type Lay-in (Steel Panel) Application

Curved Vane Diffusers CVD, SCVD, ACVD Series



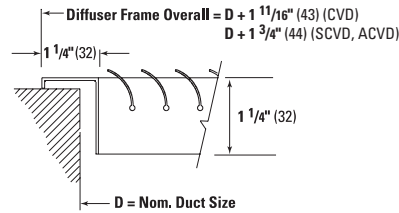
Frame Selection

Type C* Surface Mount - Curved Border

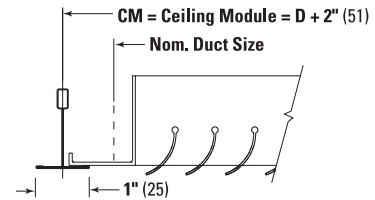


* Models CVD and ACVD only.

Type F Surface Mount - Flat Border

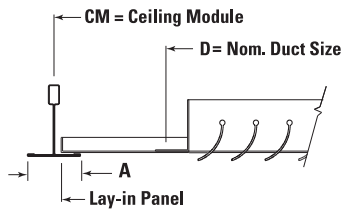


Type 3* Lay-in Inverted T 1" [25]

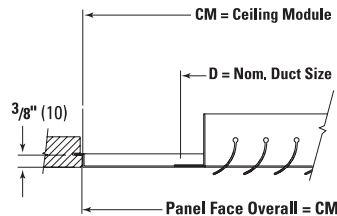


* ACVD Max. Size = 22 x 22
SCVD Max. Size = 22 x 22

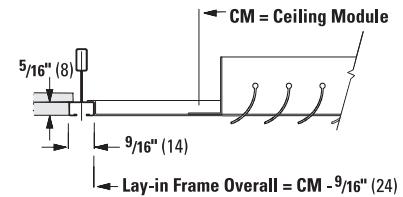
Inverted T-bar Lay-in Panel Type 3P A = 1" [25] Type 916P A = 9/16" [14]



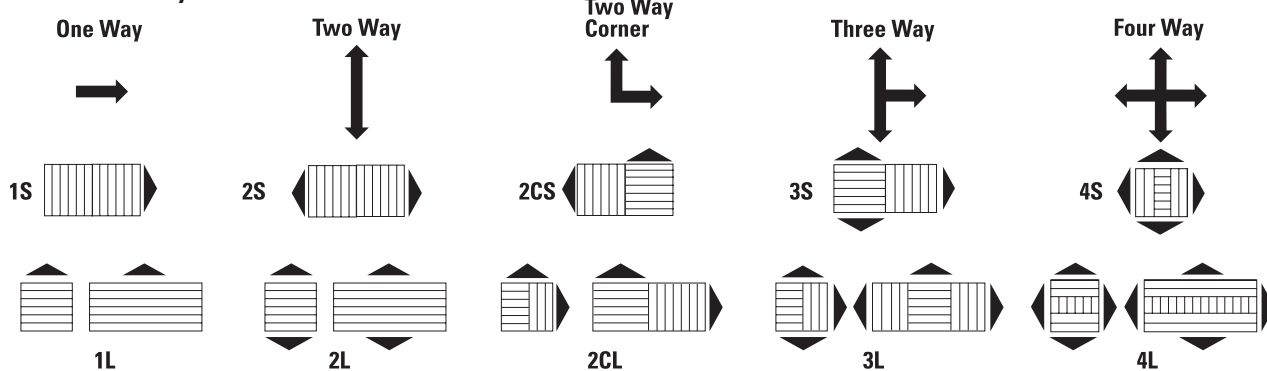
Type 4P Lay-in Panel Concealed Spline



Type 17P Lay-in Panel Narrow Member 9/16" [14]



Available Core Styles



Size Limitations - CVD

| Minimum Duct Size | Maximum Duct Size | Panel Sizes Type 3P, 4P, 17P |
|-------------------|-------------------|--|
| 6x4 / 150 x 100 | 36x36 / 900 x 900 | 12x12 / 300 x 300 24x24 / 600 x 600 48x24 / 1200 x 600 |

Size Limitations - ACVD / SCVD

| Minimum Duct Size | Maximum Duct Size | Panel Sizes Type 3P, 4P, 17P |
|-------------------|-------------------|--|
| 6x4 / 150 x 100* | 24x24 / 600 x 600 | 12x12 / 300 x 300 24x24 / 600 x 600 48x24 / 1200 x 600 |

* 4 way pattern only. All 4 inch rectangular units are available in 1 and 2 way patterns only.

Fire-Rated Steel Curved Vane Diffusers SCVD-FR Series



Product Information - Fixed Air Pattern

Three Hour Rating - Lay-in

Price SCVD-FR steel curved vane diffusers are Fire-Rated Assemblies listed in the UL Listed (Underwriters Laboratories Fire Resistance Directory) and ULC Listed (Underwriters Laboratories of Canada Equipment and Materials Directory). This design meets time versus temperature test criteria and NFPA 90A requirements.

Price SCVD-FR Series steel curved vane directional diffuser features individually adjustable curved vanes to direct supply air precisely to suit the desired application and a clean, functional appearance with excellent performance characteristics.

Features

- Roll formed steel construction.
- Curved vanes provide superior air control.
- Curved vanes are individually adjustable from the grille face.
- Non-adjustable, butterfly-type ceiling radiation damper.
- Designed for use in an exposed grid suspension ceiling (T-bar Lay-in) with a three hour or less restrained or unrestrained assembly rating. Units must be installed in accordance with the instructions that accompany each unit.
- Thermal blanket is non-asbestos.
- Standard 165°F [74°C] fusible link, optional 212°F [100°C] fusible link.
- Optional adjustable volume controller (Allen key adjustable).
- Optional T-bar Lay-in Panel 12" x 12" and 24" x 24".

Available Module Sizes

| Imperial | Metric |
|-----------|-----------|
| 24" x 24" | 600 x 600 |
| 20" x 20" | 500 x 500 |
| 12" x 12" | 300 x 300 |

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.

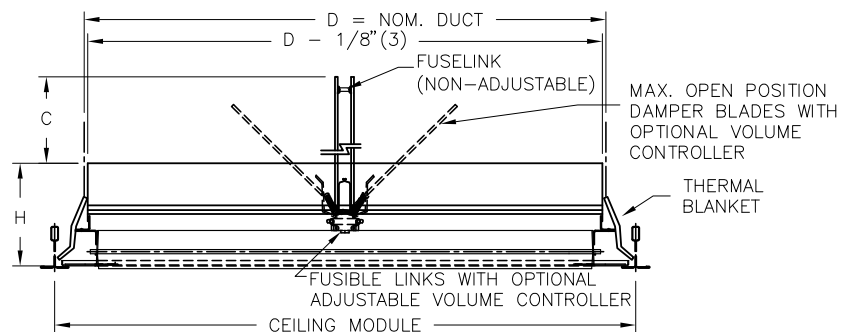


Model SCVD-FR

Size Limitations - SCVD-FR

| Minimum Duct Size | Maximum Duct Size | Panel Sizes Type 3P |
|--------------------|---------------------|--|
| 6 x 6 / 150 x 150* | 22 x 22 / 559 x 559 | 12 x 12 / 300 x 300 24 x 24 / 600 x 600 |

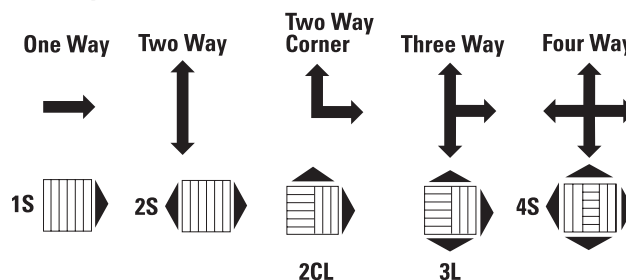
* 4 Way Pattern only.



Panel Type Lay-in (Steel Panel) Application

SCVD Max. Size = 20 x 20 [508 x 508] for Panel Option.

Available Core Styles



✓ Product Selection Checklist

- 1] Select Inlet Diameter.
- 2] Select Face Size based on ceiling module.
- 3] Select Diffuser Style by model number.
- 4] Select Options desired.
- 5] Select Finish.

Example: 8" / 24" x 24" / SCVD-FR / 3P / B12

Curved Vane Diffusers CVD, SCVD, ACVD Series



Performance Data

| Size | Core Velocity | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | |
|------------------------------------|-------------------|-------|--------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Velocity Pressure | .001 | .002 | .006 | .010 | .016 | .022 | .031 | .040 | .051 | .062 | |
| | Total Pressure | .003 | .014 | .031 | .056 | .090 | .131 | .175 | .225 | .290 | .355 | |
| Ac = .12 ft ² 6 x 4 | cfm | 10 | 25 | 35 | 50 | 60 | 70 | 85 | 95 | 110 | 120 | |
| | NC | - | - | - | - | 20 | 24 | 28 | 32 | 35 | 38 | |
| | Throw ft | 4 Way | - | - | - | 5-7-11 | 5-8-13 | 7-10-16 | 8-12-19 | 9-13-21 | 10-15-24 | 11-16-26 |
| | | 3 Way | - | - | - | 5-7-12 | 6-9-14 | 7-11-17 | 8-12-20 | 10-14-23 | 10-16-25 | 12-18-28 |
| | | 2 Way | - | - | - | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-22 | 10-16-25 | 12-18-28 | 13-19-31 |
| 1 Way | | - | - | - | 7-10-16 | 8-12-19 | 10-14-23 | 11-17-27 | 12-19-30 | 14-21-34 | 15-23-37 | |
| Ac = .16 ft ² 8 x 4 | cfm | 15 | 30 | 50 | 65 | 80 | 95 | 110 | 130 | 145 | 160 | |
| | NC | - | - | - | 15 | 21 | 26 | 30 | 33 | 36 | 39 | |
| | Throw ft | 4 Way | - | - | 4-6-9 | 5-7-12 | 6-9-14 | 7-11-17 | 8-12-20 | 9-14-22 | 10-16-25 | 12-18-28 |
| | | 3 Way | - | - | 4-6-10 | 5-8-13 | 6-9-15 | 8-12-19 | 9-14-22 | 10-15-24 | 11-17-27 | 12-19-30 |
| | | 2 Way | - | - | 5-7-11 | 6-9-14 | 7-11-17 | 9-13-21 | 10-15-24 | 11-17-27 | 12-19-30 | 14-21-33 |
| 1 Way | | - | - | 5-8-13 | 7-11-17 | 9-13-21 | 10-16-25 | 12-18-29 | 13-20-32 | 15-22-36 | 17-25-40 | |
| Ac = .20 ft ² 10 x 4 | cfm | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | |
| | NC | - | - | - | 16 | 22 | 27 | 31 | 34 | 37 | 40 | |
| | Throw ft | 4 Way | - | - | 4-5-9 | 5-8-13 | 6-9-15 | 8-11-18 | 9-13-21 | 10-15-24 | 11-17-27 | 12-18-29 |
| | | 3 Way | - | - | 4-6-10 | 6-9-14 | 7-10-16 | 8-12-20 | 10-14-23 | 11-16-26 | 12-18-29 | 13-20-32 |
| | | 2 Way | - | - | 5-7-11 | 6-9-15 | 8-11-18 | 9-14-22 | 10-16-25 | 12-18-29 | 13-20-32 | 15-22-35 |
| 1 Way | | - | - | 6-9-14 | 8-11-18 | 9-14-22 | 11-16-26 | 12-19-30 | 14-21-34 | 16-24-38 | 18-26-42 | |
| Ac = .26 ft ² 12 x 4 | cfm | 25 | 50 | 80 | 105 | 130 | 155 | 180 | 210 | 235 | 260 | |
| | NC | - | - | - | 17 | 23 | 28 | 32 | 35 | 38 | 41 | |
| | Throw ft | 4 Way | - | 3-4-7 | 4-6-10 | 6-9-14 | 7-10-16 | 8-12-20 | 10-14-23 | 11-16-26 | 12-18-29 | 13-20-32 |
| | | 3 Way | - | 3-4-7 | 5-7-11 | 6-9-15 | 8-11-18 | 9-13-21 | 10-15-24 | 11-17-27 | 13-19-31 | 14-21-34 |
| | | 2 Way | - | 3-5-8 | 5-7-12 | 7-10-16 | 8-12-20 | 10-15-24 | 11-17-27 | 13-19-31 | 14-21-34 | 16-24-38 |
| 1 Way | | - | 4-6-10 | 6-9-15 | 8-12-19 | 10-15-24 | 12-18-28 | 13-20-32 | 15-23-37 | 17-26-41 | 19-28-45 | |
| Ac = .30 ft ² 14 x 4 | cfm | 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 | 270 | 300 | |
| | NC | - | - | - | 18 | 23 | 28 | 32 | 36 | 39 | 42 | |
| | Throw ft | 4 Way | - | 3-4-7 | 4-6-10 | 6-9-14 | 7-11-17 | 9-13-21 | 10-15-24 | 11-17-27 | 12-19-30 | 14-21-33 |
| | | 3 Way | - | 3-5-8 | 5-7-11 | 6-9-15 | 8-12-19 | 9-14-22 | 10-16-25 | 12-18-29 | 13-20-32 | 15-22-35 |
| | | 2 Way | - | 3-5-8 | 5-8-13 | 7-11-17 | 9-13-21 | 10-15-24 | 12-18-28 | 13-20-32 | 16-24-38 | 16-24-39 |
| 1 Way | | - | 4-6-10 | 6-9-15 | 8-12-20 | 10-16-25 | 12-18-29 | 14-21-34 | 16-24-38 | 18-27-43 | 20-29-47 | |
| Ac = .35 ft ² 16 x 4 | cfm | 35 | 70 | 105 | 140 | 175 | 210 | 245 | 280 | 315 | 350 | |
| | NC | - | - | 11 | 18 | 24 | 29 | 33 | 37 | 39 | 42 | |
| | Throw ft | 4 Way | - | 3-4-7 | 5-7-11 | 6-9-15 | 8-11-18 | 9-13-21 | 10-16-25 | 12-18-28 | 13-19-31 | 14-21-34 |
| | | 3 Way | - | 3-5-8 | 5-7-12 | 6-9-15 | 8-12-19 | 10-14-23 | 11-16-26 | 14-19-30 | 14-21-33 | 15-23-37 |
| | | 2 Way | - | 4-6-9 | 5-8-13 | 7-11-17 | 9-13-21 | 10-16-25 | 12-18-29 | 14-21-33 | 15-23-37 | 17-26-41 |
| 1 Way | | - | 4-6-10 | 7-10-16 | 9-13-21 | 10-16-25 | 12-19-30 | 15-22-35 | 17-25-40 | 18-27-44 | 20-31-49 | |
| Ac = .40 ft ² 18 x 4 | cfm | 40 | 80 | 120 | 160 | 200 | 240 | 280 | 320 | 360 | 400 | |
| | NC | - | - | 12 | 19 | 25 | 30 | 34 | 37 | 40 | 43 | |
| | Throw ft | 4 Way | - | 3-5-8 | 5-7-11 | 6-9-15 | 8-12-19 | 9-14-22 | 11-16-26 | 12-18-29 | 13-20-32 | 15-22-35 |
| | | 3 Way | - | 3-5-8 | 5-7-12 | 7-10-16 | 8-12-20 | 10-15-24 | 11-17-27 | 13-19-31 | 15-22-35 | 16-24-38 |
| | | 2 Way | - | 4-6-9 | 6-9-14 | 8-11-18 | 9-14-22 | 11-16-26 | 12-19-30 | 14-21-34 | 16-24-38 | 18-26-42 |
| 1 Way | | - | 5-7-11 | 7-10-16 | 9-14-22 | 10-16-26 | 13-19-31 | 15-22-36 | 17-26-41 | 19-29-46 | 21-32-51 | |
| Ac = .45 ft ² 20 x 4 | cfm | 45 | 90 | 135 | 180 | 225 | 270 | 315 | 360 | 405 | 450 | |
| | NC | - | - | - | 19 | 26 | 30 | 34 | 38 | 41 | 44 | |
| | Throw ft | 4 Way | - | 3-5-8 | 5-7-12 | 6-9-15 | 8-12-19 | 10-14-23 | 11-16-26 | 12-19-30 | 14-21-33 | 15-23-37 |
| | | 3 Way | - | 3-5-8 | 5-8-13 | 7-11-17 | 9-13-21 | 10-15-24 | 12-18-28 | 13-20-32 | 15-22-36 | 16-24-39 |
| | | 2 Way | - | 4-6-9 | 6-9-14 | 8-12-19 | 10-14-23 | 11-17-27 | 13-19-31 | 15-22-35 | 16-24-39 | 18-27-44 |
| 1 Way | | - | 5-7-11 | 7-11-17 | 9-14-22 | 11-17-27 | 13-20-32 | 15-23-37 | 18-26-42 | 20-29-47 | 22-33-53 | |
| Ac = .55 ft ² 4 x 4 | cfm | 55 | 110 | 165 | 220 | 275 | 330 | 385 | 440 | 495 | 550 | |
| | NC | - | - | - | 20 | 26 | 31 | 35 | 39 | 41 | 44 | |
| | Throw ft | 4 Way | 2-3-4 | 3-5-8 | 5-7-12 | 7-10-16 | 8-12-20 | 10-15-24 | 12-18-28 | 13-19-31 | 15-22-35 | 16-24-39 |
| | | 3 Way | 2-3-5 | 4-6-9 | 5-8-13 | 8-11-18 | 9-14-22 | 11-16-26 | 12-19-30 | 14-21-33 | 16-24-38 | 17-26-41 |
| | | 2 Way | 2-3-5 | 4-6-10 | 6-9-15 | 8-12-20 | 10-15-24 | 12-18-29 | 14-21-33 | 15-23-37 | 17-26-41 | 19-29-46 |
| 1 Way | | 2-4-6 | 5-7-12 | 8-11-18 | 10-14-23 | 12-18-29 | 14-21-34 | 16-24-39 | 18-27-44 | 21-31-50 | 23-35-56 | |

See Performance Notes, Page C133

Curved Vane Diffusers CVD, SCVD, ACVD Series



Performance Data

| Size | Core Velocity Velocity Pressure Total Pressure | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | |
|--|--|-------|-------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| Ac = .62 ft² 18 x 6 | cfm | 60 | 125 | 185 | 250 | 310 | 370 | 435 | 495 | 560 | 620 | |
| | NC | - | - | - | 21 | 27 | 32 | 36 | 39 | 42 | 45 | |
| 10 x 10 | Throw ft | 4 Way | 2-3-4 | 4-6-9 | 5-8-13 | 7-11-17 | 9-13-21 | 10-16-25 | 12-18-28 | 13-20-32 | 15-22-36 | 17-25-40 |
| | | 3 Way | 2-3-5 | 4-6-9 | 6-9-14 | 8-11-18 | 9-14-22 | 11-17-27 | 13-19-31 | 14-21-34 | 16-24-39 | 18-27-43 |
| | | 2 Way | 2-3-5 | 4-6-10 | 6-9-15 | 8-12-20 | 10-16-25 | 12-18-29 | 14-21-34 | 16-24-38 | 18-27-43 | 20-29-47 |
| | | 1 Way | 2-4-6 | 5-7-12 | 8-11-18 | 10-15-24 | 12-19-30 | 15-22-35 | 17-26-41 | 19-29-46 | 21-32-51 | 24-36-57 |
| | | | | | | | | | | | | |
| Ac = .70 ft² 30 x 4 | cfm | 70 | 140 | 210 | 280 | 350 | 420 | 490 | 560 | 630 | 700 | |
| | NC | - | - | 14 | 21 | 27 | 32 | 36 | 40 | 42 | 45 | |
| 20 x 6 14 x 8 12 x 10 | Throw ft | 4 Way | 2-3-5 | 4-6-9 | 5-8-13 | 7-11-17 | 9-13-21 | 10-16-25 | 12-18-29 | 14-21-33 | 15-23-37 | 17-26-41 |
| | | 3 Way | 2-3-5 | 4-6-9 | 6-9-14 | 8-12-19 | 10-14-23 | 11-17-27 | 13-20-32 | 15-22-36 | 17-25-40 | 18-27-44 |
| | | 2 Way | 2-3-6 | 5-7-11 | 7-10-16 | 9-13-21 | 10-16-25 | 12-19-30 | 15-22-35 | 17-25-40 | 18-27-44 | 20-31-49 |
| | | 1 Way | 3-4-7 | 5-8-13 | 8-12-19 | 10-16-25 | 12-19-30 | 15-22-36 | 18-26-42 | 20-29-47 | 22-33-53 | 25-37-59 |
| | | | | | | | | | | | | |
| Ac = .81 ft² 36 x 4 | cfm | 80 | 160 | 245 | 325 | 405 | 485 | 565 | 650 | 730 | 810 | |
| | NC | - | - | 15 | 22 | 28 | 33 | 37 | 40 | 43 | 46 | |
| 24 x 6 16 x 8 14 x 10 | Throw ft | 4 Way | 2-3-5 | 4-6-9 | 6-9-14 | 8-11-18 | 9-14-22 | 11-16-26 | 12-19-30 | 14-21-34 | 16-24-38 | 18-27-43 |
| | | 3 Way | 2-3-5 | 4-6-10 | 6-9-15 | 8-12-20 | 11-16-26 | 12-18-28 | 14-21-33 | 15-23-37 | 17-26-41 | 19-29-46 |
| | | 2 Way | 2-4-6 | 5-7-11 | 7-10-16 | 9-14-22 | 11-16-26 | 13-19-31 | 15-22-36 | 17-26-41 | 19-26-46 | 21-32-51 |
| | | 1 Way | 3-4-7 | 5-8-13 | 8-12-20 | 11-16-26 | 13-20-32 | 16-24-38 | 18-27-44 | 20-31-49 | 23-34-55 | 26-39-62 |
| | | | | | | | | | | | | |
| Ac = .87 ft² 18 x 8 | cfm | 85 | 175 | 260 | 350 | 435 | 520 | 610 | 695 | 785 | 870 | |
| | NC | - | - | 15 | 22 | 28 | 33 | 37 | 40 | 43 | 46 | |
| 12 x 12 | Throw ft | 4 Way | 2-3-5 | 4-6-9 | 6-9-14 | 8-12-19 | 10-14-23 | 11-17-27 | 13-19-31 | 15-22-35 | 16-24-39 | 18-27-43 |
| | | 3 Way | 2-3-5 | 4-6-10 | 6-9-15 | 8-12-20 | 10-16-25 | 12-18-29 | 14-21-33 | 16-24-38 | 18-26-42 | 20-29-47 |
| | | 2 Way | 2-4-6 | 5-7-11 | 7-11-17 | 9-14-22 | 11-17-27 | 13-20-32 | 15-23-37 | 18-26-42 | 20-29-47 | 22-32-52 |
| | | 1 Way | 3-4-7 | 6-9-14 | 8-12-20 | 11-16-26 | 13-20-32 | 16-24-39 | 19-29-45 | 21-31-50 | 25-35-56 | 26-39-63 |
| | | | | | | | | | | | | |
| Ac = 1.02 ft² 30 x 6 | cfm | 100 | 205 | 305 | 410 | 510 | 610 | 715 | 815 | 920 | 1020 | |
| | NC | - | - | 16 | 23 | 29 | 34 | 38 | 41 | 44 | 47 | |
| 20 x 8 16 x 10 14 x 12 | Throw ft | 4 Way | 2-3-5 | 4-6-10 | 6-9-15 | 8-12-19 | 10-15-24 | 12-18-28 | 13-20-32 | 15-22-36 | 17-26-41 | 19-28-45 |
| | | 3 Way | 2-4-6 | 4-6-10 | 7-10-16 | 9-13-21 | 10-16-25 | 12-19-30 | 15-22-35 | 16-24-39 | 18-27-44 | 20-30-48 |
| | | 2 Way | 2-4-6 | 5-7-12 | 7-11-17 | 10-14-23 | 12-18-28 | 14-21-33 | 16-24-39 | 18-27-43 | 20-31-49 | 23-34-55 |
| | | 1 Way | 3-4-7 | 6-9-14 | 8-12-20 | 11-16-26 | 13-20-32 | 16-24-39 | 19-28-45 | 21-31-50 | 25-35-56 | 26-39-63 |
| | | | | | | | | | | | | |
| Ac = 1.15 ft² 24 x 8 | cfm | 115 | 230 | 345 | 460 | 575 | 690 | 805 | 920 | 1040 | 1150 | |
| | NC | - | - | 16 | 24 | 30 | 34 | 38 | 42 | 45 | 48 | |
| 18 x 10 16 x 12 | Throw ft | 4 Way | 2-3-5 | 4-6-10 | 6-9-15 | 8-12-20 | 10-16-25 | 12-18-29 | 14-21-33 | 16-24-38 | 18-26-42 | 19-29-46 |
| | | 3 Way | 2-4-6 | 5-7-11 | 7-10-16 | 9-13-21 | 11-16-26 | 13-19-31 | 15-22-36 | 17-26-41 | 19-28-45 | 21-31-50 |
| | | 2 Way | 2-4-6 | 5-7-12 | 8-11-18 | 10-14-23 | 12-18-29 | 14-21-34 | 17-25-40 | 19-28-45 | 21-31-50 | 23-35-56 |
| | | 1 Way | 3-5-8 | 6-9-15 | 9-14-22 | 12-18-28 | 15-22-35 | 17-26-41 | 20-29-47 | 22-34-54 | 25-37-60 | 28-42-68 |
| | | | | | | | | | | | | |
| Ac = 1.25 ft² 36 x 6 | cfm | 125 | 250 | 375 | 500 | 625 | 750 | 875 | 1000 | 1120 | 1250 | |
| | NC | - | - | 16 | 24 | 30 | 34 | 38 | 42 | 45 | 48 | |
| 20 x 10 14 x 14 | Throw ft | 4 Way | 2-3-5 | 4-6-10 | 6-9-15 | 8-12-20 | 10-16-25 | 12-18-29 | 14-21-34 | 16-24-38 | 18-27-43 | 20-29-47 |
| | | 3 Way | 2-4-6 | 5-7-11 | 7-10-16 | 9-14-22 | 11-17-27 | 13-20-32 | 15-23-37 | 17-26-41 | 19-29-46 | 21-32-51 |
| | | 2 Way | 2-4-6 | 5-7-12 | 8-11-18 | 10-15-24 | 12-19-30 | 15-22-35 | 17-26-41 | 19-29-46 | 21-32-51 | 24-36-57 |
| | | 1 Way | 3-5-8 | 6-9-15 | 9-14-22 | 12-18-29 | 15-22-35 | 18-26-42 | 20-30-48 | 23-34-55 | 26-39-62 | 29-43-69 |
| | | | | | | | | | | | | |
| Ac = 1.35 ft² 16 x 4 | cfm | 135 | 270 | 405 | 540 | 675 | 810 | 945 | 1080 | 1220 | 1350 | |
| | NC | - | - | 17 | 24 | 30 | 35 | 39 | 42 | 45 | 48 | |
| 18 x 12 | Throw ft | 4 Way | 2-4-6 | 4-6-10 | 7-10-16 | 9-13-21 | 10-16-25 | 12-19-30 | 15-22-35 | 16-24-39 | 18-27-44 | 20-30-48 |
| | | 3 Way | 2-4-6 | 5-7-11 | 7-11-17 | 9-14-22 | 11-17-27 | 13-20-32 | 15-23-37 | 18-26-42 | 20-29-47 | 22-32-52 |
| | | 2 Way | 3-4-7 | 5-8-13 | 8-12-19 | 10-16-25 | 12-19-30 | 15-22-36 | 18-26-42 | 20-29-47 | 22-33-53 | 25-37-59 |
| | | 1 Way | 3-5-8 | 6-9-15 | 10-14-23 | 12-18-29 | 15-22-36 | 18-27-43 | 21-31-50 | 23-35-56 | 26-39-63 | 29-44-70 |
| | | | | | | | | | | | | |
| Ac = 1.53 ft² 30 x 8 | cfm | 155 | 305 | 460 | 610 | 765 | 920 | 1070 | 1220 | 1380 | 1530 | |
| | NC | - | - | 17 | 25 | 31 | 36 | 40 | 43 | 46 | 49 | |
| 24 x 10 20 x 12 18 x 14 16 x 16 | Throw ft | 4 Way | 2-4-6 | 5-7-11 | 7-10-16 | 9-13-21 | 11-16-26 | 13-19-31 | 15-22-36 | 17-25-40 | 19-28-45 | 21-31-50 |
| | | 3 Way | 2-4-6 | 5-7-12 | 7-11-17 | 10-14-23 | 12-18-28 | 14-21-33 | 16-24-39 | 18-27-44 | 20-31-49 | 22-34-54 |
| | | 2 Way | 3-4-7 | 5-8-13 | 8-12-19 | 10-16-25 | 13-20-32 | 15-23-37 | 18-27-43 | 20-30-48 | 23-34-55 | 25-37-60 |
| | | 1 Way | 3-5-8 | 7-10-16 | 10-14-23 | 12-19-30 | 15-23-37 | 18-27-44 | 21-32-51 | 24-36-58 | 27-41-65 | 30-46-73 |
| | | | | | | | | | | | | |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum), with a cooling temperature differential of 20 °F. The throw values may be increased or decreased 20% by changing the vane settings.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks (—) indicate NC levels below 15.
- This data is based on an opening of about 1/8 in. between the frame and the first vane, with progressively wider spacing between vanes away from the frame. The setting will cause the air to be discharged parallel to the face of the diffuser (horizontal discharge if installed in ceiling).
- If the vanes are adjusted to the full open position, the listed NC values will be reduced by 7 and the total pressure will be 0.30 times that shown in the tables.
- Models SCVD / ACVD 4 in. rectangular units are available in 1 and 2 way patterns only.
- Does not include effects of ceiling radiation damper (SCVD-FR)

Curved Vane Diffusers CVD, SCVD, ACVD Series



Performance Data

| Size | Core Velocity Velocity Pressure Total Pressure | | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|--------------------------------------|--|--------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | | .001 .003 | .002 .014 | .006 .031 | .010 .056 | .016 .090 | .022 .131 | .031 .175 | .040 .225 | .051 .290 | .062 .355 |
| Ac = 1.82 ft ² 36 x 8 | cfm | | 182 | 365 | 545 | 730 | 910 | 1090 | 1270 | 1460 | 1640 | 1820 |
| | | | - | - | 18 | 26 | 32 | 36 | 40 | 44 | 47 | 50 |
| | Throw ft | 4 Way | 2-4-6 | 5-7-11 | 7-11-17 | 9-14-22 | 11-17-27 | 13-20-32 | 15-23-37 | 18-26-42 | 20-29-47 | 22-33-53 |
| | | 3 Way | 2-4-6 | 5-7-12 | 8-11-18 | 10-15-24 | 12-18-29 | 15-22-35 | 17-25-40 | 19-28-45 | 21-32-51 | 24-36-57 |
| | | 2 Way | 3-4-7 | 6-9-14 | 8-12-20 | 11-17-27 | 14-21-33 | 16-24-39 | 19-28-45 | 21-31-50 | 24-36-57 | 26-39-63 |
| 1 Way | | 3-5-8 | 7-10-16 | 10-15-24 | 13-20-32 | 16-24-39 | 19-29-46 | 22-34-54 | 25-37-60 | 28-42-68 | 32-48-76 | |
| Ac = 2.10 ft ² 24 x 14 | cfm | | 210 | 420 | 630 | 840 | 1050 | 1260 | 1470 | 1680 | 1890 | 2100 |
| | NC | | - | - | 19 | 26 | 32 | 37 | 41 | 44 | 47 | 50 |
| | Throw ft | 4 Way | 2-4-6 | 5-7-12 | 8-11-18 | 10-14-23 | 12-18-28 | 14-21-34 | 16-24-39 | 18-27-44 | 20-31-49 | 23-34-55 |
| | | 3 Way | 3-4-7 | 5-8-13 | 8-12-19 | 10-16-25 | 12-19-30 | 15-22-36 | 18-26-42 | 20-29-47 | 22-33-53 | 25-37-59 |
| | | 2 Way | 3-4-7 | 6-9-14 | 9-13-21 | 12-18-28 | 14-21-34 | 17-25-40 | 19-29-46 | 22-32-52 | 25-37-59 | 28-41-66 |
| 1 Way | | 4-6-9 | 7-11-17 | 10-16-25 | 14-21-33 | 17-25-40 | 20-30-48 | 23-34-55 | 26-39-62 | 29-44-70 | 33-50-80 | |
| Ac = 2.35 ft ² 36 x 10 | cfm | | 235 | 470 | 705 | 940 | 1180 | 1410 | 1640 | 1880 | 2120 | 2350 |
| | NC | | - | - | 19 | 27 | 33 | 37 | 41 | 45 | 48 | 51 |
| | Throw ft | 4 Way | 2-4-6 | 5-7-12 | 8-11-18 | 10-15-24 | 12-18-29 | 15-22-35 | 17-25-40 | 19-28-45 | 21-31-50 | 24-36-57 |
| | | 3 Way | 3-4-7 | 5-8-13 | 8-12-19 | 10-16-25 | 13-19-31 | 15-23-37 | 18-27-43 | 20-31-49 | 23-34-55 | 25-37-60 |
| | | 2 Way | 3-5-8 | 6-9-15 | 9-14-22 | 12-18-28 | 15-22-35 | 18-26-42 | 20-30-48 | 22-34-54 | 25-38-61 | 28-42-68 |
| 1 Way | | 4-6-9 | 7-11-17 | 11-16-26 | 14-21-34 | 18-26-42 | 20-31-49 | 24-36-57 | 27-40-64 | 30-45-72 | 34-51-82 | |
| Ac = 2.68 ft ² 36 x 12 | cfm | | 270 | 535 | 805 | 1070 | 1340 | 1610 | 1880 | 2140 | 2410 | 2680 |
| | NC | | - | - | 20 | 27 | 33 | 38 | 42 | 45 | 48 | 51 |
| | Throw ft | 4 Way | 3-4-7 | 5-8-13 | 8-12-19 | 10-16-25 | 12-19-30 | 15-22-36 | 18-26-42 | 20-29-47 | 22-32-52 | 25-37-59 |
| | | 3 Way | 3-4-7 | 6-9-14 | 8-12-20 | 11-16-26 | 14-21-33 | 16-24-39 | 19-28-45 | 21-31-50 | 24-36-57 | 26-39-63 |
| | | 2 Way | 3-5-8 | 6-9-15 | 9-14-22 | 12-18-29 | 15-22-36 | 20-30-48 | 20-31-49 | 23-35-56 | 26-39-62 | 29-44-70 |
| 1 Way | | 4-6-9 | 8-11-18 | 11-17-27 | 15-22-35 | 18-27-43 | 21-32-51 | 25-37-59 | 28-41-66 | 31-47-75 | 35-53-85 | |
| Ac = 3.15 ft ² 36 x 14 | cfm | | 315 | 630 | 945 | 1260 | 1580 | 1890 | 2200 | 2520 | 2840 | 3150 |
| | NC | | - | - | 20 | 28 | 34 | 39 | 43 | 46 | 49 | 52 |
| | Throw ft | 4 Way | 3-4-7 | 5-8-13 | 8-12-19 | 11-16-26 | 13-19-31 | 15-23-37 | 18-27-43 | 20-31-49 | 23-34-55 | 26-39-62 |
| | | 3 Way | 3-4-7 | 6-9-14 | 9-13-21 | 11-17-27 | 14-21-34 | 17-25-40 | 19-29-46 | 22-32-52 | 25-37-59 | 28-41-66 |
| | | 2 Way | 3-5-8 | 7-10-16 | 10-15-24 | 12-19-30 | 16-24-38 | 19-28-45 | 21-32-51 | 24-36-58 | 27-41-65 | 30-46-73 |
| 1 Way | | 4-6-10 | 8-12-19 | 12-18-28 | 15-22-36 | 19-28-45 | 22-33-53 | 26-39-62 | 29-43-69 | 33-49-47 | 37-56-89 | |
| Ac = 3.65 ft ² 36 x 16 | cfm | | 365 | 730 | 1100 | 1460 | 1820 | 2190 | 2560 | 2920 | 3280 | 3650 |
| | NC | | - | - | 21 | 29 | 35 | 39 | 43 | 47 | 50 | 53 |
| | Throw ft | 4 Way | 3-4-7 | 6-9-14 | 8-12-20 | 11-17-27 | 14-21-33 | 16-24-39 | 19-28-45 | 21-31-50 | 24-36-57 | 27-40-64 |
| | | 3 Way | 3-5-8 | 6-9-15 | 9-14-22 | 12-18-28 | 15-22-35 | 18-26-42 | 20-30-48 | 23-34-55 | 25-38-61 | 28-42-68 |
| | | 2 Way | 3-5-8 | 7-10-16 | 10-15-24 | 13-20-32 | 16-24-39 | 19-29-46 | 22-34-54 | 25-37-60 | 28-42-68 | 32-48-76 |
| 1 Way | | 4-6-10 | 8-12-20 | 12-18-29 | 15-23-37 | 19-29-46 | 23-34-55 | 27-40-64 | 30-45-72 | 34-51-82 | 38-57-92 | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum), with a cooling temperature differential of 20 °F. The throw values may be increased or decreased 20% by changing the vane settings.
5. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
6. Blanks (—) indicate NC levels below 15.
7. This data is based on an opening of about 1/8" between the frame and the first vane, with progressively wider spacing between vanes away from the frame. The setting will cause the air to be discharged parallel to the face of the diffuser (horizontal discharge if installed in ceiling).
8. If the vanes are adjusted to the full open position, the listed NC values will be reduced by 7 and the total pressure will be 0.30 times that shown in the tables.
9. Models SCVD / ACVD 4" rectangular units are available in 1 and 2 way patterns only.
10. Does not include effects of ceiling radiation damper (SCVD-FR)

Curved Vane Diffusers CVD, SCVD, ACVD Series



Performance Data

| Size | Core Velocity | | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | |
|--------------------------------------|---------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|----------|--|
| | Velocity | Pressure | .001 | .002 | .006 | .010 | .016 | .022 | .031 | .040 | .051 | .062 | |
| Total Pressure | | .003 | | .014 | .031 | .056 | .090 | .131 | .175 | .225 | .290 | .355 | |
| Ac = 4.05 ft ² 36 x 18 | cfm | | 405 | 810 | 1220 | 1620 | 2020 | 2430 | 2830 | 3240 | 3640 | 4050 | |
| | | | - | 11 | 22 | 29 | 35 | 40 | 44 | 47 | 50 | 53 | |
| | Throw ft | 4 Way | 3-4-7 | 6-9-14 | 9-13-21 | 11-17-27 | 14-21-34 | 17-25-40 | 19-29-46 | 22-32-52 | 25-37-59 | 28-41-66 | |
| | | 3 Way | 3-5-8 | 6-9-15 | 9-14-22 | 12-18-29 | 15-22-36 | 18-27-43 | 20-31-49 | 23-35-56 | 26-39-63 | 29-44-70 | |
| | | 2 Way | 4-6-9 | 7-11-17 | 10-16-25 | 13-20-32 | 17-25-40 | 20-29-47 | 23-34-55 | 26-39-62 | 29-44-70 | 33-49-79 | |
| 1 Way | | 4-6-10 | 8-12-20 | 12-19-30 | 16-24-39 | 20-29-47 | 24-36-57 | 28-41-66 | 31-46-74 | 35-52-84 | 39-59-94 | | |
| Ac = 4.72 ft ² 36 x 20 | cfm | | 470 | 945 | 1420 | 1890 | 2360 | 2830 | 3300 | 3780 | 4250 | 4720 | |
| | NC | | - | 12 | 22 | 30 | 36 | 40 | 44 | 48 | 51 | 54 | |
| | Throw ft | 4 Way | 3-5-8 | 6-9-15 | 9-14-22 | 12-18-28 | 15-22-35 | 18-26-42 | 20-30-48 | 22-34-54 | 25-38-61 | 28-42-68 | |
| | | 3 Way | 3-5-8 | 7-10-16 | 10-14-23 | 12-19-30 | 16-24-38 | 19-28-45 | 22-32-52 | 24-36-58 | 28-41-66 | 31-46-74 | |
| | | 2 Way | 4-6-9 | 7-11-17 | 11-16-26 | 14-21-34 | 18-26-42 | 20-31-49 | 24-36-57 | 27-40-64 | 30-46-73 | 34-51-82 | |
| 1 Way | | 5-7-11 | 9-13-21 | 13-19-31 | 17-25-40 | 20-31-49 | 25-37-59 | 28-42-68 | 32-49-78 | 37-55-88 | 41-61-98 | | |
| Ac = 5.82 ft ² 36 x 24 | cfm | | 580 | 1160 | 1750 | 2330 | 2910 | 3490 | 4070 | 4660 | 5240 | 5820 | |
| | NC | | - | 13 | 23 | 31 | 37 | 41 | 45 | 49 | 52 | 55 | |
| | Throw ft | 4 Way | 3-5-8 | 6-9-15 | 10-14-23 | 12-19-30 | 15-23-37 | 18-27-44 | 21-32-51 | 24-36-57 | 27-40-64 | 30-45-72 | |
| | | 3 Way | 4-6-9 | 7-10-16 | 10-16-25 | 13-20-32 | 17-25-40 | 20-29-47 | 23-34-55 | 25-38-61 | 29-44-70 | 32-49-78 | |
| | | 2 Way | 4-6-9 | 8-11-18 | 11-17-27 | 15-22-35 | 18-27-44 | 22-32-52 | 25-37-60 | 28-42-68 | 32-48-77 | 36-54-87 | |
| 1 Way | | 5-7-11 | 9-14-22 | 13-20-32 | 18-26-42 | 22-32-52 | 26-39-62 | 30-45-72 | 34-51-82 | 39-56-93 | 44-66-105 | | |
| Ac = 7.17 ft ² 36 x 30 | cfm | | 715 | 1430 | 2150 | 2870 | 3580 | 4300 | 5020 | 5740 | 6450 | 7170 | |
| | NC | | - | 14 | 24 | 31 | 37 | 42 | 46 | 50 | 53 | 56 | |
| | Throw ft | 4 Way | 3-5-8 | 7-10-16 | 10-15-24 | 13-20-32 | 16-24-39 | 19-29-46 | 22-34-54 | 25-37-60 | 28-42-68 | 32-48-76 | |
| | | 3 Way | 4-6-9 | 7-11-17 | 11-16-26 | 14-21-34 | 18-26-42 | 21-31-50 | 24-36-57 | 27-41-65 | 30-46-73 | 34-51-82 | |
| | | 2 Way | 4-6-10 | 8-12-20 | 12-18-29 | 15-23-37 | 19-29-46 | 23-34-55 | 27-40-64 | 30-45-72 | 34-51-82 | 38-57-92 | |
| 1 Way | | 5-7-12 | 10-14-23 | 14-21-34 | 18-27-44 | 23-34-55 | 28-41-66 | 32-48-77 | 36-54-87 | 41-61-98 | 46-69-110 | | |
| Ac = 8.63 ft ² 36 x 36 | cfm | | 865 | 1730 | 2590 | 3450 | 4320 | 5180 | 6040 | 6900 | 7700 | 8630 | |
| | NC | | - | 14 | 25 | 32 | 38 | 43 | 47 | 51 | 53 | 56 | |
| | Throw ft | 4 Way | 4-6-9 | 7-11-17 | 10-16-25 | 14-21-33 | 17-26-41 | 20-31-49 | 23-35-56 | 27-40-64 | 30-44-71 | 33-50-80 | |
| | | 3 Way | 4-6-10 | 8-11-18 | 11-17-27 | 15-22-35 | 18-27-44 | 22-32-52 | 25-37-60 | 28-42-68 | 32-48-77 | 36-54-87 | |
| | | 2 Way | 4-6-10 | 8-12-20 | 12-19-30 | 16-24-39 | 20-30-48 | 24-36-58 | 28-42-67 | 32-48-76 | 36-54-86 | 40-60-96 | |
| 1 Way | | 5-8-13 | 10-15-24 | 15-22-36 | 19-29-46 | 24-36-58 | 29-44-70 | 33-50-80 | 38-57-91 | 43-64-103 | 48-72-116 | | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum), with a cooling temperature differential of 20 °F. The throw values may be increased or decreased 20% by changing the vane settings.
5. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
6. Blanks (—) indicate NC levels below 15.
7. This data is based on an opening of about 1/8" between the frame and the first vane, with progressively wider spacing between vanes away from the frame. The setting will cause the air to be discharged parallel to the face of the diffuser (horizontal discharge if installed in ceiling).
8. If the vanes are adjusted to the full open position, the listed NC values will be reduced by 7 and the total pressure will be 0.30 times that shown in the tables.
9. Models SCVD / ACVD 4" rectangular units are available in 1 and 2 way patterns only.
10. Does not include effects of ceiling radiation damper (SCVD-FR)

Product Overview

Price offers a complete line of round cone ceiling diffusers that combine the classic beauty of round cone styling with maximum air diffusion efficiency.

Models RCD / ARCD / RCDA

The round cone styling of this diffuser makes for classic beauty and exceptional performance. Center cones move in unison for optimum aesthetic appeal and provide excellent adjustable horizontal and vertical air patterns. Because of the ceiling-hugging feature of air, these diffusers can be used for VAV applications. Sizes range from 6 in. [152] to 36 in. [914] nominal duct / neck. Available in steel (RCD / RCDA) and aluminum (ARCD) construction [6 in. [152] to 20 in. [508]].

Model RCDE

This diffuser combines economy, simplicity and versatility in one unit. Center cones can be adjusted to provide a two position horizontal air pattern, and because of the ceiling-hugging feature of air, can be used for VAV applications. Sizes range from 6 in. [152] to 24 in. [610] nominal duct / neck.

Model RPD

The round plaque diffuser satisfies engineering performance criteria, both in architectural ceilings and facilities with exposed ductwork. The smooth faced plaque is adjustable in three positions for horizontal or vertical air patterns. The ceiling-hugging feature of the horizontal air pattern means these diffusers can be used for VAV applications. Sizes range from 6 in. [152] to 14 in. [356] nominal duct / neck. Available in steel construction.

Model RID

Designed for high ceiling installation, this round cone high capacity industrial diffuser is easily field adjusted for full vertical or horizontal air pattern for heating/cooling applications. Suggested installations are factories, warehouses, convention centers, arenas, shopping malls, etc. Sizes range from 10 in. [254] to 36 in. [914] nominal duct / neck.

Models

Horizontal / Vertical Adjustable Air Pattern

Three Position Adjustment
Fully Adjustable

**RCD / ARCD
RCDA**

Horizontal Adjustable Air Pattern

Two Position

RCDE

Horizontal / Vertical Adjustable Air Pattern

Three Position

RPD

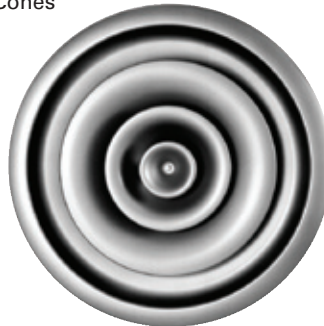
Industrial, Horizontal / Vertical Application

Fully Adjustable

RID

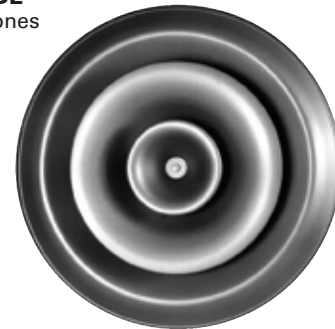
Types

RCD / ARCD / RCDA
4 Cones



Pages C141 - C142

RCDE
3 Cones



Pages C143 - C144

RPD



Pages C145 - C146

RID
2 Cones



Pages C147 - C148

Quick Selection Guide

| Installation | Discharge Pattern | Recommended Model |
|----------------------------|---------------------------------|-------------------|
| Commercial / Institutional | Fully Adjustable | RCDA |
| | Two Position Horizontal | RCDE |
| | Three Position | RPD |
| Industrial | Fully Adjustable, Pole Operated | RID |

Round Cone Diffusers RCD Series



Product Information

Models

Horizontal / Vertical Air Pattern

Three Position Adjustment (Steel) **RCD**
Three Position Adjustment (Aluminum)

ARCD
RCDA

Fully Adjustable

Price RCD / ARCD / RCDA Series adjustable round cone ceiling diffusers combine the classic beauty of 4 cone styling with maximum air diffusion efficiency. The three center cones move in unison when adjusted and retain their relative position so maximum uniformity of design and minimum pressure loss are assured under all conditions.

Model RCD / ARCD

Adjustment of inner cones is accomplished by removing cones and repositioning screws. Three adjustment positions available.

Model RCDA

Air pattern is adjustable from full horizontal to full vertical by turning the small center cone.

Features

- Heavy gauge spun steel (RCD / RCDA) or heavy gauge aluminum (ARCD) construction.
- Three center cones move in unison to ensure uniform appearance.
- Easily adjustable without requiring special tools.
- Excellent performance for VAV applications.
- Optional wire guards available to protect diffuser face for gymnasium applications.
- Complete range of available accessory dampers, equalizing grids, etc.

Finish

White Powder Coat

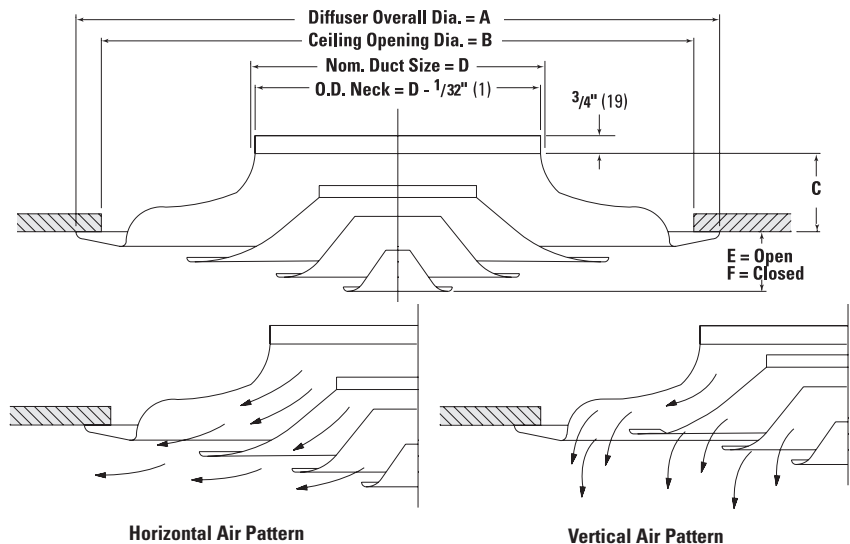
B12

For optional and special finishes see color matrix.

✓ Product Selection Checklist

- 1] Select Unit Size based on specified inlet diameter.
- 2] Select Outlet Type by model number.
- 3] Select Volume Control and/or Mounting Accessory, if desired.
- 4] Select Wire Guard / Safety Chain Accessories, if desired.
- 5] Select Finish.

