TCF

TWIN CITY FAN

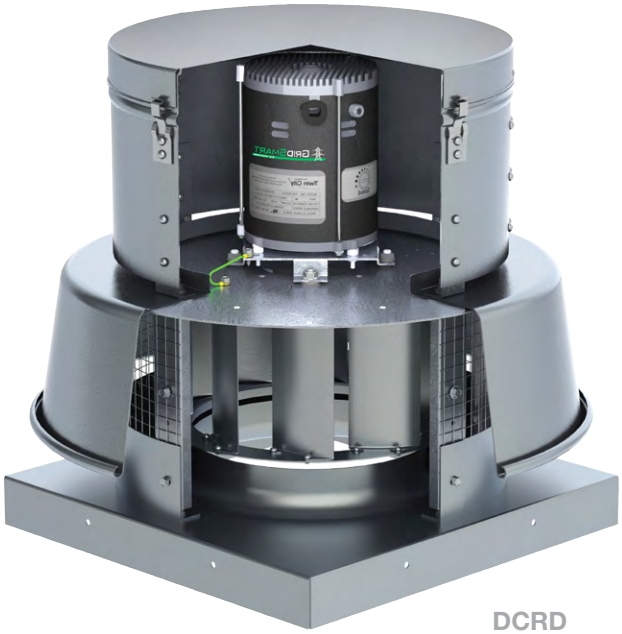
INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

DOWNBLAST ROOF EXHAUSTERS

DCRD | BCRD | BCRD-E (Endurex™ Polymeric Housing)

Overview

DCRD | BCRD | BCRD-E



DCRD
Direct Drive

Now Available with

GRIDSMART™ EC MOTORS

see page 9

Twin City Fan & Blower's line of quiet, efficient and economical centrifugal roof exhausters are designed to offer world-class performance and quality in a wide variety of commercial and industrial ventilating applications.

Models DCRD (direct drive) and BCRD (belt driven) feature spun aluminum construction. Model BCRD-E belt driven roof exhausters feature a housing constructed of Twin City Fan & Blower's proprietary Endurex™ polymeric material that provide significantly improved impact, weather, corrosion, and UV resistance – see page 5 for more information.

Typical Applications Include
Agriculture, Air Pollution Control, Automotive, Boilers, Brick, Car Wash, Commercial Plan & Spec, Composting, Ethanol, Food & Beverage, Foundry, General Manufacturing, Glass, HVAC, Institutional & Hospitality, Metal & Minerals, Microchip, OEM, Pharmaceutical, Power Generation, Recycling, Textile, Transportation

Wheel Types
Backward Inclined Centrifugal

Optional Construction
Special Coatings, Spark Resistant, UL 705, UL 762, UL Smoke & Heat

Certifications
AMCA Sound/Air and FEG, UL 705 Listed for Electrical, UL 762 Listed for Grease-Laden Air, UL Listed for Smoke Control Systems, OSHPD Seismic Preapproval per OSP-0395-10, Miami-Dade County Hurricane Rating per NOA No. 12-0914.12

c UL us

DCRD, BCRD and BCRD-E models are cULus 705 listed for electrical, File No. E158680.

Twin City Fan & Blower certifies that the Models DCRD, BCRD, and BCRD-E shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Fan Efficiency Grade (FEG) certification applies to Model BCRD Sizes 140D, 160D, 160DHP, 180D, 180DHP, 210D, 210DHP, 240D, 240DHP, 300D, 300DHP, 360D, 360DHP, 420D and 480D, Model BCRD-E Sizes 140D, 160D, 160DHP, 180D, 180DHP, 210D, 210DHP, 240D and 240DHP.

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For complete product performance, drawings and available accessories, download our Fan Selector program at tcf.com.

Overview

DCRD | BCRD | BCRD-E

The centrifugal roof exhausters are designed for roof mounted exhaust of relatively clean air. Typical applications include general HVAC, warehouse exhaust, and exhaust for churches, schools, and offices.

Model DCRD

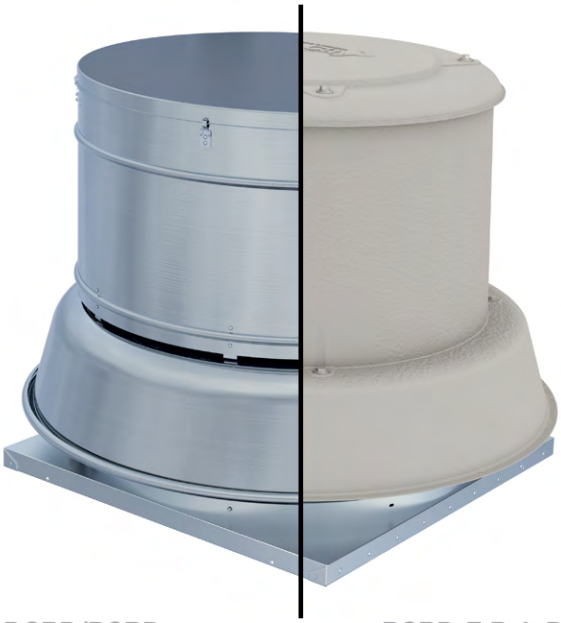
8" to 19.25" wheel diameters
Airflow to 5,600 CFM
Static pressure to 1" w.g.

Model BCRD

8.5" to 49.21" wheel diameters
Airflow to 28,700 CFM
Static pressure to 3.25" w.g.