Example: 24 in. / RCDA / B12



Dimensional Data — Imperial (in.) / Metric [mm]

| Nominal Size | A | B | C | D | E | F |
|--------------|---------------------------------------|-----------|-------------------------------------|----------|---------------------------------------|--------------------------------------|
| 6 | 13 ¹ / ₂ [343] | 12 [305] | 1 ⁵ / ₈ [41] | 6 [44] | 1 ³ / ₄ [44] | 1 ⁵ / ₁₆ [24] |
| 8 | 18 [457] | 16 [406] | 2 ¹ / ₈ [54] | 8 [56] | 2 ³ / ₁₆ [56] | 1 ³ / ₁₆ [30] |
| 10 | 22 ¹ / ₂ [572] | 20 [508] | 2 ³ / ₈ [67] | 10 [68] | 2 ¹¹ / ₁₆ [68] | 1 ⁷ / ₁₆ [37] |
| 12 | 27 [686] | 24 [610] | 3 ¹ / ₄ [83] | 12 [79] | 3 ¹ / ₈ [79] | 1 ⁵ / ₈ [41] |
| 14 | 31 ¹ / ₂ [800] | 28 [711] | 3 ³ / ₄ [95] | 14 [100] | 3 ¹⁵ / ₁₆ [100] | 1 ¹⁵ / ₁₆ [49] |
| 16 | 36 [914] | 32 [813] | 4 ¹ / ₄ [108] | 16 [108] | 4 ¹ / ₄ [108] | 2 ¹ / ₄ [57] |
| 18 | 40 ¹ / ₂ [1029] | 36 [914] | 4 ⁷ / ₈ [124] | 18 [121] | 4 ³ / ₄ [121] | 2 ¹ / ₂ [64] |
| 20 | 45 [1143] | 40 [1061] | 5 ³ / ₈ [137] | 20 [133] | 5 ¹ / ₄ [133] | 2 ³ / ₄ [70] |
| 24* | 54 [1372] | 48 [1219] | 6 ¹ / ₂ [165] | 24 [159] | 6 ¹ / ₄ [159] | 3 ¹ / ₄ [83] |
| 30* | 67 ¹ / ₂ [1715] | 60 [1524] | 8 [203] | 30 [184] | 7 ¹ / ₄ [184] | 3 ³ / ₁₆ [90] |
| 36* | 67 ¹ / ₂ [1715] | 60 [1524] | 8 [203] | 36 [184] | 7 ¹ / ₄ [184] | 3 ³ / ₁₆ [90] |

* These sizes not available for Model ARCD

Round Cone Diffusers RCD / RCDA Series



Performance Data

| Size | Neck Jet Velocity, fpm | NC 20 | | | | 30 | | | 40 | | | 50 |
|------|-----------------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----|
| | | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 | |
| | Velocity Pressure, in. w.g. | .010 | .016 | .023 | .031 | .040 | .051 | .063 | .090 | .122 | .160 | |
| | Total Pressure | .021 | .034 | .048 | .065 | .084 | .107 | .132 | .189 | .256 | .346 | |
| | Horizontal | .027 | .044 | .063 | .085 | .109 | .139 | .172 | .246 | .333 | .437 | |
| | Vertical | | | | | | | | | | | |
| 6 | Flow Rate, cfm | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 235 | 275 | 315 | |
| | Radius of Diffusion, ft | 1-2-3 | 2-3-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-7 | 4-5-8 | 4-6-10 | 5-7-11 | 6-8-13 | |
| | NC | — | — | 15 | 20 | 24 | 27 | 31 | 36 | 41 | 45 | |
| 8 | Flow Rate, cfm | 140 | 175 | 210 | 245 | 280 | 315 | 350 | 420 | 490 | 560 | |
| | Radius of Diffusion, ft | 2-3-4 | 2-3-5 | 3-3-7 | 3-5-8 | 4-5-9 | 4-6-10 | 5-7-11 | 5-9-13 | 6-9-15 | 7-11-17 | |
| | NC | — | — | 16 | 21 | 26 | 29 | 32 | 38 | 43 | 47 | |
| 10 | Flow Rate, cfm | 220 | 270 | 330 | 380 | 435 | 490 | 545 | 655 | 765 | 870 | |
| | Radius of Diffusion, ft | 2-3-5 | 3-4-7 | 3-5-8 | 4-6-9 | 4-7-11 | 5-8-12 | 6-8-14 | 7-10-16 | 8-12-19 | 9-13-22 | |
| | NC | — | — | 17 | 22 | 27 | 30 | 33 | 39 | 44 | 48 | |
| 12 | Flow Rate, cfm | 315 | 390 | 470 | 550 | 630 | 705 | 785 | 940 | 1100 | 1255 | |
| | Radius of Diffusion, ft | 3-4-7 | 3-5-8 | 4-6-10 | 5-7-11 | 5-8-13 | 6-9-15 | 7-10-16 | 8-12-19 | 9-14-23 | 11-16-26 | |
| | NC | — | — | 18 | 23 | 27 | 31 | 34 | 40 | 45 | 50 | |
| 14 | Flow Rate, cfm | 425 | 530 | 635 | 745 | 850 | 955 | 1060 | 1270 | 1490 | 1695 | |
| | Radius of Diffusion, ft | 3-5-8 | 4-6-9 | 5-5-11 | 5-8-13 | 6-9-15 | 7-11-17 | 8-12-19 | 9-14-22 | 11-16-26 | 13-19-30 | |
| | NC | — | — | 19 | 24 | 28 | 32 | 35 | 41 | 46 | 50 | |
| 16 | Flow Rate, cfm | 560 | 700 | 840 | 980 | 1120 | 1260 | 1400 | 1680 | 1960 | 2240 | |
| | Radius of Diffusion, ft | 4-5-9 | 5-7-11 | 5-8-13 | 6-9-15 | 7-11-17 | 8-12-20 | 9-14-22 | 11-16-26 | 13-19-30 | 14-22-35 | |
| | NC | — | — | 19 | 25 | 29 | 32 | 36 | 41 | 46 | 51 | |
| 18 | Flow Rate, cfm | 710 | 885 | 1060 | 1240 | 1420 | 1590 | 1770 | 2120 | 2480 | 2830 | |
| | Radius of Diffusion, ft | 4-6-10 | 5-8-12 | 6-9-15 | 7-11-17 | 8-12-20 | 9-14-22 | 10-15-24 | 12-18-29 | 14-21-34 | 16-24-39 | |
| | NC | — | 15 | 20 | 26 | 30 | 33 | 36 | 42 | 47 | 52 | |
| 20 | Flow Rate, cfm | 875 | 1100 | 1310 | 1530 | 1750 | 1970 | 2190 | 2610 | 3060 | 3500 | |
| | Radius of Diffusion, ft | 4-7-11 | 6-9-14 | 7-10-16 | 8-12-19 | 9-14-22 | 10-15-24 | 11-14-27 | 13-19-32 | 16-24-38 | 18-27-43 | |
| | NC | — | 15 | 21 | 26 | 30 | 34 | 37 | 43 | 48 | 52 | |
| 24 | Flow Rate, cfm | 1260 | 1570 | 1880 | 2200 | 2510 | 2830 | 3140 | 3770 | 4400 | 5020 | |
| | Radius of Diffusion, ft | 5-8-13 | 7-10-16 | 8-12-19 | 9-14-23 | 11-16-26 | 12-18-29 | 14-20-32 | 16-24-39 | 19-28-45 | 22-32-52 | |
| | NC | — | 16 | 22 | 27 | 31 | 35 | 38 | 44 | 49 | 53 | |
| 30 | Flow Rate, cfm | 1960 | 2450 | 2940 | 3430 | 3920 | 4410 | 4900 | 5880 | 6860 | 7840 | |
| | Radius of Diffusion, ft | 7-10-16 | 8-13-20 | 10-15-24 | 12-18-28 | 13-20-32 | 15-23-36 | 17-25-41 | 20-30-49 | 24-34-57 | 27-40-65 | |
| | NC | — | 17 | 23 | 27 | 32 | 36 | 39 | 45 | 50 | 54 | |
| 36 | Flow Rate, cfm | 2820 | 3520 | 4230 | 4930 | 5630 | 6340 | 7040 | 8450 | 9850 | 11,260 | |
| | Radius of Diffusion, ft | 8-12-20 | 10-15-24 | 12-18-29 | 14-21-34 | 16-24-39 | 18-27-44 | 20-30-49 | 24-36-58 | 28-42-68 | 32-48-78 | |
| | NC | — | 18 | 24 | 28 | 33 | 37 | 40 | 46 | 51 | 55 | |

Downward Projection* of Heated Air, ft

| | | | | | | | | | | |
|-------------------------|-------|-------|----------|----------|----------|----------|----------|----------|----------|----------|
| 10 Degrees Differential | 6-6-3 | 8-8-6 | 10-12-11 | 13-15-16 | 15-19-24 | 17-23-28 | 19-25-33 | 21-32-42 | 25-38-52 | 27-40-60 |
| 20 Degrees Differential | 4-4-2 | 6-7-5 | 7-8-7 | 9-11-11 | 10-14-16 | 12-16-20 | 13-18-24 | 15-21-30 | 17-25-36 | 19-29-42 |
| 30 Degrees Differential | 3-3-2 | 5-5-4 | 6-7-6 | 7-9-9 | 9-11-13 | 10-13-16 | 11-15-19 | 13-18-25 | 14-20-30 | 15-24-35 |
| 40 Degrees Differential | 3-2-2 | 4-4-3 | 5-6-6 | 7-8-9 | 8-10-12 | 9-12-15 | 10-13-17 | 11-16-22 | 12-18-27 | 14-20-31 |

*Downward Projection values represent the distance to a total air velocity of essentially zero. The three values are for a 6 in., 12 in. and 24 in. diffuser respectively.

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
If the diffuser is mounted on an exposed duct, multiply the throw value in table by 0.70.
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser. Values shown are for a horizontal pattern. Add 1 dB for a vertical pattern.
7. Blanks (—) indicate an NC level below 15.

Product Information

Models

Horizontal Air Pattern

Two Position Adjustment

RCDE

Price RCDE round cone ceiling diffusers feature a spring lock arrangement permitting quick, easy removal of the inner cone assembly. Ample adjustment of inner screw allows two different horizontal air patterns.

Features

- Heavy gauge spun steel construction.
- Two horizontal discharge settings for different flow rate conditions. In the open position (E), maximum capacity is obtained. In the closed position (F) induction is increased, and the noise levels increase by 1 NC above those shown in the performance table on page C144.
- Deeply contoured outer cone prevents smudging.
- Easily adjustable without requiring special tools.
- Excellent performance for VAV applications when selected within the range of tabulated performance values.
- Optional wire guards available to protect diffuser face for gymnasium applications.
- Complete range of available accessory dampers, equalizing grids etc.

Finish

White Powder Coat

B12

For optional and special finishes see color matrix

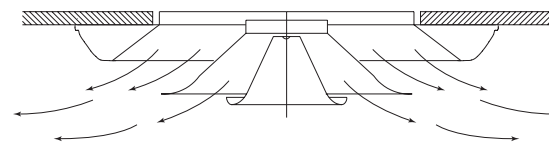
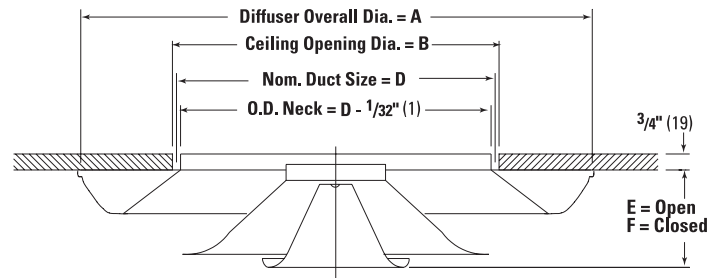
Available Sizes

6 in. [152] to 24 in. [610] nominal duct/neck.

✓ Product Selection Checklist

- 1] Select Unit Size based on specified inlet diameter.
- 2] Select Outlet Type by model number.
- 3] Select Volume Control and / or Mounting Accessory, if desired.
- 4] Select Wire Guard / Safety Chain Accessories, if desired.
- 5] Select Finish.

Example: 24 in. / RCDE / B12



RCDE Air Pattern

Dimensional Data — Imperial (in.) / Metric [mm]

| Nominal Size | A | B | D | E | F |
|--------------|---------------------------------------|--------------------------------------|----------|-------------------------------------|-------------------------------------|
| 6 | 11 ¹ / ₈ [283] | 6 ¹ / ₂ [165] | 6 [152] | 1 ³ / ₄ [45] | 1 ¹ / ₈ [29] |
| 8 | 14 ³ / ₄ [375] | 8 ¹ / ₂ [216] | 8 [203] | 2 ¹ / ₈ [54] | 1 ¹ / ₂ [38] |
| 10 | 18 ¹ / ₄ [464] | 10 ¹ / ₂ [267] | 10 [254] | 2 ⁷ / ₈ [73] | 2 ¹ / ₈ [54] |
| 12 | 22 [559] | 12 ¹ / ₂ [318] | 12 [305] | 3 ¹ / ₈ [79] | 2 ⁵ / ₈ [60] |
| 14 | 26 [660] | 14 ¹ / ₂ [368] | 14 [356] | 3 ³ / ₄ [86] | 2 ⁵ / ₈ [67] |
| 16 | 29 [737] | 16 ¹ / ₂ [419] | 16 [406] | 4 [102] | 3 ¹ / ₄ [83] |
| 18 | 32 ¹ / ₂ [826] | 18 ¹ / ₂ [470] | 18 [457] | 4 ³ / ₄ [121] | 3 ⁷ / ₈ [98] |
| 20 | 36 [914] | 20 ¹ / ₂ [521] | 20 [508] | 5 ⁷ / ₈ [149] | 4 ⁷ / ₈ [124] |
| 24 | 43 ³ / ₄ [1099] | 24 ¹ / ₂ [622] | 24 [610] | 7 ³ / ₄ [197] | 6 ⁵ / ₈ [168] |

Round Cone Diffusers RCDE Series



Performance Data

| Size | Neck Velocity, fpm Velocity Pressure, in. w.g. | NC 20 | | | | | 30 | | | 40 | | 50 |
|------|---|--------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----|
| | | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 | |
| 6 | Total Pressure, in. w.g. | .026 | .041 | .059 | .079 | .102 | .130 | .161 | .230 | .311 | .408 | |
| | Flow Rate, cfm | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 235 | 275 | 315 | |
| | Radius of Diffusion, ft | 2-2-4 | 2-3-5 | 2-4-6 | 3-4-7 | 3-5-8 | 4-5-9 | 4-6-10 | 5-7-11 | 6-8-13 | 6-10-15 | |
| | NC | — | — | — | 19 | 23 | 26 | 30 | 35 | 40 | 44 | |
| 8 | Total Pressure, in. w.g. | .033 | .052 | .075 | .101 | .130 | .166 | .205 | .292 | .397 | .520 | |
| | Flow Rate, cfm | 140 | 175 | 210 | 245 | 280 | 315 | 350 | 420 | 490 | 560 | |
| | Radius of Diffusion, ft | 2-4-8 | 3-4-7 | 4-5-9 | 4-6-10 | 5-7-11 | 5-8-13 | 6-9-14 | 7-11-17 | 8-13-20 | 10-14-23 | |
| | NC | — | 15 | 21 | 26 | 31 | 34 | 37 | 44 | 48 | 53 | |
| 10 | Total Pressure, in. w.g. | .027 | .043 | .062 | .084 | .108 | .138 | .170 | .243 | .329 | .432 | |
| | Flow Rate, cfm | 220 | 270 | 330 | 380 | 435 | 490 | 545 | 655 | 765 | 870 | |
| | Radius of Diffusion, ft | 3-4-7 | 3-5-8 | 4-6-10 | 5-7-11 | 5-8-13 | 6-9-15 | 7-10-16 | 8-12-20 | 10-14-23 | 11-16-26 | |
| | NC | — | — | 17 | 21 | 26 | 30 | 33 | 39 | 44 | 48 | |
| 12 | Total Pressure, in. w.g. | .026 | .042 | .060 | .081 | .105 | .135 | .166 | .236 | .320 | .420 | |
| | Flow Rate, cfm | 315 | 390 | 470 | 550 | 630 | 705 | 785 | 940 | 1100 | 1255 | |
| | Radius of Diffusion, ft | 3-5-8 | 4-6-10 | 5-7-12 | 6-8-13 | 6-10-15 | 7-11-17 | 8-12-19 | 10-14-23 | 11-17-23 | 12-19-31 | |
| | NC | — | — | 17 | 22 | 26 | 30 | 33 | 39 | 45 | 49 | |
| 14 | Total Pressure, in. w.g. | .038 | .061 | .087 | .118 | .152 | .194 | .240 | .342 | .465 | .608 | |
| | Flow Rate, cfm | 425 | 530 | 635 | 745 | 850 | 955 | 1060 | 1270 | 1490 | 1695 | |
| | Radius of Diffusion, ft | 4-6-10 | 5-8-12 | 6-9-15 | 7-11-17 | 8-12-20 | 9-14-22 | 10-15-24 | 12-18-29 | 14-21-34 | 16-24-39 | |
| | NC | — | 18 | 23 | 28 | 32 | 36 | 40 | 46 | 51 | 55 | |
| 16 | Total Pressure, in. w.g. | .033 | .053 | .076 | .102 | .132 | .168 | .208 | .297 | .403 | .528 | |
| | Flow Rate, cfm | 560 | 700 | 840 | 980 | 1120 | 1260 | 1400 | 1680 | 1960 | 2240 | |
| | Radius of Diffusion, ft | 5-7-11 | 6-9-14 | 7-10-16 | 8-12-19 | 9-14-22 | 10-15-24 | 11-17-27 | 14-20-33 | 16-24-38 | 18-27-43 | |
| | NC | 16 | 16 | 22 | 27 | 31 | 35 | 39 | 44 | 49 | 53 | |
| 18 | Total Pressure, in. w.g. | .030 | .048 | .069 | .093 | .120 | .153 | .189 | .270 | .366 | .480 | |
| | Flow Rate, cfm | 710 | 885 | 1060 | 1240 | 1420 | 1590 | 1770 | 2120 | 2480 | 2830 | |
| | Radius of Diffusion, ft | 5-7-12 | 6-9-15 | 7-11-18 | 9-13-21 | 10-15-24 | 11-17-27 | 12-19-30 | 15-22-36 | 17-26-42 | 20-30-48 | |
| | NC | — | 15 | 21 | 26 | 30 | 34 | 37 | 43 | 48 | 52 | |
| 20 | Total Pressure, in. w.g. | .030 | .047 | .068 | .091 | .118 | .155 | .196 | .266 | .360 | .472 | |
| | Flow Rate, cfm | 875 | 1100 | 1310 | 1530 | 1750 | 1970 | 2190 | 2610 | 3060 | 3500 | |
| | Radius of Diffusion, ft | 6-8-13 | 7-10-17 | 8-12-20 | 10-15-23 | 11-17-27 | 12-19-30 | 14-21-33 | 16-25-40 | 19-29-46 | 22-33-53 | |
| | NC | — | 16 | 21 | 26 | 30 | 34 | 38 | 43 | 48 | 52 | |
| 24 | Total Pressure, in. w.g. | .024 | .038 | .054 | .073 | .094 | .120 | .148 | .211 | .286 | .376 | |
| | Flow Rate, cfm | 1260 | 1570 | 1880 | 2200 | 2510 | 2820 | 3140 | 3770 | 4400 | 5020 | |
| | Radius of Diffusion, ft | 6-9-15 | 8-12-19 | 9-14-22 | 11-16-26 | 12-19-30 | 14-21-34 | 16-23-37 | 19-28-45 | 22-33-52 | 25-37-60 | |
| | NC | — | — | 19 | 24 | 28 | 32 | 35 | 41 | 46 | 50 | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in inches of water in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
If the diffuser is mounted on an exposed duct, multiply the throw value in table by 0.70.
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser. Values shown are for a horizontal pattern. Add 1 dB for a vertical pattern.
7. Blanks (—) indicate an NC level below 15.

Round Plaque Diffusers RPD Series



Product Information

Models

Horizontal / Vertical Air Pattern

Three Position Adjustable (Steel) **RPD**

Price RPD Series round plaque diffuser satisfies engineering performance criteria, both in architectural ceilings and facilities with exposed ductwork. The smooth faced plaque is adjustable in three positions for horizontal or vertical air flow.

Features

- Heavy gauge spun steel construction.
- Outer cone is one-piece with smooth, aerodynamically designed surfaces to help prevent ceiling smudging.
- The outer cone shape combined with the face plaque delivers a tight 360° radial horizontal air pattern.
- Face plaque is easily installed and removed without special tools.
- Three field adjustable plaque positions:
 - Vertical air flow;
 - Horizontal air flow, with ceiling;
 - Horizontal air flow, exposed ductwork;
- Excellent performance for VAV applications.
- Excellent performance for heating / cooling applications.
- Complete range of available accessory dampers, equalizing grids, etc.

Options

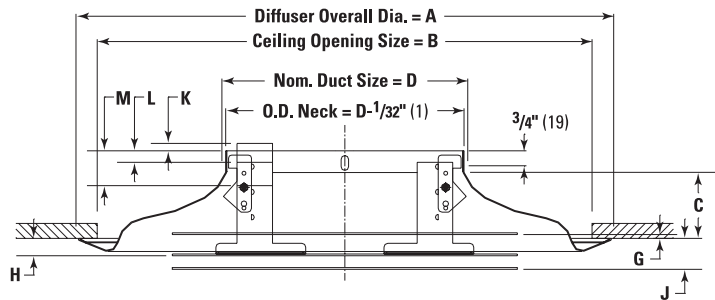
Retaining cable to attach inner plaque assembly to outer cone when a plaque removed for maintenance, etc.

Finish

White Powder Coat

B12

For optional and special finishes see color matrix.



Dimensional Data — Imperial (in.) / Metric [mm]

| Nom. Size | Plaque Position refer. to Ceiling Line | | | | Plaque Web Height refer. top of inlet | | | | | |
|-----------|--|----------|------------------------------------|----------|---------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|
| | A | B | C | D | Vert. Pattern | Horiz.1 Pattern | Horiz.2 Pattern | Vert. Pattern | Horiz.1 Pattern | Horiz.2 Pattern |
| 6 | 14 [356] | 12 [305] | 1 ⁵ / ₈ [41] | 6 [152] | - ⁵ / ₁₆ [-8] | ³ / ₈ [10] | 1/2 [13] | ⁵ / ₁₆ [8] | - ³ / ₈ [-10] | - ⁹ / ₁₆ [-14] |
| 8 | 18 [457] | 16 [406] | 2 ¹ / ₈ [54] | 8 [203] | - ¹ / ₈ [-3] | ⁹ / ₁₆ [14] | 1 ¹ / ₁₆ [27] | 1/4 [6] | - ⁷ / ₁₆ [-11] | - ¹⁵ / ₁₆ [-24] |
| 10 | 22 ¹ / ₂ [572] | 20 [508] | 2 ⁵ / ₈ [67] | 10 [254] | ⁷ / ₁₆ [11] | 1 ³ / ₁₆ [30] | 1 ¹ / ₂ [38] | ⁷ / ₁₆ [11] | - ¹ / ₄ [-6] | - ⁹ / ₁₆ [-14] |
| 12 | 27 [686] | 24 [610] | 3 ¹ / ₄ [83] | 12 [305] | 0 [0] | 1 [25] | 1 ³ / ₈ [35] | ³ / ₈ [10] | - ⁵ / ₈ [-16] | - ¹⁵ / ₁₆ [-24] |
| 14 | 31 ¹ / ₂ [800] | 28 [711] | 3 ³ / ₄ [95] | 14 [356] | 1/2 [13] | 1 ¹ / ₈ [29] | 1 ⁷ / ₈ [48] | ⁹ / ₁₆ [14] | ³ / ₈ [10] | ³ / ₈ [10] |

✓ Product Selection Checklist

- 1] Select Unit Size based on specified inlet diameter.
- 2] Select Outlet Type by model number.
- 3] Select Finish.

Example: 14 in. / RPD / B12

Round Plaque Diffusers RPD Series



Performance Data

| Size | Neck Velocity, fpm | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | | |
|--|--|---------------------------|--------------------------|--------|--------|--------|--------|--------|---------|---------|---------|-------|
| | Velocity Pressure, in. w.g. | .010 | .016 | .023 | .031 | .040 | .051 | .063 | .090 | .122 | | |
| | Plaque Position | Flow Rate, cfm | 79 | 98 | 118 | 137 | 157 | 177 | 196 | 236 | 275 | |
| 6 in. | Center | Total Pressure, in. w.g. | 0.014 | 0.022 | 0.032 | 0.044 | 0.057 | 0.073 | 0.090 | 0.129 | 0.176 | |
| | | Static Pressure, in. w.g. | 0.004 | 0.007 | 0.010 | 0.013 | 0.017 | 0.022 | 0.027 | 0.039 | 0.054 | |
| | | N.C (Noise Criteria) | - | - | - | - | - | - | - | 15 | 21 | 26 |
| | | Horizontal Throw (ft) | 1-2-4 | 2-3-5 | 2-3-5 | 2-4-5 | 3-4-6 | 3-4-6 | 3-5-7 | 4-5-7 | 4-5-8 | |
| | Down | Total Pressure, in. w.g. | 0.015 | 0.024 | 0.035 | 0.047 | 0.062 | 0.078 | 0.096 | 0.139 | 0.189 | |
| | | Static Pressure, in. w.g. | 0.005 | 0.008 | 0.012 | 0.017 | 0.022 | 0.028 | 0.034 | 0.049 | 0.067 | |
| | | NC (Noise Criteria) | - | - | - | - | - | - | - | 16 | 22 | 27 |
| | | Horizontal Throw (ft) | 1-2-5 | 2-3-6 | 2-4-7 | 3-4-8 | 3-5-8 | 4-5-9 | 4-6-9 | 5-7-10 | 6-8-11 | |
| | Up | Total Pressure, in. w.g. | 0.039 | 0.061 | 0.088 | 0.120 | 0.156 | 0.198 | 0.244 | 0.352 | 0.479 | |
| | | Static Pressure, in. w.g. | 0.029 | 0.046 | 0.066 | 0.089 | 0.117 | 0.147 | 0.182 | 0.262 | 0.357 | |
| NC (Noise Criteria) | | - | - | - | - | 16 | 19 | 23 | 29 | 34 | | |
| Vertical Projection to 50fpm 10 degF Heating | | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | | |
| Vertical Projection to 50fpm 20 degF Heating | | 10 | 11 | 12 | 13 | 14 | 15 | 15 | 17 | 18 | | |
| Vertical Projection to 50fpm 30 degF Heating | | 9 | 11 | 12 | 12 | 13 | 14 | 15 | 16 | 18 | | |
| Vertical Projection to 50fpm 40 degF Heating | 9 | 10 | 11 | 12 | 12 | 13 | 14 | 15 | 16 | | | |
| NC 20 | | | | | | | | | | | | |
| 8 in. | Center | Flow Rate, cfm | 140 | 175 | 209 | 244 | 279 | 314 | 349 | 419 | 489 | |
| | | Total Pressure, in. w.g. | 0.019 | 0.030 | 0.043 | 0.058 | 0.076 | 0.096 | 0.118 | 0.171 | 0.232 | |
| | | NC (Noise Criteria) | - | - | - | - | - | - | - | 20 | 25 | |
| | | Horizontal Throw, ft | 2-3-6 | 3-4-8 | 3-5-10 | 4-6-11 | 4-6-13 | 5-7-14 | 5-8-16 | 6-10-19 | 7-11-22 | |
| | Down | Total Pressure, in. w.g. | 0.016 | 0.025 | 0.036 | 0.049 | 0.064 | 0.081 | 0.100 | 0.144 | 0.196 | |
| | | NC (Noise Criteria) | - | - | - | - | - | - | - | 19 | 23 | |
| | | Horizontal Throw, ft | 2-3-6 | 3-4-8 | 3-5-9 | 4-5-11 | 4-6-12 | 5-7-14 | 5-8-15 | 6-9-18 | 7-11-21 | |
| | | Up | Total Pressure, in. w.g. | 0.045 | 0.070 | 0.101 | 0.137 | 0.179 | 0.227 | 0.280 | 0.403 | 0.549 |
| | NC (Noise Criteria) | | - | - | - | - | 18 | 21 | 24 | 29 | 33 | |
| | Vertical Projection to 50fpm 10 degF Heating | | 10 | 11 | 12 | 13 | 13 | 14 | 15 | 16 | 18 | |
| Vertical Projection to 50fpm 20 degF Heating | 9 | | 10 | 11 | 11 | 12 | 13 | 14 | 15 | 16 | | |
| Vertical Projection to 50fpm 30 degF Heating | 8 | | 9 | 10 | 10 | 11 | 12 | 12 | 14 | 15 | | |
| Vertical Projection to 50fpm 40 degF Heating | 7 | | 8 | 9 | 9 | 10 | 11 | 11 | 12 | 13 | | |
| NC 20 | | | | | | | | | | | | |
| 10 in. | Center | Flow Rate, cfm | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 | 763 | |
| | | Total Pressure, in. w.g. | 0.019 | 0.030 | 0.043 | 0.058 | 0.076 | 0.096 | 0.118 | 0.171 | 0.232 | |
| | | NC (Noise Criteria) | - | - | - | - | 16 | 19 | 22 | 28 | 32 | |
| | | Horizontal Throw, ft | 3-4-8 | 3-5-10 | 4-6-11 | 4-7-13 | 5-8-15 | 6-9-17 | 6-10-19 | 8-11-23 | 9-13-27 | |
| | Down | Total Pressure, in. w.g. | 0.016 | 0.025 | 0.036 | 0.049 | 0.064 | 0.081 | 0.100 | 0.144 | 0.196 | |
| | | NC (Noise Criteria) | - | - | - | - | 16 | 19 | 22 | 27 | 31 | |
| | | Horizontal Throw, ft | 2-4-7 | 3-5-9 | 4-6-11 | 4-7-13 | 5-7-15 | 6-8-17 | 6-9-19 | 7-11-22 | 9-13-26 | |
| | | Up | Total Pressure, in. w.g. | 0.024 | 0.037 | 0.053 | 0.072 | 0.095 | 0.120 | 0.148 | 0.213 | 0.290 |
| | NC (Noise Criteria) | | - | - | - | - | 15 | 19 | 22 | 28 | 33 | |
| | Vertical Projection to 50fpm 10 degF Heating | | 11 | 12 | 14 | 15 | 16 | 17 | 17 | 19 | 21 | |
| Vertical Projection to 50fpm 20 degF Heating | 10 | | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 19 | | |
| Vertical Projection to 50fpm 30 degF Heating | 9 | | 10 | 11 | 12 | 13 | 13 | 14 | 16 | 17 | | |
| Vertical Projection to 50fpm 40 degF Heating | 8 | | 9 | 10 | 10 | 11 | 12 | 13 | 14 | 15 | | |
| NC 20 NC 30 | | | | | | | | | | | | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Vertical projections are to terminal velocities of 50 fpm.
5. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
6. Throw data is based on supply air and room air being at isothermal conditions.
7. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
8. Blanks (-) indicate an NC level below 15.

Performance Data

| Size | Neck Velocity, fpm | | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | |
|--------|------------------------------|------------------------------|-----------------------|------------|------------|--------------|------------|------------|--------------|-------------|-------------|-------------|
| | Velocity Pressure, in. w.g. | | .010 | .016 | .023 | .031 | .040 | .051 | .063 | .090 | .122 | |
| 12 in. | Plaque Position | | Flow Rate, cfm | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 | 1099 |
| | Center | Total Pressure, in. w.g. | | 0.019 | 0.030 | 0.043 | 0.058 | 0.076 | 0.096 | 0.118 | 0.171 | 0.232 |
| | | NC (Noise Criteria) | | - | - | - | 18 | 22 | 26 | 29 | 34 | 39 |
| | | Horizontal Throw, ft | | 3-5-9 | 4-6-11 | 5-7-14 | 5-8-16 | 6-9-18 | 7-10-21 | 8-11-23 | 9-14-28 | 11-16-32 |
| | Down | Total Pressure, in. w.g. | | 0.016 | 0.025 | 0.036 | 0.049 | 0.064 | 0.081 | 0.100 | 0.144 | 0.196 |
| | | NC (Noise Criteria) | | - | - | - | 19 | 23 | 26 | 29 | 34 | 38 |
| | | Horizontal Throw, ft | | 3-4-9 | 4-6-11 | 4-7-14 | 5-8-16 | 6-9-18 | 7-10-21 | 7-11-23 | 9-13-28 | 10-16-32 |
| | Up | Total Pressure, in. w.g. | | 0.032 | 0.050 | 0.071 | 0.097 | 0.127 | 0.161 | 0.198 | 0.285 | 0.389 |
| | | NC (Noise Criteria) | | - | - | - | 19 | 23 | 27 | 30 | 35 | 40 |
| | | Vertical Projection to 50fpm | 10 degF Heating | 13 | 14 | 16 | 17 | 18 | 19 | 20 | 22 | 24 |
| | | Vertical Projection to 50fpm | 20 degF Heating | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | 22 |
| | | Vertical Projection to 50fpm | 30 degF Heating | 10 | 11 | 13 | 14 | 15 | 15 | 16 | 18 | 19 |
| | Vertical Projection to 50fpm | 40 degF Heating | 9 | 10 | 11 | 12 | 13 | 14 | 14 | 16 | 17 | |
| | | | NC 20 | | | NC 30 | | | NC 40 | | | |
| 14 in. | Plaque Position | | Flow Rate, cfm | 428 | 535 | 641 | 748 | 855 | 962 | 1069 | 1283 | 1497 |
| | Center | Total Pressure, in. w.g. | | 0.019 | 0.030 | 0.043 | 0.058 | 0.076 | 0.096 | 0.118 | 0.171 | 0.232 |
| | | NC (Noise Criteria) | | - | - | 19 | 24 | 28 | 31 | 34 | 40 | 44 |
| | | Horizontal Throw, ft | | 4-6-11 | 5-7-14 | 6-9-17 | 7-10-20 | 8-11-23 | 9-13-26 | 10-14-29 | 11-17-34 | 13-20-40 |
| | Down | Total Pressure, in. w.g. | | 0.016 | 0.025 | 0.036 | 0.049 | 0.064 | 0.081 | 0.100 | 0.144 | 0.196 |
| | | NC (Noise Criteria) | | - | 15 | 20 | 24 | 28 | 31 | 34 | 39 | 43 |
| | | Horizontal Throw, ft | | 3-5-10 | 4-6-13 | 5-8-16 | 6-9-18 | 7-10-21 | 8-12-23 | 9-13-26 | 10-16-31 | 12-18-36 |
| | Up | Total Pressure, in. w.g. | | 0.031 | 0.048 | 0.069 | 0.094 | 0.122 | 0.155 | 0.191 | 0.276 | 0.375 |
| | | NC (Noise Criteria) | | - | 18 | 22 | 27 | 30 | 33 | 36 | 41 | 45 |
| | | Vertical Projection to 50fpm | 10 degF Heating | 13 | 14 | 15 | 17 | 18 | 19 | 20 | 22 | 24 |
| | | Vertical Projection to 50fpm | 20 degF Heating | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 21 |
| | | Vertical Projection to 50fpm | 30 degF Heating | 10 | 11 | 12 | 13 | 14 | 14 | 15 | 17 | 18 |
| | Vertical Projection to 50fpm | 40 degF Heating | 8 | 9 | 10 | 11 | 12 | 12 | 13 | 14 | 15 | |
| | | | NC 20 | | | NC 30 | | | NC 40 | | | |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Vertical projections are to terminal velocities of 50 fpm.
5. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
6. Throw data is based on supply air and room air being at isothermal conditions.
7. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
8. Blanks (-) indicate an NC level below 15.

Round Cone Diffusers - Industrial RID Series



Product Information

Models

Horizontal / Vertical Air Pattern

Fully Adjustable

RID

Price RID heavy duty round cone ceiling diffusers feature a wide range of pattern adjustment. At the full vertical setting it provides a long downward projection for effective heating and cooling from high mounting locations.

Classified as an industrial ceiling diffuser, the RID is well suited to factories, warehouses, convention halls, shopping malls and other applications where ceilings are high and conditions are variable.

Features

- Heavy gauge spun steel construction.
- Radial vanes adjust from full horizontal to full vertical pattern.
- Ring operator allows adjustments with pole.
- Deeply contoured outer cone helps prevent smudging.
- Complete range of available accessory dampers, equalizing grids etc.

Finish

White Powder Coat

B12

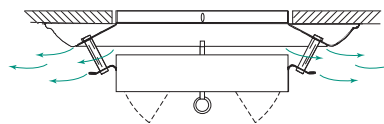
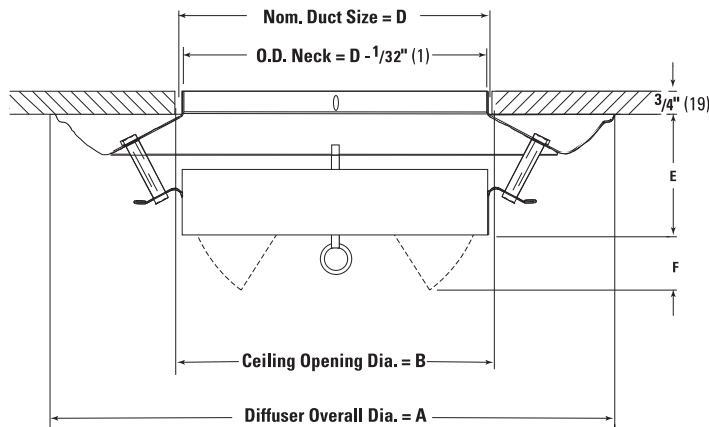
Aluminum Powder Coat

B15

For optional and special finishes see color matrix.

Available Sizes

10 in. [254] to 36 in. [914] nominal duct/neck.



RID Air Pattern

✓ Product Selection Checklist

- 1) Select Unit Size based on specified inlet diameter.
- 2) Select Outlet Type by model number.
- 3) Select Volume Control and/or Mounting Accessories, if desired.
- 4) Select Wire Guard / Safety Chain Accessories, if desired.
- 5) Select Finish.

Example: 24 in. / RID / B12

Dimensional Data — Imperial (in.) / Metric [mm]

| Nominal Size | A | B | D | E | F |
|--------------|---------------------------------------|--------------------------------------|----------|-------------------------------------|-------------------------------------|
| 10 | 18 ¹ / ₄ [464] | 10 ¹ / ₂ [267] | 10 [254] | 4 [102] | 1 ³ / ₄ [44] |
| 12 | 22 [559] | 12 ¹ / ₂ [318] | 12 [305] | 4 [102] | 2 ¹ / ₂ [63] |
| 14 | 26 [660] | 14 ¹ / ₂ [368] | 14 [356] | 4 ¹ / ₂ [114] | 2 ³ / ₄ [70] |
| 16 | 29 [737] | 16 ¹ / ₂ [419] | 16 [406] | 5 ¹ / ₄ [133] | 3 ¹ / ₂ [89] |
| 18 | 32 ¹ / ₂ [826] | 18 ¹ / ₂ [470] | 18 [457] | 5 ¹ / ₂ [140] | 4 ¹ / ₄ [108] |
| 20 | 36 [914] | 20 ¹ / ₂ [521] | 20 [508] | 5 ⁵ / ₈ [143] | 4 ³ / ₄ [121] |
| 24 | 43 ¹ / ₄ [1099] | 24 ¹ / ₂ [622] | 24 [610] | 6 ⁵ / ₈ [168] | 4 ¹ / ₂ [114] |
| 30 | 53 ³ / ₈ [1368] | 30 ¹ / ₂ [775] | 30 [762] | 8 ¹ / ₄ [210] | 5 ¹ / ₂ [140] |
| 36 | 65 ¹ / ₂ [1664] | 36 ¹ / ₂ [927] | 36 [914] | 8 ⁷ / ₈ [225] | 7 [178] |

Round Cone Diffusers - Industrial RID Series



Performance Data

| Size | Neck Jet Velocity, fpm | | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 | 1400 | 1600 |
|------|-------------------------|----|------|------|------|-------|-------|-------|-------|-------|-------|--------|
| | Velocity Pressure, fpm | | .010 | .016 | .023 | .031 | .040 | .051 | .063 | .090 | .122 | .160 |
| 10 | Total Pressure | V | .013 | .021 | .030 | .040 | .053 | .067 | .082 | .118 | .160 | .210 |
| | | H | .023 | .036 | .052 | .070 | .091 | .115 | .143 | .205 | .280 | .358 |
| | Flow Rate, cfm | | 220 | 270 | 330 | 380 | 435 | 490 | 545 | 655 | 765 | 870 |
| | Radius of Diffusion, ft | H | 4 | 5 | 6 | 7 | 8 | 10 | 10 | 12 | 14 | 15 |
| | Projection, ft | V | 4-14 | 5-17 | 6-19 | 7-23 | 9-28 | 10-31 | 11-36 | 16-52 | 19-63 | 22-72 |
| | | NC | 15 | 19 | 23 | 27 | 33 | 37 | 40 | 43 | 47 | 53 |
| 12 | Total Pressure | V | .012 | .019 | .028 | .037 | .049 | .062 | .076 | .110 | .148 | .195 |
| | | H | .020 | .032 | .046 | .062 | .080 | .102 | .125 | .180 | .245 | .318 |
| | Flow Rate, cfm | | 315 | 390 | 470 | 550 | 630 | 705 | 785 | 940 | 1100 | 1255 |
| | Radius of Diffusion, ft | H | 5 | 5 | 7 | 8 | 9 | 11 | 12 | 13 | 16 | 18 |
| | Projection, ft | V | 4-15 | 5-17 | 6-22 | 8-25 | 9-31 | 10-34 | 11-37 | 17-55 | 21-69 | 25-81 |
| | | NC | 15 | 19 | 23 | 27 | 33 | 37 | 39 | 45 | 51 | 54 |
| 14 | Total Pressure | V | .012 | .019 | .027 | .036 | .047 | .060 | .074 | .106 | .144 | .188 |
| | | H | .020 | .032 | .046 | .062 | .080 | .102 | .125 | .180 | .245 | .318 |
| | Flow Rate, cfm | | 425 | 530 | 635 | 745 | 850 | 955 | 1060 | 1270 | 1490 | 1695 |
| | Radius of Diffusion, ft | H | 6 | 6 | 8 | 10 | 11 | 12 | 13 | 16 | 17 | 20 |
| | Projection, ft | V | 5-17 | 6-18 | 7-23 | 8-26 | 10-32 | 11-36 | 12-38 | 18-60 | 22-72 | 27-87 |
| | | NC | 15 | 19 | 22 | 28 | 34 | 39 | 42 | 47 | 52 | 56 |
| 16 | Total Pressure | V | .012 | .018 | .026 | .035 | .046 | .058 | .072 | .103 | .140 | .183 |
| | | H | .020 | .032 | .046 | .062 | .080 | .102 | .125 | .180 | .245 | .318 |
| | Flow Rate, cfm | | 560 | 700 | 840 | 980 | 1120 | 1260 | 1400 | 1680 | 1960 | 2240 |
| | Radius of Diffusion, ft | H | 6 | 7 | 9 | 10 | 12 | 14 | 14 | 17 | 20 | 22 |
| | Projection, ft | V | 5-17 | 6-19 | 7-23 | 9-29 | 10-33 | 11-36 | 12-41 | 18-62 | 23-75 | 28-94 |
| | | NC | 16 | 19 | 23 | 28 | 32 | 38 | 42 | 47 | 51 | 55 |
| 18 | Total Pressure | V | .011 | .018 | .025 | .034 | .045 | .056 | .070 | .099 | .135 | .177 |
| | | H | .020 | .032 | .046 | .062 | .080 | .102 | .125 | .180 | .245 | .318 |
| | Flow Rate, cfm | | 710 | 885 | 1060 | 1240 | 1420 | 1590 | 1770 | 2120 | 2480 | 2830 |
| | Radius of Diffusion, ft | H | 6 | 8 | 10 | 12 | 13 | 15 | 16 | 19 | 22 | 24 |
| | Projection, ft | V | 5-17 | 7-21 | 8-25 | 9-29 | 10-33 | 11-37 | 13-42 | 20-65 | 24-77 | 28-93 |
| | | NC | 16 | 19 | 25 | 32 | 35 | 38 | 42 | 47 | 52 | 56 |
| 20 | Total Pressure | V | .011 | .017 | .024 | .033 | .043 | .054 | .067 | .096 | .130 | .170 |
| | | H | .019 | .030 | .043 | .058 | .076 | .096 | .120 | .170 | .235 | .305 |
| | Flow Rate, cfm | | 875 | 1100 | 1310 | 1530 | 1750 | 1970 | 2190 | 2610 | 3060 | 3500 |
| | Radius of Diffusion, ft | H | 7 | 9 | 11 | 13 | 14 | 16 | 17 | 21 | 24 | 27 |
| | Projection, ft | V | 6-17 | 7-22 | 8-25 | 9-30 | 11-34 | 12-38 | 13-43 | 20-67 | 25-80 | 30-98 |
| | | NC | 16 | 19 | 26 | 33 | 36 | 39 | 43 | 48 | 52 | 56 |
| 24 | Total Pressure | V | .011 | .017 | .023 | .031 | .042 | .053 | .065 | .094 | .128 | .167 |
| | | H | .019 | .030 | .043 | .058 | .076 | .096 | .120 | .170 | .235 | .305 |
| | Flow Rate, cfm | | 1260 | 1570 | 1880 | 2200 | 2510 | 2820 | 3140 | 3770 | 4400 | 5020 |
| | Radius of Diffusion, ft | H | 8 | 10 | 13 | 15 | 16 | 19 | 21 | 24 | 28 | 31 |
| | Projection, ft | V | 6-18 | 7-23 | 8-27 | 10-31 | 11-36 | 12-39 | 14-46 | 22-70 | 26-83 | 32-105 |
| | | NC | 19 | 23 | 27 | 33 | 36 | 39 | 43 | 48 | 54 | 59 |
| 30 | Total Pressure | V | .010 | .016 | .023 | .031 | .041 | .052 | .064 | .092 | .125 | .162 |
| | | H | .020 | .031 | .045 | .060 | .078 | .100 | .123 | .176 | .240 | .313 |
| | Flow Rate, cfm | | 1960 | 2450 | 2940 | 3430 | 3920 | 4410 | 4900 | 5880 | 6860 | 7840 |
| | Radius of Diffusion, ft | H | 10 | 12 | 15 | 18 | 20 | 23 | 24 | 29 | 34 | 38 |
| | Projection, ft | V | 6-19 | 7-23 | 9-27 | 10-32 | 11-36 | 13-42 | 14-47 | 22-72 | 27-85 | 33-110 |
| | | NC | 15 | 21 | 26 | 29 | 33 | 36 | 38 | 43 | 47 | 50 |
| 36 | Total Pressure | V | .010 | .016 | .023 | .031 | .041 | .052 | .064 | .092 | .125 | .162 |
| | | H | .015 | .024 | .036 | .047 | .062 | .079 | .098 | .139 | .189 | .247 |
| | Flow Rate, cfm | | 2820 | 3520 | 4230 | 4930 | 5630 | 6340 | 7040 | 8450 | 9850 | 11260 |
| | Radius of Diffusion, ft | H | 11 | 14 | 17 | 20 | 23 | 26 | 29 | 34 | 39 | 46 |
| | Projection, ft | V | 6-19 | 7-24 | 9-29 | 10-33 | 11-37 | 13-43 | 15-61 | 24-78 | 27-98 | 35-115 |
| | | NC | 23 | 29 | 33 | 37 | 41 | 44 | 46 | 51 | 55 | 58 |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cubic feet per minute.
- All pressures are in in. w.g.
- Vertical Projections are to terminal velocities of 50 fpm.
- Minimum projections are with a 40°F heating temperature differential and maximum projections are with a 20°F cooling temperature differential.
- Horizontal throws are to a terminal velocity of 50 fpm with a 20°F cooling temperature differential.
- NC values are based on a room absorption of 10dB re 10⁻¹² watts and one diffuser.
- NC Values based on a horizontal pattern (center closed). For vertical pattern (center open) use the following correction.

| Size | Correction |
|---------|---------------|
| 10 - 24 | subtract 3 NC |
| 30, 36 | no correction |
- Blanks (—) indicate an NC level below 15.

Overview

Model RVD

Price RVD Series Radial Vane Diffusers are unique in design. Fixed radial slots produce a high induction horizontal vortex of air that travels out from the face of the diffuser. The high induction vortex air pattern provides rapid mixing of the supply and room air, producing excellent uniformity of temperature in the conditioned space.

The RVD series produces the high induction horizontal vortex over a wide range of air flows, making it an ideal selection for VAV applications with high turndown ratios.

RTD

Price RTD Radial Twist Diffuser is a unique diffuser with simple construction and superior performance. 16 radial slots formed out of a thick gage steel face produce a high induction horizontal vortex of air that travels out from the face of the diffuser. Due to its extremely low noise level and short throw, the RTD is ideal for spaces requiring high air change rates. The RTD can be used in both heating and cooling applications, creating a highly desirable, draft free thermal environment in occupied spaces.

Model RSD

The RSD series is a square face outlet that produces a high induction radial pattern. The diffuser has a series of slots arranged radially around the face, each slot with its own adjustable pattern controller. Adjustment of the pattern controllers will produce 4 way, 3 way, 2 way, 1 way or full vertical discharge. There are two different face patterns available with the RSD series, a square slot pattern and a circular slot pattern.

Types

| | |
|--|------------|
| Radial Twist Diffuser | RTD |
| Radial Vane Diffuser | RVD |
| Radial Slot Diffuser Square or Circular pattern | RSD |



Radial Vane Diffuser RVD Series

Product Information

Models

Steel Face **RVD**
 Aluminum Face **RVDAL**
 Stainless Steel Face **RVDSS**

Price RVD Series Radial Vane Diffusers are unique in design. Radial slots produce a high induction horizontal vortex of air that travels out from the face of the diffuser. The high induction vortex air pattern provides rapid mixing of the supply and room air, producing excellent uniformity of temperature in the conditioned space.

The RVD series produces the high induction horizontal vortex over a wide range of air flows, making it an ideal selection for VAV applications with high turndown ratios. The RVD provides a comfortable thermal environment with no drafts in both heating and cooling modes.

Application

Applications for this diffuser include areas of high heat load where large quantities of cool air must be rapidly mixed with room air. This would include industrial applications with ceilings from 8 feet to 12 feet high. Other applications include areas which require high air change rates of up to 30 changes per hour. For open office environments, multiple units can be arranged in a row or more than one row.

Features

- Radial pattern air slots with fixed horizontal deflectors.
- Round plenum chamber has internal baffles and top mounted air inlet.
- 6", 8", 10", 12", 14", 16" round inlets available.

Construction / Finish

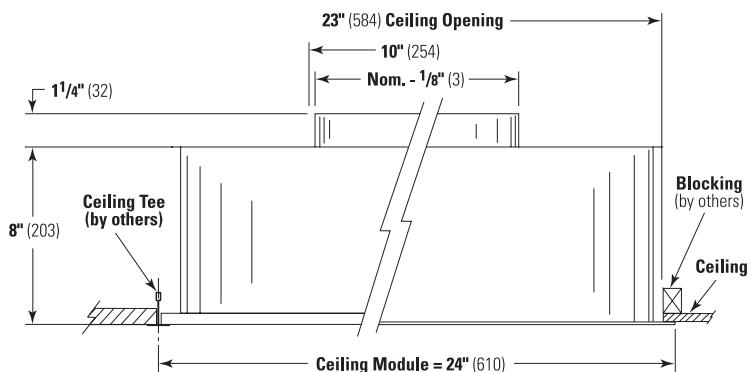
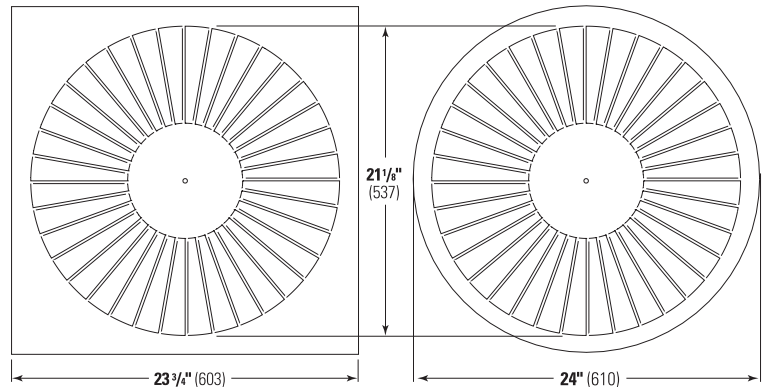
- RVD - Steel plenum and face.
 RVDAL - Coated steel plenum and aluminum face.
- RVDSS - Coated steel plenum and stainless face.
- Standard finish is B12 White Powder Coat on diffuser face (RVD, RVDAL) #4 finish on RVDSS.



Style 31 Square Face



Style 1 Round Face (steel only)



Dimensional Data — Imperial (in.) / Metric [mm]

| Ceiling Module | Metric | Overall Diffuser | Duct Size |
|----------------|-----------|--|--|
| 24 x 24 | 600 x 600 | 23 ³ / ₄ x 23 ³ / ₄ [603 x 603] | 6, 8, 10, 12, 14, 16 [152, 203, 254, 305, 356, 406] |

✓ Product Selection Checklist

- 1) Select Diffuser Type RVD.
- 2) Select Inlet Size.
- 3) Select Diffuser Border/Panel Style according to installation requirements (3 for square face; 1 for round face).

Example: RVD / 10 / 3

Radial Vane Diffuser RVD Series



Performance Data - 24 x 24

| Inlet Size 6" | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Neck Velocity | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| VP | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | 0.062 |
| Total Pressure | 0.010 | 0.018 | 0.028 | 0.040 | 0.054 | 0.071 | 0.090 | 0.111 |
| cfm | 59 | 79 | 98 | 118 | 137 | 157 | 177 | 196 |
| NC | — | — | — | — | — | 18 | 21 | 24 |
| Throw,ft | 1-1-2 | 1-1-2 | 1-1-3 | 1-2-4 | 1-2-4 | 2-2-5 | 2-3-5 | 2-3-6 |

| Inlet Size 8" | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Neck Velocity | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| VP | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | 0.062 |
| Total Pressure | 0.017 | 0.030 | 0.047 | 0.068 | 0.092 | 0.120 | 0.152 | 0.188 |
| cfm | 105 | 140 | 174 | 209 | 244 | 279 | 314 | 349 |
| NC | — | — | — | — | 19 | 23 | 26 | 29 |
| Throw,ft | 1-2-3 | 1-2-4 | 2-3-5 | 2-3-6 | 2-4-7 | 3-4-7 | 3-5-8 | 3-5-8 |

| Inlet Size 10" | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|--------|
| Neck Velocity | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| VP | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | 0.062 |
| Total Pressure | 0.029 | 0.051 | 0.079 | 0.114 | 0.156 | 0.203 | 0.257 | 0.318 |
| cfm | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 |
| NC | — | 15 | 22 | 27 | 31 | 35 | 38 | 41 |
| Throw,ft | 2-2-5 | 2-3-6 | 3-4-7 | 3-5-8 | 4-6-8 | 4-6-9 | 5-7-9 | 5-7-10 |

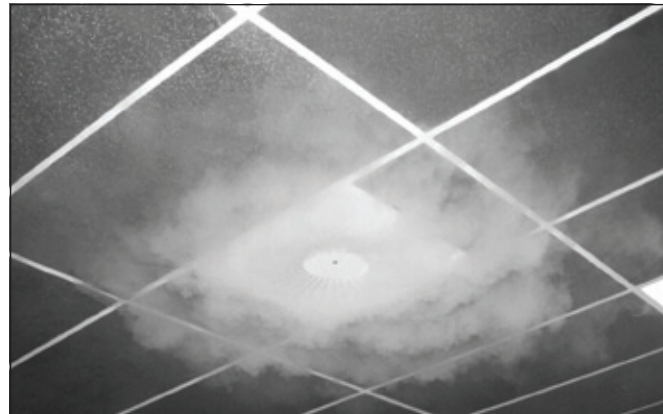
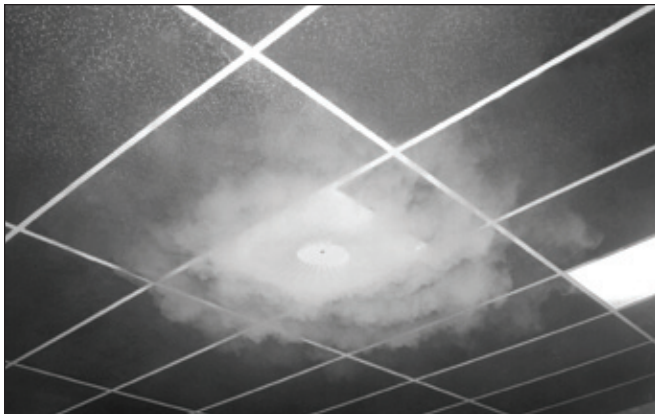
| Inlet Size 12" | | | | | | | | |
|----------------|-------|-------|-------|-------|--------|--------|--------|--------|
| Neck Velocity | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
| VP | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | 0.062 |
| Total Pressure | 0.048 | 0.086 | 0.134 | 0.194 | 0.264 | 0.344 | 0.436 | 0.538 |
| cfm | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 |
| NC | 17 | 24 | 31 | 36 | 40 | 44 | 47 | 50 |
| Throw,ft | 2-4-7 | 3-5-8 | 4-6-8 | 5-7-9 | 5-7-10 | 6-8-11 | 7-8-11 | 7-8-12 |

| Inlet Size 14" | | | | | | | | |
|----------------|-------|-------|--------|--------|--------|--------|--|--|
| Neck Velocity | 300 | 400 | 500 | 600 | 700 | 800 | | |
| VP | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | | |
| Total Pressure | 0.082 | 0.146 | 0.228 | 0.328 | 0.446 | 0.583 | | |
| cfm | 321 | 428 | 535 | 641 | 748 | 855 | | |
| NC | 24 | 32 | 38 | 43 | 47 | 51 | | |
| Throw,ft | 3-5-8 | 4-6-9 | 5-7-10 | 6-8-11 | 7-8-12 | 7-9-12 | | |

| Inlet Size 16" | | | | | | | | |
|----------------|-------|--------|--------|--------|--|--|--|--|
| Neck Velocity | 300 | 400 | 500 | 600 | | | | |
| VP | 0.006 | 0.010 | 0.016 | 0.022 | | | | |
| Total Pressure | 0.139 | 0.247 | 0.385 | 0.555 | | | | |
| cfm | 419 | 558 | 698 | 837 | | | | |
| NC | 30 | 38 | 44 | 49 | | | | |
| Throw,ft | 4-6-9 | 6-7-10 | 6-8-11 | 7-9-12 | | | | |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air being at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks "—" indicate an NC level below 15.



Radial Vane Diffuser Low Temperature Series

Product Information

Model RVDLT

Steel Construction

RVDLT

Price Model RVDLT low temperature radial vane diffuser is designed to distribute low temperature supply air to the space without drafts or thermal stratification.

Price Model RVDLT diffuser is unique in design as its radial slots provide a high induction vortex air flow projecting horizontally from the face of the diffuser. This design provides rapid mixing of the low temperature supply air with room air resulting in uniformity of temperature within the occupied space. The excellent horizontal air pattern is maintained at low flows, even with low temperature supply air.

The RVDLT is totally constructed of steel with no plastic components. In order to reduce the risk of condensation forming, the distribution plenum and the back of the faceplate are externally wrapped with 3/4" dual density fibreglass with foil facing.

Standard finish

Plenum - Coated Steel

MILL

Diffuser Face -

White Powder Coat

B12

Optional finish

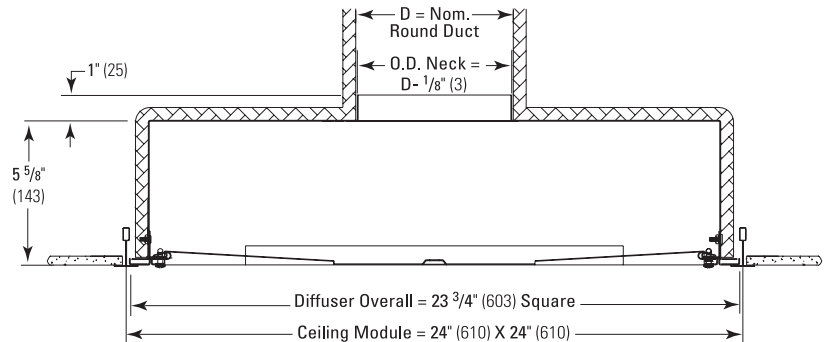
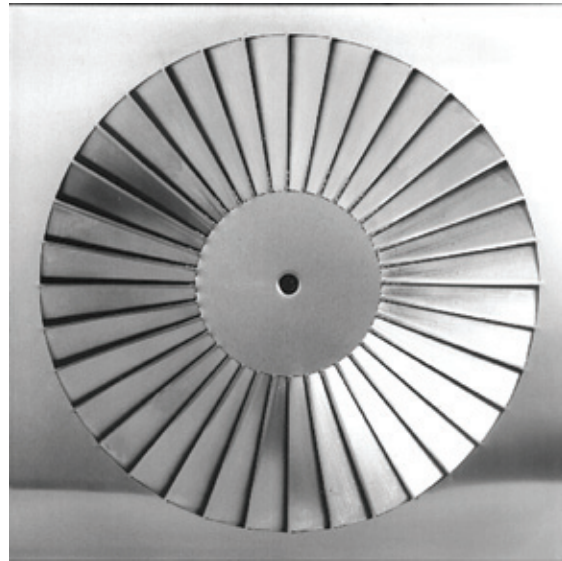
Plenum - Coated Steel

MILL

Diffuser Face -

Stainless Steel

#4



Dimensional Data - Imperial (in.) / Metric [mm]

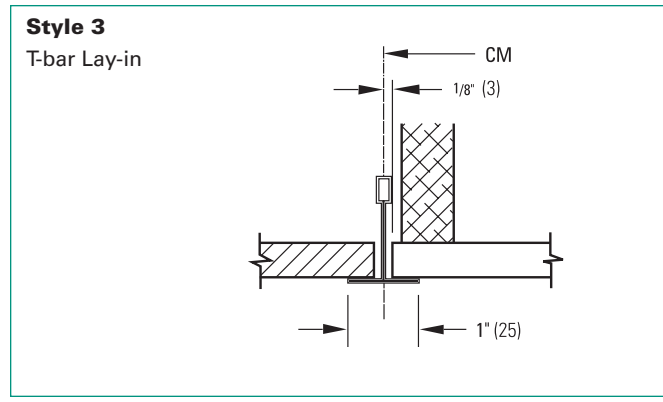
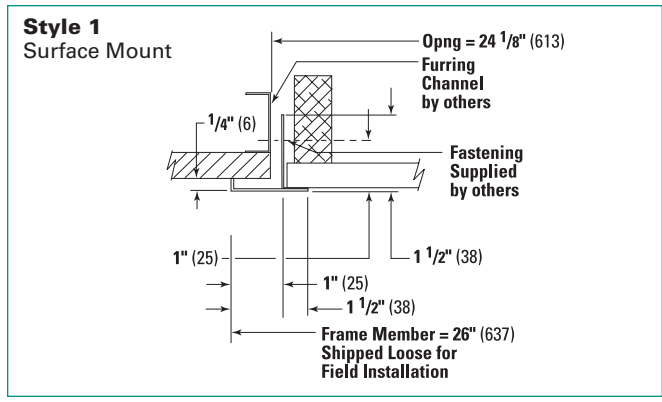
| CM | Duct Size |
|------------------------|-----------------------------|
| 24 x 24 [610 x 610] | 6, 8, 10 [152, 203, 254] |

✓ Product Selection Checklist

- 1) Select Inlet Diameter based on desired performance characteristics.
- 2) Select Diffuser Type RVDLT.
- 3) Select Border Style according to installation requirements (Page C153).
- 4) Select Finish.

Example: 10" / RVD / 1 / B12

Frame Selection



Installation Guidelines

Low Temperature Diffusers

Diffusers designed for low temperature air distribution must be installed using recommended industry practice to ensure that condensation does not form. Because installation is critical to successful performance, the following is recommended:

- Provide externally insulated duct, complete with vapor barrier and a suggested minimum resistivity of R3. Field install duct and duct insulation so as to tightly compress foil face insulation on the diffuser backpan.
- Seal airtight the field joint at the diffuser with industry approved duct sealer.
- In the event that the foil face lining of the insulation is punctured, repair with foil tape.

Frame Styles

Style 1 Surface Mount is offered for plastered ceiling mounting where a surface mount condition exists. Flexible, insulated and jacketed duct is required for installation of the diffuser. The surface mount frame is fastened into the frame opening (fasteners supplied by others). The flexduct connection must be in accordance with the instructions previously described. Allow sufficient ceiling space clearance above diffuser to insert the unit through the opening and complete duct connections.

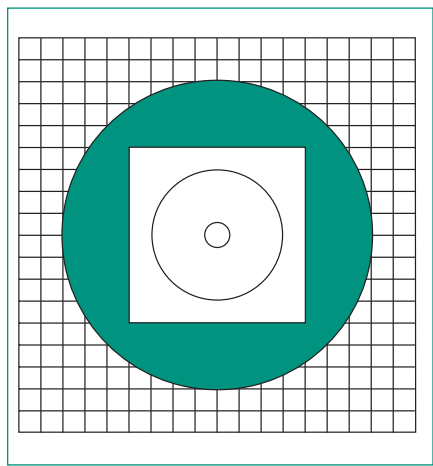
The surface mount frame ensures a smooth, clean fit between the frame and the drywall ceiling. This mounting arrangement also allows the diffuser to be lifted out to provide access to the ceiling plenum for service and adjustment.

Style 3 T-bar Mount is offered for mounting into T-bar ceilings. The diffuser, when resting on the T-bar frame, is thermally isolated by a coated cloth tape.

Dampers

Since access to the inlet through the diffuser face is not available, inlet dampers are not offered as an option. Air volume control is recommended by field installation of dampers at the branch take-off, upstream of the diffuser. The further the damper can be mounted remote from the diffuser, the less likely damper generated noise will enter the occupied space. It is recommended to insulate and seal the damper quadrant to prevent air leakage.

Air Pattern – RVDLT Series



Typical Radial Air Pattern (Plan View)

The RVDLT Series low temperature radial vane diffuser produces a radial air pattern. The angular discharge blades produce a high induction vortex, which maintains the air stream on the ceiling, even at low flow conditions. The above characteristic makes the RVDLT an excellent choice for VAV applications.

Radial Vane Diffuser Low Temperature Series



Performance Data – 24 x 24 [610 x 610] Module

Inlet Size 6"ø

| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|---------|--------|----------|--------------------|---------|--------|----------|
| | | | | Throw (ft) | | | Drop in. | Throw (ft) | | | Drop in. |
| | | | | 150 fpm | 100 fpm | 50 fpm | | 150 fpm | 100 fpm | 50 fpm | |
| 100 | 0.03 | 0.01 | — | 1 | 2 | 3 | 3 | 1 | 2 | 2 | 5 |
| 200 | 0.12 | 0.06 | 25 | 2 | 3 | 6 | 6 | 2 | 3 | 5 | 11 |
| 300 | 0.27 | 0.12 | 36 | 3 | 5 | 8 | 8 | 3 | 5 | 6 | 15 |
| 400 | 0.48 | 0.22 | 44 | 4 | 6 | 9 | 9 | 4 | 5 | 7 | 16 |
| 500 | 0.75 | 0.35 | 50 | 5 | 7 | 10 | 10 | 5 | 6 | 8 | 18 |
| 600 | 1.08 | 0.50 | 55 | 6 | 7 | 11 | 11 | 6 | 6 | 8 | 20 |

Inlet Size 8"ø

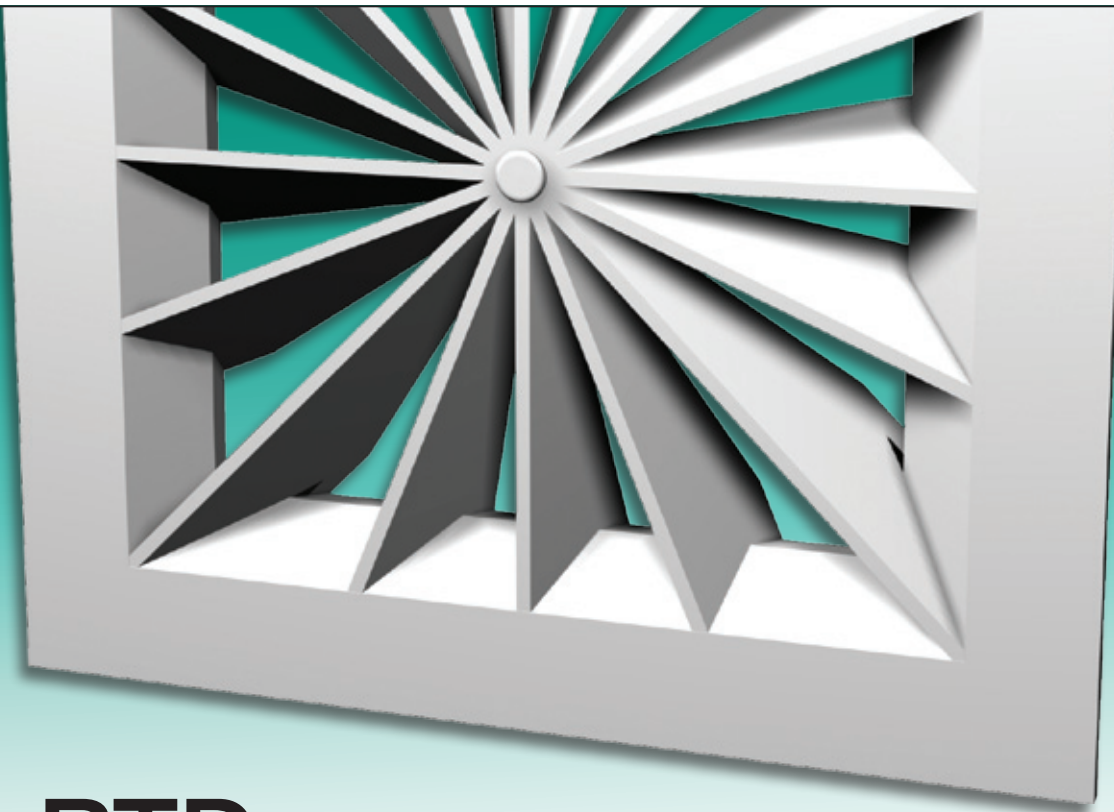
| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|---------|--------|----------|--------------------|---------|--------|----------|
| | | | | Throw (ft) | | | Drop in. | Throw (ft) | | | Drop in. |
| | | | | 150 fpm | 100 fpm | 50 fpm | | 150 fpm | 100 fpm | 50 fpm | |
| 100 | 0.01 | 0.01 | — | 1 | 2 | 3 | 3 | 1 | 2 | 2 | 5 |
| 200 | 0.06 | 0.04 | — | 2 | 3 | 6 | 6 | 2 | 3 | 5 | 11 |
| 300 | 0.13 | 0.08 | 24 | 3 | 5 | 8 | 8 | 3 | 5 | 6 | 15 |
| 400 | 0.23 | 0.15 | 32 | 4 | 6 | 9 | 9 | 4 | 5 | 7 | 16 |
| 500 | 0.36 | 0.23 | 38 | 5 | 7 | 10 | 10 | 5 | 6 | 8 | 18 |
| 600 | 0.51 | 0.33 | 44 | 6 | 7 | 11 | 11 | 6 | 6 | 8 | 20 |

Inlet Size 10"ø

| cfm | TP | SP | NC | Isothermal Conditions | | | | Cooling Conditions | | | |
|-----|------|------|----|-----------------------|---------|--------|----------|--------------------|---------|--------|----------|
| | | | | Throw (ft) | | | Drop in. | Throw (ft) | | | Drop in. |
| | | | | 150 fpm | 100 fpm | 50 fpm | | 150 fpm | 100 fpm | 50 fpm | |
| 100 | 0.01 | 0.01 | — | 1 | 2 | 3 | 3 | 1 | 2 | 2 | 5 |
| 200 | 0.04 | 0.03 | — | 2 | 3 | 6 | 6 | 2 | 3 | 5 | 11 |
| 300 | 0.10 | 0.08 | 23 | 3 | 5 | 8 | 8 | 3 | 5 | 6 | 15 |
| 400 | 0.18 | 0.15 | 32 | 4 | 6 | 9 | 9 | 4 | 5 | 7 | 16 |
| 500 | 0.29 | 0.24 | 39 | 5 | 7 | 10 | 10 | 5 | 6 | 8 | 18 |
| 600 | 0.40 | 0.32 | 44 | 6 | 7 | 11 | 11 | 6 | 6 | 8 | 20 |

Performance Notes:

- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
TP = total pressure
SP = static pressure
- NC values are based on room absorption of 10 dB re 10⁻¹² watts and one diffuser.
- Blanks (—) indicate a NC level below 15.
- Isothermal conditions indicate supply air temperature is equal to room air temperature.
- Cooling conditions are based on a supply air temperature of 40 °F and a room temperature of 75 °F.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Drop is in inches at a terminal velocity of 50 fpm.

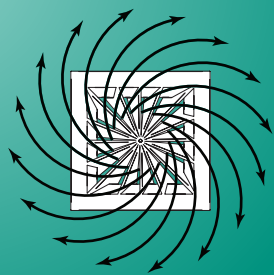


RTD

HIGH INDUCTION RADIAL TWIST DIFFUSER

This radial design allows the RTD to combine excellent air mixing capabilities with low noise values throughout its cataloged range. Supply and room air is effectively mixed over a wide range of air flows in both heating and cooling applications. The diffuser comes with round inlets ranging from 6 inch to 14 inch.

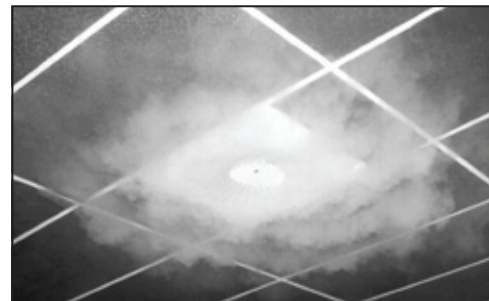
The most quiet, efficient and economical high induction radial twist diffuser on the market today.



16 radial pattern air slots



Aesthetically pleasing stamped face



Room air is effectively mixed over a wide range of air flows

www.priceindustries.com for additional product information, including product videos and brochures.

Radial Twist Diffuser RTD Series

Product Information

Models

Steel Face

RTD

Price RTD Radial Twist Diffuser is a unique diffuser with simple construction and superior performance. 16 radial slots formed out of a thick gage steel face produce a high induction horizontal vortex of air that travels out from the face of the diffuser. Due to its induction properties, the supply air vortex rapidly mixes with the room air, producing excellent uniformity of temperature in the conditioned space. The RTD combines excellent air mixing capabilities with low NC values throughout its cataloged range.

The RTD is extremely effective at mixing supply and room air over a wide range of air flows, making it an ideal choice for VAV applications with high turndown ratios. Due to its extremely low noise level and short throw, the RTD is ideal for spaces requiring high air change rates. The RTD can be used in both heating and cooling applications, creating a highly desirable, draft free thermal environment in occupied spaces.

Applications

Office spaces, labs, patient rooms.

Features

- 16 radial pattern air slots with fixed horizontal deflectors.
- 24x24 T-bar mount module.
- 6 in., 8 in., 10 in., 12 in. and 14 in. round inlets.
- Removable plug in the center of the face provides access to round damper.

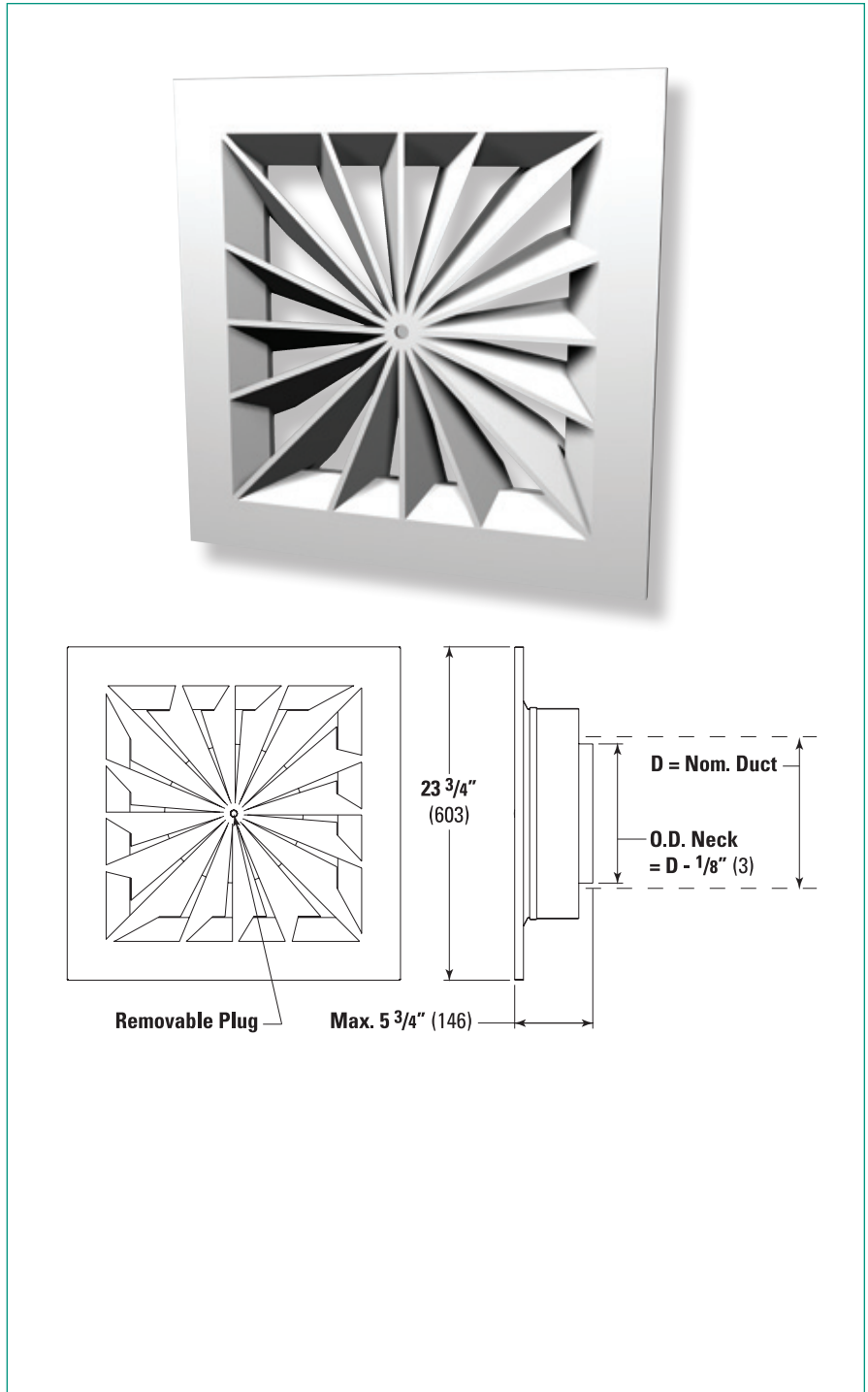
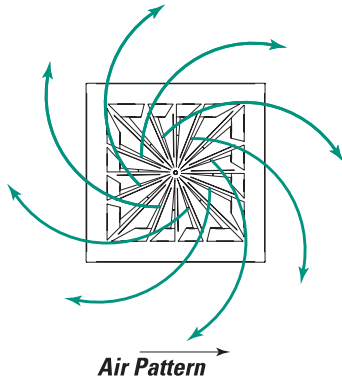
Construction

- Steel face and plenum.
- Painted with B12 White, highly durable powder coat paint.

Options

- Choice of three round dampers (VCR7, VCR8 or VCR9).

Air Pattern:



✓ Product Selection Checklist

- 1) Select Diffuser Type RTD.
- 2) Select Inlet Size.

Example: RTD / 10

Radial Twist Diffuser RTD Series



Performance Data – 24" x 24" / 600 x 600 Module

| Inlet Size | Neck Velocity, fpm | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1200 |
|------------|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | Velocity Pressure, in. w.g. | 0.002 | 0.006 | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.040 | 0.062 | 0.090 |
| 6 | Total Pressure, in. w.g. | 0.003 | 0.007 | 0.012 | 0.019 | 0.028 | 0.038 | 0.049 | 0.062 | 0.077 | 0.110 |
| | Flow Rate, cfm | 39 | 59 | 79 | 98 | 118 | 137 | 157 | 177 | 196 | 236 |
| | NC | -- | -- | -- | -- | -- | -- | -- | -- | 16 | 21 |
| | Throw 150, 100, 50 | 0-1-1 | 1-1-2 | 1-1-2 | 1-1-3 | 1-2-3 | 1-2-4 | 2-2-5 | 2-3-5 | 2-3-6 | 2-3-7 |
| 8 | Total Pressure, in. w.g. | 0.003 | 0.007 | 0.012 | 0.019 | 0.028 | 0.038 | 0.049 | 0.062 | 0.077 | 0.110 |
| | Flow Rate, cfm | 70 | 105 | 140 | 174 | 209 | 244 | 279 | 314 | 349 | 419 |
| | NC | -- | -- | -- | -- | -- | -- | -- | 18 | 21 | 26 |
| | Throw 150, 100, 50 | 1-1-2 | 1-2-3 | 1-2-4 | 2-3-5 | 2-3-6 | 2-4-7 | 3-4-8 | 3-5-9 | 3-5-10 | 4-6-12 |
| 10 | Total Pressure, in. w.g. | 0.003 | 0.007 | 0.013 | 0.021 | 0.030 | 0.041 | 0.053 | 0.067 | 0.083 | 0.119 |
| | Flow Rate, cfm | 109 | 164 | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 |
| | NC | -- | -- | -- | -- | -- | -- | 18 | 22 | 25 | 30 |
| | Throw 150, 100, 50 | 1-2-3 | 2-2-5 | 2-3-6 | 3-4-8 | 3-5-9 | 4-5-11 | 4-6-12 | 5-7-13 | 5-8-13 | 6-9-15 |
| 12 | Total Pressure, in. w.g. | 0.005 | 0.011 | 0.020 | 0.031 | 0.044 | 0.060 | 0.078 | 0.099 | 0.122 | 0.176 |
| | Flow Rate, cfm | 157 | 236 | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 |
| | NC | -- | -- | -- | -- | -- | 18 | 22 | 25 | 28 | 34 |
| | Throw 150, 100, 50 | 2-2-5 | 2-3-7 | 3-5-9 | 4-6-11 | 5-7-12 | 5-8-13 | 6-9-14 | 7-10-15 | 8-11-16 | 9-12-17 |
| 14 | Total Pressure, in. w.g. | 0.007 | 0.015 | 0.027 | 0.043 | 0.061 | 0.084 | 0.109 | 0.138 | 0.171 | 0.246 |
| | Flow Rate, cfm | 214 | 321 | 427 | 534 | 641 | 748 | 855 | 962 | 1068 | 1282 |
| | NC | -- | -- | -- | -- | 16 | 21 | 25 | 28 | 31 | 37 |
| | Throw 150, 100, 50 | 2-3-6 | 3-5-9 | 4-6-12 | 5-8-13 | 6-9-14 | 7-11-16 | 8-12-17 | 9-12-18 | 10-13-19 | 12-14-20 |

Performance Notes:

1. Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
2. Air flow is in cfm.
3. All pressures are in in. w.g.
4. Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
5. Throw data is based on supply air and room air being at isothermal conditions.
6. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
7. Blanks (—) indicate NC levels below 15.

CEILING DIFFUSERS

Ceiling Twist Outlets RSD Series

Product Information

Models

Radial Slot Diffuser

Square Discharge Pattern

Circular Discharge Pattern

RSD/S

RSD/C

The **Price RSD Series** of radial outlets produces a high induction radial pattern generated by individually adjustable radial slots. The discharge pattern can be manually adjusted to produce 4 way, 3 way, 2 way or 1 way discharge, and from horizontal to vertical down by adjusting the pattern controller on each slot. Two face patterns are available, square and round.

Features

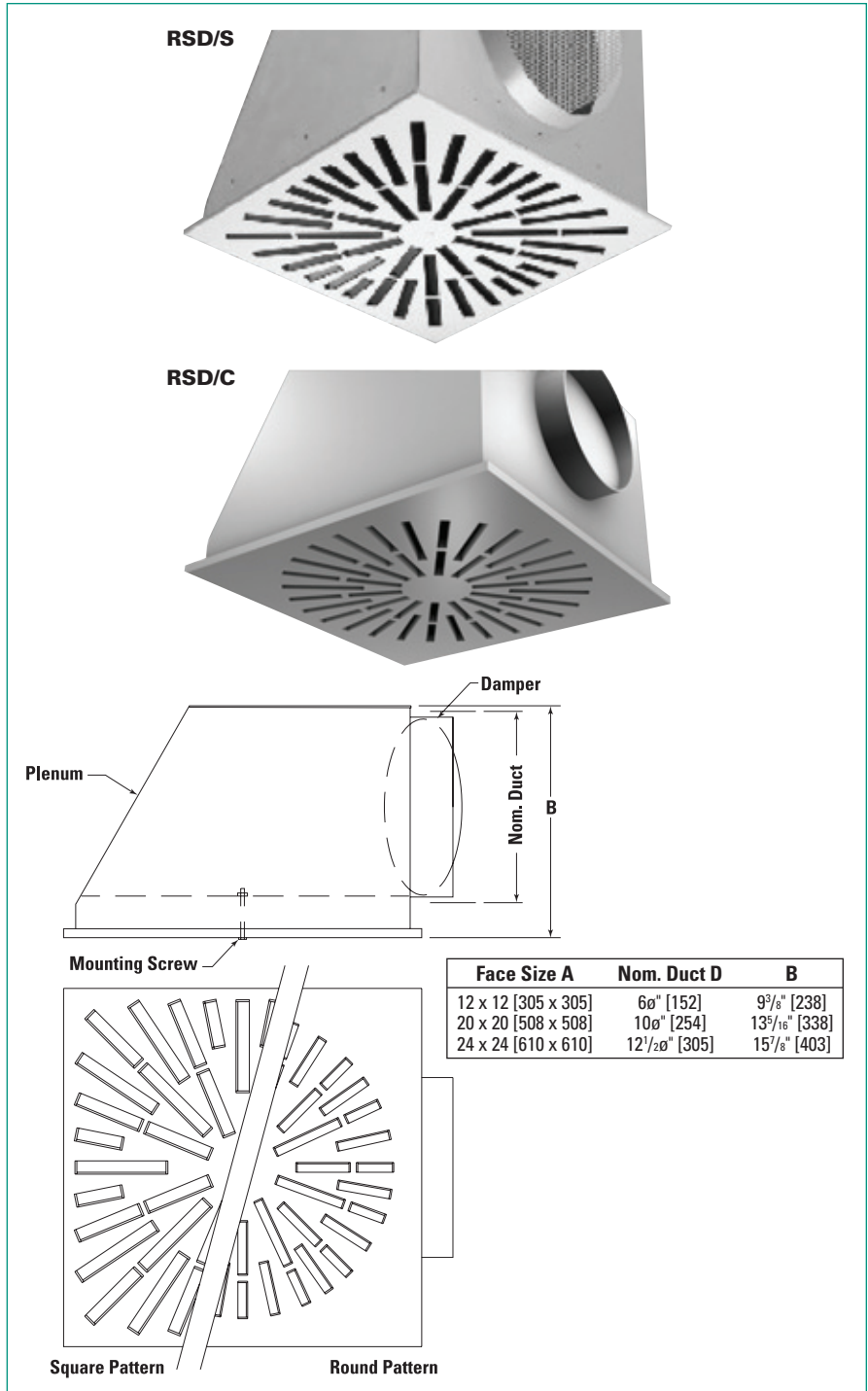
- High induction radial pattern.
- Rapid temperature equalization.
- Manually adjustable discharge direction from horizontal to vertical down.
- Manually adjustable discharge pattern, 4 way, 3 way, 2 way or 1 way.
- Surface mounting or suspended from duct.
- Accommodates ceiling heights up to 14 feet.
- Plenum with integral damper.

Finish

9003 white powder coat finish. White polycarbonate pattern controllers (black optional). Galvanized steel plenum.

Available Sizes

| |
|---------------------------|
| 12 in.x12 in. [300 x 300] |
| 20 in.x20 in. [500 x 500] |
| 24 in.x24 in. [600 x 600] |



✓ Product Selection Checklist

- 1) Select Diffuser Size based on desired performance characteristics.
- 2) Select Options and Accessories if required.
- 3) Select Finish.

Example: RSD / 24 x 24 / Top / 8

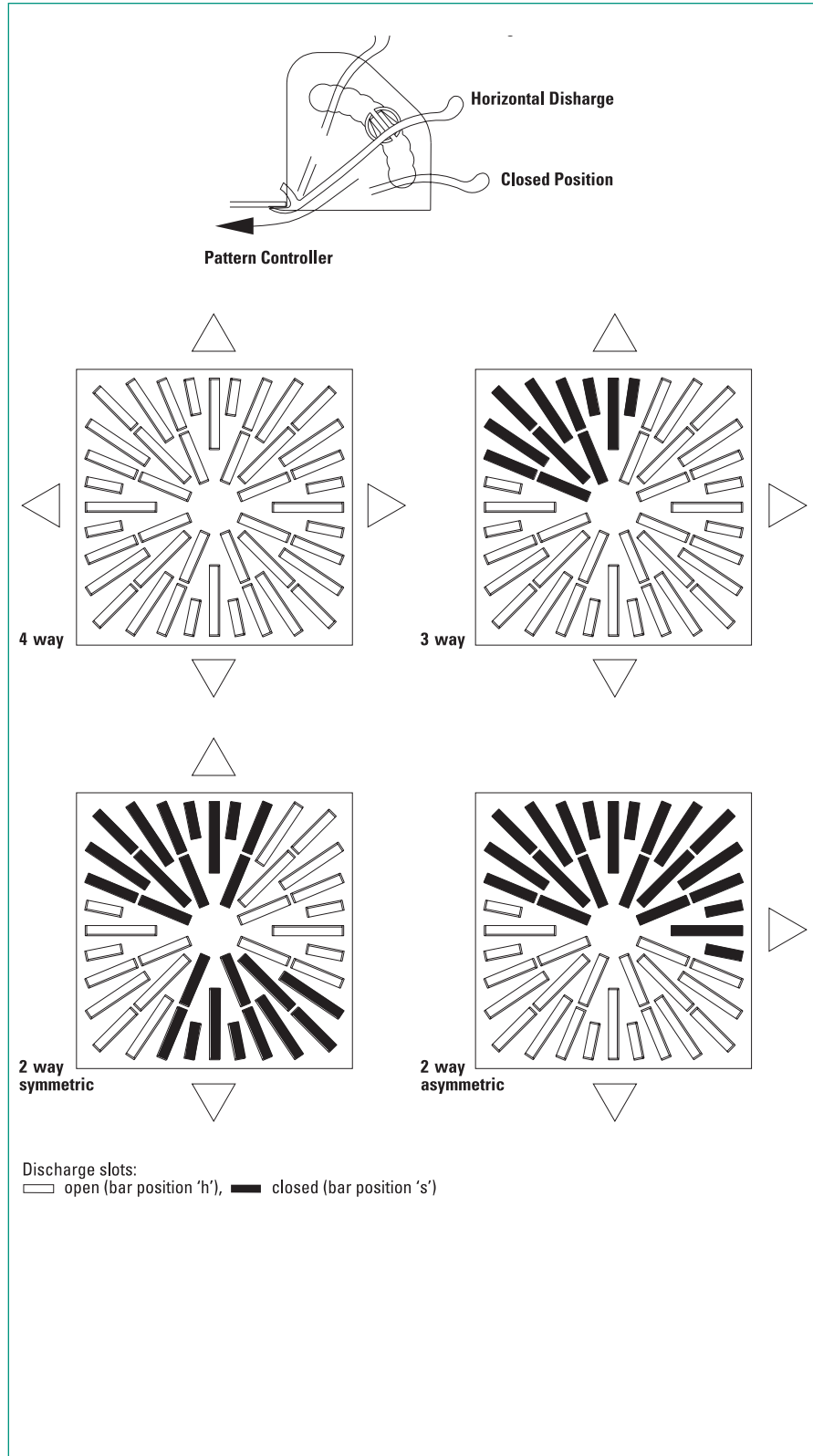
Product Information (continued)

Mode of Operation

The direction of the discharge air jet can be manually modified by adjusting the polycarbonate pattern controllers on each slot. With the pattern controller in the position indicated as "v", the air jet will be discharged vertically downward.

By moving each pattern controller to the center position, shown as "h", the air jet will be deflected to produce a horizontal discharge pattern.

At position "s" the pattern controller will have closed off the slot allowing the user to modify the discharge pattern from 1 way to 2 way to 3 way to 4 way to achieve the desired distribution pattern.



Performance Data - Circular Slot Arrangement

| Face Module | Neck Size | Neck Velocity, fpm | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|-----------------|-----------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|
| | | Velocity Pressure, in. w.g. | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | 0.062 |
| 12 in. x 12 in. | 6 | Total Pressure, in. w.g. | 0.058 | 0.091 | 0.131 | 0.179 | 0.234 | 0.296 | 0.365 |
| | | Air Flow, cfm | 79 | 98 | 118 | 137 | 157 | 177 | 196 |
| | | NC | -- | 20 | 26 | 31 | 35 | 39 | 44 |
| 20 in. x 20 in. | 10 | Total Pressure, in. w.g. | 0.061 | 0.096 | 0.138 | 0.188 | 0.246 | 0.311 | 0.384 |
| | | Air Flow, cfm | 218 | 273 | 327 | 382 | 436 | 491 | 545 |
| | | NC | -- | 22 | 28 | 33 | 37 | 41 | 44 |
| 24 in. x 24 in. | 12.5 | Total Pressure, in. w.g. | 0.063 | 0.098 | 0.141 | 0.197 | 0.251 | 0.318 | 0.392 |
| | | Air Flow, cfm | 341 | 426 | 511 | 597 | 682 | 767 | 852 |
| | | NC | 15 | 22 | 28 | 33 | 37 | 41 | 45 |

Performance Notes:

1. Air flow is in cfm.
2. All pressures are in in. w.g.
3. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
4. Blanks (--) indicate an NC value less than 15.
5. Performance is based on 4 way discharge and one diffuser mounted in a ceiling.

Performance Data - Square Slot Arrangement

| Face Module | Neck Size | Neck Velocity, fpm | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|-----------------|-----------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|
| | | Velocity Pressure, in. w.g. | 0.010 | 0.016 | 0.022 | 0.031 | 0.040 | 0.050 | 0.062 |
| 12 in. x 12 in. | 6 | Total Pressure, in. w.g. | 0.058 | 0.091 | 0.131 | 0.179 | 0.234 | 0.296 | 0.365 |
| | | Air Flow, cfm | 79 | 98 | 118 | 137 | 157 | 177 | 196 |
| | | NC | -- | 16 | 23 | 29 | 34 | 39 | 43 |
| 20 in. x 20 in. | 10 | Total Pressure, in. w.g. | 0.061 | 0.096 | 0.138 | 0.188 | 0.246 | 0.311 | 0.384 |
| | | Air Flow, cfm | 218 | 273 | 327 | 382 | 436 | 491 | 545 |
| | | NC | -- | 20 | 27 | 33 | 39 | 43 | 47 |
| 24 in. x 24 in. | 12.5 | Total Pressure, in. w.g. | 0.063 | 0.098 | 0.141 | 0.192 | 0.251 | 0.318 | 0.392 |
| | | Air Flow, cfm | 341 | 426 | 511 | 597 | 682 | 767 | 852 |
| | | NC | -- | 22 | 29 | 35 | 41 | 45 | 49 |

Performance Notes:

1. Air flow is in cfm.
2. All pressures are in in. w.g.
3. NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
4. Blanks (--) indicate an NC value less than 15.
5. Performance is based on 4 way discharge and one diffuser mounted in a ceiling.

Minimum Spacing Between Outlets

| Air Flow, cfm | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 |
|---------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Spacing, ft | 7 | 7 | 8 | 8 | 9 | 9 | 10 | 10 | 11 | 11 | 11 |

Performance Notes:

1. Air flow is in cfm.
2. Minimum spacing required to give air velocity 50 fpm or less in the occupied zone.
3. Minimum distances are based on 20 °F cooling temperature differential between the supply air and room air temperatures and a 12 ft mounting height.

Extruded Aluminum Ceiling Systems

Unitee Series



Product Information

Design Objectives

Unitee Ceiling Systems were developed as a cost-competitive alternative to solid and narrow screw-slot extruded aluminum T-bar systems. Assembled by means of patented two-piece clips, Unitee is an aesthetically pleasing system that accommodates low-cost square-edge Lay-in acoustic panels.

For further information, performance and specification details on any architectural product, please contact your nearest Price sales rep. Detailed brochures are available.

Applications

Unitee Ceiling Systems can be used in any retail, commercial or public space where steel Ts or other unsealed extruded aluminum ceiling products would be installed.

Fully Accessible

A major feature of Unitee Series is that it can be easily removed and reinstalled to provide access to the plenum space. Occasionally mechanical or electrical equipment fail, requiring large areas of the ceiling to be removed. Some applications require that the entire ceiling be removed for cleaning the plenum space above the ceiling. Unitee Series uses the Price two-piece Universal Assembly Clips, which allow the grid to be easily removed and reinstalled.

Features/Benefits

- Accepts square-edge Lay-in panels; panels are easily installed and removed for full plenum access.
- Unique connector clips provide rapid installation of ceiling members.
- Continuous screw slots for attaching partitions without damaging ceiling members.
- Thru-slot intersections for aesthetically pleasing appearance.
- Design flexibility - several profiles to choose from in any module size.
- Extruded aluminum construction for clean, crisp lines, maximum durability and rust-proof performance. Choice of painted or anodized finishes.

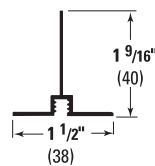
Finish

The standard finish for Unitee Series is B12 White Powder Coat.

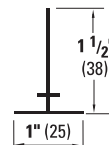
Other finishes, including anodizing, are available by request.



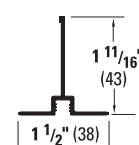
Profile #4667



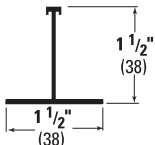
Profile #4683



Profile #4787



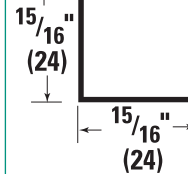
Profile #4818



Profile #4823



Profile #4826



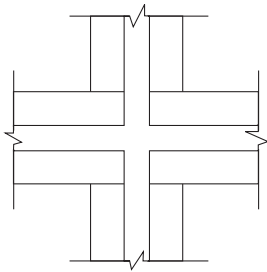
✓ Product Selection Checklist

- 1] Select Profile Number based on design conditions.
- 2] Select Ceiling Panel Type.
- 3] Select Finish B12 or other (specify).

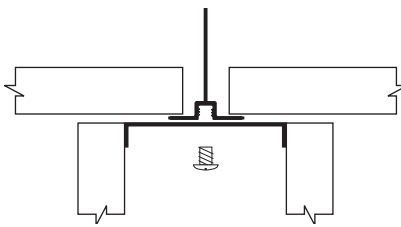
Note: Drawings must be provided showing designer's reflected ceiling plan, as well as air distribution and lighting layouts.

Product Information (continued)

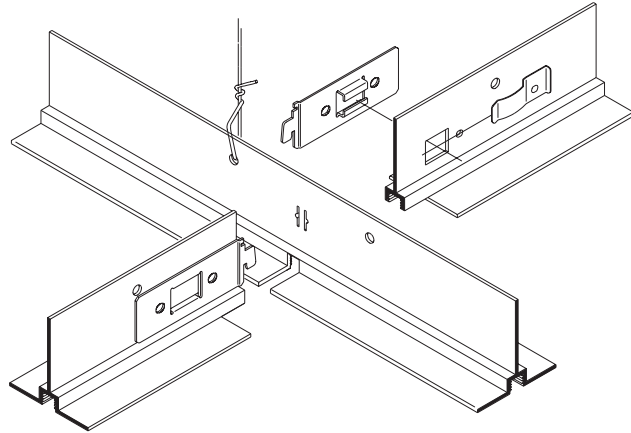
Thru-Slot Intersection



Partition Mounting



Connector Detail



Easy to Install and Remove

Unitee assembles by means of a patented two-piece Universal Clip consisting of a steel mounting clip and spring locking clip, both of which are normally factory installed. The bayonet-type mounting clips are designed to pass through the regimentation holes in connecting grid members and lock securely in place. The

speed of installation with this design helps reduce installation cost and assures better alignment and a more rigid installation. If it becomes necessary to remove a member at a later date, simply remove the locking clips and the grid member will easily disengage from the intersection.



The designer has total creative control with Unitee Ceiling Systems.

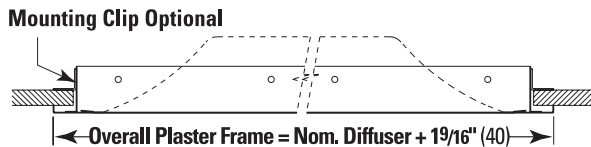
Quick Selection Guide

| Accessory Application | Accessory Type | Recommended Model |
|---------------------------|---------------------------|----------------------------|
| Surface Mounted | Lay-in Adaptor Frame | |
| | Steel Construction | SPF |
| | Aluminum Construction | APF |
| Round Neck | Opposed Blade Damper | |
| | 6 in. - 36 in. | VCR7 (w/ Duct Ring) |
| | 4 in. - 24 | VCR8, VCR8E |
| | Equalizing Grid | EG |
| | Damper / Grid | VCR6 |
| | Sectorizing Baffles | SB |
| Square / Rectangular Neck | Opposed Blade Damper | VCS3 |
| | Equalizing Grid | EG |
| | Damper / Grid | VCS6 |
| Duct Mounted | Opposed Blade Damper | |
| | Round 6 in. - 36 in. dia. | VCR7 |
| | Square / Rectangular | VCS3B |
| | Air Volume Extractor | AE1, AE2 |

CEILING DIFFUSERS

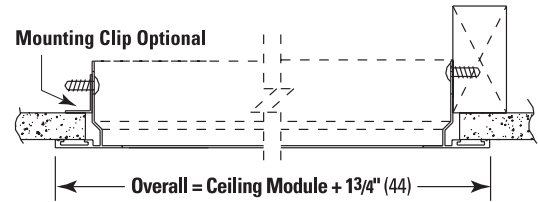
Surface Mounting Accessories

SPF - Steel Surface Mount Adaptor Frame



For surface mounting square ceiling diffusers in drywall ceiling. This allows retrofit of Lay-in diffusers or installation of flexible duct in surface mount applications. Constructed of heavy gauge steel. Assures a neat job and close fit. Finish: B12 white.