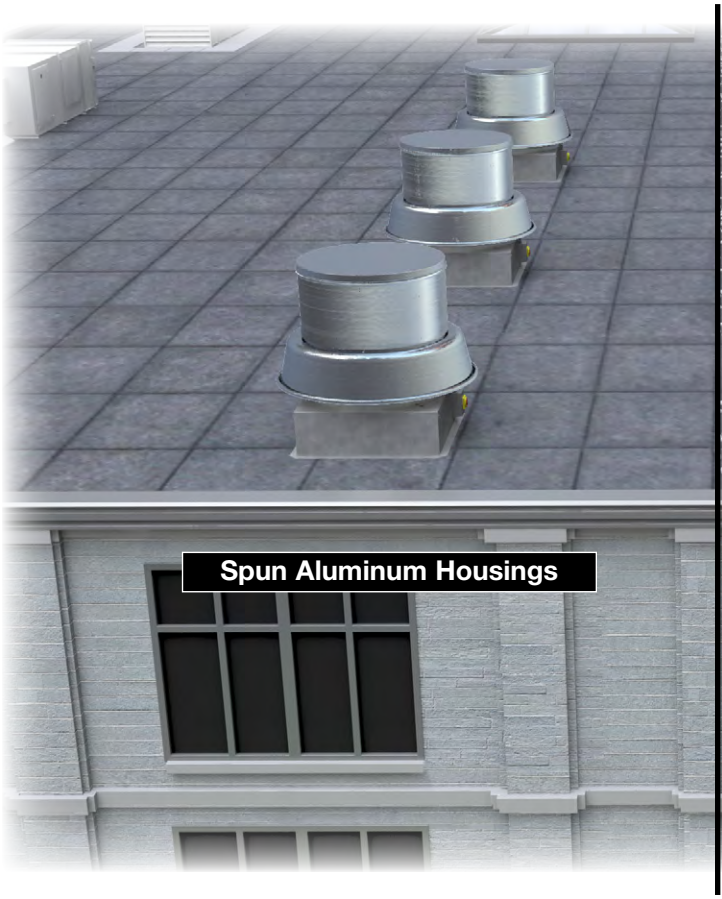
Model BCRD-E

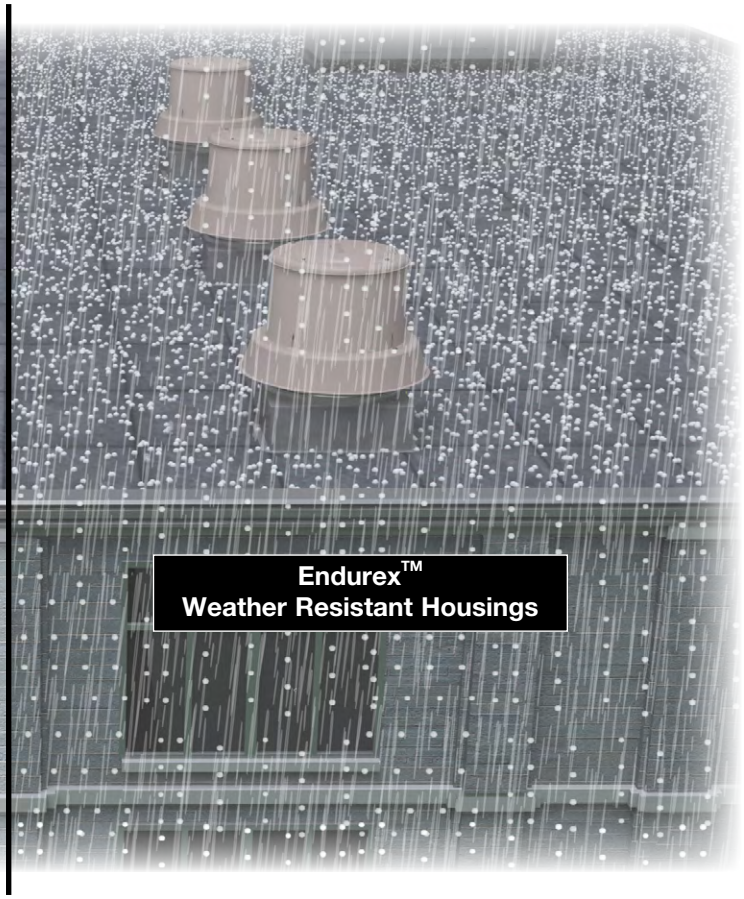
8.5" to 27.95" wheel diameters
Airflow to 8,700 CFM
Static pressure to 3.25" w.g.

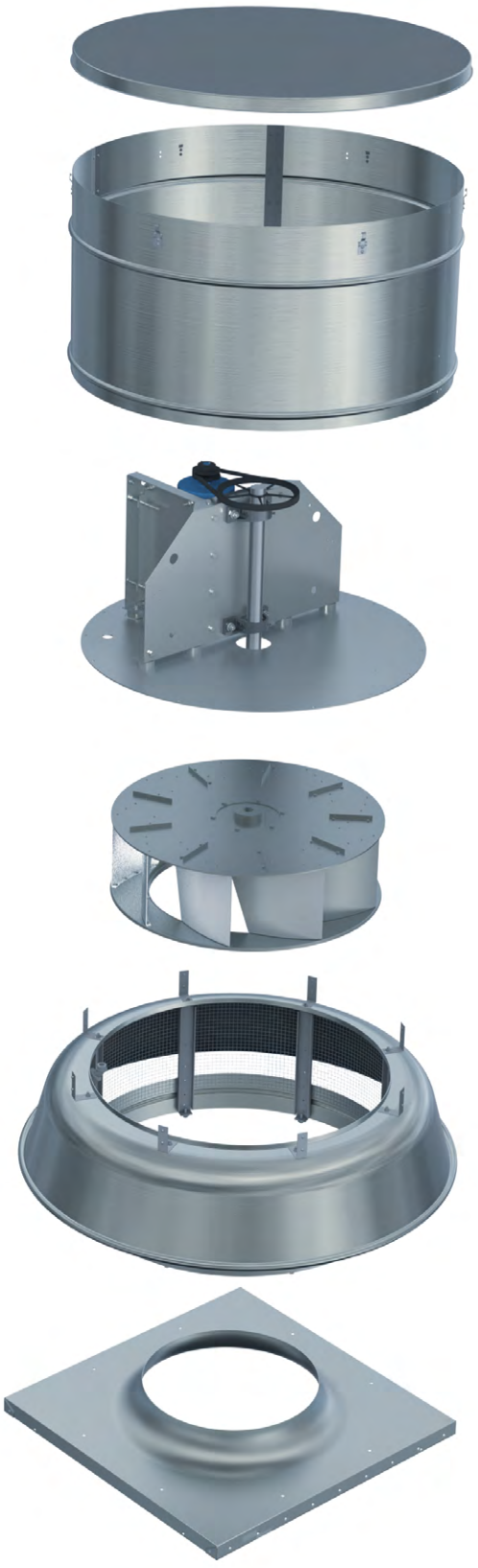


DCRD/BCRD
Spun Aluminum Housing

BCRD-E Belt Driven
Endurex™ Housing







Models

DCRD | BCRD | BCRD-E

Housings - BCRD & DCRD housings feature heavy gauge spun aluminum construction of the shroud and top cover. Shrouds feature a rolled bead edge for rigidity. Motor bands are constructed of heavy gauge aluminum, rolled and beaded for rigidity. All housings provide complete protection of the motor and drive assembly, while allowing quick access to these components.

Bearings - Heavy-duty re-greaseable pillow block ball bearings are specifically designed for air handling applications to provide an average life (L-50) of 500,000 hours or more at maximum cataloged operating speeds.

Shaft - Precision ground and polished with a first critical speed of at least 125% of the fan's maximum operating speed.

Drive - Adjustable pitch V-belt drives with cast iron sheaves and heat resistant belts are selected at 150% of the driven motor horsepower.

Motors - ODP, TEFC, and explosion proof, single and three phase motors are carefully matched to the fan load.

Vibration Isolation - Motor and drive assembly is completely isolated from the fan supports by rubber isolators to reduce transmission of noise and vibration.

Wheel - Quiet and efficient non-overloading wheels with backwardly curved blades are precisely matched to a deep spun venturi. All wheels are statically and dynamically balanced to ensure smooth and quiet operation.

Galvanized Bird Screen - Protects the wheel, inlet, and internal components from entry of birds.

Curb Cap - One-piece curb cap/inlet venturi assembly provides protection from weather. Prepunched mounting holes provide easy and accurate attachment to the roof curb.

Conduit Tubing - A conduit tube is furnished for running electrical wiring through the curb cap and into the motor compartment.

Disconnect Switch - Standard on all units. Fans are provided with a NEMA 1 type disconnect switch mounted in the motor compartment when ODP or TEFC motors are used. When explosion proof motors are specified, a NEMA 7/9 disconnect switch will be shipped loose for field mounting and wiring.

Model

BCRD-E

Endurex™ Construction Advantages

BCRD-E housings feature Endurex™ polymeric construction of the housing and top cover. The polymeric construction of Endurex™ provides the same long lasting characteristics as aluminum but with significantly improved impact, weather, corrosion, and UV resistance. To prove our confidence in Endurex™ we are providing a limited lifetime warranty on all Endurex™ housing components.

Impact Resistant - Housing will not dent or crack even in cold weather to -40ºF.

Weather Resistant - Resistant to storm damage caused by wind, hail and airborne objects.

Corrosion Resistant - Impervious to salt, airborne chemicals and normal weathering.

UV Resistant - UV inhibitors provide resistance to ultraviolet light for long years of service.

Resists Shipping Damage - Impossible to dent and alter housing shape caused by improper handling.

Safe Installation - Provides safe areas to grab for installation and maintenance without sharp metal edges.

Ease of Maintenance - Removable top cover provides for belt inspection and maintenance, while the one-piece construction provides easy removal and access to the wheel.

Twin City Fan & Blower's proprietary Endurex™ polymeric material

UL TESTING, ENDUREX™ HOUSINGS

The Endurex™ housing was tested by UL in accordance with UL 94, 746A, and 746C and is approved as UL 705 listed. The Endurex™ material underwent rigid testing per these standards, surpassing the requirements of the following:

Ultraviolet Light Exposure Testing – Samples were exposed to ultra violet light for an equivalent of 500,000 hours (90+ years) to provide the assurance that the material will last a lifetime.