AMF - Aluminum Surface Mount Adaptor Frame



For surface mounting square ceiling diffusers in drywall ceiling. This allows retrofit of Lay-in diffusers or installation of flexible duct in surface mount applications. Constructed of extruded aluminum for crisp, clean lines. Assures a neat job and close fit. Finish: B12 white.

PR - Plaster Ring for Round Diffusers



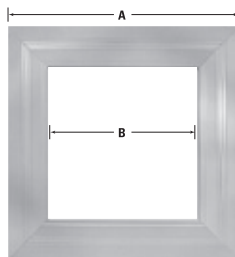
Specify model PR ring for round diffusers with standard outer cone. Mounts in ceiling prior to plastering. Assures a neat job and close fit. Finish: Black.

DRF / DPR - Duct Ring Flange / Duct Plaster Ring for Round Neck Diffusers



Price offers a variety of plaster rings to suit most applications. Duct rings are used for exposed duct mounting of round neck diffusers and other similar applications. Plaster rings are generally installed before the application of the plaster to assist in framing the ceiling opening. Finish: Black.

CCSQ - Mounting Panel for Square Ceiling Diffusers

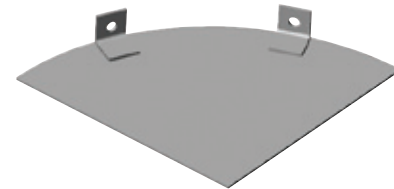


Dimensional Data - Imperial (in.) / Metric [mm]

| Module Size | A | B |
|-------------|---|---|
| 12 x 12 | 25 ³ / ₁₆ " [640] | 13 ⁵ / ₁₆ " [338] |
| 24 x 24 | 37 ³ / ₁₆ " [945] | 25 ⁵ / ₁₆ " [643] |

Special anti-smudge frame for square diffusers, the Price CCSQ neatly drops the diffusers 1 ¹/₁₆ in. [27] below the ceiling to enhance the ceiling effect and reduce smudging. Finish: as specified.

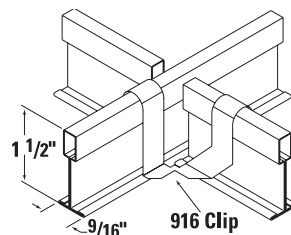
SB - Sectorizing Baffle



The sectorizing baffle is a field installed accessory used to blank-off a portion of the inlet to create a special irregular air pattern. Baffles are available in multiples of 45° for Models SPD, SCD, RCD, RCDE and RCDA diffusers.

916 Clip

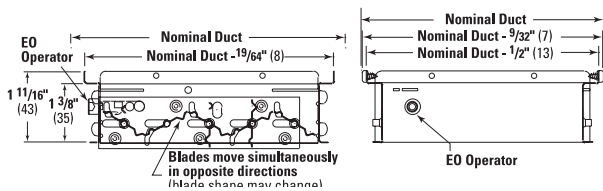
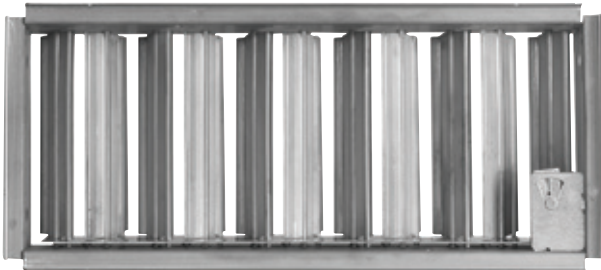
For flat ⁹/₁₆ in. ceiling T grid



Increases corner size to ¹⁵/₁₆ in. flat ceiling T equivalent. Use when frame style 916, 916P is not available. Four clips required per diffuser. Supplied in boxes of 100.

Square / Rectangular Neck Accessories

VCS3 / VCS3AL - Opposed Blade Damper



Opposed blade damper specifically designed for use with square and rectangular neck diffusers. Blades move simultaneously in opposite directions to permit precise metering of the air while creating a minimal disturbance to the air pattern.

Attaches quickly and easily to the diffuser neck with sheet metal screws.

Regulated by removing diffuser inner core and adjusting the slot operator with a screwdriver.

| Model | Construction | Finish |
|--------|-------------------------------|--------|
| VCS3 | Zinc Coated Cold rolled steel | Mill |
| VCS3AL | Aluminum blades and frame | Mill |

VCS6 S/ L - Combination Damper & Grid



Model VCS6/S Blades parallel to short dimension.
Model VCS6/L Blades parallel to long dimension.

Combination damper and equalizing grid is easily installed in the square or rectangular duct take-off. Fully adjustable damper blade opens directly into air stream for precision air control. Louver blades are individually adjustable and spring-tensioned to maintain setting. Finish: Black.

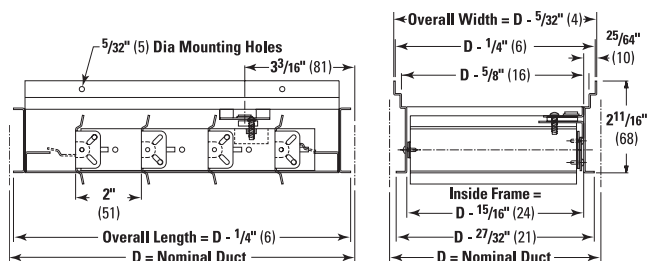
EG S / L Equalizing Grid



Model EG/S Blades parallel to short dimension.
Model EG/L Blades parallel to long dimension.

Equalizes air flow into square or rectangular necks with minimum noise and turbulence. Louver blades are individually adjustable and spring-tensioned to maintain setting. Finish: Black.

VCS5/C - Heavy Duty Damper c/w Screw Driver Operator



Heavy Duty Balancing Damper specifically designed for use with high capacity industrial type grilles and diffusers from HCD, 150 and 300 series. Blades move simultaneously in opposite directions to allow for precise metering of the air while creating a minimal disturbance to the air flow. The damper comes with a positive screw type locking mechanism that immobilizes the blades once the desired damper set-point is achieved.

Attaches quickly and easily to diffuser neck with sheet metal screws.

Damper is face adjustable when used with HCD, 150 and 300 series of products.

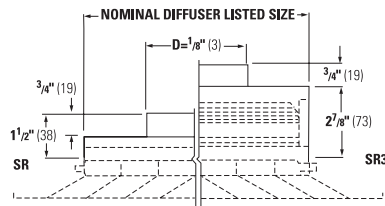
Additional Information Index

For more information on VCS5/C - Heavy Duty Damper c/w Screw Driver Operator, please see Section D of this catalog.

Square / Rectangular Neck Accessories

SR Round Neck Adaptor

SR



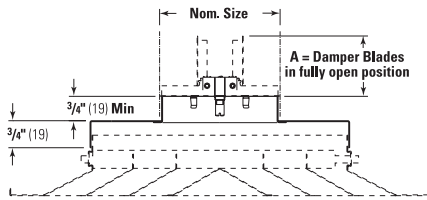
SR3
SR3AL

SR – Adapts square neck diffusers to a round neck, permitting attachment of round flexible or rigid duct. Damper selection is then restricted to dampers for round neck, such as VCR7, VCR8, VCR6. Adaptors fit over the diffuser neck for fast assembly. SR shipped attached.

SR3 – Adapts square neck diffusers to a round neck with Type 3 opposed blade damper, permitting attachment of round flexible or rigid duct. SR and damper shipped unattached.

SR3AL – Adapts square neck diffusers to a round neck with aluminum opposed blade damper, permitting attachment of round flexible or rigid duct. SR and damper shipped unattached.

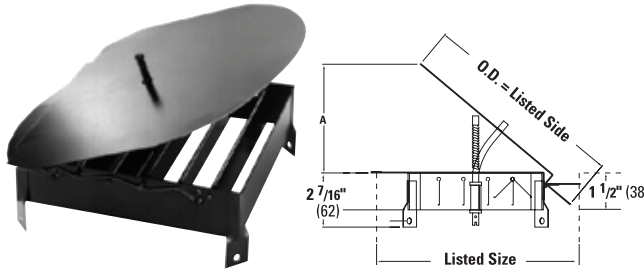
SR8E



SR8E – Adapts square neck diffusers to a round neck VCR8E damper, permitting attachment of round flexible or rigid duct. SR and damper shipped unattached.

Round Neck Accessories

VCR 6 Combination Damper and Grid



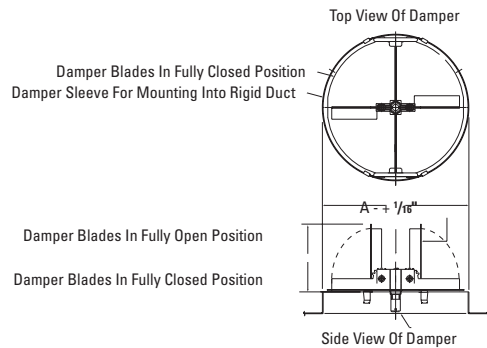
Dimensional Data — Imperial (in.) / Metric (mm)

| Size | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 24 | 30 | 36 |
|------|-------|---------|-------|---------|--------|--------|-------|-------|-------|-------|-------|--------|----------|--------|--------|
| | [102] | [127] | [152] | [178] | [203] | [254] | [305] | [356] | [381] | [406] | [457] | [506] | [610] | [762] | [914] |
| A | 2 1/4 | 2 13/16 | 3 3/8 | 3 15/16 | 4 7/16 | 5 9/16 | 7 1/8 | 8 5/8 | 9 | 9 7/8 | 11 | 12 1/4 | 14 13/16 | 17 1/2 | 21 3/4 |
| | [57] | [71] | [86] | [100] | [113] | [141] | [181] | [219] | [229] | [251] | [279] | [311] | [376] | [445] | [553] |

Combination damper and equalizing grid is easily installed in the round duct take-off. Fully adjustable damper blade opens directly into air stream for precision air control. Louver blades are individually adjustable and spring-tensioned to maintain setting. Easily operated from the face of the diffuser with slotted operator. Constructed of heavy cold rolled steel frame and extruded aluminum blades. Finish: Black.

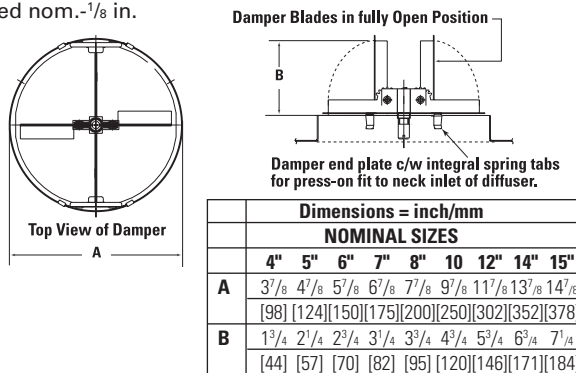
VCR 8 Volume Control Damper

Damper mounts directly into rigid duct.

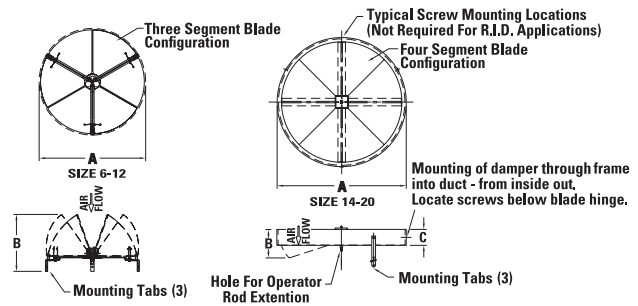


VCR 8E Butterfly-type volume control damper.

Damper mounts directly to any round diffuser neck inlet that is sized nom. -1/8 in.



VCR 7 Radial Opposed Blade Damper c/w Duct Ring



Dimensional Data — Imperial (in.) / Metric (mm)

| Nom. Size | A | B | C |
|-----------|------------------|------------------|------------------|
| 6 | 5 7/8 in. [149] | 2 3/16 in. [56] | -- |
| 8 | 7 7/8 in. [200] | 2 7/8 in. [73] | -- |
| 10 | 9 7/8 in. [251] | 3 9/16 in. [90] | -- |
| 12 | 11 7/8 in. [302] | 4 7/16 in. [110] | -- |
| 14 | 13 7/8 in. [352] | 4 7/8 in. [124] | 2 7/8 in. [54] |
| 15 | 14 7/8 in. [378] | 5 1/8 in. [130] | 2 7/8 in. [54] |
| 16 | 15 7/8 in. [403] | 5 5/8 in. [143] | 2 7/8 in. [54] |
| 18 | 17 7/8 in. [454] | 6 1/4 in. [159] | 2 7/8 in. [54] |
| 20 | 19 7/8 in. [505] | 7 in. [178] | 2 7/8 in. [54] |
| 24 | 23 7/8 in. [606] | 6 3/4 in. [172] | 2 13/16 in. [72] |
| 30 | 29 7/8 in. [759] | 8 1/4 in. [210] | 2 13/16 in. [72] |
| 36 | 35 7/8 in. [911] | 9 3/4 in. [248] | 2 13/16 in. [72] |

VCR 7 radial opposed blade damper supplied with duct ring. Can be mounted directly into most diffuser necks before installation. Easily adjusted with slotted operator.

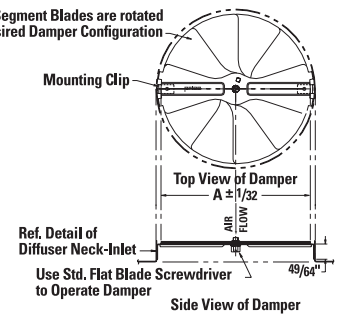
VCR 7 is not recommended for use with flexible duct application.

VCR 9 Radial Damper

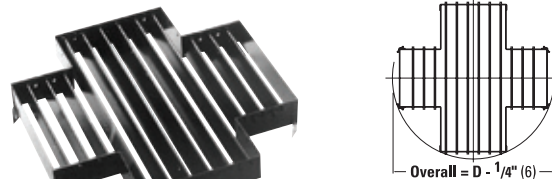
Five Segment Blades are rotated to desired Damper Configuration

Dimensional Data — Imperial (in.) / Metric (mm)

| Duct Size | A |
|-----------|------------------|
| 6 | 5 1/2 in. [140] |
| 8 | 7 1/2 in. [191] |
| 10 | 9 1/2 in. [241] |
| 12 | 11 1/2 in. [292] |
| 14 | 13 1/2 in. [343] |



EG Equalizing Grid



Dimensional Data — Imperial (in.) / Metric (mm)

| D=Listed Size | 4 [102] | 5 [127] | 6 [152] | 7 [178] | 8 [203] |
|---------------|----------|----------|----------|----------|----------|
| | 10 [254] | 12 [305] | 14 [356] | 15 [381] | 16 [406] |
| | 18 [457] | 20 [506] | 24 [610] | 30 [762] | 36 [914] |

Used to equalize air flow into the round neck of a diffuser or duct take-off. Extruded aluminum louver blades are individually adjustable for precision air control and spring-tensioned to maintain setting. Finish: Black.

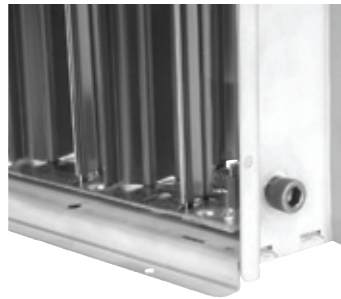
Duct Mounted Accessories

VCS3B, VCS3BEO, VCS3BAL, VCS3BALEO, VCS3BSS, VCS3BSSEO

Opposed Blade Damper,
and with External Operator

Identical in design and construction to the VCS3, this opposed blade damper comes with an integral frame for duct mounting.

VCS3BEO option features a hex operator that projects through the mounting frame. For installation in a duct where damper is inaccessible from the face of the diffuser.



| Model | Construction | Finish |
|-----------|------------------|--------|
| VCS3B | Zinc Coated Cold | Mill |
| VCS3BEO | Rolled Steel | |
| VCS3BAL | Aluminum Blade | Mill |
| VCS3BALEO | and Frame | Alum. |
| VCS3BSS | Stainless | #4 |
| VCS3BEO | Steel | Finish |

AE1

1 in. [25]
Blade Space

AE2

2 in. [51]
Blade Space
Air Volume
Extractor



Maximum Size Restrictions

| Operator | Movement Bar Length | Blade Length | Area |
|----------|---------------------|--------------|---------------------------------------|
| 1 | 36 in. [914] | 36 in. [914] | 4ft ² / 0.37m ² |
| 3 | 30 in. [762] | 16 in. [406] | 2ft ² / 0.19m ² |
| 4 | 60 in. [1524] | 36 in. [914] | 6ft ² / 0.57m ² |

Fully adjustable gang-operated blades move from fully open to fully closed positions to control air direction and volume to ceiling diffuser.

- Rugged cold rolled steel construction.
- Blades spaced 1 in. [25] or 2 in. [51] on center.
- Finished in matte black .
- Factory assembled.

Available Operators

No. 1 Operator - Manual Adjusting Lever.

No. 3 Operator - Hex Key Operated mechanism.

No. 4 Operator - Manually Externally controlled Operating Rod.

Recommended for all oversize volume extractors. Supplied complete with set screw lock.

For complete information on Air Volume Extractors, please refer to Duct Mounted Accessories for Grilles and Registers in Section D.

Miscellaneous Accessories

Safety Chains

For any large diffuser with removable cores situated in areas where the outlet may be subject to impact.

Wire Guards

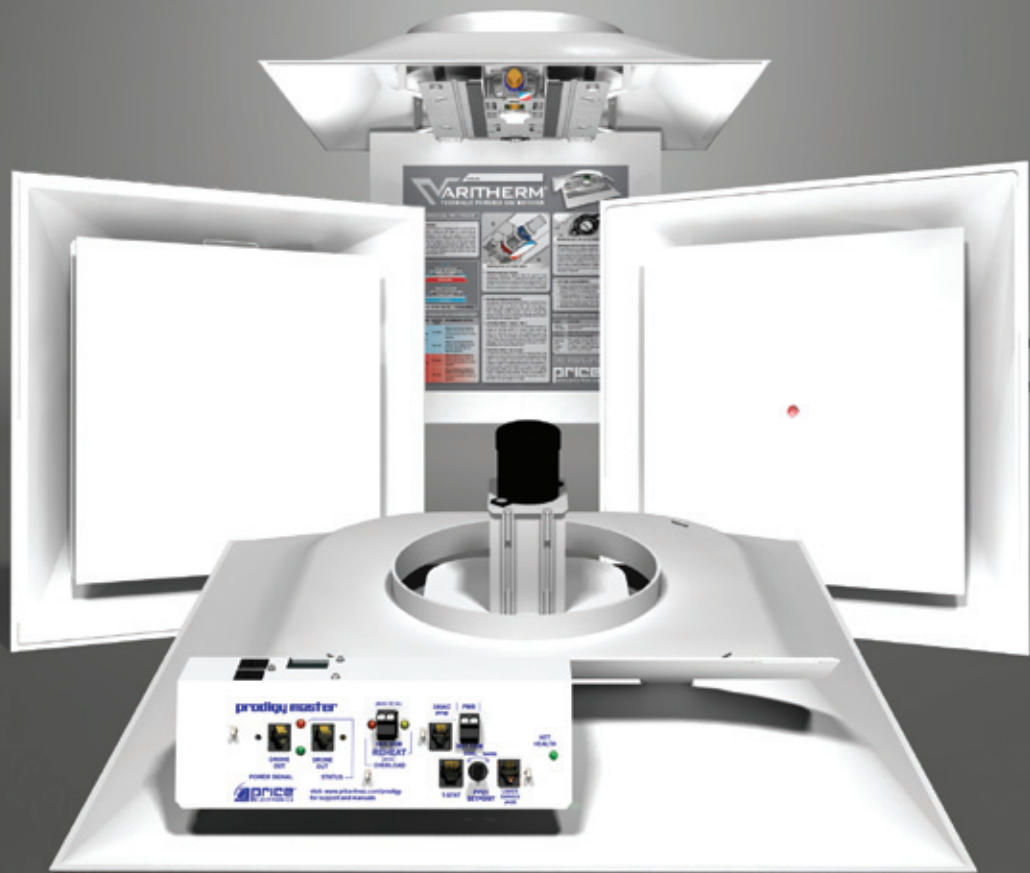
For Round Cone Diffusers. Recommended for gymnasiums and areas where diffusers are subject to abusive conditions.

Sectorizing Baffles

Allows modification of the air patterns of radial discharge round neck diffusers. Sectorizing baffles blank off the appropriate portion of the round inlet areas to direct air pattern away from obstructions, etc.

Contact your local Price sales rep for additional details and information.





Engineering Guide

VAV Diffusers

Please refer to the **Price Engineer's HVAC Handbook** for more information on VAV Diffusers.

Diffuser Types

Conventional air distribution systems typically group several rooms into a zone that is controlled by a single thermostat. Because rooms within the zone can have different heating/cooling requirements, the system's response to heating/cooling loads within the zone may not be consistent with load requirements. The result can be a system that compromises the comfort of the occupants in each room by providing a blanket response to individual needs. As well, there is resulting system inefficiency due to the overheating/overcooling of rooms within the building.

Self-modulating Variable Air Volume (VAV) diffusers allow for smaller, comfortable zones. They monitor local space conditions and regulate air flow to satisfy the occupants' selected level of comfort. As air flow varies, the unique design of VAV diffusers adjusts an integral damper to maintain face discharge velocities and excellent throw characteristics. VAV diffusers can help solve the inconsistent throws or dumping that may occur with some overhead diffusers due to varying supply conditions.

Several different types of VAV diffusers exist, however most can be grouped into two models: Thermally Powered and Electronically Powered.

Thermally Powered VAV Diffusers

Thermally powered VAV diffusers, shown in **Figure 1**, commonly use thermal actuators to modulate the flow rate of supply air into a room according to a desired temperature setting. The diffuser works independent of a BAS and does not require external power. Based on this, the unit provides system flexibility and a low-cost installation. Each occupant or small group of occupants can adjust their local diffuser to their desired temperature, ensuring tailored comfort levels for all occupants in the building.

A thermally powered VAV diffuser installs much like any other ceiling diffuser. Once the supply duct is connected and air is flowing, the thermally powered VAV diffuser begins to operate. Temperature set-point adjustments and minimum air flow settings can be adjusted on the diffuser core. The diffuser measures the room temperature by inducing room air into the diffuser core and passing it over a thermal actuator. Linkage contained within the core adjusts the damper based on the difference between room and desired set-point temperatures. Typically, diffusers are available for VAV cooling and VAV cooling/heating with automatic changeover.

Electronically Powered VAV Diffusers

An electronically powered VAV diffuser, shown in **Figure 2**, uses an electric modulating damper inside the diffuser core assembly. The electronics to control the device are mounted on the top of the backpan, out of sight from the occupied space. The analog or DDC controller with proportional integral control will provide stable, precise control with fast response. Space temperature control within 1 °F of set-point, true VAV cooling and heating, activation of perimeter heat, and optional BACnet interface are all possible with these types of units.

An electronically powered VAV diffuser will require an electrical connection. Temperature set-point adjustment can be made in a variety of ways: on board the unit, wall mounted thermostat, remote control, or a building management system such as BACnet. The room temperature is measured either by inducing room air into the diffuser core or by the use of a wall thermostat. For a zone larger than one diffuser, a master diffuser can drive several drone diffusers. The drone units will adjust their dampers in unison as dictated by the master unit.

Figure 1: Thermally powered VAV diffuser



Figure 2: Electronically powered VAV diffuser



Conventional Design vs. VAV Diffuser Layouts

Conventional Diffuser System Layout

In **Figure 3**, a zone thermostat controls the conditions for a zone, which can include several rooms. In this illustration, the VAV terminal will supply air to the zone based on the feedback from the thermostat. When the load has been satisfied, the damper limits the downstream air flow. A pressure control valve monitors the upstream static pressure and allows air to bypass the supply duct.

The disadvantage to this design is that the one thermostat is controlling multiple rooms within a zone. The loads within each of the three rooms will vary throughout the day and will require different supply conditions. The zone thermostat will dictate the amount of cool or warm air necessary to keep its room temperature at the occupant's desired set-point. Therefore, this system will provide inadequate comfort control to all other rooms in the zone since the demand is generated based on the conditions at the thermostat. Overcooling or overheating will likely occur in other rooms.

System Layout with Thermally Powered VAV Diffusers

In **Figure 4**, thermally powered diffusers are used to regulate the air flow within each room. The thermally powered diffuser has an integrated thermostat that reacts to the conditions in that room. A pressure control valve monitors duct static pressure and allows air to bypass the supply duct. This system design gives the occupant the ability to control local space comfort within each room. Because the damper is regulated by a thermal actuator, reaction time to changing conditions will be gradual and stable. The standalone unit is self powered, thus allowing for future layout modifications and requirements. Due to the simple operation of this diffuser, no special training is required for installation and maintenance. Thermal comfort and diffuser performance also are maintained at lower flows.

Networked System Layout with Electronically Powered VAV Diffusers

In **Figure 5**, electronically powered VAV diffusers are used to regulate the air flow within each room. A thermostat or an integrated temperature sensor is located in each space. The electronically powered VAV diffuser actuates based on feedback from the thermostat. A pressure control valve monitors duct static pressure and allows air to bypass the supply duct. BACnet may be utilized for electronically powered VAV diffuser output management and control.

Occupants of each room can control their temperature set-point, thus creating an acceptable space for almost all occupants. As shown in **Figure 5**, an RTU controller can be integrated into the system to allow for polling and heating/cooling strategies to increase energy efficiency and enhanced comfort control.

Figure 3: Conventional diffuser system layout

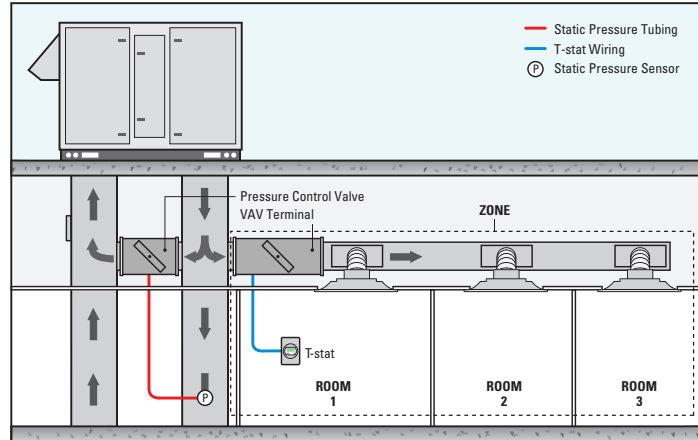


Figure 4: System layout with thermally powered VAV diffusers

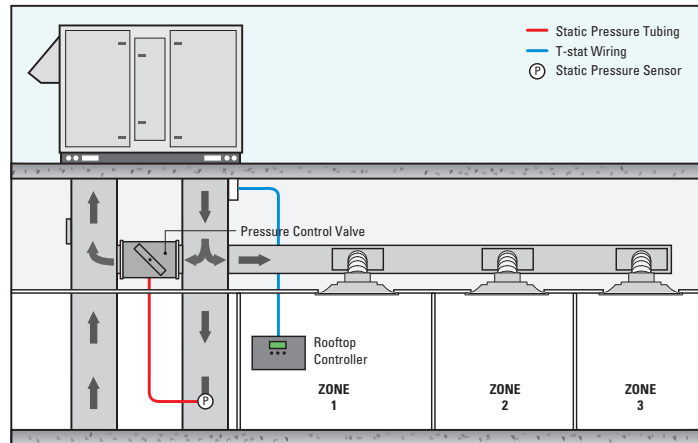
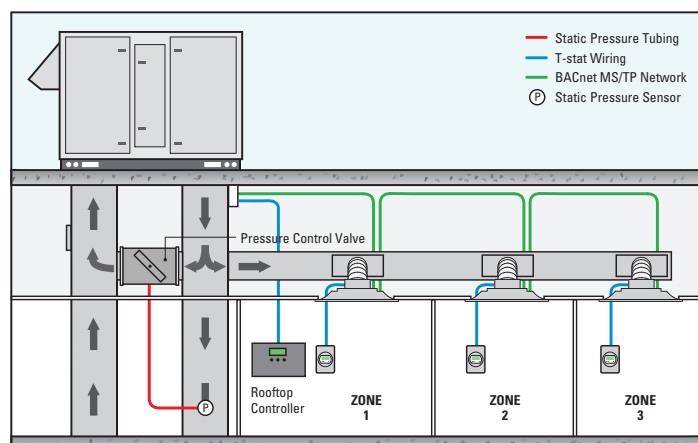


Figure 5: Networked system layout with electronically powered VAV diffusers



Operating Principles

Coanda Effect

When air passes over a static surface it will follow the surface's profile, providing there are no sharp edges or abrupt changes. This is what is known as the Coanda Effect (**Figure 6**) (ASHRAE, 2009) (Nevin, R. G., 1976). The aerodynamic diffuser backpan ensures that the supply air has a smooth transition from the duct to the room. Supply air leaves the diffuser, adhering to the ceiling as it flows into the space, where it mixes with room air, minimizing air pattern drop. By design, the VAV diffuser backpan and internal damper generate a tight high velocity jet pattern with the Coanda Effect attaching it to the ceiling surface. Without this design, the air flow patterns may detach from the ceiling prematurely and cause thermal discomfort.

Room Air Induction

Induction is the phenomenon of air being drawn towards air in motion. As the speed of air movement increases, the static pressure in the local zone at the diffuser decreases, pulling the surrounding air towards it. This principle is important to the performance of mixing systems; it is the elevated discharge velocity that draws in room air and mixes it with the supply air, as illustrated in **Figure 7** (ASHRAE, 2007b). VAV diffusers rely on high induction to effectively mix the supply and room air to provide uniform room temperature distribution with low room velocities.

No Turn-Down Effects

Conventional systems typically respond to changes to the heating/cooling load by varying the flow of air to the diffusers at low loads. At low loads this can create low velocity air streams at the diffuser, creating the potential for unwanted drafts in the occupied zone (ASHRAE, 2009). VAV diffusers vary the volume of air supplied to a space by modifying the diffuser outlet area. Face velocities are maintained at a more consistent level; high enough to maintain the Coanda Effect and prevent diffuser dumping. Thus, the performance of VAV diffusers is maintained at all load levels due to the consistent face velocities promoting increased room air induction as illustrated in **Figure 8**.

Minimum Air Volume

To meet ventilation rate requirements, the VAV diffuser must be set for a minimum air volume. Both thermal powered and electronically powered VAV diffuser, typically have a means of setting this minimum air volume which can be preset in the factory or adjusted in the field. In some cases, this minimum air volume setting may exceed the cooling load, overcooling the space. To prevent overcooling, some method of introducing heat must be applied. With electronically powered VAV diffusers, the control board can activate perimeter radiation, radiant panels or an upstream duct heater. Thermally powered VAV diffusers will require an additional thermostat to activate heat.

Figure 6: Coanda Effect

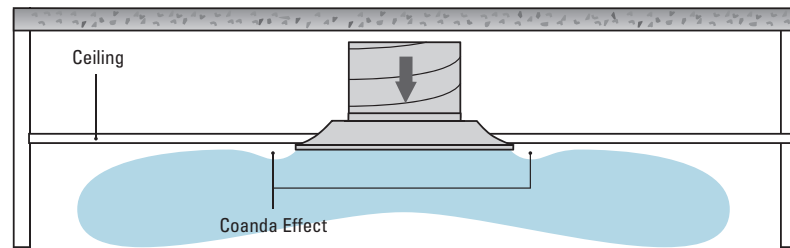
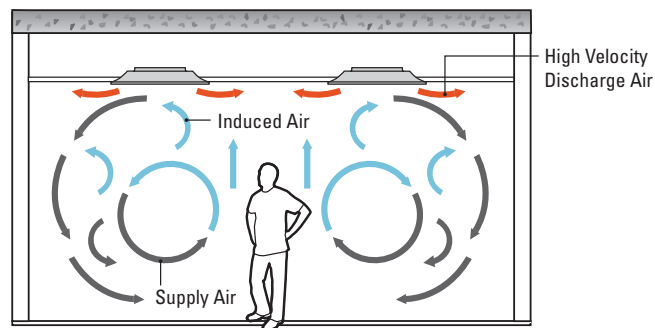


Figure 7: Room air induction



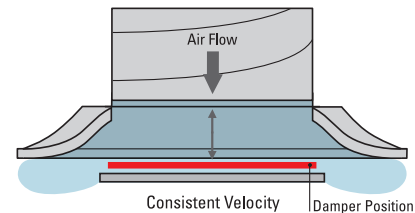
Maintained ADPI

By definition, the air diffusion performance index (ADPI) is the statistical percentage of the points, when measured uniformly within a space, whose local draft velocities and temperatures fall within acceptable comfort limits (ASHRAE, 2007b). An explanation of the ASHRAE method for estimating ADPI and selection procedures can be found in Chapter 9—Mixing Ventilation in the Price Engineer's HVAC Handbook (**Table 1**).

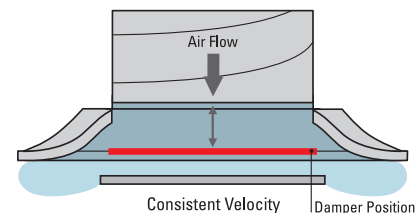
VAV diffusers are designed to maintain a higher ADPI over the full range of movement of their integral dampers within the published operating range. As the damper closes, the air volume discharged from the diffuser is decreased; however, the velocity of the air remains virtually constant due to the resulting reduction in open area. By maintaining the discharge velocity, VAV diffusers ensure good induction and mixing of the room through their operating range. Furthermore, by maintaining the velocity, the throw to 50 fpm is not reduced as much as it is for a conventional air outlet with a constant outlet area, which means the T_{50}/L ratio is not as significantly affected. Therefore, the ADPI value should remain acceptable as the integral diffuser damper modulates.

Figure 8: Face velocities

Open Damper / High Air Flow



Reduced Damper / Low Air Flow



Operating Principles

Room Temperature Measurement

Commonly VAV diffusers are designed to operate without a room thermostat, reducing cost, field labor and wiring. Room temperature is measured and controlled based on inducing room air into the diffuser core. During cooling this induced air will be very representative of the occupied zone temperature as the entire room is well mixed due to the high induction characteristics of the VAV diffuser. During heating some stratification of room temperature will exist due to the buoyancy of the warm air, causing a difference in temperature reading between the induced room air and the temperature in the occupied zone. This difference will vary depending on the supply air temperature. The higher the supply air temperature the greater the difference. To correct this temperature difference an "offset" is often applied to more accurately estimate the occupied zone temperature. With a thermally powered VAV diffuser a constant offset is applied in the thermal actuator linkage. Since the actual temperature error varies with air flow and supply air temperature this constant offset will provide limited room control accuracy. An electronically powered VAV diffuser can be programmed to calculate a room temperature offset based on the duct temperature reading to more accurately determine the room temperature in the occupied zone. For applications with limited heating requirements, or for morning warm up sequences the above control strategy will provide acceptable room temperature control. For applications requiring significant hours of heating and where room temperature control is critical an electronically powered VAV diffuser with wall mounted thermostat would be recommended.

Figure 9: Thermally powered diffuser with minimum air flow adjustment



Figure 10: Electronically powered diffuser with heat output on control board



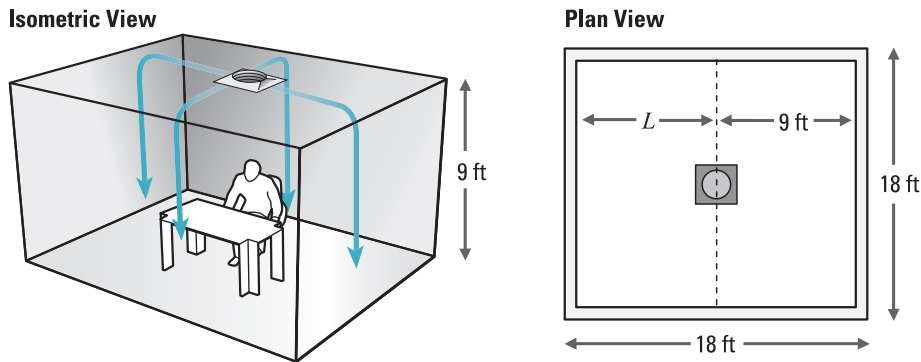
Table 1: Air diffusion performance index (ADPI) selection guide (ASHRAE, 2007b) - IP

| Terminal Device | Room Load Btu/hft ² | T ₅₀ /L for Max. APDI | Maximum ADPI | ADPI Greater Than | Range of T ₅₀ /L |
|--|--------------------------------|----------------------------------|--------------|-------------------|-----------------------------|
| High Sidewall Grilles | 80 | 1.8 | 68 | - | - |
| | 60 | 1.8 | 71 | 70 | 1.5-2.2 |
| | 40 | 1.6 | 78 | 70 | 1.2-2.3 |
| Circular ¹ Ceiling Diffusers | 20 | 1.5 | 85 | 80 | 1.0-1.9 |
| | 80 | 0.8 | 76 | 70 | 0.7-1.3 |
| | 60 | 0.8 | 83 | 80 | 0.7-1.2 |
| Sill Grille Straight Vanes | 40 | 0.8 | 88 | 80 | 0.5-1.5 |
| | 20 | 0.8 | 93 | 90 | 0.7-1.3 |
| | 80 | 1.7 | 61 | 60 | 1.5-1.7 |
| Sill Grille Spread Vanes | 60 | 1.7 | 72 | 70 | 1.4-1.7 |
| | 40 | 1.3 | 86 | 80 | 1.2-1.8 |
| | 20 | 0.9 | 95 | 90 | 0.8-1.3 |
| Ceiling Slot Diffusers (T ₁₀₀ /L) | 80 | 0.7 | 94 | 90 | 0.8-1.5 |
| | 60 | 0.7 | 94 | 80 | 0.6-1.7 |
| | 40 | 0.7 | 94 | - | - |
| Light Troffer Diffusers | 20 | 0.7 | 94 | - | - |
| | 80 | 0.3 | 85 | 80 | 0.3-0.7 |
| | 60 | 0.3 | 88 | 80 | 0.3-0.8 |
| Perforated & Louvered Ceiling Diffusers | 40 | 0.3 | 91 | 80 | 0.3-1.1 |
| | 20 | 0.3 | 92 | 80 | 0.3-1.5 |
| | 60 | 2.5 | 86 | 80 | <3.8 |
| Perforated & Louvered Ceiling Diffusers | 40 | 1.0 | 92 | 90 | <3.0 |
| | 20 | 1.0 | 95 | 90 | <4.5 |
| | 11.51 | 2.0 | 96 | 90 | 1.4-2.7 |
| | | | 80 | | 1.0-3.4 |

¹Includes square cone diffuser (SCD) and square plaque diffuser (SPD). Since VAV diffusers are based on the geometry of a square plaque diffuser, they will be included in this category as well.

Example 1

In the following example, the ADPI will be evaluated for an electronically powered VAV diffuser and standard perforated diffuser at the same room condition. Consider a 18 ft x 18 ft x 9 ft room with a 24 in. x 24 in. outlet centered in the ceiling.



Space Considerations

Some of the assumptions made for the space are as follows:

- Maximum cooling load = 6900 Btu/h or 21 Btu/h/ft²
- Minimum cooling load = 3100 Btu/h or 10 Btu/h/ft²
- Maximum flow rate = 376 cfm
- Minimum flow rate = 169 cfm
- A 10 in. inlet neck is selected
- The VAV diffuser will operate at 0.30 in. inlet static pressure
- Characteristic length, L, is 9 ft
- Throw at 50 fpm terminal velocity (T₅₀) is determined from product catalogs

Determine the ADPI at maximum flow from Table 1

| Model | L | T ₅₀ | T ₅₀ /L | ADPI |
|------------------|------|-----------------|--------------------|------|
| Perforated 4 way | 9 ft | 15 ft | 1.7 | 90 |
| VAV | 9 ft | 12 ft | 1.3 | 90 |

Determine the ADPI at minimum flow from Table 1

| Model | L | T ₅₀ | T ₅₀ /L | ADPI |
|------------------|------|-----------------|--------------------|------|
| Perforated 4 way | 9 ft | 8 ft | 0.9 | <80 |
| VAV | 9 ft | 8 ft | 0.9 | 90 |

Both diffusers provide good ADPI at the maximum flow. At minimum flow, the VAV diffuser has a much greater ADPI compared to the perforated diffuser, which does not achieve the minimum acceptable ADPI level of 80.

VAV Diffusers and LEED®

Incorporating VAV diffusers into building design may contribute to LEED credits. Two credits available when using VAV diffusers are:

Controllability of Systems – Thermal Comfort – IEQ Credit 6.2

The intent of this credit is to provide a high level of thermal comfort system control by individual occupants or groups to support optimum health, productivity and comfort conditions. In order to qualify for this credit, 50% of occupants must have the ability to make adjustments to meet their individual space comfort condition preferences.

VAV diffusers allow personal control of a zone by allowing the user to set the temperature set-point locally, by manually adjusting the diffuser or, in the case of the electronic versions, with the use of an optional thermostat or infrared remote control. These diffusers are the ideal solution for providing personal control in an office environment.

Thermal Comfort – Design – IEQ Credit 7.1

To qualify for this credit the system must provide a thermally comfortable environment that supports the productive and healthy performance of the building

occupants in accordance with ASHRAE Standard 55 (ASHRAE, 2004). Under ASHRAE 55, 80% of the occupants must be comfortable in their environment.

VAV diffusers create high room air induction at all cataloged air flow ranges. The increased induction at low air flow eliminates turn-down effects as seen in some standard overhead ceiling diffusers and maintains an acceptable ADPI rating.

Zoning Solutions

Building with Multiple Demands

Buildings often have multiple zones with different air conditioning needs due to local equipment, solar loads, room locations, the number of occupants and the activity level in this space.

A building in the winter can experience varying exterior loads. For this discussion, we will assume the rooftop does have heating capability and three rooms have been identified as needing supplemental heat as shaded blue in Figure 11. The south side can be primary cooling, while the north side has a heating load.

Solution 1

If this set of offices only has one rooftop unit and one thermostat, the system can only satisfy one of the cooling/heating requirements. A VAV diffuser can be incorporated into each room to improve individual comfort without additional heating strategies, such as baseboard heat.

Solution 2

Perimeter heat or radiant panels offer another solution to the multiple demand spaces example. The system can be designed so that the Air Handling Unit (AHU) supplies cool air to all diffusers and the perimeter radiation system responds to any requirement for heat (Figure 12). If the zone requires no further cooling, the VAV diffusers will move to minimum position, and perimeter heat is activated on a call for heating.

Figure 11: Solution 1 - Zones call for heating and cooling. Rooftop supplies either cool air or warm air.

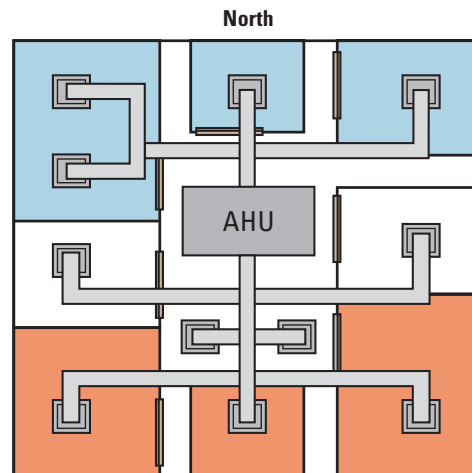
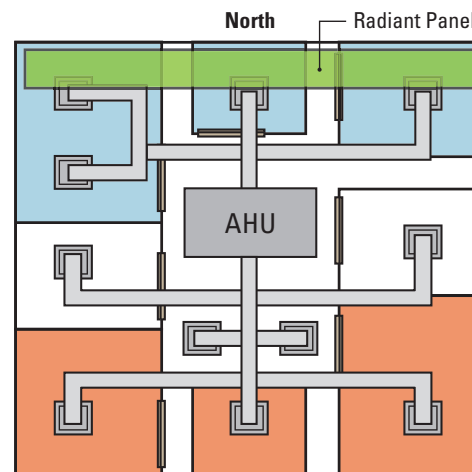


Figure 12: Solution 2 - Perimeter heat or radiant panels, cool supply.



Example 1

Solution 3

Duct heater stations, an alternative to Perimeter Radiation or Radiant Panels, allow for thermal and ventilation demands in a larger multiple demand zone system (Figure13). For zones that require heating, specific duct heater stations can energize to supply heat to the specific zones rather than supplying hot air from the rooftop to all zones. The zones in which VAV diffusers are located will automatically switch to heating mode (if the option is selected) ensuring that there is adequate zone ventilation for each specific zone demand, and allowing other zones to continue to function in cooling mode. A major drawback for duct heater station design is the additional energy costs required to cool then reheat the air.

Solution 4

By using a rooftop unit with both cooling and heating coils and a DDC rooftop unit controller, BACnet networked VAV diffusers can control the system to supply cooling or heating based on the demand in the various zones or rooms. Weighted and average polling strategies can be used to determine the overall building need for heating and cooling, and control the rooftop unit directly to ensure that these needs are met.

In the example shown in Figure14, the red diffusers require 85% heating, the green diffusers are 100% neutral, and the blue diffusers require 30% cooling.

Under the polling average strategy, the total system demand for the building is shown in Table 2.

In this case, it would not make sense to supply cooling to the blue diffusers since they are a minority with respect to the building's overall heating/cooling requirements. Under this control method, the rooftop would supply heated air until the demand was satisfied.

The advantage of this solution is that it takes into account the size of the demand for either heating or cooling, where the other solutions simply energize heat when there is a demand for heat. This method is more energy efficient.

A drawback of this system design is that not everyone is satisfied as the polling scheme determines when the system is in heating and cooling. However, this can be adjusted through the addition of reheat stations, perimeter heat or multiple AHUs depending on the size of the space. This method of measuring load can be more energy efficient and comfort can be addressed through proper polling schemes.

Figure 13: Solution 3 - Duct heater stations

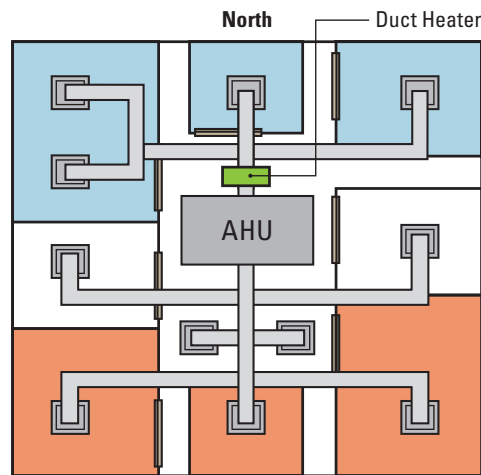


Figure 14: Solution 4 - BACnet network VAV diffusers

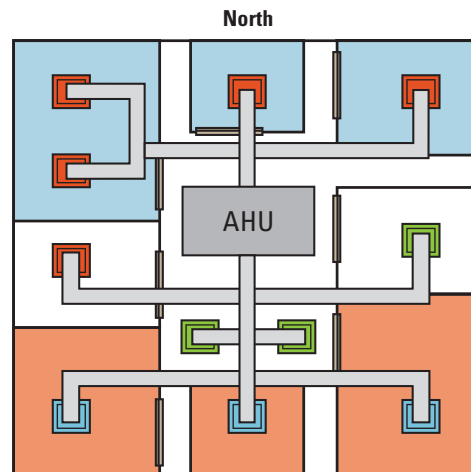


Table 2: Total System Demand for Solution 4

| System Demand | |
|--------------------------|------------------|
| 5 x 85% | 425% Heat |
| 3 x 30% | 90% Cooling |
| 3 x 100% | 300% Neutral |
| Total Demand | 815% |
| Heating makes up 425/815 | 52% of the total |
| Cooling makes up 90/815 | 11% of the total |
| Neutral makes up 300/815 | 49% of the total |

Selection Procedure

Selection of a VAV diffuser is dependent on two main criteria: noise and pressure dependent flow rate.

1. Determine the duct pressure for the system based on pressure drop between the fan discharge and the farthest outlet. The static pressure should be a maximum of ¼ in. w.g. entering the VAV diffuser inlet to minimize the noise generation.
2. Determine the maximum and minimum flow rate to the diffuser based on the room load and ventilation rate.
3. Select the VAV diffuser size from the Modulated Flow Selection Table (see

Table 3). Under the appropriate design duct pressure column, select the inlet size which will meet the specified sound criteria at the maximum design air volume.

4. Check the cataloged throw values to ensure they match the space requirements. Refer to Chapter 9—Mixing Ventilation in the Price Engineer's HVAC Handbook for further selection information.
5. Once the VAV diffuser size has been selected, note the lowest air volume cataloged under the duct pressure column. This is the minimum limit of the VAV diffuser at the listed static pressure.

Check the air volume to ensure it meets the design ventilation rate and also check the throw and noise levels. In some cases, the noise level of the VAV diffuser increases with reduced flow and damper closure.

6. For more information on NC and air distribution selection procedures, please reference Chapter 9—Mixing Ventilation in the Price Engineer's HVAC Handbook.

Note: The VAV diffusers will not operate below the lowest air volume values listed in the Modulated Flow Selection Table (see **Table 3**). Zero minimum or shut-off is not available.

Example 2

In the following example, a VAV diffuser will be selected referencing performance catalog data (**Table 3**).

Space Considerations

Some of the assumptions made for the space are as follows:

Maximum flow = 350 cfm

Minimum flow = 150 cfm

Duct Static Pressure = 0.20 in. w.g.