Flammability Testing – Flame tests performed per UL 94, the most widely accepted flammability performance standards for plastic materials, gauged the material's ability to propagate or extinguish a flame once ignited.

Impact Resistance Testing – Tensile and izod impact tests measured the material's resistance to real life conditions such as falling objects, blows, collisions, drops, etc.

Functional Support Testing – Flexural and tensile strength tests to prove the material's structural stability and integrity.

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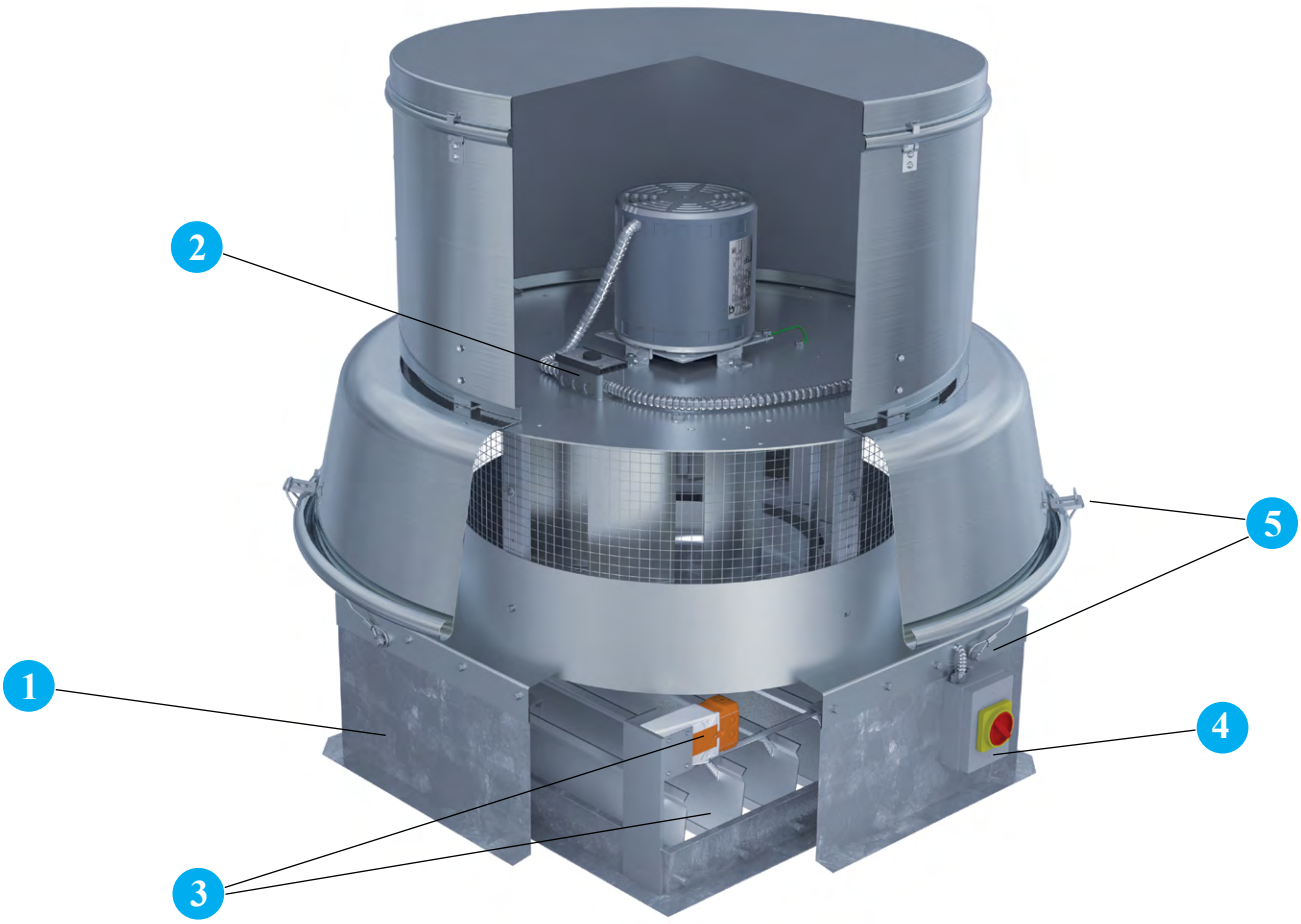
OPTIONS/ACCESSORIES



1 Self-Flashing Roof Curb Prefabricated roof curbs are available in heavy duty galvanized steel or aluminum construction, in heights of 8", 12" or 18". The self-flashing curb is provided with a factory installed $^{3}/_{16}$" polystyrene gasket. Curbs are provided with 1.5" of insulation as standard and feature continuously welded seams for added rigidity and moisture protection. Prefabricated curbs are also available in raised cant, pitched and peak models. Refer to Catalog 4910 for complete details on roof curb options. Minimum 12" high curbs are recommended for use with motorized dampers.

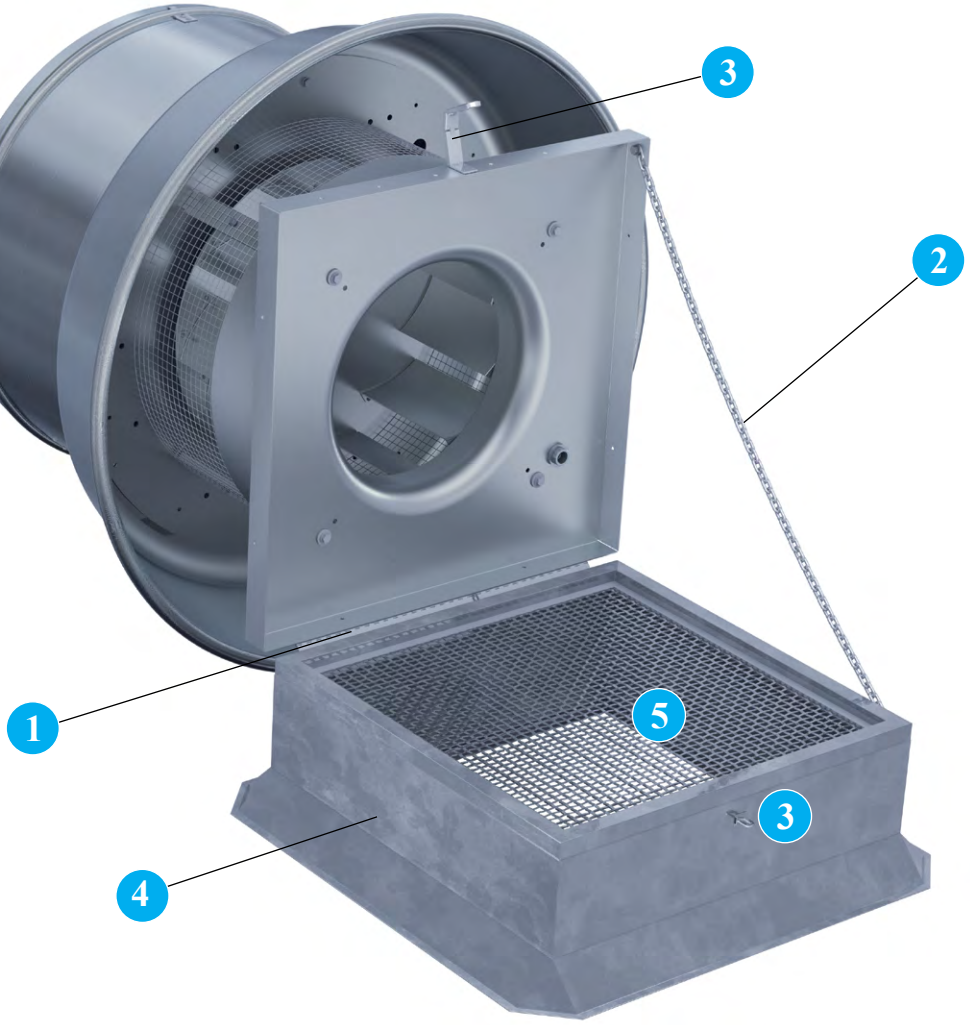
2 Variable Speed Control is an optional accessory on all DCRD models with 115 volt, open type motors, to allow the adjustment of airflow for system balancing. Variable speed controllers are solid-state (Tri-ac) design, and are designed to start the motor on high speed for better startup characteristics. Variable speed controls can be shipped separately, factory installed, or field installed on the unit at a later date. Motor must be ODP 115V, PSC or shaded pole type.

3 Backdraft Damper, with automatic or motorized operation, feature a felt seal on the edge of the damper blades for quiet operation. Damper frames are constructed of 19-gauge galvanized steel and blades are constructed of 26-gauge aluminum.

Motorized dampers are recommended for low CFM applications to assure unrestricted airflow. Motorized dampers are available with 115, 208, 230, 460, 575 or 24 volt service. End switches are available. When a motorized damper option is selected a 12" (or greater) high roof curb is required.

4 NEMA 4 Disconnect Switch provides positive electrical shutoff when fan cleaning or maintenance of fan and is water and dust tight. Switch is available shipped loose for field mounting and wiring or factory mounted and wired. NEMA 3R enclosure is also available.

5 Tie-Down Brackets A quantity of four brackets are mounted to the fan shroud to allow the fan to be secured to the roof in areas where high winds are a concern. Guy wires are supplied and installed by others.



1 **Curb Hinge** The curb hinge arrangement provides easy access to the exhaust fan, backdraft damper and duct for servicing and cleaning. The curb hinge is of the piano type, running the entire length of the fan's curb base. The curb hinge option ships loose and is designed for use with a standard canted curb only (1.5" less than fan base). This option cannot be used with self-flashing curbs.

2 **Retaining Chain** is available in conjunction with the curb hinge arrangement to stabilize the unit and to prevent damage from occurring to the unit while servicing and cleaning.

3 **Security Hasp** A security hasp is available in conjunction with the curb hinge arrangement to prevent removal of the unit from the unit curb cap and prevent entrance into the building through the roof's ductwork.

4 **Canted Roof Curb** Prefabricated roof curbs are available in heavy duty galvanized steel or aluminum construction, in heights of 8", 12" or 18". The canted curb is provided with a factory installed wood nailer. Curbs are provided with 1.5" of insulation as standard and feature continuously welded seams for added rigidity and moisture protection. Prefabricated curbs are also available in raised cant, pitched and peak models. Refer to Catalog 4910 for complete details on roof curb options. Minimum 12" high curbs are recommended for use with motorized dampers.

5 **Insect Screen** Provides protection from entry of insects into wheel, inlet and interior of building.

OPTIONS/ACCESSORIES

1 **Auto Belt Tensioner** Spring loaded pulley used for automatic belt tensioning. Eliminates the need for regular belt tensioning and extends belt life.

2 **Miami-Dade Construction** All sizes on model DCRD and sizes 070-360 on model BCRD are available with optional Miami-Dade Hurricane Construction. With this option, units are rated for wind loads up to 150 miles per hour. In conjunction with independent, licensed Florida Professional Engineers, these fans have undergone rigorous design, analysis and testing to ensure they meet the stringent product requirements of Miami-Dade County. Twin City Fan & Blower's NOA (Notice of Acceptance) number is 11-0126.08 and can be found on the Miami-Dade County website.

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OTHER OPTIONS/ACCESSORIES INCLUDE:

Special Coatings Powered roof exhausters often require special coatings for protective and decorative purposes. Available coatings include air-dried enamel, air-dried epoxy, and Heresite (air-dried phenolic). Contact your Twin City Fan & Blower sales representative for more information on available coatings and colors.

Straight-Sided Roof Curb Self-flashing style curb with factory installed wood nailer manufactured with the outside dimensions of a canted curb (1.50" less than fan curb cap inside dimension). Straight-sided curbs are available with all the same options as self-flashing and canted curbs. Refer to Catalog 4910 for complete details on roof curb options.

2-Speed Switch Two speed switch is available for 2 speed/2 winding motors to control the fan speed (high speed, low speed, off). Available on single phase, 1 HP and below.

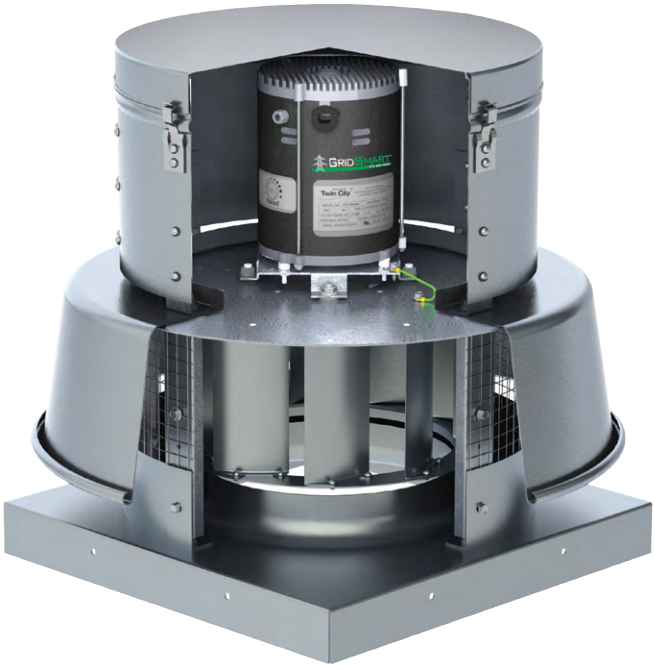
Firestat Designed to shut down fan in the event of a fire to prevent spreading. For use with single phase motors only. Available shipped loose for field mounting and wiring or factory mounted and wired.

AMCA Spark B Includes a non-ferrous (aluminum) wheel and an aluminum rubbing plate around the opening through which the shaft passes.

Performance Baffle Inlet plate with customized diameter to meet specific performance point. Ships loose for field mounting.

Twin City Fan & Blower offers its own line of custom engineered Electronically Commutated (EC) motors. Electronic commutation is the latest motor technology to be used in direct drive fans. Also known in the industry as Brush Free or Brushless DC, the EC motors utilize an electronic circuit board to control the functionality of the motor. The motor operates off of single phase AC power, which is converted to DC power within the motor's circuitry. Twin City Fan & Blower has motor options available for 115V, 208-230V or 277V single phase electrical power. The result is a highly efficient motor, even at part load, with an expanded speed control range and a variety of speed control options from which to choose. EC motors are available in ODP, TENV and TEFC enclosures.

GRIDSMART™ EC MOTORS



Model DCRD
With GridSmart™ EC Motor

Benefits

- Efficiencies up to 85%
- Constant efficiency as the motor speed is varied
- Up to 66% energy savings over traditional PSC motors
- Performance range comparable to a belt drive fan with reduced maintenance benefits of a direct drive fan
- 80% usable turndown range as compared with 40% maximum on PSC motors
- Soft start gives fans smooth, quiet start
- Lower operating temperatures result in longer life and reduces energy consumption
- Heavy-duty ball bearings are permanently lubricated
- Elimination of VFD results in lower initial cost

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EC Motor Options

1/6HP to 1HP

- 1/6HP: 115V, single phase
- 1/4HP – 1HP: 115V, 208-230V, 277V, single phase
- ODP or TENV Enclosure
- Motor mounted speed control dial as standard
- 0-10VDC control leads as standard
- Available with remote mounted speed control dial

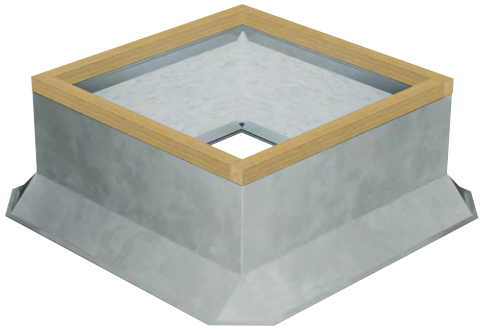
1HP & 2HP

- 1HP: 115V, 208-230V, single phase
- 2HP: 208-230V, single phase
- TEFC enclosure (totally enclosed fan cooled)
- Available with motor mounted speed dial or 0-10VDC control lead