Max Room NC = 40

Table 3: Performance Data

| Performance Data - VAV, 10 in. diffuser | | | | | | |
|---|--------------------------|-----------|----|--------------------------|-----------|----|
| Inlet Size | 0.10 Duct P _s | | | 0.20 Duct P _s | | |
| | cfm | Throw, ft | NC | cfm | Throw, ft | NC |
| 6 in. | 20 | 0-0-1 | - | 28 | 0-1-2 | 16 |
| | 54 | 0-1-2 | - | 79 | 0-1-3 | 23 |
| | 77 | 0-1-3 | 15 | 111 | 1-2-3 | 25 |
| | 109 | 1-2-3 | 17 | 152 | 2-2-4 | 27 |
| 8 in. | 46 | 1-1-3 | - | 64 | 1-2-4 | 24 |
| | 112 | 2-3-5 | 20 | 158 | 3-4-7 | 31 |
| | 170 | 3-4-7 | 23 | 240 | 4-6-9 | 33 |
| | 242 | 4-6-9 | 26 | 342 | 6-4-10 | 36 |
| 10 in. | 95 | 1-2-4 | 23 | 135 | 2-3-6 | 33 |
| | 190 | 3-4-8 | 26 | 268 | 4-6-10 | 36 |
| | 274 | 4-6-11 | 28 | 388 | 6-8-13 | 38 |
| | 365 | 6-9-12 | 29 | 517 | 8-10-14 | 39 |
| 12 in. | 120 | 2-3-6 | 27 | 169 | 3-4-8 | 38 |
| | 202 | 3-4-9 | 28 | 285 | 4-6-11 | 38 |
| | 311 | 5-7-11 | 29 | 441 | 6-9-13 | 39 |
| | 478 | 8-10-14 | 30 | 675 | 10-12-17 | 40 |
| 14 in. | 139 | 3-4-8 | 27 | 197 | 4-5-9 | 36 |
| | 213 | 3-5-9 | 28 | 302 | 5-7-11 | 37 |
| | 370 | 5-8-12 | 30 | 524 | 8-10-15 | 39 |
| | 555 | 9-11-15 | 30 | 785 | 10-13-18 | 40 |

By interpolating the performance data:

Maximum air flow - 350 cfm - 37 NC - 13 ft throw to 50 fpm terminal velocity

Minimum air flow - 135 cfm - 33 NC - 6 ft throw to 50 fpm terminal velocity

Duct Pressure Control

It is important to control the system pressure for two main reasons. The first is to maintain design noise levels. When some rooms or zones are at low load conditions, diffusers will be forced to throttle off more air to maintain room temperature, creating increased duct static pressure. As the duct static pressure increases, the noise level of the diffusers will increase proportionally. Secondly, as diffusers throttle to reduce air flow to the room or zone, the air flow over the direct expansion (DX) coil is also reduced, potentially causing freeze-up on the coil. Pressure control with a bypass loop will prevent this situation by maintaining constant flow over the coil and limiting duct static pressure to acceptable levels.

The following pressure control methods are commonly used.

Pressure Relief Collar

Pressure relief collars (Green) are a simple mechanical method of controlling system static pressure (Figure 15). These collars have bypass gates that are forced open by a predetermined system pressure, shown in Figure 16.

When they open, air is bypassed into the ceiling return plenum, thus reducing the static pressure in the supply duct. This method is common with retrofit VAV diffuser applications as installation is simple and does not require extensive system modification.

Care must be taken to ensure that the return air plenum does not over-pressurize and force the bypassed supply air into the occupied space (i.e. exhaust fan or rooftop relief damper).

Discharge Bypass Damper Method

The bypass damper or pressure control valve (Green) is connected to a static pressure sensor, which will actuate the valve when duct system pressure becomes too high, illustrated in Figure 17. In this method excess air will be bypassed into the ceiling return plenum, thereby reducing the static pressure. Care must be taken to ensure that the return air plenum does not over-pressurize and force the bypassed supply air into the occupied space (i.e. exhaust fan or rooftop relief damper). The static pressure sensor must be placed at least 3/4 of the way downstream from the control valve to ensure that all pressure losses induced by the ductwork are accounted for (ASHRAE, 2007a).

Figure 15: Equipment layout of pressure relief collar method

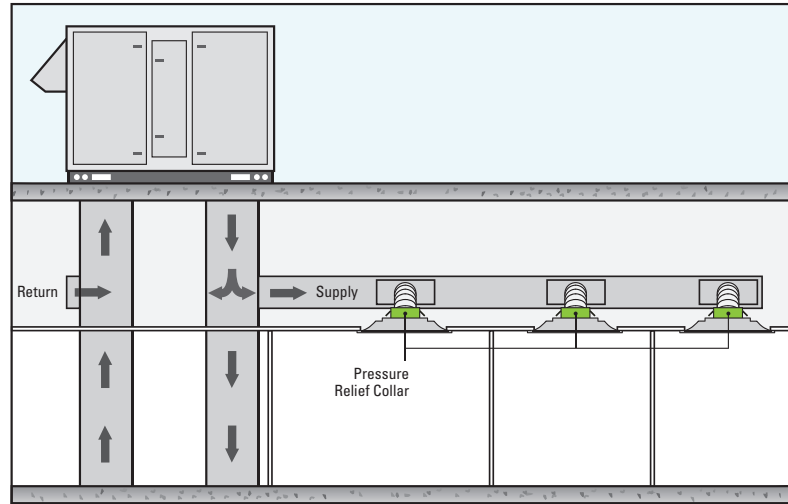
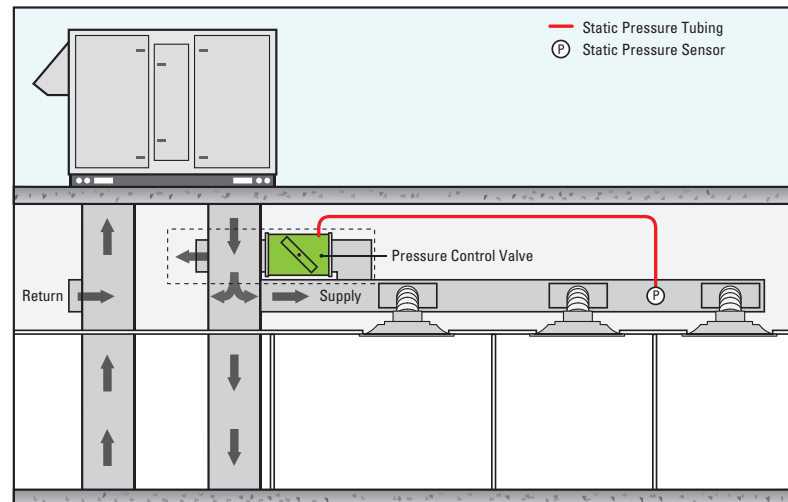


Figure 16: Pressure relief collar



Figure 17: Equipment layout of discharge bypass damper method



Duct Pressure Control

Ducted Bypass Damper Method

This method, illustrated in **Figure 18**, is similar to the plenum return method, except in this case you duct the bypass exhaust terminal or pressure control valve (GREEN) straight to the return ductwork. Since the return ductwork could become pressurized and bypass into the plenum, methods to ensure that the return duct does not get pressurized must be taken (i.e. exhaust fan or rooftop relief damper). The static pressure sensor must be placed at least 3/4 of the way downstream from the control valve to ensure that all pressure losses induced by the ductwork are accounted for (ASHRAE, 2007a).

Fan Control Method

There are two possible methods of fan control that will maintain static pressure in the system. By using a pressure controller (Red) to signal a variable frequency drive (VFD) motor, we can slow down or speed up the flow of air into the space, as illustrated in **Figure 19**. The alternative to the VFD motor is to use inlet vanes. The pressure controller can signal an actuator to close or open the vanes, thus controlling air flow. Fan control should not be used with DX Coils.

The static pressure sensor must be placed at least 3/4 of the way downstream from the control valve to ensure that all pressure losses induced by the ductwork are accounted for (ASHRAE, 2007a).

Figure 18: Equipment layout of ducted bypass damper method

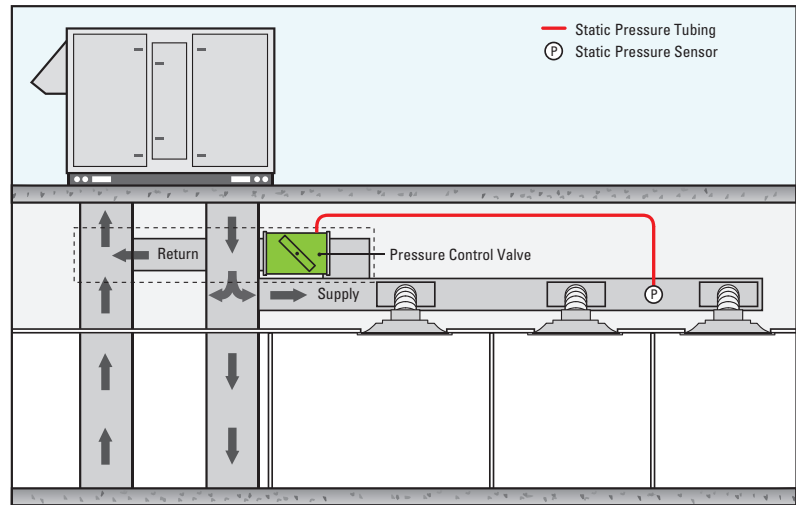
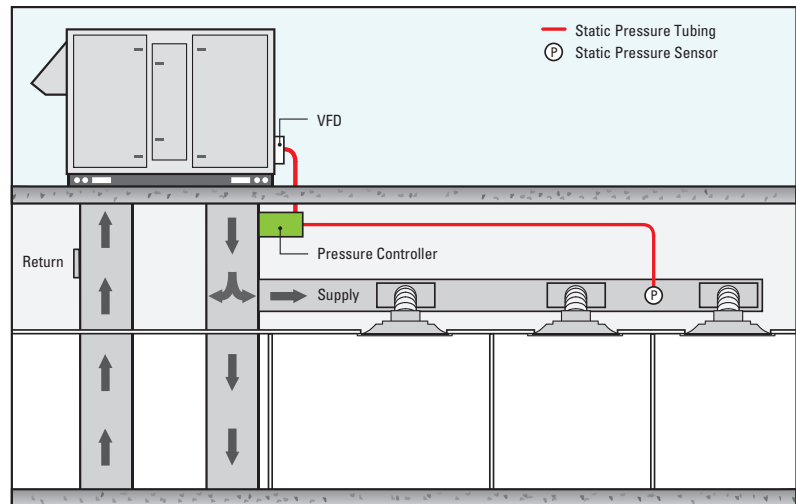


Figure 19: Equipment layout of fan control method



Retrofit Applications

Reduce Thermal Comfort Complaints

When multiple occupants exist in a single zone, chances are one or more people will be thermally uncomfortable. VAV diffusers may be a solution to this problem by subdividing the zone and allowing the occupants to adjust their local zone for temperature. Either thermally or electronically actuated VAV diffusers can be utilized for this. The decision is usually made by weighing the installation requirements versus the type of temperature set-point control desired.

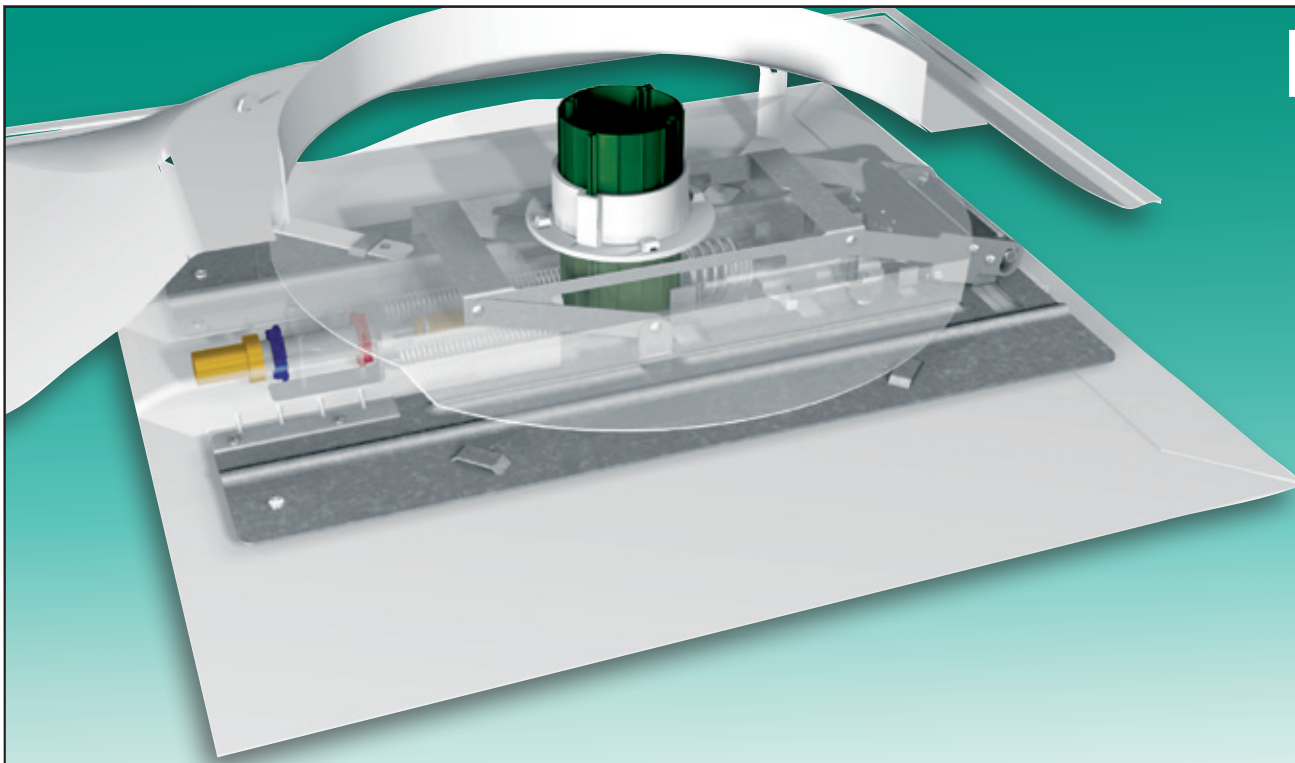
Facility Renovations

Instead of installing terminal units to subdivide a large zone, VAV diffusers are a practical alternative. Both thermally and electronically powered models may be used with the decision mainly based on preference and requirements of the diffusers. If the building already has or is being upgraded to a building management system, the preferred choice would be the electronically powered models, as outputs such as room temperature, supply temperature and damper position would be useful in troubleshooting the HVAC system.

One point to investigate, in either case, is how the system will react, as the proposed VAV diffusers open and close the dampers. As the damper regulates flow, there will be a change in system static pressure. Adding a single VAV diffuser to a large zone may not have much impact on the system. However, replacing a large percentage of diffusers within a zone will cause problems upstream to equipment capacities without proper pressure and flow control being implemented.

References

- ASHRAE (2007a). Chapter 46. *ASHRAE handbook—HVAC applications*. Atlanta, GA: American Society of Heating, Refrigeration, Air-Conditioning Engineers.
- ASHRAE (2007b). Chapter 56. *ASHRAE handbook—HVAC applications*. Atlanta, GA: American Society of Heating, Refrigeration, Air-Conditioning Engineers.
- ASHRAE (2009). Chapter 20. *ASHRAE handbook—Fundamentals*. Atlanta, GA: American Society of Heating, Refrigeration, Air-Conditioning Engineers.
- Nevens, R. G. (1976). *Air diffusion dynamics, theory, design and application*. Birmingham, MI: Business News Publishing Company.

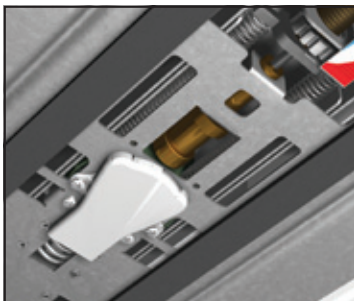


VARITHERM®

THERMALLY POWERED VAV DIFFUSER

Comfort made easy! All of the Varitherm® settings can be easily accessed and adjusted from the room side of the diffuser chassis—a first in the industry. You can trust the Price Varitherm® to perform to the highest industry standards as it is AHRI certified and backed by a 10 year warranty.

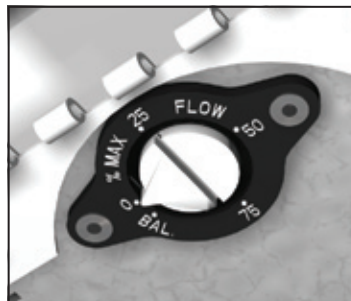
Offers wider air flow ranges and lower pressure drop compared to other thermally powered VAV diffusers.



Easy to control



Easy to access



Easy to use



Easy to install

Product Overview

Varitherm®

The Varitherm® self-modulating diffuser series is designed to provide accurate personal VAV control, while being easy to install, maintain and operate. Thermal sensors, mounted just above the plaque, sense the room temperature and modulate a damper according to the supply air temperature and load in the room – all done mechanically so there is no requirement for power or wiring.

Traditional VAV strategies include grouping rooms and spaces with similar loads and environmental requirements into zones, all controlled by a single VAV device and a single thermostat. As people have varying comfort criteria, there are often many who are left unsatisfied or uncomfortable by being placed in a zone where the thermostat is controlled by other people. Complaints of people being “too cold” or “too warm” are common as the system typically works to satisfy the occupant representing the “worst case” within the zone.

The Varitherm® eliminates this issue by allowing individual control at the diffuser level, providing much more flexibility and greater comfort. Patented technology allows the Varitherm® to provide highly accurate flow rates determined by the heating or cooling requirement in the room. The thermal actuators are constantly engaged with the damper and thus, provide constant feedback and enable precise control of the room temperature.

As the room load varies, the Varitherm® diffuser compensates by controlling the flow of supply air into the space. The diffuser is available in two models, a cooling only model and a heating-cooling model. Modulation for both models is precise and proportional to the requirements of the space and occupant.

By varying the open area at the diffuser, a near constant velocity of supply air is maintained, even at very low flows. This ensures that the Coanda effect is maintained at all flows and diffuser performance issues due to VAV turn down (dumping, for example) are eliminated.

The actuator mechanism features robust thermal sensors that operate an engineered linkage to adjust the damper. An inlet-mounted thermal sensor provides the heating-cooling model with automatic changeover between heating and cooling modes.

Achieve Personal Comfort



Product Information

Models

VAV Cooling **VPD-C**
 VAV Cooling and VAV Heating **VPD-HC**

Varitherm® diffusers feature an architecturally appealing solid plaque design and high performance control linkage. The plaque can be opened to allow for easy access to temperature set-point dials, and minimum air flow adjustment.

Thermal actuators sense room air and adjust air flow into the space to satisfy the room load, requiring no wires for simple installation and maintenance.

Standard Construction Features

- Steel backpan, faceplate and linkage for strength and durability.
- Thermal elements for consistent, repeatable performance.
- Hinged faceplate, with powerful magnetic closure ensures simple yet strong closure that allows for quick access to adjustment features.
- Specially engineered damper stack for reduced linkage binding and superior performance over the entire operating range.

Standard Linkage and Control Features

- Individual heating and cooling set-points (Varitherm-HC only).
- Minimum air flow adjustment.
- Balancing mode for easy setup.
- Automatic heating /cooling changeover (Varitherm-HC only).
- Engineered damper lift track for a more predictable linear performance and for isolating the force of the damper on the linkage for freer, smoother operation – improving the response of the diffuser to fluctuating room loads.

Accessories

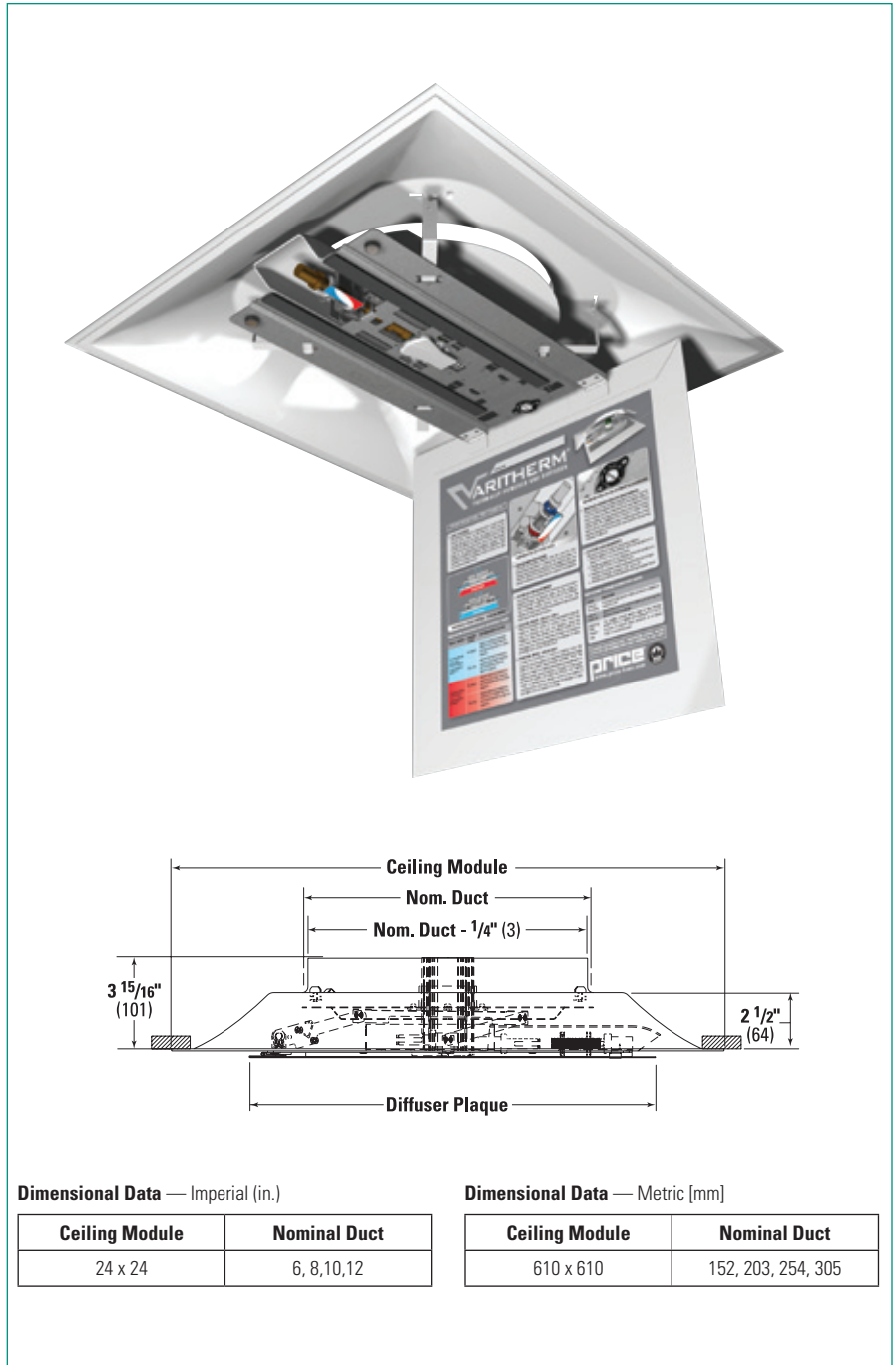
- PRC – Pressure Relief Collar regulates static pressure at the Varitherm®.
- PCV – Pressure Control Valve.

Options

- R6 Insulation

Finish

White Powder Coat **B12**
 For optional and special finishes see color matrix.



Dimensional Data — Imperial (in.)

| Ceiling Module | Nominal Duct |
|----------------|--------------|
| 24 x 24 | 6, 8, 10, 12 |

Dimensional Data — Metric [mm]

| Ceiling Module | Nominal Duct |
|----------------|--------------------|
| 610 x 610 | 152, 203, 254, 305 |

✓ Product Selection Checklist

- 1] Select Inlet Diameter based on desired performance characteristics.
- 2] Select Diffuser Type by model number.
- 3] Select Frame Style according to installation requirements.
- 4] Select Options.
- 5] Select Finish (B12 is standard).

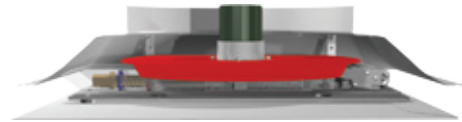
Example: 8" / VPD-HC / 3 / B12

Model Nomenclature

Varitherm® Series Model VPD-C VAV Cooling

The VPD-C is suitable for cooling only applications without heating requirements.

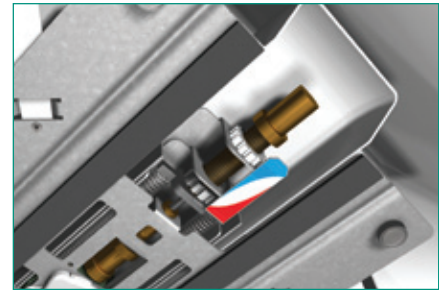
- Minimum air flow adjustment at diffuser.
- Forced open damper mode allows for system balancing at maximum flow.
- Manual temperature set-point adjustment at diffuser.
- Hinged plaque with powerful magnetic closure.



Varitherm® Series Model VPD-HC VAV Cooling and VAV Heating

VPD-HC is suitable for applications that require dedicated heating and cooling cycles.

- Dual set-points for control in heating and cooling.
- Minimum air flow adjustment at diffuser.
- Forced open damper mode allows for system balancing at maximum flow.
- Manual temperature set-point adjustment at diffuser.
- Automatic changeover to heating / cooling modes.
- Hinged plaque with powerful magnetic closure.



Accessories

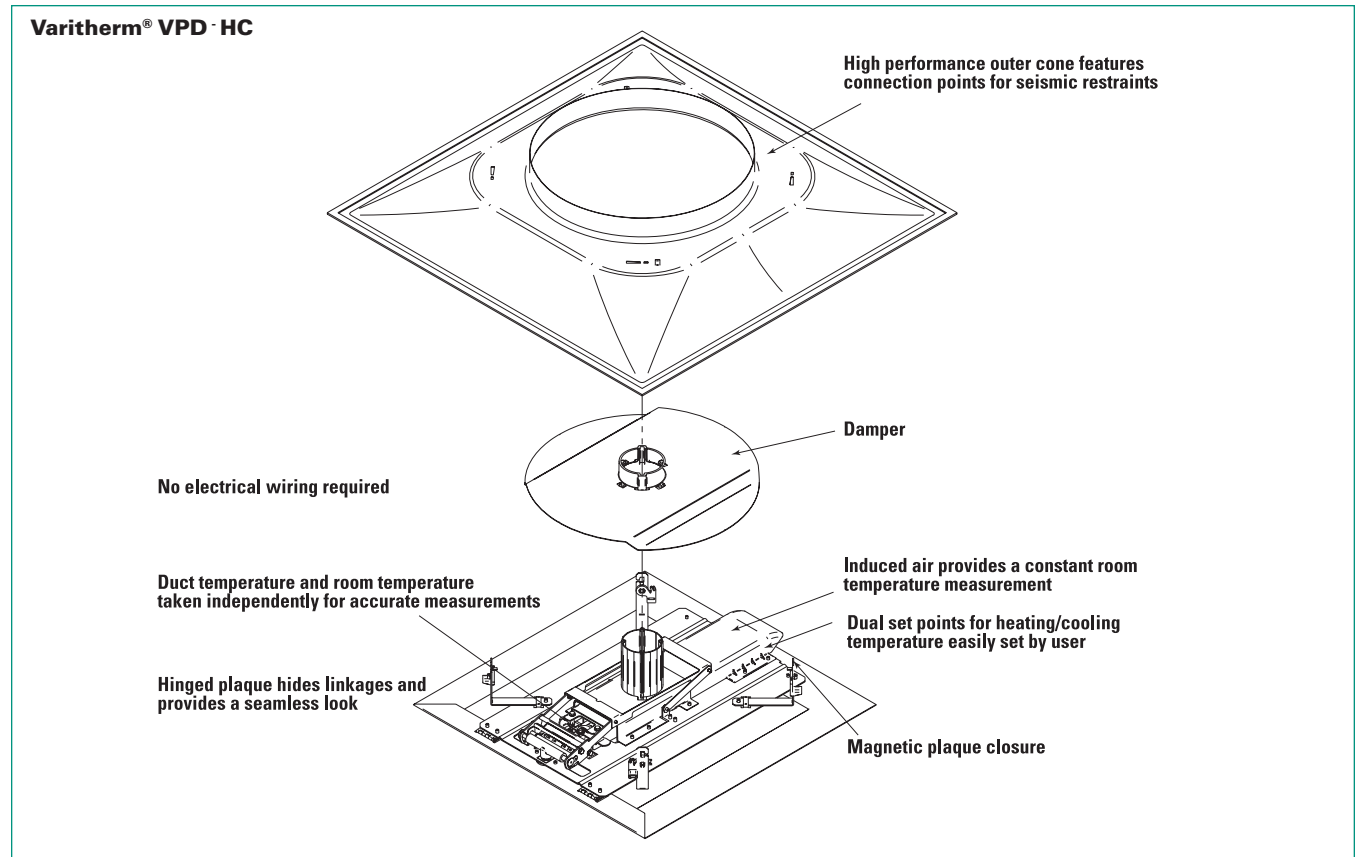
Varitherm Dial Adjustment Tool VPD-AT

Varitherm Dial Adjustment tool is shipped with every unit.

- Works with cooling (VPD-C) and heating-cooling (VPD-HC) units.
- Provides user with better grip to adjust dials.
- Aluminum construction.
- Magnets in handle allow the tool to be stored anywhere on the base plate.



Product Feature Summary



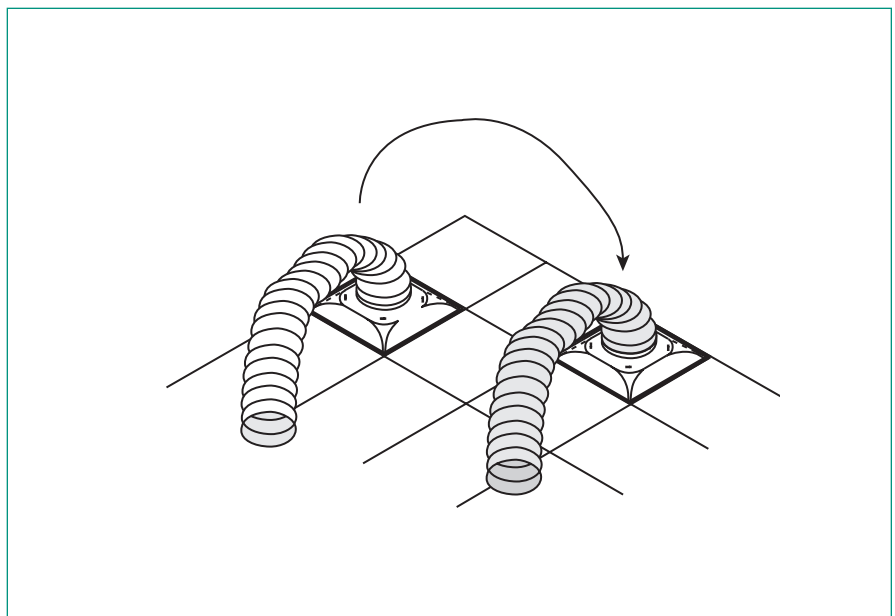
Installation

Installation

The installation of the Price Varitherm® is as quick and easy as the installation of a standard ceiling diffuser, either in a T-bar Lay-in or surface mounted application. Once the unit is fully secured to the ceiling, round ductwork is connected to the inlet connection via standard fastening methods.

Relocation

Relocation of Varitherm® to new zones is easy. No movement of VAV boxes or thermostats is required. Just move the unit and reconnect to the duct; change any settings as required.



Significant Features

Ease of Installation:

The Price Varitherm® diffuser is easily and quickly configured because it installs as a traditional ceiling diffuser would. Installation of the Varitherm® does not require wiring or special trades person. Also, because it is not connected to any power source, the unit will not require special start-up or recalibration upon power loss.

Dual Temperature Set-Points:

The Price Varitherm® has dual face operable temperature set-points for heating and cooling modes. The two set-point dials can be set to the desired room temperature and are hidden behind the hinged plaque. A convenient gauge shows the user what the current temperature settings are.

Minimum Air Flow Adjustment:

The Price Varitherm® has a minimum air flow adjustment, allowing for control of the zone ventilation requirements sustaining minimum ventilation requirements.

Automatic Heating/Cooling Changeover:

The engineered linkage that controls the damper position incorporates a heating/cooling changeover so that when the system changes from heating to cooling (and vice versa) the VPD-HC will continue to control accordingly.

Room Air Temperature Sensing:

The high supply air exit velocities, even at low flow, ensure sufficient room mixing. The induced room air draws occupied zone air up to the diffuser face. Room air is then induced over the temperature sensors for consistent, accurate room temperature monitoring.

Incorporated Forced Open Mode:

A manual forced open mode is designed into the system for balancing purposes. This is accomplished by turning a screw, which allows for easy adjustment of the minimum damper position.

No Turn Down Effects:

The design of the outer cone ensures that the speed of the air exiting the diffusers is always sufficient enough to maintain a proper Coanda across the ceiling. By maintaining the Coanda, no dumping is seen, even mixing occurs, and personal comfort is maintained.

Smoke Test – Full Flow 8"Ø – 350 cfm (203mm Ø - 165 L/s)



Smoke Test – Modulated Flow 8"Ø – 200 cfm (203mm Ø - 94 L/s)



Varitherm® Temperature Measurement and Control

Price Varitherm®

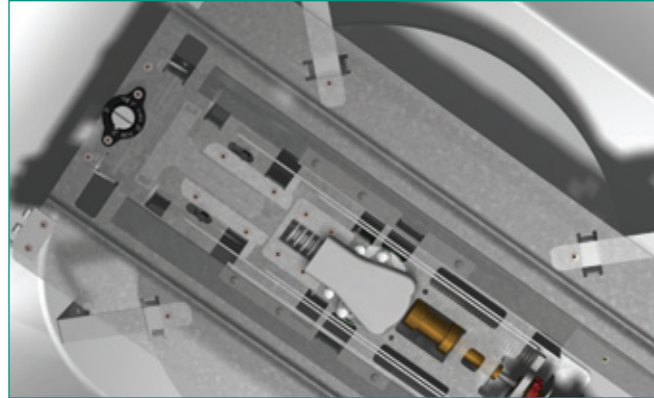
The Varitherm® incorporates thermal actuators as the heart of its design. The actuators respond to temperature change, retracting as they cool and extending as they warm up. Price has developed a specialized linkage to harness the power of these actuators, and provide accurate room temperature control for heating and cooling applications. The Varitherm® control features are accessible from behind the hinged plaque.

The Varitherm® measures temperature for both of its models in similar ways. As the supply air passes through the inlet, a portion of the air passes through a center stack and a port directs the exiting air towards a predetermined edge of the diffuser. The directed air causes an induction effect at the opposite edge of the diffuser; in both the cooling only model (VPD-C) and the heating-cooling model (VPD-HC), two actuators are positioned within this induced air path. This induced air provides these two actuators with air at room temperature, allowing the diffuser to measure the room air temperature accurately. In the case of the VPD-HC, three interconnected actuators are needed, with a heat-cooling changeover actuator located within the center stack measuring the duct temperature.

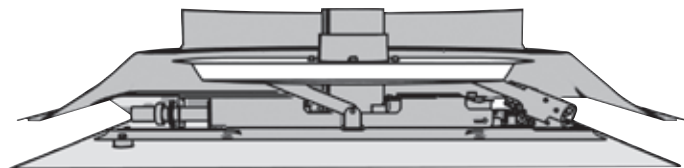
The desired temperature of the room is easily changed and set by adjusting the control dials under the plaque. Each dial can be spun along a threaded shaft, either to increase or decrease the desired set-point temperature. Between both dials is a gauge to indicate what the dial is currently set at and to show what the allowable range for the dial is. The VPD-HC has two dials; one red for the heating temperature set-point and one blue for the cooling temperature set-point. The VPD-C has one blue dial to set the cooling temperature.

In cooling mode, the actuators will close the damper as the room cools down and open the damper as the room heats up. In heating mode (VPD-HC only), the actuators will close the damper as the room air becomes warmer and open the damper upon a decrease in room air temperature. The actuator assembly is connected to a linkage system that will automatically engage heating or cooling modes of the diffuser based on the supply air temperature.

Varitherm® – Minimum air flow adjustment



Varitherm®



Minimum Air Flow and Balancing Mode

To ensure that a room meets minimum air flow rate requirements, an easy adjustment dial is provided near the hinge of the diffuser. This dial can be turned to allow for 10% to 100% of the minimum air flow rate of the selected diffuser size. Inscribed upon the dial is an easy to read gauge and only requires a standard screwdriver to set to the appropriate percentage.

To change the diffuser to balancing mode, simply rotate the dial to 100%. The damper will become disengaged from the linkage allowing for a quick and easy balancing of the diffuser. Once the diffuser is balanced, rotate the dial back to the desired minimum percentage.

Key Features and Advantages

- Hinged plaque with magnetic closure ensures simple operation and strong closure. Plaque has no risk of falling from unit as it is permanently fastened to the support chassis via a hinge.
- Circular stack and bearing design allow for free movement of damper, with no binding between the stack and damper.
- Local zone control by user.
- Simple minimum air flow adjustment, with integrated balancing mode accessible from room side for easy adjustment.
- No calibration required.
- Resistant to power fluctuations (burnouts, blackouts).
- No wiring required.
- Does not require special journeymen/tradesmen for installation.
- No thermostat required; utilizes induction to measure room temperature.
- Senses true average room temperature.
- Smooth operation for quiet modulation.
- Separate temperature settings for heating and cooling.

Performance Data - Imperial Units - 24 x 24

Maximum Flow Selection Table

| Inlet Size | Neck Velocity, fpm Velocity Pressure | 400 0.010 | 500 0.016 | 600 0.022 | 700 0.031 | 800 0.040 | 900 0.050 | 1000 0.062 | 1200 0.090 |
|------------|---|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| 6 | Static Pressure | 0.014 | 0.021 | 0.031 | 0.042 | 0.054 | 0.069 | 0.085 | 0.123 |
| | Total Pressure | 0.024 | 0.037 | 0.053 | 0.072 | 0.094 | 0.119 | 0.147 | 0.212 |
| | cfm | 79 | 98 | 118 | 137 | 157 | 177 | 196 | 236 |
| | NC | — | — | — | 17 | 21 | 24 | 28 | 33 |
| | Throw, ft | 1-2-4 | 2-2-5 | 2-3-6 | 2-3-6 | 2-4-7 | 3-4-7 | 3-5-8 | 4-6-8 |
| 8 | Static Pressure | 0.022 | 0.034 | 0.049 | 0.067 | 0.087 | 0.110 | 0.136 | 0.196 |
| | Total Pressure | 0.032 | 0.050 | 0.072 | 0.097 | 0.127 | 0.161 | 0.199 | 0.286 |
| | cfm | 140 | 174 | 209 | 244 | 279 | 314 | 349 | 419 |
| | NC | — | — | 18 | 23 | 27 | 30 | 33 | 39 |
| | Throw, ft | 2-3-7 | 3-4-7 | 3-5-8 | 4-6-9 | 5-7-9 | 5-7-10 | 6-7-11 | 7-8-12 |
| 10 | Static Pressure | 0.030 | 0.047 | 0.068 | 0.092 | 0.120 | 0.152 | 0.188 | 0.271 |
| | Total Pressure | 0.040 | 0.063 | 0.090 | 0.123 | 0.160 | 0.203 | 0.250 | 0.361 |
| | cfm | 218 | 273 | 327 | 382 | 436 | 491 | 545 | 654 |
| | NC | — | 17 | 23 | 27 | 31 | 35 | 38 | 44 |
| | Throw, ft | 4-5-9 | 4-7-11 | 5-8-12 | 6-9-12 | 7-9-13 | 8-10-14 | 9-11-15 | 9-12-16 |
| 12 | Static Pressure | 0.038 | 0.060 | 0.086 | 0.118 | 0.154 | 0.195 | 0.240 | 0.346 |
| | Total Pressure | 0.048 | 0.076 | 0.109 | 0.148 | 0.194 | 0.245 | 0.302 | 0.436 |
| | cfm | 314 | 393 | 471 | 550 | 628 | 707 | 785 | 942 |
| | NC | — | 21 | 26 | 31 | 35 | 39 | 42 | 47 |
| | Throw, ft | 5-8-11 | 6-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 10-13-18 | 11-14-20 |

Performance Notes:

- Performance data is presented for the Varitherm® diffuser with the damper in the full open (maximum flow) position.
- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- All pressures are in in. w.g.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks "—" indicate an NC level below 15.

Modulated Flow Selection Table - Imperial Units

| Inlet Size | .05 Duct Ps | | | 0.10 Duct Ps | | | 0.20 Duct Ps | | | 0.30 Duct Ps | | |
|------------|-------------|-----------|----|--------------|-----------|----|--------------|-----------|----|--------------|-----------|----|
| | cfm | Throw, ft | NC | cfm | Throw, ft | NC | cfm | Throw, ft | NC | cfm | Throw, ft | NC |
| 6" | 111 | 2-3-6 | 21 | 157 | 3-4-7 | 29 | 222 | 4-6-8 | 37 | 272 | 4-6-9 | 41 |
| | 128 | 2-3-6 | 24 | 181 | 3-4-7 | 29 | 256 | 4-6-9 | 38 | 313 | 5-7-10 | 44 |
| | 150 | 2-4-7 | 28 | 213 | 3-5-8 | 30 | 301 | 5-7-10 | 40 | 369 | 6-7-11 | 46 |
| 8" | 144 | 2-4-7 | 20 | 203 | 3-5-9 | 28 | 287 | 5-7-11 | 35 | 352 | 6-8-12 | 40 |
| | 176 | 3-5-8 | 24 | 249 | 5-7-10 | 28 | 352 | 6-8-12 | 37 | 432 | 8-9-13 | 43 |
| | 211 | 3-5-8 | 28 | 299 | 5-7-10 | 29 | 423 | 7-8-12 | 39 | 518 | 7-9-13 | 45 |
| 10" | 179 | 2-3-7 | 19 | 254 | 3-5-9 | 27 | 359 | 4-7-11 | 35 | 440 | 5-8-12 | 40 |
| | 231 | 5-7-13 | 25 | 326 | 7-10-16 | 27 | 461 | 9-13-19 | 37 | 565 | 11-14-21 | 43 |
| | 281 | 5-7-11 | 30 | 398 | 6-9-13 | 29 | 562 | 9-11-15 | 39 | 689 | 10-12-17 | 45 |
| 12" | 217 | 4-6-12 | 19 | 307 | 6-9-15 | 27 | 434 | 8-12-18 | 35 | 532 | 10-14-20 | 40 |
| | 290 | 5-8-14 | 26 | 410 | 8-11-17 | 27 | 579 | 11-14-20 | 37 | 709 | 13-16-23 | 43 |
| | 358 | 6-9-12 | 31 | 507 | 8-10-14 | 29 | 716 | 10-12-17 | 39 | 877 | 11-13-19 | 45 |

Performance Notes:

- Performance data is presented for Varitherm® diffuser at several modulated damper positions with constant duct static pressures of .05, 0.10, 0.20, and 0.30 inches w.g.
- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in cfm.
- Throw values are measured in feet for terminal velocities of 150 fpm (minimum), 100 fpm (middle) and 50 fpm (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks "—" indicate an NC level below 15.

Performance Data - Metric Units - 610mm x 610mm

Maximum Flow Selection Table

| Inlet Size | Inlet Velocity Velocity Pressure | 2.0 2 | 2.5 4 | 3.0 5 | 3.6 8 | 4.1 10 | 4.6 12 | 5.1 15 | 6.1 22 |
|------------|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 150mm | Static Pressure | 3 | 5 | 8 | 10 | 13 | 17 | 21 | 31 |
| | Total Pressure | 6 | 9 | 13 | 18 | 23 | 30 | 37 | 53 |
| | Air Flow | 37 | 46 | 56 | 65 | 74 | 84 | 93 | 111 |
| | NC | - | - | - | 17 | 21 | 24 | 28 | 33 |
| | Throw, m | 0.3-0.6-1.2 | 0.6-0.6-1.5 | 0.6-0.9-1.8 | 0.6-0.9-1.8 | 0.6-1.2-2.1 | 0.9-1.2-2.1 | 0.9-1.5-2.4 | 1.5-1.8-2.4 |
| 200mm | Static Pressure | 5 | 8 | 12 | 17 | 22 | 27 | 34 | 49 |
| | Total Pressure | 8 | 12 | 18 | 24 | 32 | 40 | 50 | 71 |
| | Air Flow | 66 | 82 | 99 | 115 | 132 | 148 | 165 | 198 |
| | NC | - | - | 18 | 23 | 27 | 30 | 33 | 39 |
| | Throw, m | 0.6-0.9-2.1 | 0.9-1.2-2.1 | 0.9-1.5-2.4 | 1.2-1.8-2.7 | 1.5-2.1-2.7 | 1.5-2.1-3.0 | 1.8-2.1-3.4 | 2.1-2.4-3.7 |
| 250mm | Static Pressure | 7 | 12 | 17 | 23 | 30 | 38 | 47 | 68 |
| | Total Pressure | 10 | 16 | 22 | 31 | 40 | 51 | 62 | 90 |
| | Air Flow | 103 | 129 | 154 | 180 | 206 | 232 | 257 | 309 |
| | NC | - | 17 | 23 | 27 | 31 | 35 | 38 | 44 |
| | Throw, m | 1.2-1.5-2.7 | 1.2-2.1-3.4 | 1.5-2.4-3.7 | 1.8-2.7-3.7 | 2.1-2.7-4.0 | 2.4-3.0-4.3 | 2.7-3.4-4.6 | 2.7-3.7-4.9 |
| 300mm | Static Pressure | 9 | 15 | 21 | 29 | 38 | 49 | 60 | 86 |
| | Total Pressure | 12 | 19 | 27 | 37 | 48 | 61 | 75 | 109 |
| | Air Flow | 148 | 185 | 222 | 260 | 296 | 334 | 370 | 445 |
| | NC | - | 21 | 26 | 31 | 35 | 39 | 42 | 47 |
| | Throw, m | 1.5-2.4-3.4 | 1.8-2.7-4.0 | 2.4-3.0-4.3 | 2.7-3.4-4.6 | 2.7-3.4-4.9 | 3.0-3.7-5.2 | 3.0-4.0-5.5 | 3.4-4.3-6.1 |

Performance Notes:

- Performance data is presented for the Varitherm® diffuser with the damper in the full open (maximum flow) position.
- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in L/s.
- All pressures are in Pa.
- Throw values are measured in feet for terminal velocities of 0.75 m/s (minimum), 0.5 m/s (middle) and 0.25 m/s (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks "-" indicate an NC level below 15.

Modulated Flow Selection Table - Metric Units

| Inlet Size | 12.5 Pa Duct Pressure | | | 24.9 Pa Duct Pressure | | | 49.8 Pa Duct Pressure | | | 74.7 Pa Duct Pressure | | |
|------------|-----------------------|-------------|----|-----------------------|-------------|----|-----------------------|-------------|----|-----------------------|-------------|----|
| | L/s | Throw, m | NC | L/s | Throw, m | NC | L/s | Throw, m | NC | L/s | Throw, m | NC |
| 150mm | 52 | 0.6-0.9-1.8 | 21 | 74 | 0.9-1.2-2.1 | 29 | 105 | 1.2-1.8-2.4 | 37 | 128 | 1.2-1.8-2.7 | 41 |
| | 60 | 0.6-0.9-1.8 | 24 | 85 | 0.9-1.2-2.1 | 29 | 121 | 1.2-1.8-2.7 | 38 | 148 | 1.5-2.1-3.0 | 44 |
| | 71 | 0.6-1.2-2.1 | 28 | 101 | 0.9-1.5-2.4 | 30 | 142 | 1.5-2.1-3.0 | 40 | 174 | 1.8-2.1-3.4 | 46 |
| 200mm | 68 | 0.6-1.2-2.1 | 20 | 96 | 0.9-1.5-2.7 | 28 | 135 | 1.5-2.1-3.4 | 35 | 166 | 1.8-2.4-3.7 | 40 |
| | 83 | 0.9-1.5-2.4 | 24 | 118 | 1.5-2.1-3.0 | 28 | 166 | 1.8-2.4-3.7 | 37 | 204 | 2.4-2.7-4.0 | 43 |
| | 100 | 0.9-1.5-2.4 | 28 | 141 | 1.5-2.1-3.0 | 29 | 200 | 2.1-2.4-3.7 | 39 | 245 | 2.1-2.7-4.0 | 45 |
| 250mm | 85 | 0.6-0.9-2.1 | 19 | 120 | 0.9-1.5-2.7 | 27 | 169 | 1.2-2.1-3.4 | 35 | 208 | 1.5-2.4-3.7 | 40 |
| | 109 | 1.5-2.1-4.0 | 25 | 154 | 2.1-3.0-4.9 | 27 | 218 | 2.7-4.0-5.8 | 37 | 267 | 3.4-4.3-6.4 | 43 |
| | 133 | 1.5-2.1-3.4 | 30 | 188 | 1.8-2.7-4.0 | 29 | 265 | 2.7-3.4-4.6 | 39 | 325 | 3.0-3.7-5.2 | 45 |
| 300mm | 102 | 1.2-1.8-3.7 | 19 | 145 | 1.8-2.7-4.6 | 27 | 205 | 2.4-3.7-5.5 | 35 | 251 | 3.0-4.3-6.1 | 40 |
| | 137 | 1.5-2.4-4.3 | 26 | 194 | 2.4-3.4-5.2 | 27 | 273 | 3.4-4.3-6.1 | 37 | 335 | 4.0-4.9-7.0 | 43 |
| | 169 | 1.8-2.7-3.7 | 31 | 293 | 2.4-3.0-4.3 | 29 | 338 | 3.0-3.7-5.2 | 39 | 414 | 3.4-4.0-5.8 | 45 |

Performance Notes:

- Performance data is presented for the Varitherm® diffuser at several modulated damper positions with constant duct static pressures of 12.5, 25, 50, and 75 Pa.
- Tested in accordance with ASHRAE Standard 70-2006 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air flow is in L/s.
- Throw values are measured in meters for terminal velocities of 0.75 m/s (minimum), 0.5 m/s (middle) and 0.25 m/s (maximum).
- Throw data is based on supply air and room air at isothermal conditions.
- NC values are based on room absorption of 10 dB re 10⁻¹² Watts and one diffuser.
- Blanks "-" indicate an NC level below 15.

ARI Certification Rating Points

Maximum Flow

| Inlet Size | Rated Air Flow | | Minimum Operating Static Pressure | | | Discharge Sound Power Level, dB Octave Band | | | | |
|------------|----------------|-----|-----------------------------------|----|----|---|----|----|----|----|
| | cfm | L/s | in. Water | Pa | 2 | 3 | 4 | 5 | 6 | 7 |
| 6 | 150 | 71 | 0.06 | 15 | 49 | 41 | 38 | 36 | 32 | 26 |
| 8 | 260 | 123 | 0.08 | 20 | 51 | 43 | 41 | 38 | 33 | 26 |
| 10 | 410 | 193 | 0.10 | 25 | 53 | 44 | 43 | 40 | 34 | 28 |
| 12 | 590 | 378 | 0.14 | 35 | 57 | 50 | 48 | 46 | 40 | 31 |

Modulated Flow

| Inlet Size | Rated Air Flow | | Minimum Operating Static Pressure | | | Discharge Sound Power Level, dB Octave Band | | | | |
|------------|----------------|-----|-----------------------------------|----|----|---|----|----|----|----|
| | cfm | L/s | in. Water | Pa | 2 | 3 | 4 | 5 | 6 | 7 |
| 6 | 80 | 38 | 0.08 | 20 | 50 | 42 | 40 | 35 | 31 | 26 |
| 8 | 140 | 66 | 0.21 | 52 | 52 | 47 | 48 | 42 | 36 | 30 |
| 10 | 220 | 104 | 0.22 | 55 | 54 | 49 | 50 | 45 | 37 | 32 |
| 12 | 315 | 149 | 0.30 | 75 | 55 | 51 | 52 | 49 | 44 | 36 |

Performance Notes:

1. Air flow is in cfm [L/s].
2. All pressures are in in. w.g [Pa].
3. Sound Power Levels expressed in Decibels, (dB) re 10⁻¹² watts and one diffuser.