1HP & 2HP
GridSmart™ EC Motors

1/6HP to 1HP
GridSmart™ EC Motors

Overview

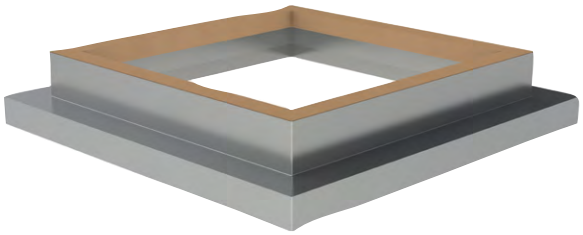


Canted Roof Curbs

- Constructed of 18-gauge galvanized steel with continuous welded seams
- Large 3" built-in 45° cant to accommodate roofing material to top of curb. Cant is beveled at corners for better support of roofing material
- Wood nailer (1½") secured to top ledge
- Lined with 1½" fiberglass fire-resistant, sound-absorbing insulation
- Damper shelf standard
- Options: Aluminum (16-gauge) construction, burglar security bars, metal liner (galvanized or aluminum), special heights up to 24", single or double pitched curbs for sloping roofs

Self-Flashing & Straight-Sided Roof Curbs

- Constructed of 18-gauge galvanized steel with continuous welded seams
- Wide base plate (flashing) to insure watertight seal to roof
- Top ledge covered with 3⁄16" polystyrene gasket (self-flashing) for weather seal and to reduce metal-to-metal conducted noise
- Wood nailer secured to top ledge (straight-sided)
- Lined with 1½" fiberglass fire-resistant, sound-absorbing insulation
- Damper shelf standard
- Straight-sided roof curbs are constructed with the same features as the self-flashing curbs, but are one dimensional to allow for field supplied cants and roofing material to be brought up to the top of the curb
- Options: Aluminum (16-gauge) construction, burglar security bars, metal liner (galvanized or aluminum), special heights up to 24", single or double pitched curbs for sloping roofs



Curb Adapters

- Constructed of heavy-gauge galvanized steel with continuous welded seams
- Top ledge covered with 3⁄16" polystyrene gasket to reduce metal-to-metal conducted noise and act as a weather seal
- Available in enlarger or reducer (shown) models

Overview

Disconnect switches provide positive electrical shutoff during fan cleaning or maintenance.

NEMA 1 Disconnect Switch (Standard)

A NEMA 1 disconnect switch is available shipped loose for field mounting and wiring or factory mounted and wired with ODP or TEFC motors.

NEMA 1 Disconnect Switch

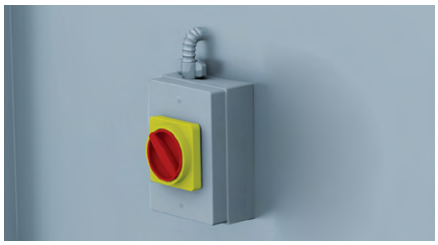
NEMA 3R Disconnect Switch

A NEMA 3R, rain proof, disconnect is available shipped loose for field mounting and wiring or factory mounted and wired externally.

NEMA 3R Disconnect Switch

NEMA 4 Disconnect Switch

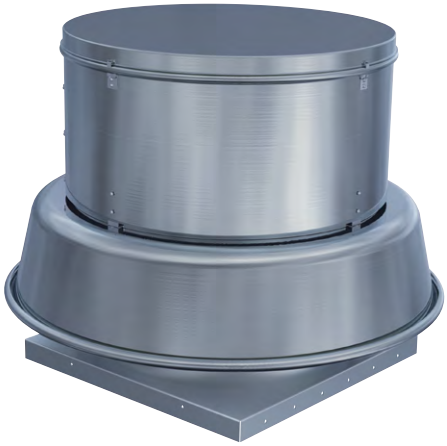
A NEMA 4, water and dust tight, disconnect is available shipped loose for field mounting and wiring or factory mounted and wired externally.



NEMA 4 Disconnect Switch

NEMA 7/9 Disconnect Switch

A NEMA 7/9 disconnect switch is recommended on fans with explosion proof motors. The NEMA 7/9 switch is designed for use with fans operating in hazardous environments. Available shipped loose for field mounting and wiring. (Not shown.)



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060B – 085B DCRD

EC MOTOR SIZE	EC MOTOR MTR HP	PSC MOTOR SIZE	PSC MOTOR MTR HP	RPM	STATIC PRESSURE (INCHES W.G.) 0	0.100	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
					CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone
060BE	1/6	060B	1/8	950	151 / 0.00 / 2.5	101 / 0.01 / 2.5	84 / 0.01 / 2.4							
				1150	183 / 0.01 / 3.5	145 / 0.01 / 3.2	133 / 0.01 / 3.4							
				1350	215 / 0.01 / 4.6	183 / 0.01 / 4.3	174 / 0.01 / 4.2	121 / 0.01 / 4.4						
				1425	227 / 0.02 / 5.1	197 / 0.02 / 5.1	189 / 0.02 / 4.8	141 / 0.02 / 5.0						
				1500	238 / 0.02 / 5.9	211 / 0.02 / 5.9	203 / 0.02 / 5.6	159 / 0.02 / 5.7	91 / 0.02 / 5.9					
				1575	250 / 0.02 / 5.9	224 / 0.02 / 6.6	217 / 0.02 / 6.7	176 / 0.02 / 6.2	124 / 0.02 / 5.9					
				1650	262 / 0.02 / 7.9	238 / 0.02 / 7.9	231 / 0.02 / 7.9	193 / 0.03 / 6.8	147 / 0.02 / 6.6					
		---	---	1750	278 / 0.03 / 8.7	255 / 0.03 / 8.7	249 / 0.03 / 8.7	214 / 0.03 / 7.5	173 / 0.03 / 7.9	114 / 0.03 / 7.4				
070BE	1/6	070B	1/8	950	238 / 0.01 / 3.2	149 / 0.01 / 2.9	123 / 0.01 / 2.9							
				1150	288 / 0.01 / 4.5	219 / 0.01 / 4.0	199 / 0.01 / 4.3							
				1350	338 / 0.01 / 5.6	281 / 0.02 / 5.2	266 / 0.02 / 5.1	176 / 0.02 / 5.2						
				1425	356 / 0.02 / 6.1	303 / 0.03 / 5.6	289 / 0.02 / 5.4	207 / 0.02 / 5.2						
				1500	375 / 0.02 / 6.5	324 / 0.02 / 6.4	312 / 0.02 / 6.2	235 / 0.02 / 6.1						
				1575	394 / 0.02 / 7.2	346 / 0.02 / 7.4	333 / 0.02 / 7.0	263 / 0.02 / 6.9	177 / 0.02 / 6.5					
				1650	412 / 0.02 / 8.5	367 / 0.03 / 8.5	355 / 0.03 / 8.0	289 / 0.03 / 7.7	214 / 0.03 / 7.1					
		---	---	1750	438 / 0.03 / 9.6	394 / 0.03 / 9.6	383 / 0.03 / 9.5	324 / 0.03 / 8.5	255 / 0.03 / 7.6					
080BE	1/6	080B	1/8	950	294 / 0.00 / 3.0	176 / 0.01 / 2.5	137 / 0.01 / 2.7							
				1150	356 / 0.01 / 4.4	262 / 0.01 / 3.9	236 / 0.01 / 4.1							
				1350	418 / 0.01 / 5.8	340 / 0.02 / 5.2	319 / 0.02 / 5.1	198 / 0.01 / 5.2						
				1425	442 / 0.01 / 6.4	367 / 0.02 / 5.8	348 / 0.02 / 5.6	240 / 0.02 / 5.6						
				1500	465 / 0.02 / 6.9	395 / 0.02 / 6.4	376 / 0.02 / 6.2	277 / 0.02 / 6.0						
				1575	488 / 0.02 / 7.4	422 / 0.02 / 7.2	404 / 0.02 / 6.7	312 / 0.02 / 6.9						
				1650	512 / 0.02 / 7.9	448 / 0.03 / 7.9	432 / 0.03 / 7.5	345 / 0.03 / 7.7	240 / 0.03 / 7.3					
		---	---	1750	542 / 0.03 / 8.9	483 / 0.03 / 8.9	468 / 0.03 / 8.4	387 / 0.03 / 8.4	296 / 0.03 / 7.9					
085BE	1/6	085B	1/8	950	401 / 0.02 / 4.0	331 / 0.02 / 3.4	311 / 0.02 / 3.4	185 / 0.02 / 3.4						
				1150	485 / 0.04 / 5.8	430 / 0.04 / 5.7	414 / 0.04 / 5.2	328 / 0.04 / 5.3	214 / 0.04 / 5.0					
				1350	570 / 0.06 / 7.7	524 / 0.06 / 7.7	512 / 0.06 / 7.7	443 / 0.06 / 6.6	364 / 0.06 / 7.0	268 / 0.06 / 6.7				
				1425	601 / 0.07 / 8.4	558 / 0.07 / 8.4	547 / 0.07 / 8.4	483 / 0.07 / 7.3	412 / 0.07 / 7.8	328 / 0.07 / 7.3	202 / 0.06 / 7.1			
				1500	633 / 0.08 / 8.9	592 / 0.08 / 8.9	581 / 0.08 / 8.9	522 / 0.08 / 7.9	457 / 0.09 / 8.4	381 / 0.08 / 7.6	291 / 0.08 / 7.9			
				1575	665 / 0.09 / 9.6	626 / 0.09 / 9.6	616 / 0.10 / 9.6	560 / 0.10 / 8.6	499 / 0.10 / 8.5	431 / 0.10 / 8.9	353 / 0.10 / 8.4	244 / 0.08 / 8.4		
				1650	696 / 0.10 / 10.2	660 / 0.11 / 10.2	650 / 0.11 / 10.2	596 / 0.11 / 9.6	540 / 0.11 / 9.1	479 / 0.11 / 9.6	407 / 0.10 / 9.0	325 / 0.11 / 9.1		
		---	---	1750	738 / 0.12 / 11.1	704 / 0.13 / 11.1	695 / 0.13 / 11.1	647 / 0.13 / 10.8	594 / 0.13 / 10.1	538 / 0.14 / 10.4	475 / 0.13 / 10.4	405 / 0.13 / 10.1	321 / 0.12 / 10.2	

EC Motor is an Electronically Commutated Motor.
PSC Motor is a Permanent Split Capacitor Motor.

NOTES:

1. The AMCA Seal for sound ratings does not apply to units with speed control.
2. Performance certified is for installation Type A: Free inlet, Free outlet.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301-90. Type A: Free inlet fan hemispherical sone levels.
5. Highlighted speeds indicate nominal speeds without speed control on PSC motors. All other speeds are intermediate speeds set with the solid-state speed controller.
6. 1/8 HP motor is 3-speed (1650 RPM/1500 RPM/1350 RPM).
7. Speed control on PSC motors is available for ODP 115/60/1 only. PSC motors are wired at either the 1650 or the 1500 RPM taps.

090B – 120B DCRD

EC MOTOR SIZE	EC MOTOR MTR HP	PSC MOTOR SIZE	PSC MOTOR MTR HP	RPM	STATIC PRESSURE (INCHES W.G.)									
					0	0.100	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
					CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
090BE	1/6	090B	1/8	950	519 0.02 4.0	430 0.02 3.5	403 0.02 3.5	235 0.02 3.5						
				1150	628 0.04 5.7	558 0.04 5.6	538 0.04 5.3	422 0.04 5.3	273 0.04 5.0					
				1350	737 0.06 7.6	679 0.06 7.6	663 0.06 7.6	574 0.07 6.8	467 0.07 6.8	340 0.07 6.8				
				1425	778 0.07 8.3	723 0.07 8.3	709 0.08 8.3	627 0.08 7.4	530 0.08 7.7	417 0.08 7.3	253 0.07 7.2			
				1500	819 0.08 8.9	767 0.09 8.9	754 0.09 8.9	678 0.09 8.1	589 0.10 8.4	488 0.09 7.7	370 0.09 8.0			
				1575	860 0.09 9.6	811 0.10 9.6	798 0.10 9.6	728 0.11 8.7	646 0.11 8.7	553 0.11 8.8	448 0.11 8.6	310 0.10 8.6		
				1650	901 0.11 10.4	854 0.11 10.4	842 0.11 10.4	776 0.12 9.8	701 0.13 9.3	616 0.13 9.8	521 0.12 9.2	413 0.12 9.5		
		---	---	1750	956 0.13 11.5	912 0.13 11.5	900 0.13 11.5	840 0.14 11.0	771 0.15 10.2	694 0.15 10.8	609 0.15 10.5	516 0.15 10.2	409 0.14 10.3	
095BE	1/4	095B	1/8	950	700 0.03 4.6	574 0.03 4.0	538 0.03 4.1	283 0.03 3.6						
				1150	848 0.04 6.6	747 0.05 6.3	719 0.05 6.0	564 0.05 6.0	323 0.04 5.3					
				1350	995 0.07 8.7	911 0.08 8.7	889 0.08 8.3	767 0.08 7.8	623 0.08 7.5	411 0.07 7.1				
				1425	1050 0.08 9.5	972 0.09 9.5	951 0.09 9.5	837 0.10 8.7	709 0.10 8.9	534 0.09 7.8	304 0.07 7.5			
				1500	1106 0.10 10.6	1031 0.11 10.6	1012 0.11 10.6	905 0.11 9.8	789 0.11 9.9	644 0.11 8.4	443 0.10 8.4			
				1575	1161 0.11 11.3	1090 0.12 11.3	1072 0.12 11.3	972 0.13 11.2	864 0.13 11.0	736 0.13 10.5	568 0.12 9.5	368 0.10 9.2		
				1650	1216 0.13 13.6	1149 0.14 13.6	1131 0.14 13.6	1038 0.15 12.8	936 0.15 11.7	823 0.15 12.4	682 0.15 10.1	497 0.13 10.1		
		---	---	1750	1290 0.16 14.9	1227 0.16 14.9	1210 0.17 14.9	1124 0.18 14.8	1029 0.18 13.2	929 0.18 13.5	812 0.18 12.8	661 0.17 11.5	483 0.15 11.4	
100BE	1/4	100B	1/15*	500	430 0.01 1.6									
				700	602 0.01 3.7	391 0.02 3.3	318 0.01 3.1							
				860	740 0.03 5.4	581 0.03 4.8	534 0.03 5.1	229 0.02 4.4						
			1/8*	1000	860 0.04 7.0	727 0.04 6.5	691 0.04 6.2	465 0.04 5.9						
				1160	998 0.06 9.0	885 0.07 8.6	855 0.07 8.5	687 0.07 8.5	467 0.06 7.7					
			1/3*	1450	1247 0.12 12.9	1158 0.13 12.9	1135 0.13 12.9	1015 0.13 11.6	877 0.13 12.4	713 0.13 11.4	524 0.12 11.6			
				1750	1505 0.22 17.5	1432 0.22 17.5	1413 0.22 17.5	1317 0.23 16.7	1216 0.23 16.0	1103 0.23 16.7	977 0.23 16.6	834 0.22 15.7	677 0.21 16.0	517 0.19 15.9
120BE	1/2	120B	1/15*	500	572 0.01 1.8									
				700	802 0.02 3.9	571 0.02 3.4	489 0.02 3.2							
				860	985 0.03 5.8	806 0.04 4.8	756 0.04 4.7	450 0.04 4.8						
			1/8*	1000	1145 0.05 7.2	995 0.06 6.7	955 0.06 6.3	723 0.07 6.4	418 0.06 6.4					
				1160	1328 0.08 9.4	1201 0.10 9.4	1168 0.10 9.0	985 0.10 8.3	768 0.10 8.0	496 0.09 8.2				
			1/3*	1450	1660 0.16 13.2	1560 0.18 13.2	1535 0.18 13.2	1399 0.19 11.9	1251 0.20 12.1	1085 0.20 12.5	902 0.19 11.8	682 0.18 11.9		
				1750	2004 0.29 18.0	1922 0.31 18.0	1901 0.31 18.0	1793 0.33 17.9	1678 0.34 16.4	1557 0.35 16.7	1427 0.35 17.7	1284 0.35 16.7	1132 0.34 15.7	968 0.33 16.3

EC Motor is an Electronically Commutated Motor.
PSC Motor is a Permanent Split Capacitor Motor.