PRODIGY®

SELF MODULATING DIFFUSER

The Price Prodigy® diffuser features a high-torque gear motor for fast response, long life and reliable operation. A room temperature sensor provides constant feedback to the microprocessor controller located in the diffuser, enabling precise control of the space temperature. Re-heat output is available on the master unit and installation is made easy with RJ-45 connectors.

Enhances traditional system design by adding the element of personal control.



NATIVE
BACnet
MS/TP

BACnet compatible



Compatible with the Price wireless thermostat



Universal junction panel on Prodigy® master



Optional IR remote

Personal Self-Modulating Diffusers Prodigy® Series



Product Overview

Prodigy®

The Prodigy® self-modulating diffuser series has been designed to address many of the problems common to today's conventional HVAC systems.

Most traditional approaches group rooms with similar load characteristics together to form zones. As these zones are created, multiple work spaces are controlled by a single thermostat. "Thermostat wars" ensue as occupants attempt to adjust the thermostat to their level of comfort. Complaints from occupants who are "too hot" or "too cold" are common. Often, the system works at capacity to satisfy that one occupant who represents the "worst case" within that zone.

The Prodigy® enhances traditional system design by adding the element of personal control. A room temperature sensor provides constant feedback to the microprocessor controller located in the diffuser, enabling precise monitoring of the space temperature.

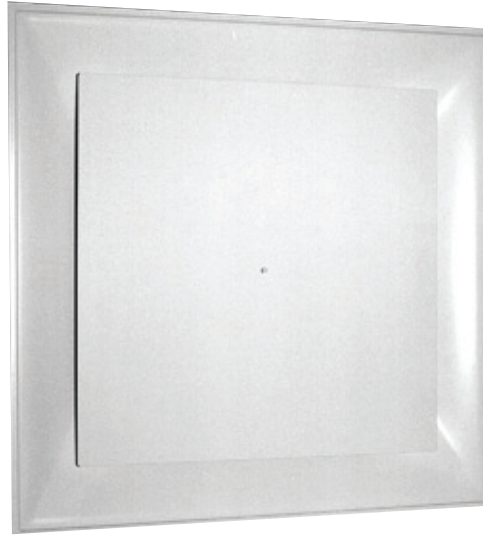
As room load varies, the Prodigy® compensates by controlling the flow of supply air into the space. A superior cone design maintains air performance characteristics throughout the performance range. Diffuser response is controlled through advanced PI control algorithms. Modulation is precise and proportionate to the requirements of the space and occupant.

The actuator mechanism features a high-torque, low voltage motor, which offers immediate response that is superior to the sluggish response and delayed action common to thermally activated expansion devices. A supply air temperature sensor provides automatic heating / cooling changeover. An output is available to activate supplemental perimeter heating devices if required.

Three models are available with convenient set-point adjustment at the diffuser, a wall mounted thermostat or a handheld remote.

A BACnet interface option allows Prodigy master units to connect to a MS/TP network. This allows the Prodigy master to share information with the building automation system.

DDC Personal Zone Control



The Prodigy® Series is an evolving product line.

Please contact your Price sales rep or visit our website www.priceindustries.com for the most current features and accessories.

Model Nomenclature

Prodigy® Series Model PPD1

VAV Cooling and VAV Heating Manual Adjustment

PPD1 is suitable for cooling only applications and limited heating requirements, including morning warm-up cycles.

- Native BACnet compliant (optional).
- Face mounted room temperature sensor.
- Manual set-point adjustment at diffuser.
- Upgradable to PPD2 or PPD3.



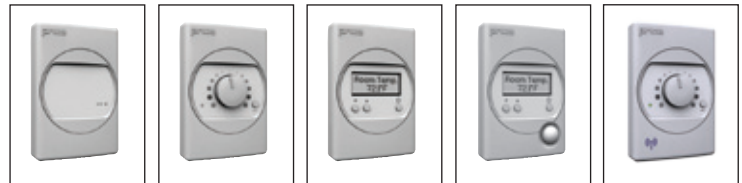
Prodigy® Series Model PPD2

VAV Cooling and VAV Heating Wall Mounted T-Stat

PPD2 is suitable for applications that require dedicated heating and cooling cycles. To more accurately sense room temperature while in the heating mode, the unit features a wall thermostat with temperature sensor.

- Native BACnet compliant (optional).
- Face mounted room temperature sensor for cooling mode.
- Set-point adjustment at the thermostat.
- Five thermostat options for PPD2 model
 - Room Sensor (Blank face)
 - Dial Thermostat
 - LCD Thermostat
 - LCD Thermostat with motion sensor for occupancy
 - Wireless Thermostat.

Note: LCD models can be used to set up variables in Prodigy units such as BACnet address, set-point limits and many others.



Prodigy® Series Model PPD3

VAV Cooling and VAV Heating IR Remote Control Device (hand-held)

PPD3 is suitable for cooling only applications and limited heating requirements, including morning warm-up cycles.

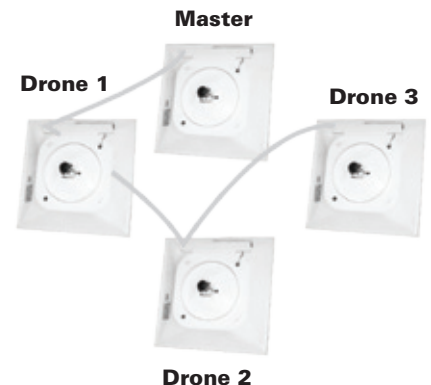
- Native BACnet compliant (optional).
- Face mounted room temperature sensor.
- Hand-held infrared remote control device for set-point adjustment.



Prodigy® Series Model PPDD

Drone Unit

Drone units contain actuators and control circuitry to respond to signals from the master unit. The damper mechanism is synchronous with the master unit. Up to five drones can be supported by one master.



Product Information

Models

- VAV Cooling and VAV Heating
Manual Adjustment **PPD1**
- VAV Cooling and VAV Heating
(c/w T-stat c/w 35 ft plenum cable) **PPD2**
- VAV Cooling and VAV Heating
(c/w Hand held IR remote) **PPD3**
- Drone Unit
(c/w 35 ft plenum cable) **PPDD**

All Prodigy® diffusers feature an architecturally pleasing faceplate design and high performance inner cone. A DDC controller utilizes PI control algorithms to modulate air flow and maintain constant room temperatures as load and space conditions vary.

Standard Construction Features

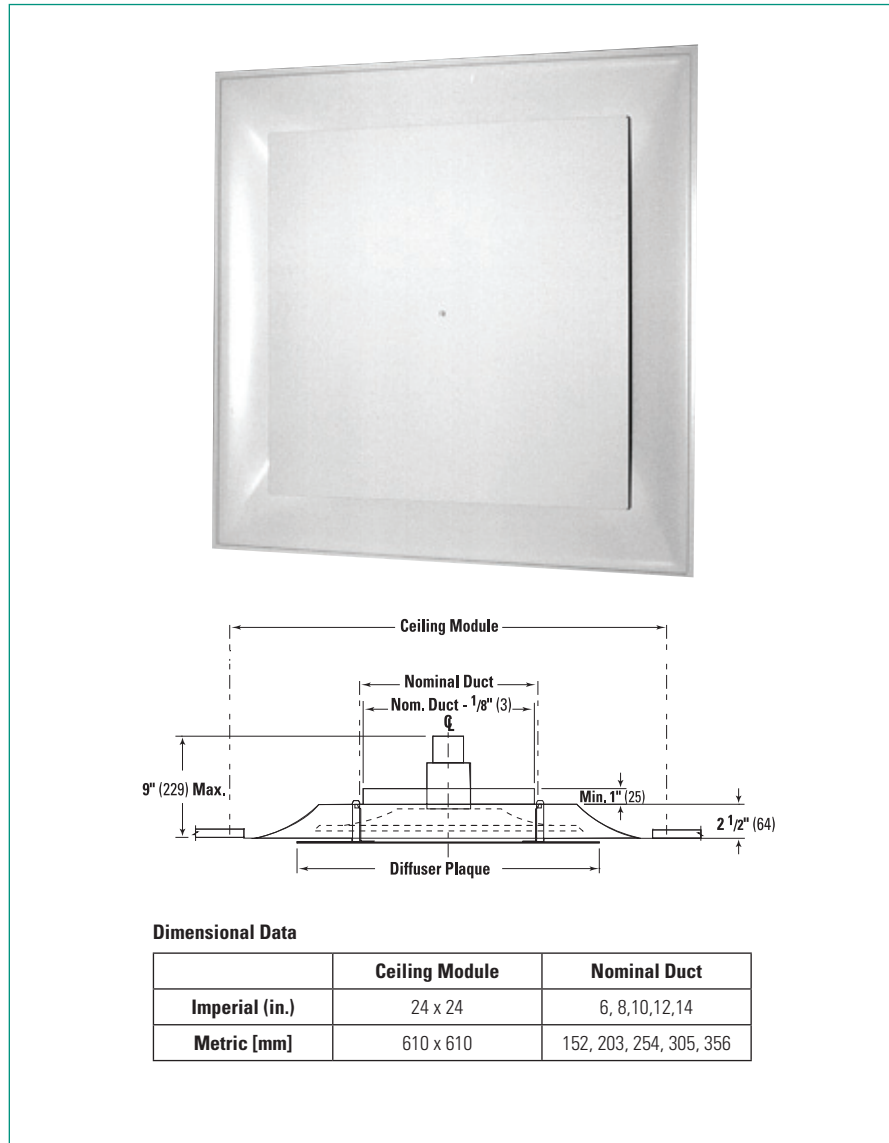
- Steel backpan, faceplate and inner cone for strength and durability.
- Engineered inner damper and panel design for enhanced air performance and low sound ratings.
- High-torque gear motor for fast response, long life and reliable operation.
- Drive components are enclosed in an extruded housing.
- Unit mounted RJ modular jacks for two drone outputs and modular power supply input.

Standard Controls and Electronics

- Microprocessor-based direct digital electronics.
- Advanced PI algorithms for enhanced control and response.
- Duct temperature sensor for automatic heating / cooling changeover.
- "Positive Positioning Feature" for synchronous operation with drone units (Model PPDD).
- Set-point flow limits are retained if power is lost.
- A pulsed 24 VAC signal output activates auxiliary perimeter heating device (by others).
- Three output signal options are available to suit a variety of applications.

Options

- BAC (BACnet interface module) (see page C218).
- 115 or 277/24 VAC transformer provided and mounted. Junction box included.



Dimensional Data

| | Ceiling Module | Nominal Duct |
|----------------|----------------|-------------------------|
| Imperial (in.) | 24 x 24 | 6, 8, 10, 12, 14 |
| Metric [mm] | 610 x 610 | 152, 203, 254, 305, 356 |

Accessories

- Power Module - supports up to 15 master units via modular cable connections.
- PRC - Pressure Relief Collar regulates static pressure at Prodigy inlet (see page C227).
- Baffle - an optional baffle is available to provide 3 way and 2 way air patterns.
- PCV - Pressure Control Valve.

Finish

White Powder Coat

B12

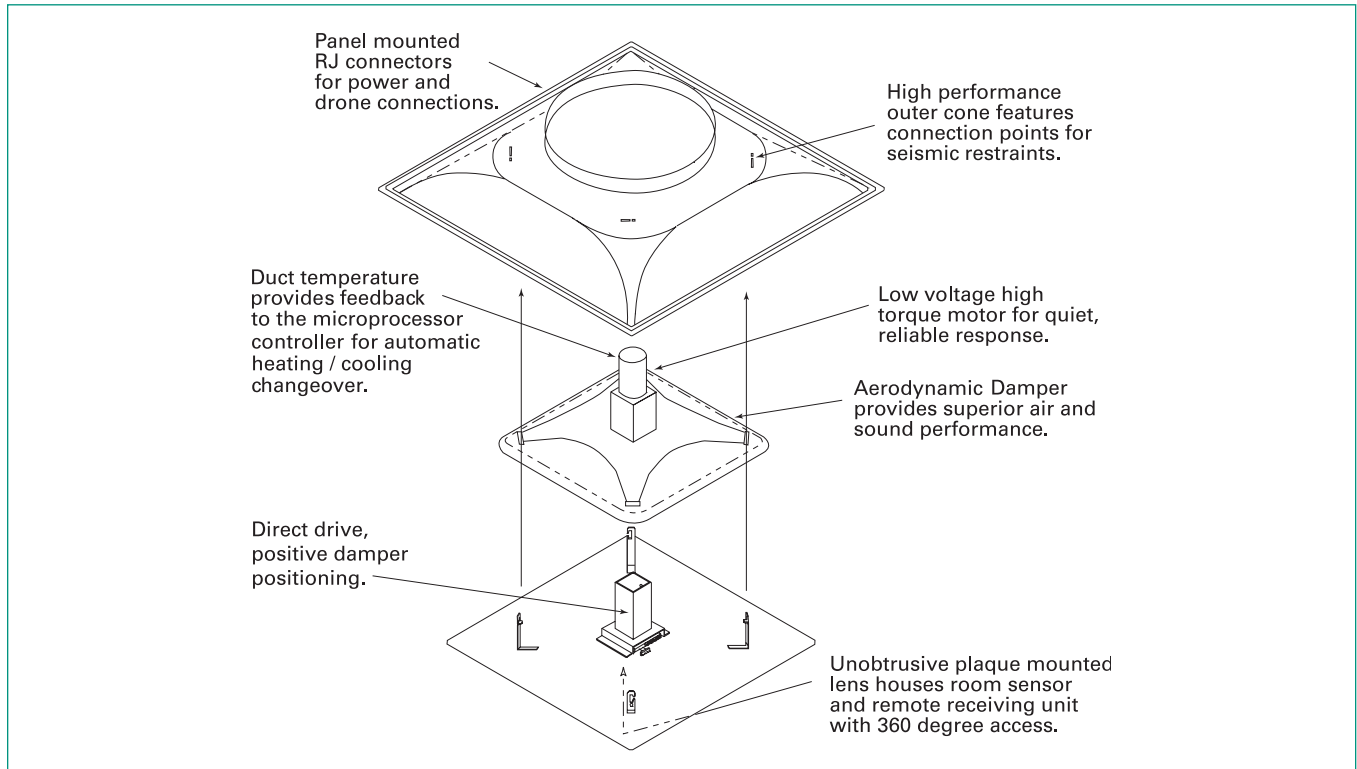
For optional and special finishes see color matrix.

✓ Product Selection Checklist

- 1] Select Inlet Diameter based on desired performance characteristics.
- 2] Select Diffuser Type by model number.
- 3] Select Frame Style according to installation requirements.
- 4] Select Options.
- 5] Select Finish (B12 is standard).

Example: PPD3 / 24 x 24 / BAC / B12

Product Feature Summary



DDC Controller

- Microprocessor-based digital control.
- Closed feedback loop with sensors modulates inner damper to maintain room temperature +/- 1°F [0.5°C].
- Monitors supply air temperature for automatic heating / cooling changeover.
- Set-point factory preset at 72°F [22°C].
- Advanced PI control.
- Retains settings if power is lost.
- Positive positioning feature for synchronous drone operation.
- 24VAC Output to energize supplemental perimeter heat (by others).

BACnet interface option:

- MS/TP Network.
- Uses modular RJ-45 connections for network.
- Shares room temperature, room load, room set-point and much more with the building automation system (BAS).

Significant Features

Individual Comfort and Control

The Prodigy® Personal Diffuser monitors space conditions and regulates the flow of supply air to maintain the room set-point with an accuracy of +/- 1° F (0.5°C). This set-point is adjustable, enabling occupants to establish the setting that represents their individual level of comfort.

Robust PI Control

The Prodigy® features **PI** (Proportional + Integral) control algorithms for proven control stability and versatility. Integral feedback improves proportional response by evaluating room conditions and diffuser response over time to eliminate offset errors and maximize comfort in the space.

Immediate Response

Direct digital control signals and a direct drive motor enable the Prodigy® to provide an immediate and controlled response to even the smallest fluctuations in room or load conditions. This feature prevents the delayed or disproportional response that contributes to “hunting” and “thermal overshoot” that is common to thermal expansion devices.

True VAV Cooling and Heating Modes

The Prodigy® provides optimal performance and flexibility in operational modes that include both heating and cooling cycles. Diffuser mounted room temperature sensors support VAV cooling and heating, while wall mounted thermostats supply the most accurate measurement needed for more demanding VAV heating applications. Heating/Cooling changeover is automatic.

Superior Air Performance

The engineered direct drive damper is designed to maintain outlet velocities as the unit modulates. Throws and mixing characteristics remain relatively constant throughout the performance range of the diffuser.

Infrared Remote Devices (PPD3)

A hand-held infrared remote provides a means for set-point adjustment for VAV cooling and constant volume heating, by pressing a button on the remote controller and directing it at the diffuser. The remote device provides “warmer” and “cooler” settings, and a “reset” option. Set-point factory preset at 74 °F (23°C) Cooling, 72 °F (22°C) Heating.

Perimeter Heat Activation

A standard feature of the Prodigy® is a pulsed 24 VAC output signal for perimeter heating devices such as baseboard units or radiant panels. On/off, Pulse Width Modulation, and Pulse Delay Modulation (default) configurations are available.

Smoke Test – Full Flow 8"Ø - 350 cfm (203mm Ø - 165 L/s)



Smoke Test – Modulated Flow 8"Ø - 200 cfm (203mm Ø - 94 L/s)



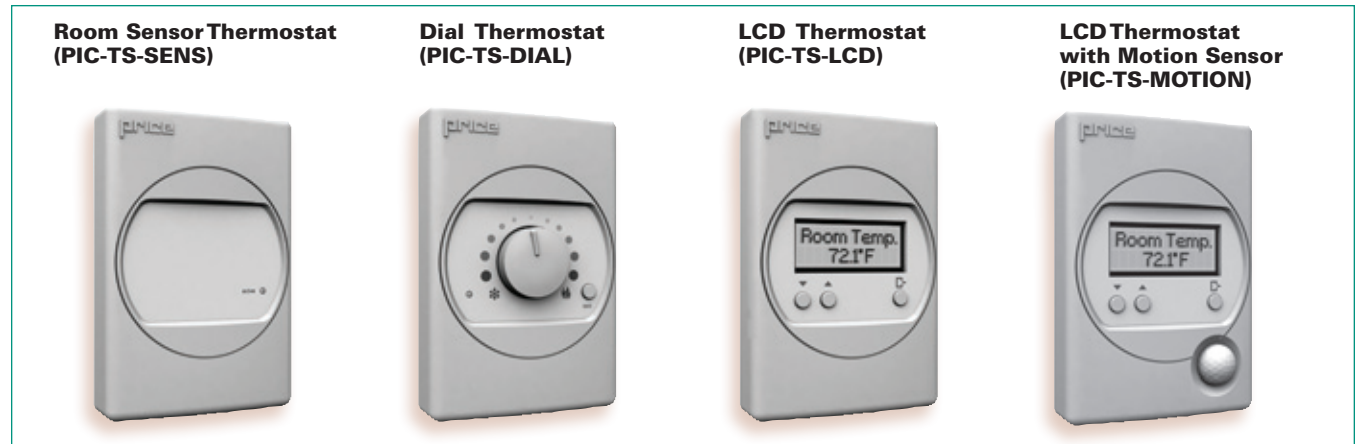
Thermostat Options

A broad range of thermostat options including LCD, Motion Sensor and Wireless allow the building owner to match the functionality of the thermostat to their specific project requirements. Existing installations can be easily upgraded to accommodate future changes. All wired thermostats have plug and play connections and a service port for configuration without having to access the plenum.

BACnet Interface Option

The Prodigy BACnet interface option allows connection to any Building Automation System supporting the industry standard BACnet communication protocol. This option allows remote monitoring and control of the Prodigy to maximize energy efficiency and occupant comfort.

Thermostat Options - Wired



Several wired thermostats are available to suit the specific requirements and budget of any project. All thermostats feature easy RJ-45 connections for fast and error free field connection as well as a service port for field configuration if required.

Room Sensor Thermostat (PIC-TS-SENS)

This economical model of thermostat measures room temperature. The set-point can be set from a hidden dial on the back of the T-Stat, through free setup software, or through a BACnet system. This eliminates the problem of unauthorized tampering without the need for visually unappealing thermostat lock boxes.

Dial Thermostat (PIC-TS-DIAL)

This model measures room temperature and features a dial adjustment and an occupancy button. Temperature set-point limits are set through software/BACnet.

LCD Thermostat (PIC-TS-LCD)

This model measures room temperature and features an LCD screen with an advanced menu structure and three pushbuttons. Temperature set-point limits are set through software/BACnet.

LCD Thermostat with Motion Sensor (PIC-TS-MOTION). This model possesses the same features as the LCD T-Stat with the addition of a passive infrared motion sensor. The motion sensor allows for automatic detection of space occupancy and therefore can save energy by shutting down during unoccupied periods.

Balancing and modification to the controller setup can be accomplished from the LCD screen.

Field Setup Options

The Prodigy® comes pre-calibrated from the factory. However if field conditions require readjustment the Service/Maintenance personnel may change Prodigy® settings.

There are several ways to access setup variables in the Prodigy®:

1. Through the password protected menu structure built into the LCD thermostats.
2. Through the BACnet network (for controllers ordered with the BACnet option).
3. Through the service jack located on the bottom of each thermostat and the Price LINKER. The LINKER is a USB 2.0 interface to Price controls. It is used in conjunction with FREE setup and balancing software available from Price.
4. Using the standalone setup tool: LCD-SETUP. This special setup tool resembles the LCD thermostat in both appearance and menu function. It can be plugged into either the Dial Thermostat or the Room Sensor Thermostat and used to setup the controller when a computer is not available.



Wireless Thermostat

Introduction

Occasionally an installation arises where running CAT5 and other wiring is inconvenient or even impossible. For jobs such as these, Price is proud to introduce its Wireless thermostat. Using cutting edge wireless technology, a base station mounted in the ceiling communicates with a battery powered remote thermostat up to 50 ft away. The thermostat also contains a temperature sensor, which is linked to the base through the wireless connection as well. The remote unit requires no wiring whatsoever, making the Price Wireless Thermostat kit a breeze to install.

What's included?

The Price Wireless Thermostat Kit comes with everything you need to get set up. Included in the kit are:

- Price Wireless Base Module
- Price Wireless Remote Thermostat
- A CAT5 data cable to connect the base module to the Prodigy
- Mounting bracket

Product Features

- Reduced installation and labor costs
- Easily relocated to accommodate occupancy changes and renovations
- Up to 5 year battery life with off-the-shelf user-replaceable batteries
- FCC and IC certified wireless module
- LCD screen on Base Station displays signal strength, battery level, room temperature and set-point
- Field reconfigured if required with Linker software or LCD-Setup tool

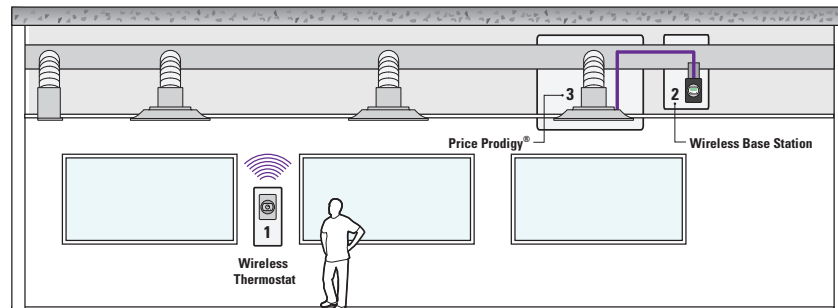
Price Wireless Thermostat



Price Wireless Base Station mounted in Plenum



Wireless System Layout with Prodigy®



Prodigy® Temperature Measurement and Control

Supply Air Temperature Measurement

Mounted near the 24VAC motor is a solid state, low drift temperature sensor that reads the supply (duct) air temperature. This temperature reading is fed into the DDC controller. Based on this supply air temperature, the Prodigy® will respond as shown below:

- Supply Air Temperature below 67 °F (19°C) → Prodigy® is in cooling mode.
- Supply Air Temperature between 67-77 °F (19 - 25°C) → Prodigy® is in neutral mode.
- Supply Air Temperature 77 °F (25°C) and above → Prodigy® is in heating mode.

These ranges can be user specified if the BACnet option is selected.

Room Air Temperature Measurement and Control

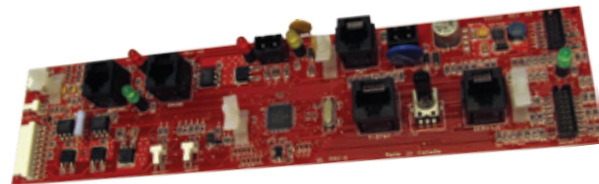
The Prodigy® PPD1 (set-point is adjusted at a potentiometer located on the back of the diffuser junction panel) and PPD3 (set-point is adjusted via infrared remote control) measure the room air temperature via a solid state, low drift temperature sensor at the plaque. A small plastic port allows room air to be induced toward the sensor. This port is also used to detect infrared signals from the remote control. Please note the PPD1 and PPD3 models support VAV cooling and heating based on the plaque temperature sensor. During cooling this temperature reading will be very representative of the actual room temperature as the entire room is well mixed due to the high induction characteristics of the Prodigy® diffuser. During heating some stratification of room temperature will exist due to the buoyancy of the warm air, causing a difference in temperature reading between the plaque sensor and the temperature in the occupied zone. This difference will vary depending on the supply air temperature. To correct this temperature difference the Prodigy® controller is programmed to calculate a room temperature offset based on the duct temperature reading to more accurately determine the room temperature in the occupied zone. For applications with limited heating requirements, or for morning warm up sequences the above control strategy will provide acceptable room temperature control. For applications requiring significant hours of heating and where room temperature control is critical the PPD2 with wall mounted thermostat would be recommended.

For the Prodigy® PPD2 (set-point is adjusted via a wall mounted thermostat), temperature is measured at the thermostat. This model of Prodigy® is intended for VAV cooling and VAV heating modes. Typically, measuring the room air temperature via a wall mounted thermostat will provide reliable readings

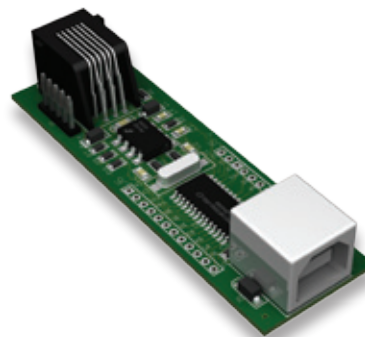
Prodigy® PPD2



Prodigy® DDC Controller



USB Linker



independent of heating or cooling modes.

Control

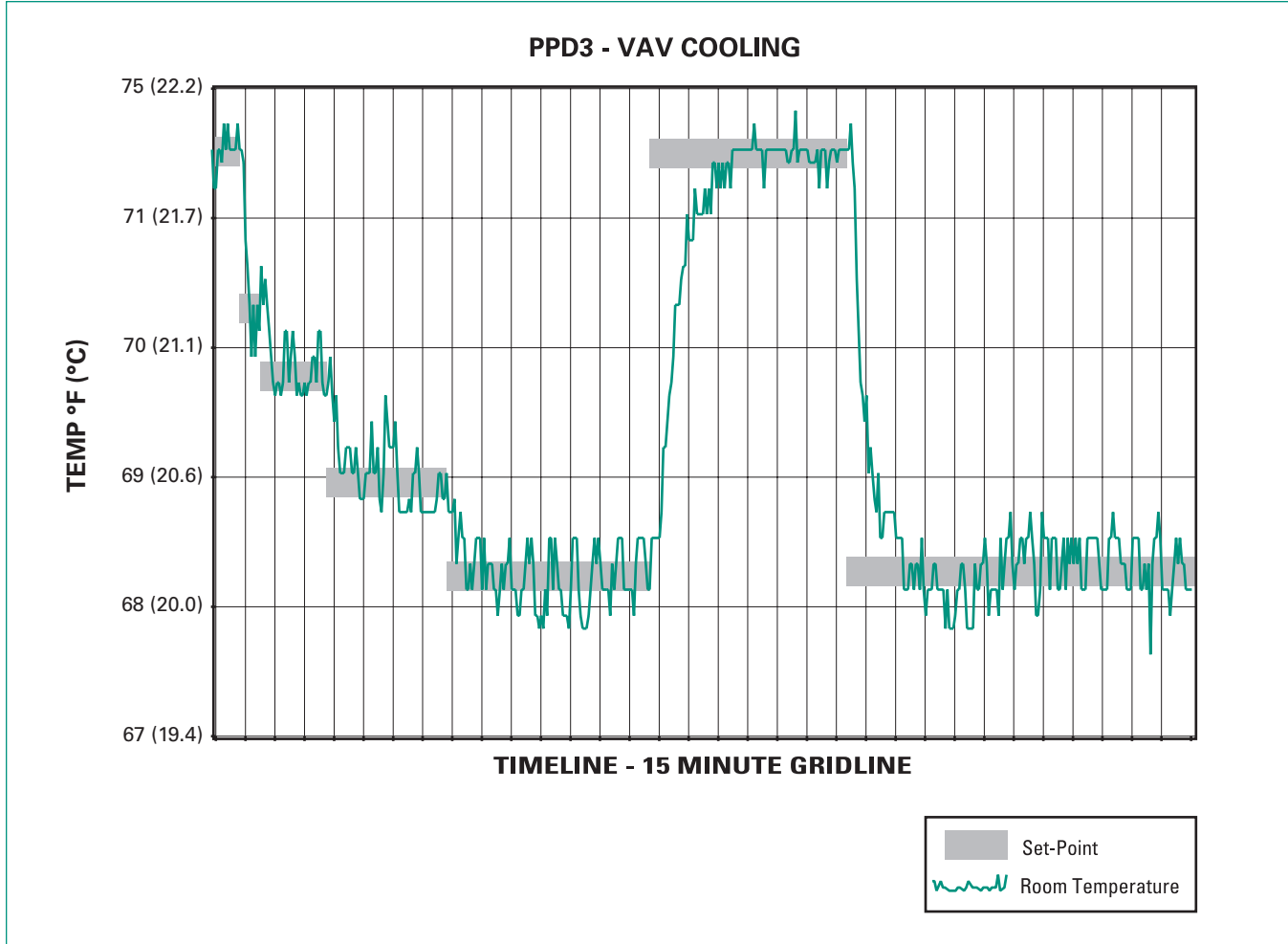
The Prodigy® series diffusers have several different control features available to aid in the functionality of the diffusers. The BACnet option diffuser has the distinct ability to control all set-points through the BAS.

Minimum Air Flow and Balancing

The Prodigy® has preset minimum damper positions and can be changed either via the LCD thermostat or through the USB Linker service tool. In order to balance a unit without the LCD thermostat or USB Linker, unplug the diffuser and reconnect the diffuser. Once the Prodigy® diffuser calibrates the damper to fully open, unplugging the unit will keep the damper fully open, at which point balancing can be done.

Temperature Control – Cooling

CEILING DIFFUSERS



The Prodigy® design incorporates DDC control, a direct drive motor and positive positioning feedback, resulting in precise and reliable performance.

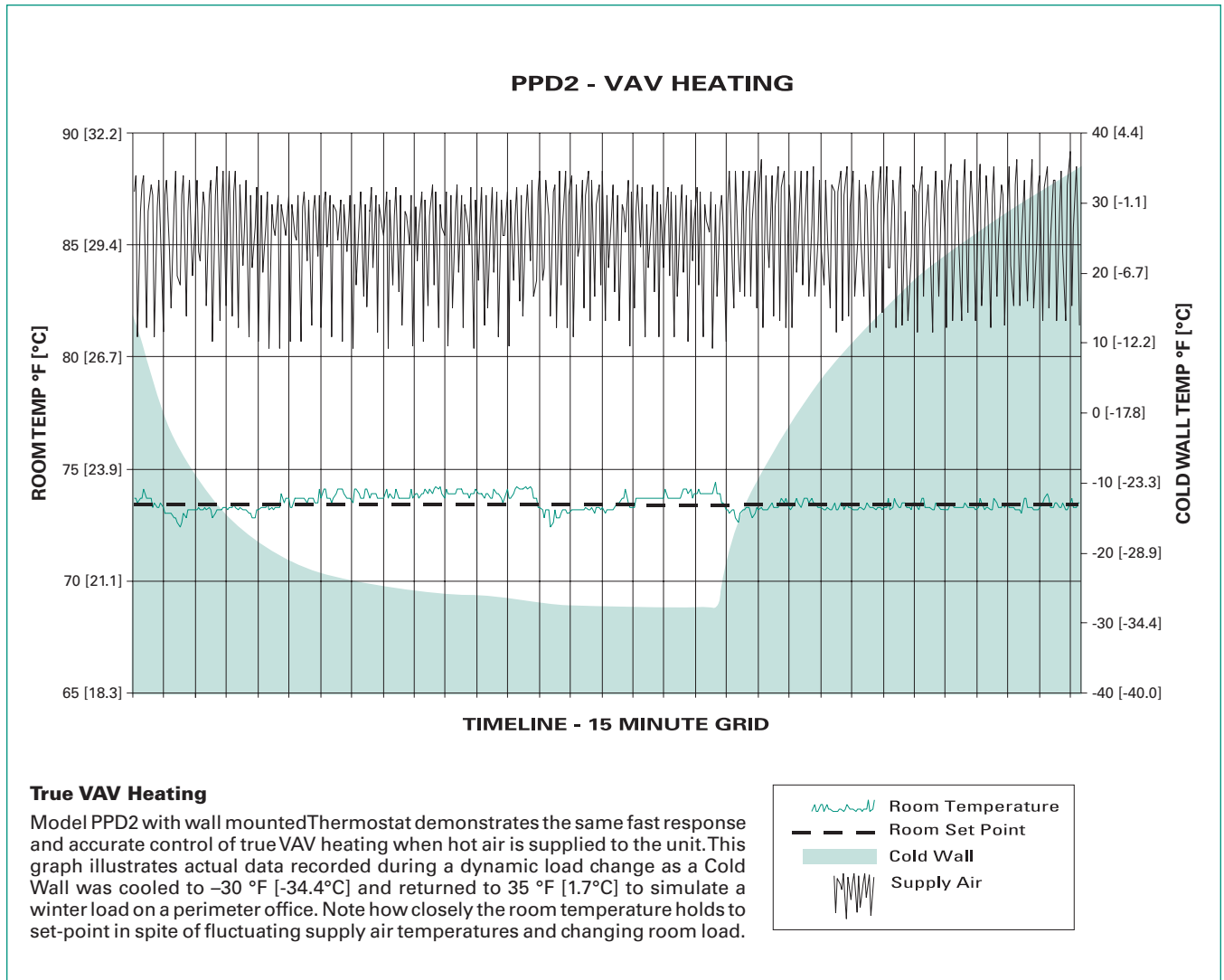
Fast Response

Prodigy® responds to set-point changes with remarkable speed. This graph represents actual laboratory data showing how quickly Prodigy® affects changes in room temperature to accommodate a change in set-point. The Prodigy® DDC control and direct drive motor allow the unit to respond immediately to new settings, achieving the desired result within 15 minutes. Even with a large change in set-point of 3° [1.67°C], Prodigy® brought the room temperature under control and within 1° [0.5°C] of the target in under 15 minutes.

Accurate Control

Robust PI control and positive damper position feedback virtually eliminates thermal overshoot. Prodigy® is able to maintain control of room temperature within +/- 1 °F [0.5 °C] of set-point.

Temperature Control – Heating



CEILING DIFFUSERS

Networking

Networking

Networking allows building systems, including the HVAC system, to share information with each other. This information includes set-points, room temperatures, room loads and much more. This allows HVAC devices to work together as a system, resulting in:

- Increased energy efficiency
 - Using schedules (Day/Night/Weekend)
 - Monitoring room load data
 - Shutting down unoccupied zones
- Control and monitoring of several devices from a single workstation (typically a personal computer or laptop)
- Easier troubleshooting

Networking with BACnet

Using the ASHRAE network standard BACnet allows the Prodigy® to communicate with other BACnet devices. This allows interoperability between different devices even if they are made by different manufacturers. For more information on networking and different communication protocols please see section L of the Price catalog.

Once the Prodigy® diffusers are networked, a software package (typically with graphics) can be used to show any device connected to the network. This allows for accurate information that is both current and accurate to be accessed by the user.

Also, once networked, it is possible to setup scheduling to shut down certain zones during the day or at night based on occupancy.

MS/TP Network

The Prodigy® uses the BACnet network type MS/TP (Master Slave Token Passing), which uses two wires in a daisy chain configuration. This network type is based RS-485 physical layer and is very robust in industrial environments, while being economical enough to be implemented on each device.

The network connection between Prodigy® (with BACnet option) diffusers is done with the included plenum rated network cable. No tools needed!

Connecting the Prodigy® diffusers with the BACnet interface option is very simple and efficient. Dual RJ-45 jacks on each diffuser allow daisy chaining each device without splitters or tools. Included with each Prodigy diffuser is a 35 foot plenum-rated network cable to simplify installation in the field.

Local addresses can be set at each Prodigy® diffuser using the on-board DIP switches. The media access control (MAC) address range is 1-99. Each device on the network segment must have a unique address, otherwise communication errors will occur.

To show proper data exchange, TX (transmit) and RX (receive) LEDs indicate when data is being sent and received. This provides a visual

Prodigy®



Prodigy® Board



Networking BACnet

BACnet router (PDR-C-RTR)



check of how the network is performing. For example, if the RX LED is not blinking this could indicate a cable is unplugged at the other end.

Standard baud rates for the BACnet MS/TP network are 9600, 19200, 38400 and 76800. All devices on the network segment must be set to communicate at the same speed, otherwise communication errors will occur.

Prodigy® Control Variables

There are several control variables that can be monitored and/or adjusted via the network. These include, but are not limited to:

- Room Temperature
- Room Set-point
- Supply Air Temperature
- Supply Air Temperature switch over points (hot/cold/neutral temperatures)

- Inlet Size
- Reheat Type
- Damper Position
- Damper Target
- Model Type (PPD1, PPD2, PPD3)
- Ping (sounds the Prodigy beeper to help you locate the unit)
- Day/Night Mode
- Cooling/Heating Load (100% auto + 100%)

These variables allow the user to determine the current status of a zone. This information can also be relayed to a main controller, allowing it to calculate the total heating or cooling loads.

BACnet Network Option

The BACnet interface option allows the Prodigy Master units to connect to a MS/TP network (sometimes referred to as RS-485). Using the ASHRAE standard BACnet allows interoperability between a new or existing building automation system (BAS). A standard communication protocol such as BACnet will ensure future updates and expansions can be done with minimal problems.

A proprietary system would only allow products to be networked if they are all from the same company. This can cause problems if that one company cannot provide all the products and solutions needed for a job.

Information Sharing

The BACnet interface allows the Prodigy Master units to share information with the building automation system. This allows for more intelligent control of the entire building automation system. The values that can be shared are room temperature, room set-point, room load and many more. The values are passed through the MS/TP network as analog variables.

Connection

To allow for fast and easy field connection, the network uses standard RJ-45 jacks. No tools are needed to hook up the network connection; it is as easy as plugging in a laptop computer.

Also included with each Prodigy Master Unit is a 35 foot shielded plenum-rated cable. This reduces field installation costs greatly since cables do not need to be sourced and assembled on site.

Addressing

Addresses are set at the Prodigy Master junction bracket using field adjustable DIP switches. Status LEDs show network receive and transmit activity to aid in troubleshooting.



MS/TP Network Termination

In order to properly terminate an MS/TP network there must be a terminator (typically a 120 ohm resistor) at the start and end of the network. The terminators help reduce reflections on the network and aid in creating a solid and stable network.

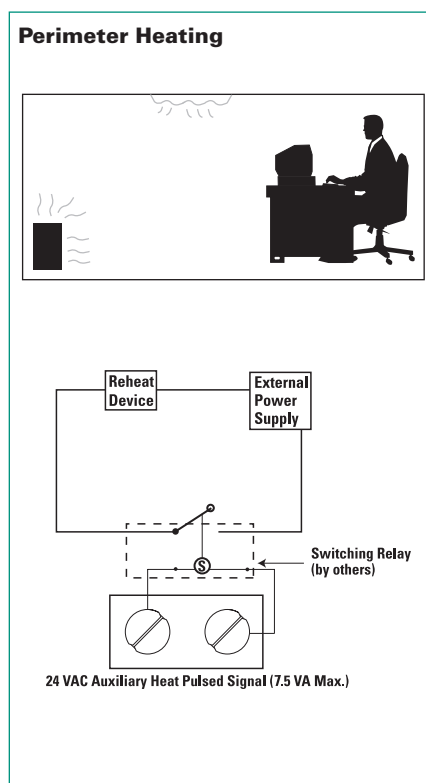
Each Prodigy Master has a built-in terminator that can be enabled by clicking a DIP switch. This saves wiring cost and reduces complexity in the field.

The Prodigy Series is constantly evolving to include new features. Please contact Price for more information.

Auxiliary Heat

A standard feature of the Prodigy® is an on board solid state relay that provides a pulsed 24 VAC signal to operate auxiliary heating devices such as hot water or electric baseboard units or radiant panels. Three output signal options are offered:

1. Pulse Width Modulation (PWM). Rapid cycle is ideal for electric baseboard and radiant panels for fine control and heater longevity.
 - a) Rapid cycle time (2 seconds).
 - b) ON portion of cycle is proportionate to heating requirements of space.
 - c) Requires intermediate Solid State relay (by others) to drive electric device (7.5 VA maximum).
2. Pulse Delay Modulation (PDM). Longer cycle is recommended for hot water systems to ensure that entire system is charged with hot water.
 - a) Minimum ON cycle of 2 minutes.
 - b) OFF cycle varies proportionate to heating requirements of space.
 - c) Intermediate Solid State relay (by others) recommended to drive water valve (7.5 VA maximum).



- 3) ON / OFF—operates more like a traditional thermostat and cycles least of all three options.
 - a) ON cycle begins when space temperature falls lower than 2 °F [1 °C] below heating set-point.
 - b) OFF cycle resumes when space temperature reaches heating set-point.
 - c) Suitable for use with intermediate mechanical relay by others (7.5 VA maximum).

Performance Data - Imperial Units - Models PPD1, PPD2, PPD3, PPDD

Maximum Flow Selection Table

| Inlet Size | Neck Velocity VP, in. w.g. | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|------------|----------------------------|--------|---------|---------|----------|----------|----------|----------|
| 6" | Static Pressure | 0.056 | 0.087 | 0.124 | 0.167 | 0.216 | 0.272 | 0.333 |
| | Total Pressure | 0.066 | 0.102 | 0.146 | 0.197 | 0.256 | 0.322 | 0.396 |
| | CFM | 79 | 98 | 118 | 137 | 157 | 177 | 196 |
| | NC | 21 | 25 | 29 | 33 | 36 | 38 | 40 |
| | Throw, ft | 2-3-5 | 3-4-6 | 3-4-6 | 4-5-7 | 4-5-7 | 4-5-8 | 5-6-8 |
| 8" | Static Pressure | 0.040 | 0.060 | 0.083 | 0.111 | 0.141 | 0.175 | 0.213 |
| | Total Pressure | 0.050 | 0.075 | 0.106 | 0.141 | 0.181 | 0.226 | 0.275 |
| | CFM | 140 | 175 | 209 | 244 | 279 | 314 | 349 |
| | NC | 17 | 23 | 27 | 32 | 35 | 38 | 41 |
| | Throw, ft | 2-3-7 | 3-4-7 | 3-5-8 | 4-6-9 | 5-7-9 | 5-7-10 | 6-7-11 |
| 10" | Static Pressure | 0.048 | 0.072 | 0.101 | 0.134 | 0.171 | 0.212 | 0.257 |
| | Total Pressure | 0.058 | 0.088 | 0.123 | 0.164 | 0.211 | 0.263 | 0.320 |
| | CFM | 218 | 273 | 327 | 382 | 436 | 491 | 545 |
| | NC | 19 | 25 | 30 | 34 | 37 | 41 | 43 |
| | Throw, ft | 4-5-9 | 4-7-11 | 5-8-12 | 6-9-12 | 7-9-13 | 8-10-14 | 9-11-15 |
| 12" | Static Pressure | 0.055 | 0.083 | 0.117 | 0.155 | 0.199 | 0.247 | 0.299 |
| | Total Pressure | 0.065 | 0.099 | 0.139 | 0.186 | 0.238 | 0.297 | 0.362 |
| | CFM | 314 | 393 | 471 | 550 | 628 | 707 | 785 |
| | NC | 21 | 27 | 32 | 36 | 39 | 42 | 45 |
| | Throw, ft | 5-8-11 | 6-9-13 | 8-10-14 | 9-11-15 | 9-11-16 | 10-12-17 | 10-13-18 |
| 14" | Static Pressure | 0.062 | 0.094 | 0.132 | 0.176 | 0.225 | 0.279 | 0.339 |
| | Total Pressure | 0.072 | 0.110 | 0.155 | 0.206 | 0.265 | 0.330 | 0.402 |
| | CFM | 428 | 535 | 641 | 748 | 855 | 962 | 1069 |
| | NC | 22 | 28 | 33 | 37 | 41 | 44 | 47 |
| | Throw, ft | 7-9-13 | 8-10-15 | 9-11-16 | 10-12-17 | 11-13-19 | 11-14-20 | 12-15-21 |

Performance Notes:

- Performance data is presented for the Prodigy diffuser with the inner cone in the full open (maximum flow) position.
- Tested in accordance with ASHRAE Standard 70-1991 "Method of Testing for Rating the Performance of Air Outlets and Inlets."
- Air Flow is in cubic feet per minute, CFM.
- All pressures are in inches of water.
- Throw values are given in feet to terminal velocities of 150-100-50 fpm.
- Throw data is based on supply air and room air at isothermal conditions.
- The NC values, sound pressure level are based on a room absorption of 10 dB re 10-12 watts one diffuser.
- Blanks "—" indicate an NC level below 15.

Modulated Flow Selection Table

| Inlet Size | 0.10 Duct Pressure Ps | | | 0.20 Duct Pressure Ps | | | 0.30 Duct Pressure Ps | | | 0.40 Duct Pressure Ps | | |
|------------|-----------------------|-----------|----|-----------------------|-----------|----|-----------------------|-----------|----|-----------------------|-----------|----|
| | CFM | Throw,ft. | NC | CFM | Throw,ft. | NC | CFM | Throw,ft. | NC | CFM | Throw,ft. | NC |
| 6" | 29 | 0-1-1 | 21 | 46 | 1-1-2 | 31 | 57 | 1-1-3 | 36 | 66 | 1-2-3 | 39 |
| | 70 | 1-1-3 | 22 | 101 | 1-2-4 | 32 | 124 | 2-3-5 | 38 | 144 | 2-3-6 | 42 |
| | 89 | 2-3-5 | 24 | 125 | 2-4-6 | 33 | 154 | 3-4-7 | 38 | 178 | 3-5-8 | 42 |
| | 108 | 3-4-6 | 27 | 152 | 4-5-7 | 35 | 189 | 4-5-8 | 40 | 218 | 5-6-8 | 43 |
| 8" | 65 | 1-2-4 | 22 | 93 | 2-3-5 | 32 | 119 | 2-4-6 | 39 | 125 | 3-4-6 | 40 |
| | 130 | 2-3-6 | 28 | 193 | 3-5-8 | 38 | 220 | 4-5-8 | 41 | 251 | 4-6-9 | 44 |
| | 191 | 3-5-8 | 29 | 284 | 4-7-10 | 39 | 308 | 5-7-10 | 41 | 393 | 6-8-11 | 47 |
| | 237 | 4-6-9 | 31 | 345 | 6-7-11 | 41 | 405 | 7-8-11 | 45 | 477 | 7-9-12 | 49 |
| 10" | 76 | 1-2-3 | 21 | 110 | 2-3-5 | 31 | 133 | 2-3-6 | 37 | 165 | 3-4-8 | 42 |
| | 155 | 2-3-7 | 26 | 220 | 3-5-9 | 35 | 320 | 5-7-11 | 44 | 360 | 5-8-12 | 47 |
| | 252 | 4-5-10 | 28 | 374 | 5-8-12 | 38 | 497 | 7-10-14 | 46 | 570 | 8-11-15 | 49 |
| | 334 | 5-8-12 | 30 | 500 | 8-10-14 | 41 | 634 | 9-11-16 | 47 | 750 | 10-12-17 | 52 |
| 12" | 100 | 2-2-5 | 25 | 141 | 2-3-7 | 34 | 170 | 3-4-8 | 39 | 220 | 4-5-9 | 46 |
| | 200 | 3-4-9 | 28 | 295 | 4-7-11 | 38 | 370 | 5-8-12 | 43 | 440 | 6-9-13 | 48 |
| | 320 | 5-7-11 | 28 | 480 | 7-10-14 | 39 | 580 | 8-11-15 | 44 | 704 | 10-12-17 | 48 |
| | 438 | 7-9-13 | 30 | 640 | 9-11-16 | 40 | 780 | 10-13-18 | 45 | 912 | 11-14-19 | 49 |
| 14" | 110 | 2-3-6 | 24 | 165 | 3-5-8 | 35 | 215 | 4-6-9 | 42 | 233 | 4-6-10 | 44 |
| | 245 | 4-6-10 | 29 | 367 | 6-8-12 | 39 | 473 | 7-10-14 | 45 | 532 | 8-10-15 | 48 |
| | 414 | 6-9-13 | 30 | 620 | 9-11-16 | 40 | 770 | 10-12-18 | 46 | 883 | 11-13-19 | 49 |
| | 554 | 9-11-15 | 29 | 812 | 10-13-18 | 40 | 1008 | 12-14-20 | 45 | 1142 | 12-15-22 | 49 |

Performance Notes:

- Performance data is presented for the Prodigy Diffuser at several modulated inner cone positions with constant duct static pressures of 0.10, 0.20, 0.30, and 0.40 inches w.g.
- Tested in accordance with ASHRAE Standard 70-1991 "Method of Testing for Rating the Performance of Air Outlets and Inlets"
- Air Flow is in cubic feet per minute, CFM.
- Throw values are given in feet to terminal velocities of 150-100-50 fpm.
- Throw data is based on supply air and room air at isothermal condition.
- The NC values, sound pressure level are based on a room absorption of 10 dB re 10-12 watts one diffuser.
- Blanks "—" indicate an NC level below 15.