* 3-phase units are supplied with 1/8 HP 860 RPM, 1/4 HP 1160 RPM and 1/2 HP 1750 RPM motors.

NOTES:

1. The AMCA Seal for sound ratings does not apply to units with speed control.
2. Performance certified is for installation Type A: Free inlet, Free outlet.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301-90. Type A: Free inlet fan hemispherical sone levels.
5. Highlighted speeds indicate nominal speeds without speed control on PSC motors. All other speeds are intermediate speeds set with the solid-state speed controller.
6. Speed control on PSC motors is available for ODP 115/60/1 only.

130B – 160B DCRD

EC MOTOR SIZE	EC MOTOR MTR HP	PSC MOTOR SIZE	PSC MOTOR MTR HP	RPM	STATIC PRESSURE (INCHES W.G.) 0	0.100	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
					CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone	CFM / BHP / Sone
130BE	3/4	130B	1/8	500	778 / 0.01 / 2.2	415 / 0.02 / 1.9	276 / 0.01 / 1.9							
				700	1089 / 0.04 / 5.2	865 / 0.04 / 4.6	804 / 0.04 / 4.9	364 / 0.04 / 4.5						
				860	1338 / 0.07 / 7.4	1163 / 0.07 / 7.0	1114 / 0.07 / 6.7	845 / 0.08 / 6.8	456 / 0.07 / 6.8					
			1/4	1000	1556 / 0.11 / 9.4	1408 / 0.11 / 9.4	1368 / 0.12 / 8.9	1157 / 0.12 / 9.4	895 / 0.12 / 9.0	552 / 0.11 / 9.0				
				1160	1805 / 0.17 / 12.1	1679 / 0.18 / 12.1	1646 / 0.18 / 12.1	1470 / 0.18 / 11.5	1282 / 0.19 / 12.9	1048 / 0.19 / 12.1	760 / 0.18 / 12.7			
			1/2	1450	2256 / 0.33 / 17.0	2156 / 0.34 / 17.0	2131 / 0.34 / 17.0	1998 / 0.35 / 17.2	1856 / 0.36 / 17.1	1709 / 0.37 / 18.0	1550 / 0.37 / 18.7	1362 / 0.37 / 17.2	1139 / 0.36 / 18.0	904 / 0.34 / 18.0
				1750	2723 / 0.58 / 22	2641 / 0.59 / 22	2620 / 0.59 / 22	2513 / 0.60 / 22	2402 / 0.62 / 23	2285 / 0.62 / 22	2164 / 0.63 / 23	2041 / 0.64 / 24	1910 / 0.65 / 25	1763 / 0.65 / 24
140BE	3/4	140B	1/8	500	884 / 0.02 / 2.9	502 / 0.02 / 2.1	344 / 0.02 / 2.1							
				700	1237 / 0.04 / 6.3	999 / 0.05 / 5.0	931 / 0.05 / 5.1	459 / 0.04 / 4.6						
				860	1520 / 0.08 / 9.0	1334 / 0.08 / 8.3	1283 / 0.08 / 7.8	994 / 0.09 / 7.5	573 / 0.08 / 7.0					
			1/4	1000	1767 / 0.13 / 11.0	1611 / 0.13 / 11.0	1569 / 0.13 / 10.6	1340 / 0.13 / 9.4	1067 / 0.13 / 8.7	688 / 0.12 / 9.1				
				1160	2050 / 0.20 / 14.3	1917 / 0.20 / 14.3	1882 / 0.20 / 14.3	1695 / 0.21 / 12.1	1488 / 0.21 / 12.3	1248 / 0.21 / 11.1	940 / 0.19 / 11.6			
		---	---	1450	2562 / 0.39 / 19.6	2458 / 0.39 / 19.6	2431 / 0.39 / 19.6	2290 / 0.4 / 18.9	2138 / 0.4 / 17.4	1977 / 0.41 / 17.3	1805 / 0.41 / 18.4	1612 / 0.41 / 17.3	1391 / 0.39 / 17.0	1117 / 0.38 / 17.0
				1750	3092 / 0.68 / 26	3006 / 0.69 / 26	2984 / 0.69 / 26	2872 / 0.70 / 26	2753 / 0.70 / 25	2628 / 0.71 / 24	2497 / 0.71 / 23	2362 / 0.72 / 23	2220 / 0.72 / 24	2068 / 0.72 / 24
150BE	1	150B	1/8	500	1192 / 0.03 / 3.1	714 / 0.03 / 2.4	571 / 0.03 / 2.6							
				700	1670 / 0.08 / 6.0	1350 / 0.08 / 5.2	1267 / 0.08 / 5.4	779 / 0.07 / 5.3						
				860	2051 / 0.14 / 8.6	1788 / 0.14 / 8.1	1725 / 0.15 / 7.7	1378 / 0.15 / 8.2	965 / 0.13 / 7.8					
			1/4	1000	2385 / 0.22 / 10.9	2157 / 0.22 / 10.9	2102 / 0.23 / 10.4	1822 / 0.23 / 9.8	1499 / 0.23 / 9.9	1142 / 0.21 / 10.0	766 / 0.19 / 10.1			
				1160	2767 / 0.34 / 13.8	2569 / 0.35 / 13.8	2521 / 0.35 / 13.8	2284 / 0.36 / 12.2	2035 / 0.36 / 13.0	1750 / 0.35 / 12.8	1445 / 0.34 / 12.6	1127 / 0.31 / 12.8	777 / 0.28 / 12.6	
	1	---	---	1400	3339 / 0.60 / 19.4	3175 / 0.61 / 19.4	3134 / 0.61 / 19.4	2935 / 0.62 / 18.3	2740 / 0.63 / 16.6	2535 / 0.63 / 17.1	2315 / 0.63 / 18.2	2068 / 0.62 / 16.9	1816 / 0.60 / 16.9	1557 / 0.58 / 17.5
	2			1750	4174 / 1.17 / 27	4042 / 1.18 / 27	4010 / 1.18 / 27	3847 / 1.20 / 27	3688 / 1.21 / 26	3532 / 1.22 / 24	3375 / 1.23 / 24	3210 / 1.24 / 24	3040 / 1.24 / 25	2859 / 1.23 / 26
160BE	1**	160B	1/4*	500	1394 / 0.04 / 4.3	936 / 0.04 / 3.6	792 / 0.04 / 3.3							
				700	1952 / 0.10 / 8.7	1661 / 0.12 / 7.6	1577 / 0.12 / 7.1	1089 / 0.12 / 6.9						
				860	2398 / 0.19 / 11.9	2171 / 0.21 / 11.9	2109 / 0.21 / 11.4	1755 / 0.22 / 10.3	1346 / 0.22 / 9.8	854 / 0.19 / 9.9				
			1/2*	1000	2788 / 0.30 / 14.2	2597 / 0.32 / 14.2	2546 / 0.32 / 14.2	2265 / 0.34 / 12.2	1941 / 0.35 / 13.0	1585 / 0.34 / 12.3	1197 / 0.31 / 12.9			
				1160	3234 / 0.46 / 17.5	3071 / 0.49 / 17.5	3028 / 0.49 / 17.5	2801 / 0.52 / 16.5	2546 / 0.54 / 15.7	2262 / 0.54 / 16.2	1956 / 0.54 / 15.4	1644 / 0.51 / 15.8	1278 / 0.47 / 15.9	
	2		---	1450	4043 / 0.91 / 25	3914 / 0.94 / 25	3881 / 0.94 / 25	3709 / 0.98 / 25	3525 / 1.01 / 23	3327 / 1.04 / 22	3114 / 1.06 / 22	2887 / 1.06 / 23	2647 / 1.06 / 23	2398 / 1.05 / 22
				1750	4879 / 1.59 / 34	4773 / 1.63 / 34	4746 / 1.64 / 34	4608 / 1.68 / 34	4464 / 1.73 / 34	4313 / 1.77 / 33	4153 / 1.81 / 31	3985 / 1.84 / 30	3810 / 1.86 / 29	3625 / 1.86 / 30

EC Motor is an Electronically Commutated Motor.
PSC Motor is a Permanent Split Capacitor Motor.