Performance Data - Metric Units - Models PPD1, PPD2, PPD3, PPDD

Maximum Flow Selection Table

| Inlet Size | Inlet Velocity | 2.0 | 2.5 | 3.0 | 3.6 | 4.1 | 4.6 | 5.1 |
|----------------|-------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 150mm | Velocity Pressure | 2 | 4 | 5 | 8 | 10 | 12 | 15 |
| | Static Pressure | 14 | 22 | 31 | 42 | 54 | 68 | 83 |
| | Total Pressure | 16 | 25 | 36 | 49 | 64 | 80 | 99 |
| | Air Flow | 37 | 46 | 56 | 65 | 74 | 84 | 93 |
| | NC | 21 | 25 | 29 | 33 | 36 | 38 | 40 |
| | Throw, m | 0.6-0.9-1.5 | 0.9-1.2-1.8 | 0.9-1.2-1.8 | 1.2-1.5-2.1 | 1.2-1.5-2.1 | 1.2-1.5-2.4 | 1.5-1.8-2.4 |
| 200mm | Static Pressure | 10 | 15 | 21 | 28 | 35 | 44 | 53 |
| | Total Pressure | 12 | 19 | 26 | 35 | 45 | 56 | 68 |
| | Air Flow | 66 | 83 | 99 | 115 | 132 | 148 | 165 |
| | NC | 17 | 23 | 27 | 32 | 35 | 38 | 41 |
| | Throw, m | 0.6-0.9-2.1 | 0.9-1.2-2.1 | 0.9-1.5-2.4 | 1.2-1.8-2.7 | 1.5-2.1-2.7 | 1.5-2.1-3.0 | 1.8-2.1-3.4 |
| | 250mm | Static Pressure | 12 | 18 | 25 | 33 | 43 | 53 |
| Total Pressure | | 14 | 22 | 31 | 41 | 53 | 66 | 80 |
| Air Flow | | 103 | 129 | 154 | 180 | 206 | 232 | 257 |
| NC | | 19 | 25 | 30 | 34 | 37 | 41 | 43 |
| Throw, m | | 1.2-1.5-2.7 | 1.2-2.1-3.4 | 1.5-2.4-3.7 | 1.8-2.7-3.7 | 2.1-2.7-4.0 | 2.4-3.0-4.3 | 2.7-3.4-4.6 |
| 300mm | | Static Pressure | 14 | 21 | 29 | 39 | 50 | 62 |
| | Total Pressure | 16 | 25 | 35 | 46 | 59 | 74 | 90 |
| | Air Flow | 148 | 185 | 222 | 260 | 296 | 334 | 370 |
| | NC | 21 | 27 | 32 | 36 | 39 | 42 | 45 |
| | Throw, m | 1.5-2.4-3.4 | 1.8-2.7-4.0 | 2.4-3.0-4.3 | 2.7-3.4-4.6 | 2.7-3.4-4.9 | 3.0-3.7-5.2 | 3.0-4.0-5.5 |
| | 350mm | Static Pressure | 15 | 23 | 33 | 44 | 56 | 69 |
| Total Pressure | | 18 | 27 | 39 | 51 | 66 | 82 | 100 |
| Air Flow | | 202 | 252 | 303 | 353 | 404 | 454 | 505 |
| NC | | 22 | 28 | 33 | 37 | 41 | 44 | 47 |
| Throw, m | | 2.1-2.7-4.0 | 2.4-3.0-4.6 | 2.7-3.4-4.9 | 3.0-3.7-5.2 | 3.4-4.0-5.8 | 3.4-4.3-6.1 | 3.7-4.6-6.4 |

Performance Notes:

- Performance data is presented for Prodigy diffuser with inner core in the full open (maximum flow) position.
- Tested in accordance with ASHRAE Standard 70-2006.
- Velocity is given in meters per second, m/s.
- All pressures are in Pascals.
- Air flow is in liters per second, L/s.
- Throw data is listed in meters to terminal velocities (VT) as listed below:

| | |
|---------------------|----------|
| Minimum Throw to VT | 0.76 m/s |
| Middle Throw to VT | 0.51 m/s |
| Maximum Throw to VT | 0.25 m/s |
- Throw data is based on supply air and room air being at isothermal conditions.
- Sound data NC values are based on a room absorption of -10dB, re 10⁻¹² watts.
- Blanks (-) indicate an NC level below 15.
- Performance data is tabulated for supply air applications.

Modulated Flow Selection Table

| Inlet Size | 25 Pa Duct Pressure | | | 50 Pa Duct Pressure | | | 75 Pa Duct Pressure | | | 100 Pa Duct Pressure | | |
|------------|---------------------|-------------|----|---------------------|-------------|----|---------------------|-------------|----|----------------------|-------------|----|
| | L/s | Throw, m | NC | L/s | Throw, m | NC | L/s | Throw, m | NC | L/s | Throw, m | NC |
| 150mm | 14 | 0.0-0.3-0.3 | 21 | 22 | 0.3-0.3-0.6 | 31 | 27 | 0.3-0.3-0.9 | 36 | 31 | 0.3-0.6-0.9 | 39 |
| | 33 | 0.3-0.3-0.9 | 22 | 48 | 0.3-0.6-1.2 | 32 | 59 | 0.6-0.9-1.5 | 38 | 68 | 0.6-0.9-1.8 | 42 |
| | 42 | 0.6-0.9-1.5 | 24 | 59 | 0.6-1.2-1.8 | 33 | 73 | 0.9-1.2-2.1 | 38 | 84 | 0.9-1.5-2.4 | 42 |
| | 51 | 0.9-1.2-1.8 | 27 | 72 | 1.2-1.5-2.1 | 35 | 89 | 1.2-1.5-2.4 | 40 | 103 | 1.5-1.8-2.4 | 43 |
| 200mm | 31 | 0.3-0.6-1.2 | 22 | 44 | 0.6-0.9-1.5 | 32 | 56 | 0.6-1.2-1.8 | 39 | 59 | 0.9-1.2-1.8 | 40 |
| | 61 | 0.6-0.9-1.8 | 28 | 91 | 0.9-1.5-2.4 | 38 | 104 | 1.2-1.5-2.4 | 41 | 119 | 1.2-1.8-2.7 | 44 |
| | 90 | 0.9-1.5-2.4 | 29 | 134 | 1.2-2.1-3.0 | 39 | 145 | 1.5-2.1-3.0 | 41 | 186 | 1.8-2.4-3.4 | 47 |
| | 112 | 1.2-1.8-2.7 | 31 | 163 | 1.8-2.1-3.4 | 41 | 191 | 2.1-2.4-3.4 | 45 | 225 | 2.1-2.7-3.7 | 49 |
| 250mm | 36 | 0.3-0.6-0.9 | 21 | 52 | 0.6-0.9-1.5 | 31 | 63 | 0.6-0.9-1.8 | 37 | 78 | 0.9-1.2-2.4 | 42 |
| | 73 | 0.6-0.9-2.1 | 26 | 104 | 0.9-1.5-2.7 | 35 | 151 | 1.5-2.1-3.4 | 44 | 170 | 1.5-2.4-3.7 | 47 |
| | 119 | 1.2-1.5-3.0 | 28 | 177 | 1.5-2.4-3.7 | 38 | 235 | 2.1-3.0-4.3 | 46 | 269 | 2.4-3.4-4.6 | 49 |
| | 158 | 1.5-2.4-3.7 | 30 | 236 | 2.4-3.0-4.3 | 41 | 299 | 2.7-3.4-4.9 | 47 | 354 | 3.0-3.7-5.2 | 52 |
| 300mm | 47 | 0.6-0.6-1.5 | 25 | 67 | 0.6-0.9-2.1 | 34 | 80 | 0.9-1.2-2.4 | 39 | 104 | 1.2-1.5-2.7 | 46 |
| | 94 | 0.9-1.2-2.7 | 28 | 139 | 1.2-2.1-3.4 | 38 | 175 | 1.5-2.4-3.7 | 43 | 208 | 1.8-2.7-4.0 | 48 |
| | 151 | 1.5-2.1-3.4 | 28 | 227 | 2.1-3.0-4.3 | 39 | 274 | 2.4-3.4-4.6 | 44 | 332 | 3.0-3.7-5.2 | 48 |
| | 207 | 2.1-2.7-4.0 | 30 | 302 | 2.7-3.4-4.9 | 40 | 368 | 3.0-4.0-5.5 | 45 | 430 | 3.4-4.3-6.1 | 49 |
| 350mm | 52 | 0.6-0.9-1.8 | 24 | 78 | 0.9-1.5-2.4 | 35 | 102 | 1.2-1.8-2.7 | 42 | 110 | 1.8-1.8-3.0 | 44 |
| | 116 | 1.2-1.8-3.0 | 29 | 173 | 1.8-2.4-3.7 | 39 | 223 | 2.1-3.0-4.3 | 45 | 251 | 2.4-3.0-4.6 | 48 |
| | 151 | 1.8-2.7-4.0 | 30 | 293 | 2.7-3.4-4.9 | 40 | 363 | 3.0-3.7-5.5 | 46 | 417 | 3.4-4.0-5.8 | 49 |
| | 207 | 2.7-3.4-4.6 | 29 | 383 | 3.0-4.0-5.5 | 40 | 476 | 3.7-4.3-6.1 | 45 | 539 | 3.7-4.6-6.7 | 49 |

Performance Notes:

- Performance data is presented for Prodigy diffuser at several modulated inner core positions with constant duct static pressures (as listed)
- Tested in accordance with ASHRAE Standard 70-2006.
- Velocity is given in meters per second, m/s.
- All pressures are in Pascals.
- Air flow is in liters per second, L/s.
- Throw data is listed in meters to terminal velocities (VT) as 0.75 m/s minimum, 0.5 m/s middle, and 0.25 m/s maximum
- Throw data is based on supply air and room air being at isothermal conditions.
- Sound data NC values are based on a room absorption of -10dB, re 10⁻¹² watts.
- Blanks (-) indicate an NC level below 15.
- Performance data is tabulated for supply air applications.

ARI Certification Rating Points – Models PPD1, PPD2, PPD3, PPDD

Maximum Flow

| Inlet Size | Rated Air Flow | | Minimum Operating Static Pressure | | Discharge Sound Power Level, dB Octave Band | | | | | |
|------------|----------------|-----|-----------------------------------|----|---|----|----|----|----|----|
| | cfm | L/s | in. Water | Pa | 2 | 3 | 4 | 5 | 6 | 7 |
| 6 | 150 | 71 | 0.18 | 45 | 48 | 43 | 48 | 42 | 34 | 25 |
| 8 | 260 | 123 | 0.15 | 37 | 51 | 48 | 50 | 46 | 38 | 28 |
| 10 | 410 | 193 | 0.15 | 37 | 57 | 52 | 51 | 47 | 37 | 27 |
| 12 | 590 | 278 | 0.18 | 45 | 57 | 53 | 52 | 49 | 40 | 29 |
| 14 | 800 | 378 | 0.20 | 50 | 57 | 53 | 53 | 49 | 42 | 30 |

Modulated Flow

| Inlet Size | Rated Air Flow | | Minimum Operating Static Pressure | | Discharge Sound Power Level, dB Octave Band | | | | | |
|------------|----------------|-----|-----------------------------------|-----|---|----|----|----|----|----|
| | cfm | L/s | in. Water | Pa | 2 | 3 | 4 | 5 | 6 | 7 |
| 6 | 80 | 38 | 0.40 | 100 | 48 | 43 | 48 | 42 | 34 | 25 |
| 8 | 140 | 66 | 0.40 | 100 | 51 | 48 | 50 | 46 | 38 | 28 |
| 10 | 220 | 104 | 0.40 | 100 | 57 | 52 | 51 | 47 | 37 | 27 |
| 12 | 315 | 149 | 0.40 | 100 | 57 | 53 | 52 | 49 | 40 | 29 |
| 14 | 430 | 203 | 0.40 | 100 | 57 | 53 | 53 | 49 | 42 | 30 |

Performance Notes:

1. Air flow is in cfm [L/s].
2. All pressures are in in. w.g. [Pa].
3. Sound Power Levels expressed in Decibels, (dB) re 10⁻¹² watts and one diffuser.

Installation

Master Unit

The Prodigy® installs much like a traditional diffuser. Standard ductwork is used and the round inlet connection accepts the same fastening methods.

The advanced DDC control requires a 24V power source. This can be provided through an optional unit mounted transformer or the convenient Prodigy Power Module (PPM), which supports up to 15 master and drone units. A terminal plug is also provided to accept 24 VAC field supplied power.

LED status lights on each diffuser indicate presence of 24 VAC power supply, 2-10VDC drone signal and reheat signals.

Drone Unit

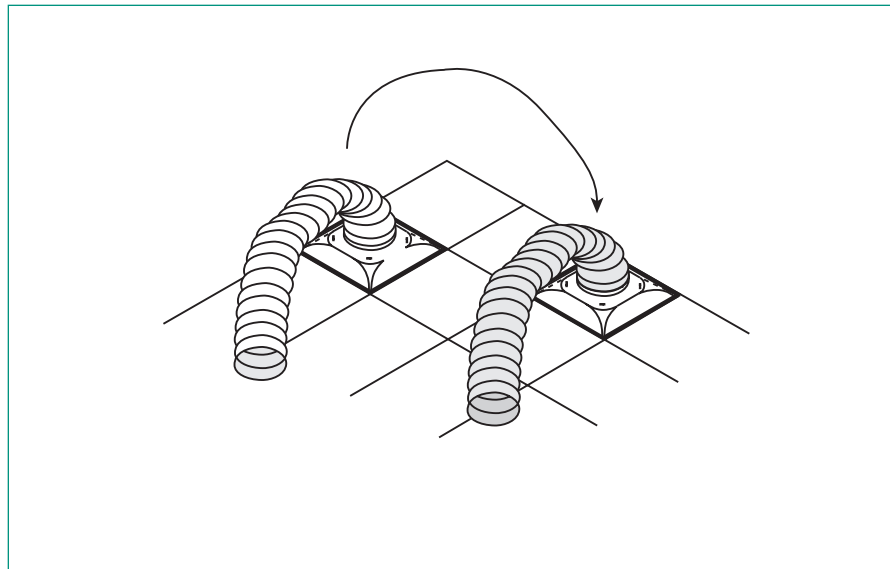
Prodigy® Drone units install in the same manner as master units. The first drone receives power and control signals from the master unit via a cable connection. Additional drones are connected together in a similar manner.

Drone units include a 35 ft plenum cable with RJ modular connectors at both ends for simple connections between units. One cable carries both power and control signals.

Relocating Prodigy® Diffusers

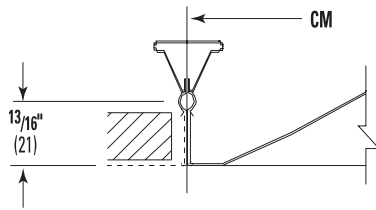
Each Prodigy® represents an individual zone of control and is easily moved as zones are reconfigured. It is not necessary to incur the cost of relocating VAV boxes, thermostats, or hard ducting.

This modular approach provides the flexibility that is required for today's dynamic tenant environments.

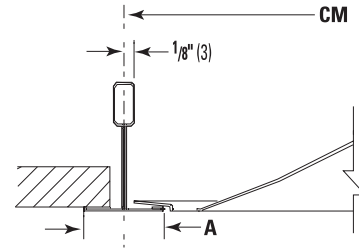


Frame Selection

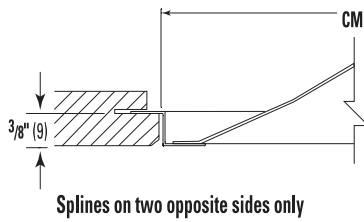
Type 2
 Snap-In



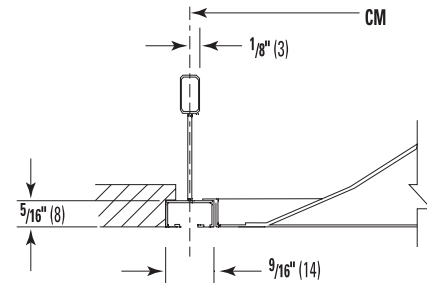
Type 3 T-bar
 A = 1" [25]



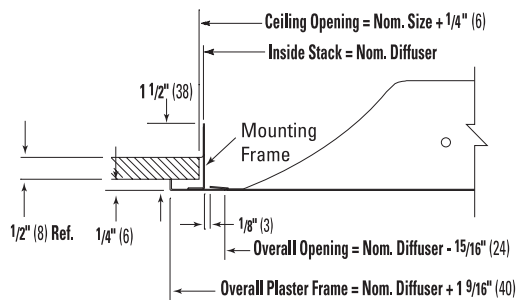
Type 4
 Spline



Type 17
 Narrow Member



Type 1
 Surface Mount (c/w Mounting Frame)



VAV Diffusers Pressure Control Valve



PCV

The Price PCV is designed as a pressure control valve to regulate duct pressure in a VAV or VVT system.

The PCV uses either a field calibrated electric or PIC DDC controller to ensure that over or under pressurization of the duct will not occur.

Typical Applications

The PCV can be used as either a bypass unit or as a throttling device.

In the bypass application, static pressure is normally measured 2/3 down the longest duct run. The PCV will bypass main supply air to a plenum or air handler return to maintain duct static pressure at a constant setting.

In the throttling (or "downstream") application, placing a static pressure sensor downstream of a PCV unit will allow for control of the pressure supplied to the VAV diffusers. The control valve is designed to maintain duct static pressure through adjustment of a control damper.

Construction PCV

- Rectangular ducts constructed of 22 gauge zinc-coated steel.
- Round ducts constructed of 24 gauge zinc-coated steel.
- Damper fabricated from 22 gauge zinc-coated steel, mechanically fastened.
- Damper shaft, sensor and all fasteners exposed to air flow are type 304 stainless steel.
- Damper shaft bearings and damper gasket are polyethylene.
- Controller cover and all external metal components are zinc-coated steel.
- SP300 sensor.

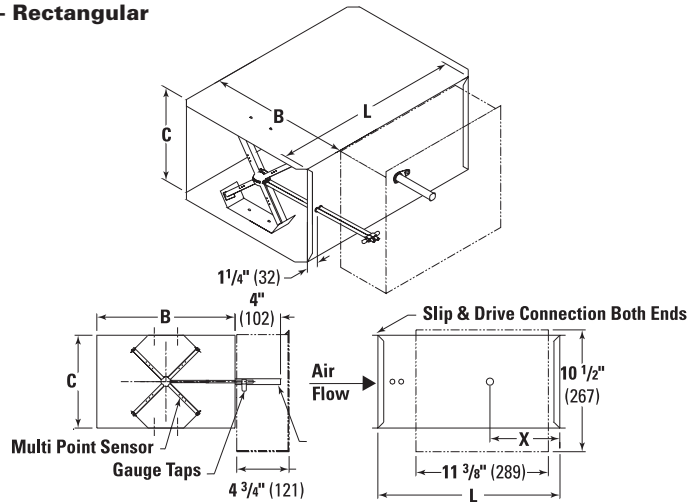
Sequence of Operation - Constant pressure, bypass

- On an increase in duct static pressure the controller/actuator will open the VAV damper to increase the amount of air bypassed.
- On a decrease in duct static pressure the controller/actuator will close the VAV damper to reduce the amount of air bypassed.
- Duct static pressure is held constant.

Calibration

PCV controllers require field calibration of the duct static pressure set-point. Controllers are factory set at a default value of 0.3 in. w.g.

PCV - Rectangular



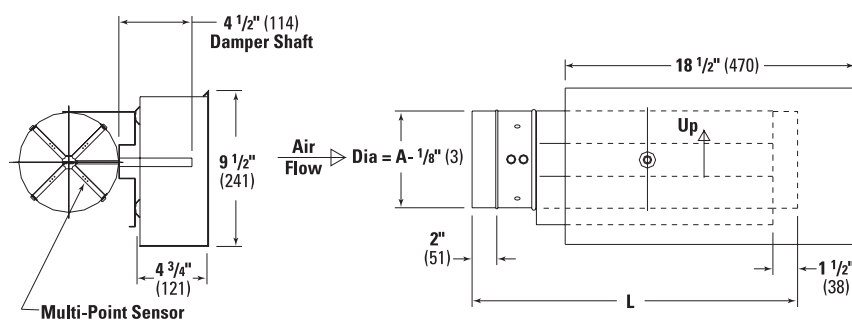
Dimensional Data — Imperial (in.) / Metric [mm]

| Unit Size | S.I. Units [mm] | | | | Imperial Units (in.) | | | |
|-----------------------------------|-----------------|-----|-----|-----|----------------------|--------------------------------|--------------------------------|---|
| | B | C | L | X | B | C | L | X |
| 12x8 | 305 | 203 | 371 | 152 | 12 | 8 | 14 ⁵ / ₈ | 6 |
| 12x10 | 305 | 254 | 371 | 152 | 12 | 10 | 14 ⁵ / ₈ | 6 |
| 14x12 ¹ / ₂ | 356 | 318 | 473 | 178 | 14 | 12 ¹ / ₂ | 18 ⁵ / ₈ | 7 |
| 16x15 | 406 | 381 | 229 | 203 | 16 | 15 | 20 ⁵ / ₈ | 8 |

Notes:

- Housing 22 gauge, zinc coated steel construction.
- Multi-point sensor c/w gauge taps.
- Controls factory mounted in galvanized enclosure.
- Custom sizes available.

PCV - Round



Dimensional Data — Imperial (in.) / Metric [mm]

| Unit Size | L/s Range | cfm Range | S.I. Units [mm] | | Imperial Units (in.) | |
|-----------|-----------|-----------|-----------------|-----|----------------------|--------------------------------|
| | | | A | L | A | L |
| 6 | 0 - 212 | 0 - 450 | 152 | 518 | 6 | 20 ³ / ₈ |
| 7 | 0 - 307 | 0 - 650 | 178 | 518 | 7 | 20 ³ / ₈ |
| 8 | 0 - 378 | 0 - 800 | 203 | 518 | 8 | 20 ³ / ₈ |
| 9 | 0 - 496 | 0 - 1050 | 229 | 518 | 9 | 20 ³ / ₈ |
| 10 | 0 - 637 | 0 - 1350 | 254 | 530 | 10 | 20 ⁷ / ₈ |
| 12 | 0 - 991 | 0 - 2100 | 305 | 587 | 12 | 23 ¹ / ₈ |
| 14 | 0 - 1416 | 0 - 3000 | 356 | 613 | 14 | 24 ¹ / ₈ |

Notes:

- Motor / shroud assembly will be supplied on right hand side unless specified otherwise.
- Dimensions of controls enclosure may vary depending on the DDC controls supplier.

✓ Product Selection Checklist

- 1] Select Unit Size based on air flow requirement.
- 2] Select PCV.

Example: 16 x 15 PCV or 8 PCV

Price Intelligent Controller for PCV

Introduction

Direct digital control is a proven control technology that has traditionally been used in large-scale building automation systems. DDC has brought unprecedented control and efficiency to building ventilation. The PIC combines the accuracy of direct digital control with the flexibility of an individual room system, providing maximum control and efficiency.

The Price Intelligent Controller (PIC) is a cutting edge control package that offers a new level of control. An advanced and configurable proportional integral (PI) controller allows for exceptional user comfort and energy efficiency. Installation of the controller is simple and error proof with RJ-45 (network type) connections to the BACnet network.

Field setup changes can be accomplished with the Price USB LINKER setup tool (combined with FREE software) or through BACnet front end software.

PIC Features

The Price Intelligent Controller comes with the following standard features:

- Stand-alone or BACnet network operation (with the optional BACnet expansion module).
- Integrated actuator.
- Service jack to provide a computer interface (using the Price USB LINKER) for setup/balancing.
- Expansion modules for additional functionality, when required.
- Fast and error proof RJ-45 BACnet connections that use supplied cables.
- LEDs on the PIC to indicate the status of all outputs, aiding with troubleshooting.
- Pressure sensing module to provide accurate duct static pressure readings for reliable control.
- BACnet module (optional) to provide a native BACnet MS/TP interface.

Optional Expansion Modules BACnet Module (PIC-BAC)

With native BACnet MS/TP compatibility, the PIC can tie into an existing or future BACnet compliant BAS system for maximum flexibility.

When connected, the network can monitor all of the controller's functions and variables, assign set-points or log historical data. This takes advantage of the level of control and visibility inherent to BAS systems.

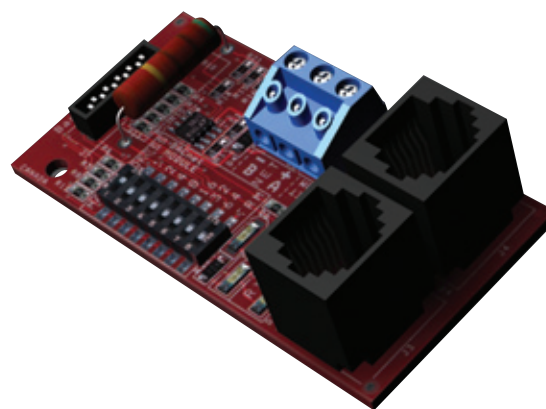
A computer on the BACnet network can also be used to configure the PIC instead of using the LINKER local setup tool.

Each PIC on the BACnet network can relay data that contains a variety of setup and system condition information.

Price Intelligent Controller (PIC)



BACnet Module (PIC-BAC)



Discharge Sound Data - PCV – Round

| Unit Size | Air Flow | | Sound Power Levels Lw dB Re 10 ⁻¹² Watts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|-------------|-------------|---|----|----|----|----|----|----|-----------------------|----|----|----|----|----|----|-----------------------|----|----|----|----|----|----|-----------------------|----|----|----|----|----|----|----|----|
| | | | 0.5 in. w.g. [125 Pa] | | | | | | | 1.0 in. w.g. [250 Pa] | | | | | | | 2.0 in. w.g. [500 Pa] | | | | | | | 3.0 in. w.g. [750 Pa] | | | | | | | | |
| | | | Octave Band | | | | | | | Octave Band | | | | | | | Octave Band | | | | | | | Octave Band | | | | | | | | |
| L/S | cfm | 2 | 3 | 4 | 5 | 6 | 7 | 2 | 3 | 4 | 5 | 6 | 7 | 2 | 3 | 4 | 5 | 6 | 7 | 2 | 3 | 4 | 5 | 6 | 7 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 6 | 94 | 200 | 51 | 52 | 49 | 47 | 42 | 38 | 56 | 57 | 53 | 50 | 47 | 44 | 60 | 61 | 58 | 54 | 51 | 50 | 63 | 63 | 61 | 56 | 54 | 53 | 63 | 63 | 61 | 56 | 54 | 53 |
| | 118 | 250 | 54 | 56 | 51 | 50 | 45 | 41 | 58 | 60 | 56 | 53 | 49 | 46 | 63 | 64 | 61 | 57 | 54 | 52 | 66 | 66 | 63 | 59 | 57 | 56 | 69 | 71 | 67 | 64 | 60 | 59 |
| | 165 | 350 | 58 | 60 | 55 | 54 | 49 | 44 | 62 | 65 | 60 | 58 | 53 | 50 | 67 | 69 | 64 | 61 | 58 | 56 | 72 | 75 | 70 | 67 | 63 | 62 | 72 | 75 | 70 | 67 | 63 | 62 |
| | 212 | 450 | 60 | 64 | 58 | 58 | 51 | 47 | 65 | 68 | 62 | 61 | 56 | 52 | 69 | 72 | 67 | 65 | 61 | 58 | 72 | 75 | 70 | 67 | 63 | 62 | 72 | 75 | 70 | 67 | 63 | 62 |
| 7 | 118 | 250 | 51 | 48 | 48 | 47 | 45 | 40 | 56 | 53 | 53 | 51 | 50 | 46 | 61 | 57 | 57 | 54 | 55 | 52 | 64 | 60 | 60 | 56 | 57 | 55 | 64 | 60 | 60 | 56 | 57 | 55 |
| | 165 | 350 | 55 | 52 | 52 | 52 | 48 | 43 | 60 | 57 | 57 | 55 | 53 | 49 | 64 | 61 | 61 | 59 | 58 | 55 | 67 | 64 | 64 | 60 | 60 | 58 | 67 | 64 | 64 | 60 | 60 | 58 |
| | 212 | 450 | 57 | 55 | 55 | 55 | 51 | 46 | 62 | 60 | 60 | 58 | 55 | 51 | 67 | 64 | 64 | 62 | 60 | 57 | 70 | 67 | 67 | 64 | 63 | 60 | 70 | 67 | 67 | 64 | 63 | 60 |
| | 260 | 550 | 59 | 58 | 57 | 57 | 53 | 47 | 64 | 63 | 62 | 61 | 57 | 53 | 69 | 67 | 66 | 64 | 62 | 59 | 72 | 70 | 69 | 66 | 65 | 62 | 72 | 70 | 69 | 66 | 65 | 62 |
| | 307 | 650 | 61 | 60 | 59 | 60 | 54 | 49 | 66 | 65 | 64 | 63 | 59 | 55 | 70 | 69 | 68 | 66 | 64 | 60 | 73 | 72 | 71 | 68 | 66 | 64 | 73 | 72 | 71 | 68 | 66 | 64 |
| 8 | 189 | 400 | 55 | 51 | 50 | 49 | 45 | 41 | 59 | 56 | 55 | 52 | 50 | 48 | 64 | 61 | 59 | 56 | 55 | 54 | 67 | 64 | 62 | 58 | 58 | 57 | 67 | 64 | 62 | 58 | 58 | 57 |
| | 236 | 500 | 57 | 54 | 53 | 52 | 48 | 43 | 62 | 59 | 58 | 56 | 53 | 49 | 67 | 64 | 62 | 59 | 57 | 56 | 69 | 67 | 65 | 61 | 60 | 59 | 69 | 67 | 65 | 61 | 60 | 59 |
| | 283 | 600 | 59 | 56 | 56 | 55 | 50 | 45 | 63 | 61 | 60 | 58 | 55 | 51 | 68 | 66 | 65 | 62 | 59 | 57 | 71 | 69 | 67 | 64 | 62 | 61 | 71 | 69 | 67 | 64 | 62 | 61 |
| | 330 | 700 | 60 | 58 | 58 | 57 | 52 | 46 | 65 | 63 | 62 | 60 | 56 | 52 | 70 | 68 | 67 | 64 | 61 | 58 | 73 | 71 | 69 | 66 | 64 | 62 | 73 | 71 | 69 | 66 | 64 | 62 |
| | 378 | 800 | 61 | 60 | 59 | 59 | 53 | 47 | 66 | 65 | 64 | 62 | 58 | 53 | 71 | 70 | 68 | 66 | 63 | 59 | 74 | 73 | 71 | 68 | 65 | 63 | 74 | 73 | 71 | 68 | 65 | 63 |
| 9 | 212 | 450 | 53 | 48 | 49 | 44 | 45 | 42 | 57 | 53 | 53 | 48 | 49 | 47 | 62 | 57 | 56 | 52 | 54 | 52 | 64 | 60 | 59 | 55 | 56 | 56 | 64 | 60 | 59 | 55 | 56 | 56 |
| | 307 | 650 | 57 | 53 | 54 | 49 | 48 | 45 | 61 | 58 | 58 | 53 | 53 | 50 | 65 | 62 | 61 | 57 | 57 | 56 | 68 | 65 | 64 | 59 | 60 | 59 | 68 | 65 | 64 | 59 | 60 | 59 |
| | 401 | 850 | 59 | 57 | 57 | 52 | 51 | 47 | 64 | 61 | 61 | 56 | 55 | 52 | 68 | 66 | 65 | 60 | 60 | 58 | 71 | 68 | 67 | 62 | 63 | 61 | 71 | 68 | 67 | 62 | 63 | 61 |
| | 496 | 1050 | 62 | 59 | 60 | 55 | 53 | 49 | 66 | 64 | 64 | 59 | 58 | 54 | 70 | 69 | 68 | 63 | 62 | 60 | 73 | 71 | 70 | 65 | 65 | 63 | 73 | 71 | 70 | 65 | 65 | 63 |
| 10 | 260 | 550 | 55 | 51 | 49 | 44 | 46 | 46 | 60 | 55 | 53 | 48 | 51 | 52 | 64 | 59 | 57 | 53 | 55 | 58 | 67 | 62 | 59 | 55 | 57 | 61 | 67 | 62 | 59 | 55 | 57 | 61 |
| | 354 | 750 | 58 | 55 | 53 | 47 | 49 | 48 | 63 | 59 | 57 | 52 | 54 | 54 | 67 | 64 | 61 | 56 | 58 | 60 | 70 | 66 | 64 | 59 | 60 | 63 | 70 | 66 | 64 | 59 | 60 | 63 |
| | 448 | 950 | 61 | 58 | 57 | 50 | 52 | 49 | 65 | 63 | 61 | 55 | 56 | 55 | 69 | 67 | 65 | 59 | 60 | 61 | 72 | 70 | 67 | 62 | 63 | 64 | 72 | 70 | 67 | 62 | 63 | 64 |
| | 543 | 1150 | 63 | 61 | 59 | 53 | 54 | 50 | 67 | 65 | 63 | 57 | 58 | 56 | 71 | 70 | 67 | 61 | 62 | 62 | 74 | 72 | 69 | 64 | 65 | 66 | 74 | 72 | 69 | 64 | 65 | 66 |
| | 637 | 1350 | 64 | 63 | 62 | 55 | 55 | 51 | 69 | 68 | 65 | 59 | 59 | 57 | 73 | 72 | 69 | 63 | 64 | 63 | 76 | 75 | 72 | 66 | 66 | 66 | 76 | 75 | 72 | 66 | 66 | 66 |
| 12 | 425 | 900 | 56 | 51 | 51 | 47 | 46 | 44 | 61 | 56 | 55 | 51 | 50 | 50 | 65 | 60 | 58 | 55 | 55 | 56 | 68 | 63 | 60 | 57 | 58 | 60 | 68 | 63 | 60 | 57 | 58 | 60 |
| | 614 | 1300 | 60 | 55 | 56 | 52 | 50 | 47 | 65 | 60 | 60 | 56 | 54 | 53 | 69 | 65 | 63 | 60 | 59 | 59 | 72 | 68 | 66 | 62 | 62 | 63 | 72 | 68 | 66 | 62 | 62 | 63 |
| | 708 | 1500 | 62 | 57 | 58 | 54 | 51 | 48 | 67 | 62 | 62 | 58 | 56 | 54 | 71 | 67 | 65 | 62 | 61 | 60 | 74 | 69 | 68 | 64 | 64 | 64 | 74 | 69 | 68 | 64 | 64 | 64 |
| | 802 | 1700 | 64 | 59 | 60 | 55 | 53 | 49 | 68 | 63 | 63 | 59 | 58 | 55 | 72 | 68 | 67 | 63 | 62 | 61 | 75 | 71 | 69 | 66 | 65 | 65 | 75 | 71 | 69 | 66 | 65 | 65 |
| | 991 | 2100 | 66 | 61 | 63 | 58 | 55 | 51 | 70 | 66 | 66 | 62 | 60 | 57 | 75 | 71 | 70 | 66 | 65 | 63 | 78 | 73 | 72 | 68 | 67 | 66 | 78 | 73 | 72 | 68 | 67 | 66 |
| 14 | 472 | 1000 | 52 | 49 | 48 | 45 | 45 | 44 | 57 | 54 | 52 | 49 | 50 | 49 | 61 | 58 | 56 | 54 | 55 | 54 | 64 | 61 | 58 | 56 | 58 | 57 | 64 | 61 | 58 | 56 | 58 | 57 |
| | 708 | 1500 | 57 | 54 | 54 | 50 | 49 | 47 | 62 | 59 | 58 | 54 | 54 | 52 | 66 | 63 | 62 | 59 | 59 | 57 | 69 | 66 | 64 | 61 | 62 | 60 | 69 | 66 | 64 | 61 | 62 | 60 |
| | 944 | 2000 | 61 | 57 | 58 | 54 | 52 | 49 | 65 | 62 | 62 | 58 | 57 | 54 | 70 | 67 | 66 | 62 | 62 | 60 | 72 | 70 | 68 | 65 | 65 | 63 | 72 | 70 | 68 | 65 | 65 | 63 |
| | 1180 | 2500 | 63 | 60 | 61 | 56 | 54 | 51 | 68 | 65 | 65 | 61 | 60 | 56 | 73 | 70 | 69 | 65 | 65 | 61 | 75 | 72 | 71 | 68 | 68 | 64 | 75 | 72 | 71 | 68 | 68 | 64 |
| | 1416 | 3000 | 66 | 62 | 63 | 59 | 56 | 52 | 70 | 67 | 67 | 63 | 61 | 57 | 75 | 72 | 71 | 68 | 66 | 63 | 77 | 75 | 74 | 70 | 69 | 66 | 77 | 75 | 74 | 70 | 69 | 66 |

Performance Notes:

1. Test data obtained in accordance with ARI Standard 880-98 and ASHRAE Standard 130-1996.
2. Air flow is given in L/s and cfm.
3. Pressure given in Pa and in. w.g.
4. Above data is not certified by ARI.
5. Data for rectangular duct PCV units unavailable at time of release.

Radiated Sound Data - PCV – Round

| Unit Size | Air Flow L/S cfm | | Sound Power Levels Lw dB Re 10 ⁻¹² Watts | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|--------------------------|-------------|---|----|----|----|----|----|----|--------------------------------------|----|----|----|----|----|----|--------------------------------------|----|----|----|----|----|----|--------------------------------------|----|----|--|--|--|--|
| | | | 0.5 in. w.g. [125 Pa] Octave Band | | | | | | | 1.0 in. w.g. [250 Pa] Octave Band | | | | | | | 2.0 in. w.g. [500 Pa] Octave Band | | | | | | | 3.0 in. w.g. [750 Pa] Octave Band | | | | | | |
| | | | 2 | 3 | 4 | 5 | 6 | 7 | 2 | 3 | 4 | 5 | 6 | 7 | 2 | 3 | 4 | 5 | 6 | 7 | 2 | 3 | 4 | 5 | 6 | 7 | | | | |
| 6 | 94 | 200 | 38 | 33 | 32 | 33 | 31 | 28 | 42 | 35 | 36 | 37 | 37 | 35 | 46 | 38 | 40 | 41 | 43 | 42 | 48 | 40 | 42 | 44 | 47 | 46 | | | | |
| | 118 | 250 | 39 | 34 | 35 | 35 | 32 | 29 | 43 | 37 | 39 | 39 | 38 | 36 | 47 | 40 | 42 | 43 | 45 | 43 | 49 | 42 | 45 | 46 | 48 | 47 | | | | |
| | 165 | 350 | 40 | 37 | 38 | 38 | 34 | 31 | 44 | 40 | 42 | 42 | 40 | 38 | 48 | 43 | 46 | 46 | 47 | 44 | 50 | 45 | 48 | 49 | 50 | 48 | | | | |
| | 212 | 450 | 41 | 40 | 40 | 40 | 36 | 32 | 45 | 42 | 44 | 44 | 42 | 39 | 49 | 45 | 48 | 48 | 48 | 46 | 51 | 47 | 50 | 51 | 52 | 50 | | | | |
| 7 | 118 | 250 | 28 | 28 | 31 | 33 | 32 | 28 | 35 | 31 | 34 | 36 | 37 | 35 | 42 | 35 | 38 | 39 | 42 | 42 | 46 | 37 | 40 | 41 | 45 | 46 | | | | |
| | 165 | 350 | 31 | 32 | 35 | 37 | 34 | 30 | 38 | 36 | 39 | 39 | 39 | 37 | 45 | 39 | 43 | 42 | 45 | 44 | 49 | 41 | 45 | 44 | 47 | 48 | | | | |
| | 212 | 450 | 34 | 35 | 39 | 39 | 36 | 31 | 41 | 39 | 42 | 42 | 41 | 38 | 48 | 43 | 46 | 45 | 46 | 45 | 52 | 45 | 48 | 47 | 49 | 49 | | | | |
| | 260 | 550 | 36 | 38 | 41 | 41 | 38 | 32 | 43 | 41 | 45 | 44 | 43 | 39 | 50 | 45 | 48 | 47 | 48 | 46 | 54 | 47 | 51 | 49 | 51 | 51 | | | | |
| | 307 | 650 | 38 | 40 | 43 | 43 | 39 | 33 | 45 | 44 | 47 | 46 | 44 | 40 | 52 | 47 | 51 | 49 | 49 | 47 | 56 | 49 | 53 | 50 | 52 | 52 | | | | |
| 8 | 189 | 400 | 37 | 30 | 36 | 33 | 34 | 29 | 42 | 35 | 39 | 37 | 40 | 36 | 47 | 39 | 43 | 41 | 46 | 44 | 50 | 42 | 45 | 43 | 50 | 48 | | | | |
| | 236 | 500 | 39 | 33 | 38 | 35 | 35 | 30 | 44 | 37 | 42 | 39 | 42 | 38 | 49 | 42 | 46 | 43 | 48 | 45 | 52 | 44 | 48 | 45 | 52 | 50 | | | | |
| | 283 | 600 | 40 | 35 | 40 | 37 | 37 | 31 | 45 | 39 | 44 | 41 | 43 | 39 | 50 | 44 | 48 | 45 | 50 | 46 | 53 | 46 | 50 | 47 | 53 | 51 | | | | |
| | 330 | 700 | 42 | 36 | 42 | 39 | 38 | 32 | 46 | 41 | 46 | 43 | 44 | 40 | 51 | 45 | 50 | 46 | 51 | 47 | 54 | 48 | 52 | 49 | 54 | 52 | | | | |
| | 378 | 800 | 43 | 38 | 44 | 40 | 39 | 33 | 47 | 42 | 48 | 44 | 45 | 41 | 52 | 47 | 51 | 48 | 52 | 48 | 55 | 49 | 54 | 50 | 56 | 53 | | | | |
| 9 | 212 | 450 | 39 | 30 | 36 | 35 | 34 | 30 | 41 | 33 | 38 | 38 | 39 | 38 | 43 | 35 | 40 | 41 | 45 | 45 | 45 | 37 | 42 | 43 | 49 | 49 | | | | |
| | 307 | 650 | 43 | 36 | 41 | 38 | 36 | 32 | 45 | 38 | 43 | 41 | 42 | 39 | 47 | 41 | 46 | 45 | 48 | 47 | 49 | 42 | 47 | 46 | 51 | 51 | | | | |
| | 401 | 850 | 46 | 39 | 45 | 41 | 38 | 33 | 48 | 42 | 47 | 44 | 44 | 40 | 50 | 44 | 49 | 47 | 49 | 48 | 52 | 46 | 51 | 49 | 53 | 52 | | | | |
| | 496 | 1050 | 48 | 42 | 48 | 43 | 39 | 34 | 50 | 45 | 50 | 46 | 45 | 41 | 53 | 47 | 52 | 49 | 51 | 49 | 54 | 49 | 54 | 51 | 54 | 53 | | | | |
| 10 | 260 | 550 | 41 | 33 | 36 | 36 | 36 | 30 | 44 | 36 | 40 | 40 | 41 | 37 | 47 | 38 | 43 | 44 | 47 | 44 | 49 | 40 | 45 | 47 | 51 | 48 | | | | |
| | 354 | 750 | 43 | 37 | 40 | 38 | 38 | 32 | 46 | 40 | 43 | 43 | 44 | 39 | 49 | 42 | 47 | 47 | 50 | 46 | 51 | 44 | 49 | 50 | 54 | 50 | | | | |
| | 448 | 950 | 44 | 40 | 43 | 40 | 40 | 33 | 47 | 43 | 46 | 45 | 46 | 40 | 50 | 46 | 50 | 49 | 52 | 49 | 52 | 47 | 52 | 52 | 56 | 52 | | | | |
| | 543 | 1150 | 45 | 43 | 45 | 42 | 42 | 34 | 48 | 45 | 48 | 47 | 48 | 42 | 51 | 48 | 52 | 51 | 54 | 49 | 53 | 50 | 54 | 54 | 57 | 53 | | | | |
| | 637 | 1350 | 46 | 45 | 47 | 44 | 43 | 35 | 49 | 48 | 50 | 48 | 49 | 43 | 52 | 50 | 54 | 52 | 55 | 50 | 54 | 52 | 56 | 55 | 59 | 54 | | | | |
| 12 | 425 | 900 | 38 | 37 | 35 | 33 | 32 | 29 | 43 | 39 | 39 | 37 | 38 | 36 | 47 | 41 | 42 | 41 | 44 | 44 | 50 | 42 | 44 | 44 | 48 | 48 | | | | |
| | 614 | 1300 | 41 | 41 | 40 | 37 | 35 | 32 | 45 | 43 | 43 | 41 | 41 | 39 | 50 | 45 | 47 | 46 | 47 | 46 | 52 | 47 | 49 | 48 | 51 | 50 | | | | |
| | 802 | 1700 | 43 | 44 | 44 | 40 | 38 | 34 | 47 | 46 | 47 | 44 | 44 | 41 | 52 | 48 | 50 | 49 | 50 | 48 | 54 | 50 | 52 | 51 | 53 | 52 | | | | |
| | 897 | 1900 | 44 | 46 | 45 | 41 | 39 | 35 | 48 | 48 | 49 | 45 | 45 | 42 | 53 | 50 | 52 | 50 | 51 | 49 | 55 | 51 | 54 | 52 | 54 | 53 | | | | |
| | 991 | 2100 | 45 | 47 | 47 | 42 | 40 | 36 | 49 | 49 | 50 | 47 | 46 | 43 | 53 | 51 | 53 | 51 | 52 | 50 | 56 | 52 | 55 | 53 | 55 | 54 | | | | |
| 14 | 472 | 1000 | 40 | 34 | 38 | 36 | 35 | 32 | 43 | 39 | 43 | 42 | 41 | 38 | 46 | 44 | 47 | 47 | 46 | 45 | 48 | 47 | 50 | 50 | 50 | 49 | | | | |
| | 708 | 1500 | 44 | 38 | 42 | 40 | 38 | 34 | 48 | 43 | 47 | 45 | 44 | 41 | 51 | 48 | 51 | 51 | 50 | 48 | 53 | 50 | 54 | 54 | 53 | 52 | | | | |
| | 944 | 2000 | 47 | 41 | 45 | 42 | 40 | 36 | 51 | 46 | 50 | 48 | 46 | 43 | 54 | 50 | 54 | 53 | 52 | 49 | 56 | 53 | 57 | 56 | 55 | 53 | | | | |
| | 1180 | 2500 | 50 | 43 | 47 | 44 | 41 | 38 | 53 | 48 | 52 | 50 | 47 | 44 | 56 | 53 | 56 | 55 | 53 | 51 | 58 | 55 | 59 | 58 | 57 | 55 | | | | |
| | 1416 | 3000 | 52 | 45 | 49 | 46 | 43 | 39 | 55 | 50 | 54 | 51 | 49 | 45 | 59 | 54 | 58 | 57 | 55 | 52 | 60 | 57 | 61 | 60 | 58 | 56 | | | | |

Performance Notes:

1. Test data obtained in accordance with ARI Standard 880-98 and ASHRAE Standard 130-1996.
2. Air flow is given in L/s and cfm.
3. Pressure given in Pa and in. w.g.
4. Above data is not certified by ARI.
5. Data for rectangular duct PCV units unavailable at time of release.

Recommended Air Volume Ranges - PCV – Round

Selection

For throttling valve applications, the PCV is sized in accordance with the design flow through the duct run supplied by the PCV. Selecting the PCV in the mid range will allow for future changes.

For bypass applications, the PCV is sized to handle the bypass air volume at minimum load for the zone or branch controlled by the PCV. This will typically be 50-70% of maximum design flow. Over-sizing the PCV will accommodate a safety factor, but may result in less stable control of duct pressure.

Field Adjustment of Pressure Controller

The pressure controller set-point will be determined by the actual pressure losses of the branch duct and diffusers, and cannot be accurately predicted. Field calibration of the PCV pressure controller is therefore required. The PCV pressure controller is factory calibrated for a default value of 0.3 in. w.g.

Electronic or Digital Controls*

| Unit Size | PCV | |
|-----------|--------------------|--------------------|
| | L/s Min. - Max. | cfm Min. - Max. |
| 6 | 38 - 212 | 81 - 450 |
| 7 | 50 - 307 | 106 - 650 |
| 8 | 65 - 378 | 137 - 800 |
| 9 | 84 - 496 | 179 - 1050 |
| 10 | 103 - 637 | 218 - 1350 |
| 12 | 153 - 991 | 325 - 2100 |
| 14 | 272 - 1888 | 576 - 4000 |

Minimum Operating Pressure

| Unit Size | Air Flow | | Min. ΔPs | |
|-----------|----------|------|----------|----------|
| | L/s | cfm | Pa | in. w.g. |
| 6 | 94 | 200 | 10 | 0.04 |
| | 118 | 250 | 19 | 0.08 |
| | 165 | 350 | 37 | 0.15 |
| | 212 | 450 | 55 | 0.22 |
| 7 | 118 | 250 | 5 | 0.02 |
| | 165 | 350 | 15 | 0.06 |
| | 212 | 450 | 25 | 0.10 |
| | 260 | 550 | 35 | 0.14 |
| | 307 | 650 | 45 | 0.18 |
| 8 | 189 | 400 | 7 | 0.03 |
| | 236 | 500 | 12 | 0.05 |
| | 283 | 600 | 17 | 0.07 |
| | 330 | 700 | 23 | 0.09 |
| | 378 | 800 | 28 | 0.11 |
| 9 | 212 | 450 | 4 | 0.02 |
| | 307 | 650 | 11 | 0.04 |
| | 401 | 850 | 18 | 0.07 |
| | 496 | 1050 | 25 | 0.10 |

| Unit Size | Air Flow | | Min. ΔPs | |
|-----------|----------|------|----------|----------|
| | L/s | cfm | Pa | in. w.g. |
| 10 | 260 | 550 | 4 | 0.02 |
| | 307 | 650 | 11 | 0.04 |
| | 401 | 850 | 18 | 0.07 |
| | 543 | 1150 | 24 | 0.10 |
| | 637 | 1350 | 31 | 0.13 |
| 12 | 425 | 900 | 3 | 0.01 |
| | 614 | 1300 | 8 | 0.03 |
| | 708 | 1500 | 11 | 0.04 |
| | 802 | 1700 | 14 | 0.05 |
| | 991 | 2100 | 19 | 0.08 |
| 14 | 472 | 1000 | 2 | 0.01 |
| | 708 | 1500 | 8 | 0.03 |
| | 944 | 2000 | 15 | 0.06 |
| | 1180 | 2500 | 22 | 0.09 |
| | 1416 | 3000 | 28 | 0.11 |

Performance Notes:

1. Test data obtained in accordance with ARI Standard 880-98 and ASHRAE Standard 130-1996.
2. Air flow given in L/s and cfm.
3. Pressure given in Pa and in. w.g.
4. Data is not certified by ARI.

Price Power Module



The Price Power Module (PPM) supports up to 15 Prodigy master units and associated drone units. It provides the most economical and convenient method of powering multiple Prodigy® diffusers because electrician time is minimized. Designed to be ceiling mounted during any phase of a project, the enclosed 96 VA Class 2 transformer is offered for 115V or 277V primary voltage supply. Final power connections to the Prodigy® diffusers are completed via plenum cables with RJ (Snap-In) plugs. Since the cables are all low voltage, commissioning or relocation of Prodigy® diffusers is simple.

Features

- 96 VA Class Transformer with circuit breaker. Supports input voltages: (115 VAC 60 Hz, 240 VAC 60 Hz, 277 VAC 60 Hz, 480 VAC 60 Hz). Output voltage: 24 VAC
- Six parallel power jacks, each of which support up to five Prodigy® units – any combination of masters and associated drones. Overload indicator LEDs on each line light up if too many Prodigy® units are connected or if there is a short in the cable.
- C35 (35 ft plenum-rated cable) with RJ12 plugs provides flexible and convenient power connection. One required for each master unit (order separately). Multiple cables can be connected by using a CC (Cable Connector) for longer runs.
- Power switch with indicator LED.

Pressure Relief Collar



The Prodigy® Pressure Relief Collar (PRC) provides a simple and inexpensive solution when duct pressures are higher than desired. When the Prodigy® responds to part-load requirements by reducing the air flow, the pressure at the Prodigy® inlet increases. The PRC's dual shutters are designed to gradually open in response to pressures in excess of approx. 0.25" w.g. and allow some of the supply air to escape into the return air plenum. This decreases static pressure at the inlet, which reduces the risk of increased noise levels or excessive air flow. When the room cooling load increases, Prodigy® provides more air flow to the space and the PRC shutters gradually close. This minimizes energy waste while maximizing comfort.

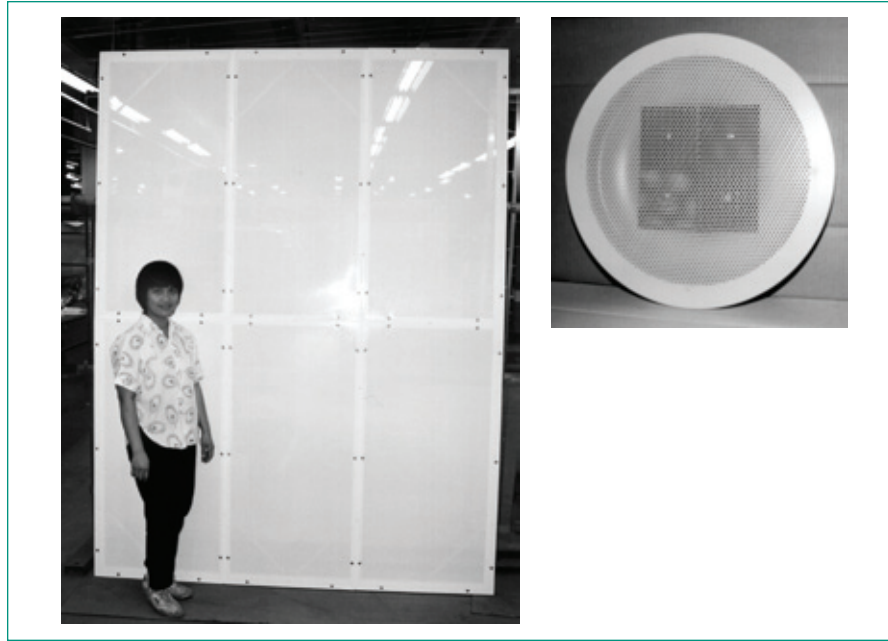
The PRC is intended for use only in systems that have a non-ducted return air plenum.

Ceiling Diffusers Special Manufacture

Introduction

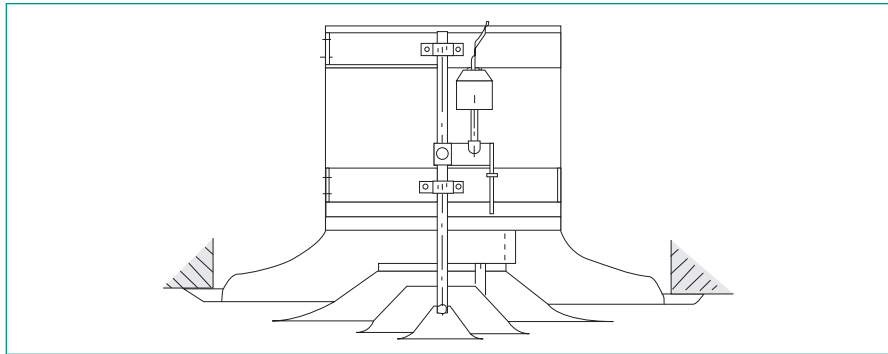
For over 50 years, Price has built an enviable reputation as a qualified designer and dependable supplier of specialized ceiling diffusers. These are often required to satisfy a unique function without compromising air distribution performance.

Illustrated on these pages are a few examples of special manufacture ceiling component diffusers. We have a commendable track record of successful applications. We invite your inquiry.



Spl. Motorized Round Diffuser

- Price Model RCDA Round Cone Diffuser is modified to accept a pneumatic or electric actuator, allowing remote control of diffuser pattern from horizontal to vertical.
- Diffuser discharge pattern can be modified to suit supply air temperature e.g. horizontal for cooling and vertical for heating.



Ceiling Diffusers

Suggested Specification

Square Ceiling Diffusers

SCD / SCD AS / ASCD

Square Cone Diffuser, Fixed Air Pattern (3 and 4 Cone)

Furnish and install Price model SCD steel, SCD AS aluminized steel, ASCD aluminum ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule. Diffusers shall consist of a precision formed back cone of one-piece seamless construction that incorporates a round inlet collar of sufficient length for connecting rigid or flexible duct. The diffuser shall integrate with all duct sizes shown on the plans without affecting the face size and appearance of the unit. An inner cone assembly shall consist of 3 cones (or optional 4 cones) which drop below the ceiling plane to assure optimal VAV air diffusion performance. The inner cone assembly shall be completely removable from the diffuser face to allow for full access to any dampers or other ductwork components located near the diffuser neck. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SCD-FR

Supply - Square Cone Diffuser, Fixed Air Pattern (3 and 4 Cone), Fire-Rated

Furnish and install Price model SCD-FR ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffusers shall consist of a precision formed steel back cone of one-piece seamless construction. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link and a non-asbestos thermal blanket. The diffuser shall integrate with all duct sizes

shown on the plans without affecting the face size and appearance of the unit. An inner cone assembly shall consist of 3 cones which drop below the ceiling plane to assure optimal VAV air diffusion performance. The inner cone assembly shall be completely removable from the diffuser face to allow for full access to any dampers or other ductwork components located near the diffuser neck. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- 4 cone inner cone assembly.
- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.
- Optional T-bar Lay-in Panel.

SCDA / ASCDA

Square Cone Diffuser, Adjustable Pattern (3 and 4 Cone)

Furnish and install Price model SCDA steel, ASCDA aluminum ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule. Diffusers shall consist of a precision formed back cone of one-piece construction that incorporates a round inlet collar of sufficient length for connecting rigid or flexible duct and outer frame which is recessed from the ceiling plane to allow for field adjustment of the air flow discharge from fully horizontal to fully vertical. The diffuser shall integrate with all duct sizes shown on the plans without affecting the face size and appearance of the unit. An inner cone assembly shall consist of 3 cones (or optional 4 cones) which assure optimal VAV air diffusion performance. The inner cone assembly shall be completely removable from the diffuser face to allow for full access to any dampers or other duct work components located near the diffuser neck. Non-protrusive air flow directional tabs shall be provided on the back of the inner cones which may be positioned for either horizontal or vertical discharge. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SCDA-FR

Supply - Square Cone Diffuser, Adjustable Pattern (3 and 4 Cone), Fire-Rated

Furnish and install Price model SCDA-FR ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffusers shall consist of a precision formed steel back cone of one-piece construction. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Outer frame of diffuser is recessed from the ceiling plane to allow for field adjustment of the air flow discharge from fully horizontal to fully vertical. Non-protrusive air flow directional tabs shall be provided on the back of the inner cones which may be positioned for either horizontal or vertical discharge. The diffuser shall integrate with all duct sizes shown on the plans without affecting the face size and appearance of the unit. An inner cone assembly shall consist of 3 cones which assure optimal VAV air diffusion performance. The inner cone assembly shall be completely removable from the diffuser face to allow for full access to any dampers or other duct work components located near the diffuser neck. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- 4 cone inner cone assembly.
- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.
- Optional T-bar Lay-in Panel.

Square Ceiling Diffusers

SPD / SPD AS / ASPD

Square Plaque Diffuser

Furnish and install Price model (SPD steel, SPD AS aluminized steel, ASPD aluminum) ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule. Diffusers shall consist of a precision formed back cone of one-piece seamless construction that incorporates a round inlet collar of sufficient length for connecting rigid or flexible duct. An inner plaque assembly shall be incorporated and shall drop no more than 1/4 in. below the ceiling plane to assure proper air distribution performance. The inner plaque assembly shall be completely removable from the diffuser face to allow for full access to any dampers or other ductwork components located near the diffuser neck. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SPD-FR

Supply - Square Plaque Diffuser, Fire-Rated

Furnish and install Price model SPD-FR steel ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffusers shall consist of a precision formed back cone of one-piece seamless construction. An inner plaque assembly shall be incorporated and shall drop no more than 1/4 in. below the ceiling plane to assure proper air distribution performance. The inner plaque assembly shall be completely removable from the diffuser face to allow for full access to any dampers or other ductwork components located near the diffuser neck. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- optional finishes available.
- optional T-bar Lay-in Panel.

SPD HI

High Induction Square Plaque Diffuser

Furnish and install Price model (SPD HI) ceiling diffusers of sizes designated by the plans and air distribution schedule. Diffusers shall consist of a precision formed back cone of one-piece seamless construction that incorporates a round inlet collar of sufficient length for connecting rigid or flexible duct. An inner plaque assembly shall be incorporated and shall drop no more than 1/4 in. below the ceiling plane to assure proper air distribution performance. An induction chamber furnishing openings in all side walls shall be attached to back cone over the inlet. The inner plaque assembly shall be completely removable from the diffuser face. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SPDLT/ASPDLT

Square Plaque - Low Temperature Diffuser

Furnish and install Price model (SPDLT steel, ASPDLT aluminum) low temperature ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule. Diffusers shall consist of a precision formed aerodynamic shape back cone of one-piece seamless construction which incorporates a round inlet collar of sufficient length for connecting rigid or flexible duct. An inner plaque assembly shall be incorporated that drops no more than 1/4 in. (6mm) below the ceiling plane to assure proper air distribution performance. The inner plaque assembly shall be completely removable from the diffuser face.

The diffuser induction chamber shall project the supply air through multiple tapered discharge slots. The induction chamber shall be all metal of the same material as the diffuser assembly. Unit shall incorporate the following construction features to prevent formation of condensation:

- Diffuser backpan shall be factory insulated with 3/4 in. dual density insulation with foil facing which meets the requirements of NFPA 90A and UL181. All seams and joints shall be sealed with coated cloth tape.
- The induction chamber shall be internally lined with 1/2 in. foil face insulation which meets the requirements of NFPA 90A and UL181.

- The upstream side of the inner plaque assembly shall be thermally lined with polyurethane foam insulation. The unit shall be designed and verified by test to prevent condensation from forming on the surface of the unit at 40 °F (4°C) supply temperature and ceiling plenum conditions of 78 °F (25°C), 60% humidity. Units shall be tested in accordance with ASHRAE Standard 70-2006. Performance data shall be provided for throw and drop at 40 °F (4°C) supply temperature with a room temperature of 75° (24°C). Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Perforated Diffusers

PDN / APDN

Supply – Flush Face, Deflectors in Neck

Furnish and install Price model (PDN steel, APDN aluminum) perforated face supply diffuser as described on plans and air distribution schedules. Diffuser shall consist of a flush perforated air distribution face of no less than 51% free area, a heavy gauge steel backpan with round / square inlet collars as noted on plans, and curved blade air deflector modules located in the neck of the diffuser. Air deflector modules shall allow full field adjustment of air flow pattern from 1 way to 4 way discharge without affecting the inlet free area or the pressure/noise performance of the diffuser. The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning or air pattern adjustment. The perforated face screen shall be steel for PDN and aluminum for APDN. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

PDN-FR

Supply – Flush Face, Deflectors in Neck, Fire-Rated

Furnish and install Price model PDN-FR perforated face supply diffusers as described on plans and air distribution schedules. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffuser shall consist of a flush perforated air distribution face of no less than 51% free area, a steel backpan with round / square inlet collars as noted on plans, and curved blade air deflector modules located in the neck of the diffuser. Air deflector modules shall allow full field adjustment of air flow pattern from 1 way to 4 way discharge without affecting the inlet free area or the pressure/noise performance of the diffuser. The perforated face shall be removable from the diffuser frame and shall be fitted with hinges to facilitate cleaning or air pattern adjustment. The perforated face screen shall be steel. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.

PDNE / APDNE

Supply – Extended Face, Deflectors in Neck

Furnish and install Price model (PDNE steel, APDNE aluminum) perforated face supply diffusers as described on plans and air distribution schedules. Diffuser shall consist of a perforated air distribution face of no less than 51% free area that extends $\frac{3}{8}$ in. below the ceiling plane, a heavy gauge steel backpan with round / square inlet collars as noted on plans, and curved blade air deflector modules located in the neck of the diffuser. Air deflector modules shall allow full field adjustment of air flow pattern from 1 way to 4 way discharge without affecting the inlet free area or the pressure / noise performance of the diffuser. The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning or air pattern adjustment. The perforated face screen shall be steel for PDNE and aluminum for APDNE. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Perforated Diffusers

PDNE-FR

Supply – Extended Face, Deflectors in Neck, Fire-Rated

Furnish and install Price model PDNE-FR perforated face supply diffusers as described on plans and air distribution schedules. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffuser shall consist of a perforated air distribution face of no less than 51% free area that extends $\frac{3}{8}$ in. below the ceiling plane, a steel backpan with round / square inlet collars as noted on plans, and curved blade air deflector modules located in the neck of the diffuser. Air deflector modules shall allow full field adjustment of air flow pattern from 1 way to 4 way discharge without affecting the inlet free area or the pressure / noise performance of the diffuser. The perforated face shall be removable from the diffuser frame and shall be fitted with hinges to facilitate cleaning or air pattern adjustment. The perforated face screen shall be steel. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.

PDSP / APDSP

Supply – Star Pattern

Furnish and install Price model PDSP steel, APDSP aluminum perforated face supply diffuser as described on plans and air distribution schedules. Diffuser shall consist of a flush perforated air distribution face of no less than 51% free area, a heavy gauge steel backpan with round / square inlet collars as noted on plans, and curved blade air deflectors located in the neck of the diffuser.

The diffuser shall be factory set for 4 way side throw or 4 way diagonal throw. Field adjustment of the air pattern shall be achieved by simply rotating the deflector assembly. A vertical pattern shall also be achieved by turning the deflector blades. The deflector assembly shall include a center opening to allow for access to an optional damper.

The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning or air pattern adjustment. The perforated face screen shall be steel for PDSP and aluminum for APDSP. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

PDSP-FR

Supply - Perforated Diffuser Star Pattern Fire-Rated

Furnish and install Price model PDSP-FR ceiling mounted diffusers of size and mounting types designated by the plans and air distribution schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in exposed grid suspended ceiling (T-bar Lay-in) with up to three-hour rating and must be installed in accordance with the installation instructions.

Diffusers shall consist of a removable perforated air distribution face of no less than 51% free area, a steel backpan with round / square inlet collars as noted on plans. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, 165°F [74°C] fusible link, and a non-asbestos thermal blanket. Diffuser shall have field adjustable air deflector modules mounted at the diffuser neck which can change the pattern from a standard 4 way diagonal throw. The deflector modules shall be completely removable from the diffuser face to allow for full access to any dampers or other ductwork components located near the diffuser neck. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional T-bar Lay-in Panel.

Perforated Diffusers

PDSPE / APDSPE

Supply – Star Pattern

Furnish and install Price model PDSPE steel, APDSPE aluminum perforated face supply diffusers as described on plans and air distribution schedules. Diffuser shall consist of a perforated air distribution face of no less than 51% free area that extends $\frac{3}{8}$ in. below the ceiling plane, a heavy gauge steel backpan with round / square inlet collars as noted on plans, and curved blade air deflectors located in the neck of the diffuser.

The diffuser shall be factory set for 4 way side throw or 4 way diagonal throw. Field adjustment of the air pattern shall be achieved by simply rotating the deflector assembly. A vertical pattern shall also be achieved by turning the deflector blades. The deflector assembly shall include a center opening to allow for access to an optional damper.

The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning or air pattern adjustment. The perforated face screen shall be steel for PDSPE and aluminum for APDSPE. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

PDF / APDF

Supply – Deflectors on Face

Furnish and install Price model PDF steel, APDF aluminum perforated face supply diffusers as described on plans and air distribution schedules. Diffuser shall consist of a flush perforated air distribution face of no less than 51% free area, a heavy gauge steel backpan with round / square inlet collars as noted on plans, and air deflector modules located on the back of the perforated face of the diffuser. Air deflector modules shall allow full field adjustment of air flow pattern from 1 way to 4 way discharge without affecting the inlet free area or the pressure / noise performance of the diffuser. The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning or air pattern adjustment. The perforated face screen shall be steel for PDF and aluminum for APDF. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

PDF-FR

Supply - Flush Face, Deflectors on Face, Fire-Rated

Furnish and install Price model PDF-FR perforated face supply diffusers as described on plans and air distribution schedules. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffuser shall consist of a flush perforated air distribution face of no less than 51% free area, a steel backpan with round / square inlet collars as noted on plans, and air deflector modules located on the back of the perforated face of the diffuser. Air deflector modules shall allow full field adjustment of air flow pattern from 1 way to 4 way discharge without affecting the inlet free area or the pressure / noise performance of the diffuser. The perforated frame shall be removable from the diffuser face and shall be fitted with hinges to facilitate cleaning or air pattern adjustment. The perforated face screen shall be steel. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.

PDFE / APDFE

Supply – Extended Face, Deflectors on Face

Furnish and install Price model PDFE steel, APDFE aluminum perforated face supply diffusers as described on plans and air distribution schedules. Diffuser shall consist of a perforated air distribution face of no less than 51% free area that extends $\frac{3}{8}$ in. below the ceiling plane, a heavy gauge steel backpan with round / square inlet collars as noted on plans, and air deflector modules located on the back of the perforated face of the diffuser. Air deflector modules shall allow full field adjustment of air flow pattern from 1 way to 4 way discharge without affecting the inlet free area or the pressure / noise performance of the diffuser. The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning or air pattern adjustment. The perforated face screen shall be steel for PDFE and aluminum for APDFE. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Perforated Diffusers

PDFE-FR

Supply – Extended Face, Deflectors on Face, Fire-Rated

Furnish and install Price model PDFE-FR perforated face supply diffusers as described on plans and air distribution schedules. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffuser shall consist of a perforated air distribution face of no less than 51% free area that extends $\frac{3}{8}$ in. below the ceiling plane, a steel backpan with round / square inlet collars as noted on plans, and air deflector modules located on the back of the perforated face of the diffuser. Air deflector modules shall allow full field adjustment of air flow pattern from 1 way to 4 way discharge without affecting the inlet free area or the pressure / noise performance of the diffuser. The perforated face shall be removable from the diffuser frame and shall be fitted with hinges to facilitate cleaning or air pattern adjustment. The perforated face screen shall be steel. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.

PDC / APDC

Supply – Flush Face, Individually Adjustable Curved Blades

Furnish and install Price model PDC steel, APDC aluminum perforated face supply diffusers as described on plans and air distribution schedules. Diffuser shall consist of a flush perforated air distribution face of no less than 51% free area, a heavy gauge steel backpan with round / square inlet collars as noted on plans, and adjustable curved blade air deflector modules located in the neck of the diffuser. Individually adjustable curved deflectors shall be available in 1, 2, 2 way corner, 3 and 4 way horizontal pattern and allow adjustment to vertical pattern, if desired. The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning or air pattern adjustment. The perforated face screen shall be steel for PDC and aluminum for APDC. The finish of the diffuser shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

PDC-FR

Supply – Flush Face, Individually Adjustable Curved Blades, Fire-Rated

Furnish and install Price model PDC-FR perforated face supply diffusers as described on plans and air distribution schedules. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffuser shall consist of a flush perforated air distribution face of no less than 51% free area that does not extend below ceiling (flush), a steel backpan with round / square inlet collars as noted on plans, and adjustable curved blade air deflector modules located in the neck of the diffuser. Individually adjustable curved deflectors shall be available in 1, 2, 2 way corner, 3 and 4 way horizontal pattern and allow adjustment to vertical pattern, if desired. The perforated face shall be removable from the diffuser frame and shall be fitted with hinges to facilitate cleaning or air pattern adjustment. The perforated face screen shall be steel. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.

Perforated Diffusers

PDCE / APDCE

Supply – Extended Face, Individually Adjustable Curved Blades

Furnish and install Price model PDCE steel, APDCE aluminum perforated face supply diffusers as described on plans and air distribution schedules. Diffuser shall consist of a flush perforated air distribution face of no less than 51% free area, a heavy gauge steel backpan with round / square inlet collars as noted on plans, and adjustable curved blade air deflector modules located in the neck of the diffuser. Individually adjustable curved deflectors shall be available in 1, 2, 2 way corner, 3 and 4 way horizontal pattern and allow adjustment to vertical pattern, if desired. The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning or air pattern adjustment. The perforated face screen shall be steel for PDCE and aluminum for APDCE. The finish of the diffuser shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

PDCE-FR

Supply – Extended Face, Individually Adjustable Curved Blades, Fire-Rated

Furnish and install Price model PDCE-FR perforated face supply diffusers as described on plans and air distribution schedules. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffuser shall consist of a perforated air distribution face of no less than 51% free area that extends $\frac{3}{8}$ in. below the ceiling plane, a steel backpan with round / square inlet collars as noted on plans, and adjustable curved blade air deflector modules located in the neck of the diffuser. Individually adjustable curved deflectors shall be available in 1, 2, 2 way corner, 3 and 4 way horizontal pattern and allow adjustment to vertical pattern, if desired. The perforated face shall be removable from the diffuser frame and shall be fitted with hinges to facilitate cleaning or air pattern adjustment. The perforated face screen shall be steel. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation

damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.

PDMC / APDMC

Furnish and install Price model PDMC (steel), APDMC (aluminum) directional modular core, perforated face diffusers of the sizes and mounting types shown on the plans and air distribution schedule. Diffusers shall consist of louvered pattern control modules, a heavy gauge backpan, and hinged perforated face screen. The perforated face screen shall be steel (Model APDMC aluminum) with a free area of 51%. A collar that allows connection to the square or round duct size indicated shall be an integral part of the frame assembly. The diffuser core shall consist of fixed louver directional modules that may be easily field adjusted from the diffuser face (without any type of tools or mechanical device) for 1, 2, 3, or 4 way discharge. Each module shall be easily removable to allow for access to any damper or other ductwork component in or near the diffuser neck. Finish shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

PDMC-FR

Supply – Flush Face, Modular Core, Fire-Rated

Furnish and install Price model PDMC-FR directional modular core, perforated face diffusers of the sizes and mounting types shown on the plans and air distribution schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with the installation instructions.

Diffusers shall consist of steel louvered pattern control modules, a steel backpan, and hinged perforated face screen. The perforated face screen shall be steel with

a free area of 51%. A collar that allows connection to the round / square duct size indicated shall be an integral part of the frame assembly. The perforated face shall be removable from the diffuser frame and shall be fitted with hinges to facilitate cleaning or air pattern adjustment. The diffuser core shall consist of fixed louver directional modules that may be easily field adjusted from the diffuser face (without any type of tools or mechanical device) for 1, 2, 3, or 4 way discharge. Each module shall be easily removable to allow for access to any damper or other ductwork component in or near the diffuser neck. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.

Perforated Diffusers

PDDR / APDDR

Return – Flush Face

Furnish and install Price model PDDR steel, APDDR aluminum perforated face return diffusers as described on plans and air distribution schedules. Diffuser shall consist of a perforated air distribution face of no less than 51% free area, a heavy gauge steel backpan with round / square inlet collars as noted on plans. The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning purposes. The perforated face screen shall be steel for PDDR and aluminum for APDDR. The finish of the diffuser shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

PDDR-FR

Return – Flush Face, Fire-Rated

Furnish and install Price model PDDR-FR perforated face return diffusers as described on plans and air distribution schedules. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with installation instructions.

Diffuser shall consist of a perforated air distribution face of no less than 51% free area, a steel backpan with round/square inlet collars as noted on plans. The perforated face shall be removable from the diffuser frame and shall be fitted with hinges to facilitate the removal of face screen for cleaning purposes. The perforated face screen shall be steel. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.

PDDRE / APDDRE

Return – Extended Face

Furnish and install Price model PDDRE steel, APDDRE aluminum perforated face return diffusers as described on plans and air distribution schedules. Diffuser shall consist of a perforated air distribution face of no less than 51% free area that extends $\frac{3}{8}$ in. below the ceiling plane, a heavy gauge steel backpan with round / square inlet collars as noted on plans. The perforated face shall be removable from the diffuser face and shall be fitted with hinges to facilitate the removal of face screen for cleaning purposes. The perforated face screen shall be steel for PDF and aluminum for APDF. The finish of the diffuser shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

PDDRE-FR

Return – Extended Face, Fire-Rated

Furnish and install Price model PDDRE-FR perforated face return diffusers as described on plans and air distribution schedules. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with installation instructions.

Diffuser shall consist of a perforated air distribution face of no less than 51% free area that extends $\frac{3}{8}$ in. below the ceiling plane and a steel backpan with round / square inlet collars as noted on plans. The perforated face shall be removable from the diffuser frame and shall be fitted with hinges to facilitate cleaning purposes. The perforated face screen shall be steel. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.

PFRF / APFRF

Return – Flush Face

Furnish and install Price model PFRF steel, APFRF aluminum perforated face return diffusers as described on plans and air distribution schedules. Diffuser shall consist of a perforated air distribution face of no less than 51% free area. The perforated face screen shall be steel for PFRF and aluminum for APFRF. The finish of the diffuser shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Perforated Diffusers

Architectural Quality

PDS

Furnish and install Price model PDS perforated face supply air diffuser of all sizes and mounting styles as shown. Diffuser shall have face panel mounted fully adjustable louvered pattern controllers. Adjustment of pattern controllers shall permit setting of air patterns from 4 way to 3 way, 2 way or 1 way. Diffuser shall have square or round necks as indicated on the drawing or diffuser schedule.

Steel backpan shall be snap-in assembly with extruded aluminum border(s). Framed perforated steel face panel sub-assembly shall have spring clip latch arrangement to permit an easy removal and access to pattern controllers. Face panel when installed shall be flush with the border frame.

Finish of frames and face panel shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.. Backpan and pattern controllers shall be painted black.

PDR

Furnish and install Price model PDR perforated face return air diffusers of sizes and mounting styles as shown on the drawings (or the diffuser schedule). The outlet shall have square or round necks as indicated on the drawing or diffuser schedule.

Steel backpan (where applicable) shall be snap-in assembly with extruded aluminum border(s). Framed perforated steel face panel sub-assembly shall have spring clip latch arrangement to permit an easy removal and access to pattern controllers. Face panel when installed shall be flush with the border frame.

Finish of frames and face panel shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.. Backpan and pattern controllers shall be painted black.

Square / Rectangular Directional

Louvered Face

SMD / AMD

Fixed Air Pattern

Furnish and install Price model SMD steel, AMD aluminum directional louvered face diffusers of the sizes and mounting types shown on the plans and air distribution schedule. Diffusers shall consist of an outer frame assembly, which facilitates mounting in the application shown. A collar that allows connection to the square (or rectangular) duct size indicated shall be an integral part of the frame assembly. An inner core assembly consisting of fixed louvers capable of producing the air flow discharge pattern indicated on the plans shall be fully removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck. The inner core assemblies shall be identically constructed so that directional core assemblies providing different air flow discharge patterns may be interchanged between frames, provided the frame duct connections are of the same size. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

LCMD

Light Commercial Directional Diffuser

Furnish and install Price model LCMD directional louvered face diffuser of the sizes and mounting types shown on the plans and air distribution schedule. Diffusers shall consist of an outer frame assembly which facilitates mounting in the application shown. A collar that allows connection to the square (or rectangular) duct size indicated shall be an integral part of the frame assembly. Diffuser shall be of all extruded aluminum construction, including an extruded aluminum frame. An inner core assembly consisting of fixed louvers capable of producing the air flow discharge pattern indicated on the plans shall be fully removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck. Diffuser louver patterns shall be available in 1, 2, 2 way corner, 3 and 4 way horizontal patterns. Louvered blades shall be spaced one (1) inch from each other. The inner core assemblies shall be identically constructed so that directional core assemblies providing different air flow discharge patterns may be interchanged between frames, provided the frame duct connections are of the same size. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SMD-FR

Supply - Louvered Face, Fixed Air Pattern, Fire-Rated

Furnish and install Price model SMD-FR directional louvered face diffusers of the sizes and mounting types shown on the plans and air distribution schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with installation instructions.

Diffusers shall consist of an outer frame assembly, which facilitates mounting in the application shown. A collar that allows connection to the square (or rectangular) duct size indicated shall be an integral part of the assembly. An inner core assembly consisting of fixed louvers capable of producing the air flow discharge pattern indicated on the plans shall be fully removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck. The inner core assemblies shall be identically constructed so that directional core assemblies providing different air flow discharge patterns may be interchanged between frames, provided the frame duct connections are of the same size. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165°F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.
- Optional T-bar Lay-in Panel.

SMDA / AMDA

Adjustable Air Pattern

Furnish and install Price model SMDA steel, AMDA aluminum directional louvered face diffusers of the sizes and mounting types shown on the plans and air distribution schedule. Diffusers shall consist of an outer frame assembly, which facilitates mounting in the application shown. A collar that allows connection to the square (or rectangular) duct size indicated shall be an integral part of the frame assembly. An inner core assembly consisting of fixed louvers capable of producing the air flow discharge pattern indicated on the plans shall be fully removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck. A set of adjustment vanes shall be provided on each side of the diffuser to allow for field adjustment from horizontal to vertical air flow discharge.

Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SMDP

Fixed Air Pattern

Furnish and install Price model SMDP steel louvered face diffusers of the sizes and mounting types shown on the plans and air distribution schedule. Diffusers shall consist of an outer frame assembly, which facilitates mounting in the application shown. A collar that allows connection to the square duct size indicated shall be an integral part of the frame assembly. An inner core assembly consisting of fixed louvers with a plaque in the center shall be fully removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Ceiling Diffusers

Suggested Specification

Square / Rectangular Directional

SMDA-FR

Supply - Louvered Face, Adjustable Air Pattern, Fire-Rated

Furnish and install Price model SMDA-FR directional louvered face diffusers of the sizes and mounting types shown on the plans and air distribution schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with installation instructions.

Diffusers shall consist of an outer frame assembly, which facilitates mounting in the application shown. A collar that allows connection to the square (or rectangular) duct size indicated shall be an integral part of the assembly. An inner core assembly consisting of fixed louvers capable of producing the air flow discharge pattern indicated on the plans shall be fully removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck. The inner core assemblies shall be identically constructed so that directional core assemblies providing different air flow discharge patterns may be interchanged between frames, provided the frame duct connections are of the same size. A set of adjustment vanes shall be provided on each side of the diffuser to allow for field adjustment from horizontal to vertical air flow discharge. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.
- Optional T-bar Lay-in Panel.

CSR

Furnish and install Price model CSR square or rectangular neck directional supply and return air combination diffusers of sizes and capacities as shown on the drawings (or the diffuser schedule). Diffuser shall supply air to the space with horizontal air flow pattern through outer slots and return air through a center mounted core of 1/2 in. x 1/2 in. x 1/2 in. aluminum eggcrate.

Supply section of diffuser shall provide ceiling blanketing air pattern and shall adapt to variable volume roof top units.

Diffusers shall consist of an outer frame (flanged) sub-assembly for surface mounting and a removable* inner core, along with center eggcrate (*on most sizes).

Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SMX

Steel Construction

Furnish and install Price model SMX louvered rapid mixing diffusers of the sizes and frame types shown on the plans and schedules.

Diffusers shall consist of a formed steel outer frame (except frames 6 and 33 which shall have an extruded aluminum frame) assembly, which facilitates mounting in the application shown. A collar that allows connection to the square (or rectangular) duct size indicated shall be an integral part of the frame assembly. This collar fits inside the duct.

Optional

Provide a connecting collar, sized to fit outside the supply duct for a low leakage joint. The formed steel collar shall be welded or clinch locked to the diffuser frame.

The inner core assembly shall consist of formed steel fixed louvers capable of producing the air flow discharge pattern indicated on the plans. Steel mixing vanes shall be fastened to the back of the fixed louvers. Vanes shall be designed to produce high induction and rapid mixing of the primary and room air. Inner core assemblies shall be easily removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck.

Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Opposed blade damper shall be of coated steel construction.
- Square to round adaptor shall be of coated steel construction.

SMX-FR

Supply - Louvered Face, Fixed Pattern, Fire-Rated

Furnish and install Price model SMX-FR louvered rapid mixing diffusers of the sizes and frame types shown on the plans and schedules. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in an exposed grid suspended ceiling (T-bar Lay-in) with up to a three-hour rating and must be installed in accordance with installation instructions.

Diffusers shall consist of a formed steel outer frame assembly, which facilitates mounting in the application shown. A collar that allows connection to the square (or rectangular) duct size indicated shall be an integral part of the assembly. This collar fits inside the duct. The inner core assembly shall consist of formed steel fixed louvers capable of producing the air flow discharge pattern indicated on the plans. Steel mixing vanes shall be fastened to the back of the fixed louvers. Vanes shall be designed to produce high induction and rapid mixing of the primary and room air. Inner core assemblies shall be easily removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74 °C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100 °C] fusible link.
- Optional finishes available.
- Optional T-bar Lay-in Panel.

Ceiling Diffusers

Suggested Specification



Square / Rectangular Directional

AMX

Aluminum Construction

Furnish and install Price model AMX louvered rapid mixing diffusers of the sizes and frame types shown on the plans and schedules.

Diffusers shall consist of an extruded aluminum outer frame assembly, which facilitates mounting in the application shown. For styles 3P, 4P, 17P, a steel frame and panel shall be provided. A collar that allows connection to the square (or rectangular) duct size indicated shall be an integral part of the frame assembly. This collar fits inside the duct.

Optional

Provide a connecting collar, sized to fit outside the supply duct for a low leakage joint. The formed aluminum collar shall be welded or clinch locked to the diffuser frame.

The inner core assembly shall consist of extruded aluminum fixed louvers capable of producing the air flow discharge pattern indicated on the plans. Aluminum mixing vanes shall be fastened to the back of the fixed louvers. Vanes shall be designed to produce high induction and rapid mixing of the primary and room air. Inner core assemblies shall be easily removable from the installed diffuser frame for access to any dampers or other ductwork components located in or near the diffuser neck.

Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Opposed blade damper shall be of (coated steel construction) (aluminum construction mill finish).
- Square to round adaptor shall be of coated steel construction.
- 3PAL, 4PAL, 17PAL - all aluminum frame and panel.

Modular Core

SMCD / AMCD

Furnish and install Price model SMCD steel, AMCD aluminum directional modular core louvered face diffusers of the sizes and mounting types shown on the plans and air distribution schedule. Diffusers shall consist of an outer frame assembly, which facilitates mounting in the application shown. A collar that allows connection to the square duct size indicated shall be an integral part of the frame assembly. The diffuser core shall consist of fixed louver directional modules that may be easily field adjusted from the diffuser face (without any type of tools or mechanical device) for 1, 2, 3, or 4 way discharge. Each module shall be easily removable to allow for access to any damper or other ductwork component in or near the diffuser neck. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Curved Vane

CVD

Supply and install Price model CVD curved vane supply air diffusers of sizes and mounting styles as shown on the drawings (or diffuser schedule).

Diffusers shall have adjustable curved extruded aluminum louver vanes.

Finish of diffuser face shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SCVD

Supply and install Price model SCVD curved vane supply air diffusers of sizes and mounting styles as shown on the drawings (or diffuser schedule).

Diffusers shall have adjustable curved roll-formed steel louver vanes.

Finish of diffuser face shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

ACVD

Supply and install Price model ACVD curved vane supply air diffusers of sizes and mounting styles as shown on the drawings (or diffuser schedule).

Diffusers shall have adjustable curved roll-formed aluminum louver vanes.

Finish of diffuser face shall be B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

SCVD-FR

Supply - Steel Curved Vane Diffuser Fire-Rated

Furnish and install Price model SCVD-FR ceiling mounted diffusers of size and mounting types designated by the plans and air distribution schedule. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories of Canada Equipment and Materials Directory. Diffusers shall meet UL time vs. temperature test criteria and NFPA 90A requirements. This design is intended for use in exposed grid suspended ceiling (T-bar Lay-in) with up to three-hour rating and must be installed in accordance with the installation instructions.

Diffusers shall consist of an outer frame assembly, which facilitates mounting in the application shown. A collar that allows connection to the square duct size indicated shall be an integral part of the assembly. The inner core assembly shall consist of individual adjustable steel curved vanes capable of producing the air flow discharge pattern indicated on the plans. Diffuser shall incorporate a non-adjustable butterfly-type ceiling radiation damper, a 165 °F [74°C] fusible link, and a non-asbestos thermal blanket. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Volume adjustment for balancing.
- 212 °F [100°C] fusible link.
- Optional T-bar Lay-in Panel.

CEILING DIFFUSERS

Round Cone Diffusers

RCD / ARCD / RCDA

Furnish and install Price model RCD / RCDA (steel) / ARCD (aluminum) round ceiling diffusers of the size and capacities shown on the plans and air distribution schedule. Diffusers shall have round neck inlets and face with a removable inner assembly of cones that extend below the diffuser face. The diffuser air pattern shall be field adjustable from horizontal to vertical by means of rotating the smallest inner cone (RCDA) / removing the cones and repositioning the mounting screws to one of three locations (RCD / ARCD). Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

RCDE

Furnish and install Price model RCDE round ceiling diffusers of size and capacities shown on the plans and air distribution schedule. Diffusers shall have round neck inlets and face with a removable inner assembly of cones that extend below the diffuser face. The diffuser air flow discharge pattern shall be field adjustable by the removal and repositioning of the cone assembly. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

RPD

Supply and install Price model RPD (Steel) round plaque diffusers of the size and capacities shown on the plans and air distribution schedule. Diffusers shall consist of an outer cone of one-piece seamless construction that incorporates a round inlet. The exposed surface of the plaque shall be smooth and flat. The air flow discharge pattern shall be field adjustable from horizontal to vertical by repositioning the mounting screws to one of three locations. The plaque shall be easily removed to allow for full access to any dampers or other ductwork components located near the diffuser neck. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Options

- Factory mounted retaining cable to hold inner plaque assembly when removed.

RID

Furnish and install Price model RID round industrial type ceiling diffuser of size and capacities shown on the plans and air distribution schedule. The diffusers shall consist of an outer cone and an inner air flow vane assembly that allows field adjustment of the air flow from horizontal to vertical by rotating an operator ring that extends below the diffuser face. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Ceiling Twist Outlets

RSD

Adjustable Discharge

Furnish and install Price model RSD/S (square face) / RSD/C (circular face) radial discharge outlets of the sizes, discharge patterns and mounting styles shown on the plans and air distribution schedule. Diffuser shall have individually adjustable manual pattern controllers to allow for field adjustment of the discharge pattern. Diffuser shall be of steel construction with RAL 9003 white powder coat finish and white polycarbonate pattern controllers. Diffuser shall be supplied with a galvanized steel plenum.

RVDLT

Radial Vane

Low Temperature Diffuser

Furnish and install Price model RVDLT Radial Vane Low Temperature Diffusers of sizes and capacities as shown on the drawings or diffuser schedule. Diffusers shall have a face panel with a radial pattern of air slots and fixed horizontal deflectors. The diffuser also consists of a circular plenum chamber with inlet baffles and a top mounted neck inlet. The diffuser air flow discharge pattern shall provide a high induction vortex air flow projecting horizontally from the diffuser.

Unit shall incorporate the following construction features to prevent formation of condensation:

Diffuser plenum and backpan shall be factory insulated with $\frac{3}{4}$ in. dual density insulation with foil facing. All seams and joints shall be sealed with coated cloth tape which meets and requirements of NFPA 90A and UL181.

The unit shall be designed and verified by test to prevent condensation from forming on the surface of the unit at 40 °F supply temperature and ceiling plenum conditions of 78 °F, 60% humidity.

Units shall be tested in accordance with ASHRAE Standard 70-2006. Performance data shall be provided for throw and drop at 40 °F supply temperature with a room temperature of 75 °F.

The radial pattern face shall be construction of (choose from coated steel, aluminum, stainless steel). Plenum chamber shall be construction of galvanized steel.

Finish shall be B12 White Powder Coat for steel or aluminum units, #4 brushed finish for stainless steel.

RVD

Radial Vane Diffuser

Furnish and install Price model RVD Radial Vane Diffusers of sizes and capacities shown on the drawings or diffuser schedule.

Diffusers shall have a face panel with a radial pattern of air slots and fixed horizontal deflectors. The diffuser shall also consist of a plenum chamber with inlet baffles and a top mounted neck inlet. The square radial pattern face shall open easily with $\frac{1}{4}$ turn quick-release fasteners for damper adjustment and cleaning purposes. The circular radial pattern face shall open easily with a stove bolt for cleaning purposes. The diffuser air flow discharge pattern shall provide a high induction vortex air flow projecting horizontally from the diffuser.

The radial pattern face and corresponding plenum shall be constructed of coated steel, aluminum or stainless steel.

RTD

Radial Twist Diffuser

Furnish and install Price model RTD Radial Vane Diffusers of sizes and capacities shown on the drawings or diffuser schedule.

Diffusers shall have a face panel with a radial pattern of 16 air slots and fixed horizontal deflectors. The diffuser shall also consist of a plenum chamber and a top mounted neck inlet. The square radial pattern face shall come with centrally located, removable plug for damper adjustment. The diffuser air flow discharge pattern shall provide a high induction vortex air flow projecting horizontally from the diffuser.

The radial pattern face and corresponding plenum shall be constructed of coated steel.

VAV Diffusers

Prodigy Series

Furnish and install Prodigy® Series Personal Self-Modulating Diffusers as manufactured by Price in sizes and capacities as shown on plans.

The diffuser shall provide variable air volume control and regulate supply air volume to maintain room temperature settings. The VAV actuator mechanism shall be fully electronic direct drive with immediate response to control signals from the controller board. Thermal expansion devices are not acceptable.

Diffuser construction shall be of steel with one-piece backpan, aerodynamically designed inner cone damper assembly, and plaque faceplate. Finish shall be B12 white powder coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.

Controls shall be microprocessor-based (direct digital) with the following features:

- Proportional plus integral (PI) control algorithms for cooling and heating.
- Automatic heating/cooling changeover.
- Power and output signals to fully control Prodigy Drone units.
- Pulsed 24 VAC contacts with auto-reset overload protection and indicator lights to activate reheat.
- Retention of set-point and settings information in case of power loss. Stored in EEPROM indefinitely. No battery to replace.

Modulating damper assembly will have the following features:

- Quiet ultra long life brushless AC drive motor.
- Direct drive system without gears/belts/levers, resulting in zero maintenance and long life.
- Completely automatic damper recalibration as needed.

Operational mode is defined by model selection as follows:

Model PPD1

Diffuser shall be Price model PPD1, providing VAV cooling and constant volume heating. The room temperature sensor shall be mounted on the diffuser face and enclosed to provide a continuous appearance. A manual set-point adjustment must be provided at the diffuser. Output jacks (RJ11) to provide power and signals for up to five drones will be accessible on the junction bracket.

Model PPD2

Diffuser shall be Price model PPD2, providing VAV cooling and VAV heating. A diffuser mounted temperature sensor shall be utilized in cooling mode. A wall mounted assembly will provide room temperature sensing in heating mode, as well as set-point adjustment for heating and cooling. Output jacks (RJ11) to provide power and signals for up to five drones will be accessible on the junction bracket.

Model PPD3

Diffuser shall be Price model PPD3, providing VAV cooling and constant volume heating. Set-point adjustment is accomplished with a hand held infrared (IR) remote device. The room temperature sensor and infrared receiving mechanism shall be mounted in the center of the diffuser for 360 degree signal response and enclosed for continuous appearance. Output jacks (RJ11) to provide power and signals for up to five drones will be accessible on the junction bracket.

Note: All Prodigy Master Units have auto model detection. For example this would allow a PPD1 unit to recognize a thermostat (PPD2) and adjust itself accordingly.

Model PPDD

Diffuser shall be Price model PPDD, providing drone operation only. The diffusers shall respond to a signal provided by the controlling unit. Output jacks (RJ11) on the Prodigy Master PPD1, 2, 3 will provide the drone with power and signals. Up to five drones may be connected to one Prodigy master. The PPDD will automatically recalibrate itself as needed.

Optional BACnet Interface

The DDC controller shall have native BACnet connectivity using a MS/TP (Master Slave Token Passing) network. The network connections shall be shielded RJ-45 connections for tool-free hookup. Each DDC controller shall be supplied with a 35ft plenum-rated shielded network cable. Multiple values will be shared through the MS/TP network including (but not limited to) room temperature, room set-point and room load.

Optional Pressure Relief Collar

A pressure relief collar (PRC) shall be fitted to the inlet collar of the Prodigy® diffusers to relieve excess static pressure arising from modulation of the air flow by the Prodigy® diffuser.

Optional Power Module

A power module shall provide 24VAC power supply to Prodigy diffusers via plenum cables with modular connectors. The single power module can power up to 15 Prodigy units.

VAV Diffusers

Pressure Control Valve

Furnish and install Price variable volume control valve assemblies of the series and capacities as shown on the plans.

The duct shall be constructed of 24 gauge type 304 stainless steel for round ducts, and 22 gauge type 304 stainless steel for rectangular ducts. The damper shall be 22 gauge type 316 stainless steel, with polyethylene damper shaft bearings and damper gasket. Damper shaft shall be type 304 stainless steel. The control enclosure and mounting bracket shall be zinc coated steel.

In the full closed position, air leakage past the closed damper shall not exceed 2% of the nominal catalogue rating 3" w.g. inlet static pressure when tested in accordance with ASHRAE Standard 130.

An air flow sensor of a cross configuration shall be located at the inlet of the assembly. The sensor shall have 12 total pressure sensing ports and center averaging chamber designed to accurately average the flow across the inlet of the assembly. Sensor shall provide accuracy within 5% with a 90° sheet metal elbow directly at the inlet of the assembly. The air flow sensor shall amplify the sensed air flow signal.

Controls

Refer to Single Duct Controller Type in Volume 3.

Varitherm® Series

Furnish and install Varitherm® Series Personal Self-Modulating Diffusers as manufactured by Price in sizes and capacities as shown on plans.

The diffuser shall provide variable air volume control and regulate supply air volume to maintain room temperature settings. The VAV actuator assembly shall be fully independent of electric or pneumatic drives and will respond only via thermal wax actuators.

Diffuser construction shall be of steel with one-piece backpan, fully supported chassis, and hinged plaque faceplate. Finish to be B12 white powder coat on damper, backpan and hinged plaque faceplate. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714. Chassis and linkage system shall be galvanized steel and engineered plastic.

Room temperature set-point adjustment shall be completed by rotating a thumbwheel in correspondence to the provided scale, independent adjustment shall be provided for heating and cooling modes. The adjustment must be made on the chassis system and accessible from behind the hinged plaque. Each set-point shall be adjustable through the range of 71 °F to 82 °F. For the VPD-C cooling only diffuser, only one set-point thumbwheel is required; for the VPD-HC heating/cooling diffuser, two set-point thumbwheels are required.

The VAV diffuser damper shall open when the unit is in cooling mode and the room air temperature rises, and when the unit is in heating mode and the room air temperature lowers. The diffuser damper shall close when the unit is in cooling mode and the room air temperature lowers, and when the unit is in heating mode and the room air temperature rises. The changeover thermostat must be factory installed and calibrated to engage heating mode when the supply air temperature exceeds 80 °F/27 °C and engage cooling mode when the supply air temperature drops below 65 °F/18 °C.

Minimum air flow adjustment must be accessible from the room side of the chassis and hidden behind the hinged plaque. The minimum air flow dial shall be adjustable with a flathead screwdriver and must have a readable gauge with a range from 0% to 100% of maximum flow. Factory set-point of the minimum flow is 0% of maximum flow. Balancing mode is accessible from the minimum air flow adjustment dial. A full turn of the dial will place the unit into balancing mode.

The manufacturer shall warrant that the VAV diffuser shall be defect free in the material and workmanship for a period of 10 years from date of shipment.

The hinged plaque must be rigidly fastened to the chassis on one side with an interlocked piano hinge to allow for access to and free adjustment of the temperature set-points or minimum air flow. Removable plaques are not acceptable. The plaque must be retained when closed, by rare earth magnets, for consistent closing and for easy opening. Instruction for use must be placed on the inside of the plaque.

Static pressure at the inlet of the diffuser shall be within .05 in. w.g./12 Pa and .25 in. w.g./62 Pa at full and partial air flows. Static pressures below .05 in. w.g./12 Pa will result in low air flow and poor induction. Operation at a static pressure above .25 in. w.g./62 Pa will result in excessive noise.

Unitee Series

The following specification is for a defined application. Price would be pleased to assist in developing a specification for your specific need.

Criteria

- Main Member #4787.
- Cross Member #4683.
- Perimeter Mould #4826.
- Module size 5 ft x 5 ft [1.5 m x 1.5 m].
- Basketweave assembly.
- To accept 20" x 60" [.508 m x 1.5 m] lighting fixture.

General

Concept

- The ceiling shall be the Unitee Ceiling System as manufactured by Price in a 5 ft x 5 ft [1.5 m x 1.5 m] planning grid complete with acoustical ceiling panels.

Scope

Supply and install the specified ceiling system complete with:

- grid suspension system
- acoustical infill panels
- related accessories

Work Not Included

- Air distribution devices and other mechanical services.
- Lighting fixtures and other electrical services.

Submittal Drawings

Prior to commencement of work, furnish a complete set of shop drawings for approval.

Product

Suspension System

- The suspension system shall be Price extruded aluminum type # 4787 main members, type #4683 cross members and type #4826 perimeter mould.
- 10 ft [3 m] main members shall assemble in a basketweave pattern to form 5 ft x 5 ft [1.5 m x 1.5 m] modules. At each 5 ft x 5 ft [1.5 m x 1.5 m] intersection, the accent screw-slot shall be thru-slot, i.e. the screw-slot shall run continuous in all directions. #4683 Cross Members shall be used to subdivide all modules to receive an under-sized 20" x 60" [.508 m x 1.5 m] lighting fixture in the centre of those modules so indicated.
- Main Members shall use the Price two-piece Universal Clip at each end for positive interconnection to other Main Members.
- Cross Members shall use the Price two-piece Universal Clip at each end, thereby permitting the spot removal or 90° rotation of any Cross Member without the use of tools.
- All exposed components shall be finished in B12 White Powder Coat. Paint finish shall pass 500 hours of salt spray exposure with no measurable creep in accordance with ASTM D1654 and 1000 hours with no rusting or blistering as per ASTM D610 and ASTM D714.
- Main Members shall be supported by #12 gauge prestressed hanger wire at 5 ft [1.5 m] centres. One additional hanger shall be used to suspend the Main Member at the mid-module location at each end of the lighting fixtures.
- Maximum deflection shall not exceed L/360, according to ASTM C635 deflection test, based on design loads.

Sound Control

- Supply and install acoustical panels (designer to specify the product and performance required).

Execution

Installation

- Install all components in accordance to the manufacturer's instructions.
- Install ceilings to heights indicated on the plans and specifications to a tolerance of 1/8" in 12 ft-0" [or 3 mm in 3600 mm].
- Temperature and humidity during installation of the ceiling is important. The system shall not be installed when the temperature in the area is under 60 °F or over 85 °F [16 °C or over 29 °C], or if the humidity is above 80 percent.