* 3-phase units are supplied with 1/2 HP 860 RPM and 1 HP 1160 RPM motors.
** Performance available with 1 HP 1160 RPM ECODP or 1 HP 1750 RPM ECTEFC motors. 1160 RPM maximum.

NOTES:
1. The AMCA Seal for sound ratings does not apply to units with speed control.
2. Performance certified is for installation Type A: Free inlet, Free outlet.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301-90. Type A: Free inlet fan hemispherical sone levels.
5. Highlighted speeds indicate nominal speeds without speed control on PSC motors. All other speeds are intermediate speeds set with the solid-state speed controller.
6. Speed control on PSC motors is available for ODP 115/60/1 only.

170B – 180B DCRD

EC MOTOR SIZE	EC MOTOR MTR HP	PSC MOTOR SIZE	PSC MOTOR MTR HP	RPM	STATIC PRESSURE (INCHES W.G.) 0	0.100	0.125	0.250	0.375	0.500	0.625	0.750	0.875	1.000
					CFM / BHP / Sone									
170BE	1	170B	1/4*	500	1669 / 0.05 / 4.0	1183 / 0.05 / 3.6	1031 / 0.05 / 3.3							
				700	2337 / 0.14 / 7.8	2015 / 0.14 / 7.1	1929 / 0.14 / 6.6	1421 / 0.14 / 6.1	845 / 0.13 / 6.4					
				860	2871 / 0.25 / 10.8	2613 / 0.26 / 10.8	2546 / 0.26 / 10.6	2185 / 0.27 / 9.6	1755 / 0.27 / 8.7	1293 / 0.25 / 9.2	750 / 0.21 / 8.7			
			1/2*	1000	3338 / 0.40 / 13.8	3118 / 0.40 / 13.8	3061 / 0.40 / 13.8	2768 / 0.42 / 12.2	2437 / 0.43 / 12.4	2063 / 0.42 / 11.5	1663 / 0.41 / 11.6	1260 / 0.38 / 12.2		
	1			1160	3872 / 0.62 / 17.4	3684 / 0.62 / 17.4	3636 / 0.63 / 17.4	3388 / 0.64 / 16.5	3128 / 0.66 / 15.4	2839 / 0.67 / 15.8	2521 / 0.66 / 15.7	2182 / 0.65 / 14.4	1837 / 0.63 / 15.3	1488 / 0.60 / 15.4
	2	---	---	1380	4606 / 1.04 / 22	4449 / 1.05 / 22	4409 / 1.05 / 22	4205 / 1.06 / 22	3995 / 1.08 / 21	3777 / 1.11 / 20	3542 / 1.12 / 20	3289 / 1.12 / 21	3021 / 1.12 / 21	2738 / 1.10 / 19.1
				1600	5341 / 1.63 / 28	5205 / 1.63 / 28	5171 / 1.63 / 28	4997 / 1.64 / 28	4819 / 1.66 / 28	4638 / 1.69 / 27	4451 / 1.72 / 26	4256 / 1.75 / 25	4048 / 1.75 / 26	3829 / 1.75 / 27
180BE	1	180B	1/2	500	2165 / 0.08 / 5.1	1660 / 0.08 / 4.5	1512 / 0.08 / 4.8	440 / 0.05 / 4.2						
				700	3031 / 0.21 / 9.8	2693 / 0.22 / 9.5	2601 / 0.22 / 9.0	2096 / 0.23 / 9.1	1496 / 0.21 / 9.2					
				860	3724 / 0.38 / 13.6	3454 / 0.40 / 13.6	3383 / 0.40 / 13.6	3005 / 0.41 / 12.4	2583 / 0.42 / 13.6	2115 / 0.41 / 12.8	1571 / 0.37 / 13.6			
			1	1000	4330 / 0.60 / 17.6	4100 / 0.62 / 17.6	4041 / 0.62 / 17.6	3729 / 0.64 / 17.1	3392 / 0.65 / 16.5	3025 / 0.66 / 17.5	2631 / 0.65 / 16.8	2195 / 0.62 / 17.1	1696 / 0.57 / 17.1	879 / 0.43 / 15.3
				1160	5023 / 0.94 / 23	4826 / 0.96 / 23	4776 / 0.96 / 23	4515 / 0.98 / 23	4239 / 1.00 / 21	3945 / 1.02 / 21	3633 / 1.02 / 22	3304 / 1.02 / 22	2954 / 1.01 / 20	2575 / 0.97 / 21
	2	---	---	1230	5326 / 1.12 / 25	5141 / 1.14 / 25	5094 / 1.14 / 25	4850 / 1.17 / 25	4594 / 1.19 / 24	4323 / 1.20 / 23	4038 / 1.22 / 23	3737 / 1.22 / 25	3422 / 1.22 / 24	3088 / 1.20 / 23
				1300	5629 / 1.32 / 27	5454 / 1.34 / 27	5410 / 1.35 / 27	5181 / 1.37 / 27	4942 / 1.39 / 27	4691 / 1.41 / 25	4428 / 1.43 / 25	4151 / 1.44 / 26	3862 / 1.44 / 26	3561 / 1.43 / 25

EC Motor is an Electronically Commutated Motor.
PSC Motor is a Permanent Split Capacitor Motor.

* 3-phase units are supplied with 1/2 HP 860 RPM and 1 HP 1160 RPM motors.

NOTES:

1. The AMCA Seal for sound ratings does not apply to units with speed control.
2. Performance certified is for installation Type A: Free inlet, Free outlet.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301-90. Type A: Free inlet fan hemispherical sone levels.
5. Highlighted speeds indicate nominal speeds without speed control on PSC motors. All other speeds are intermediate speeds set with the solid-state speed controller.
6. Speed control on PSC motors is available for ODP 115/60/1 only.

TCF
TWIN CITY FAN

070D BCRD/BCRD-E

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	0.875	1.00	1.125	1.25	1.375
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	795	180 0.01 4.0	85 0.01 4.0										
	1125	254 0.02 7.4	197 0.02 7.4	120 0.02 7.4									
	1375	311 0.03 4.4	263 0.03 6.5	214 0.03 8.4	145 0.03 9.1								
	1590	359 0.05 5.5	316 0.05 6.3	279 0.05 7.4	234 0.05 8.2	169 0.04 8.4							
	1775	401 0.06 6.5	362 0.06 6.6	329 0.06 6.8	290 0.06 7.3	251 0.06 7.9	187 0.06 7.9						
	1945	440 0.08 7.4	403 0.08 7.4	372 0.08 7.0	340 0.08 6.9	303 0.08 7.7	267 0.08 8.0	206 0.08 7.8					
	2100	475 0.10 8.6	441 0.10 8.7	411 0.10 8.1	383 0.11 7.9	350 0.11 8.4	316 0.11 9.0	282 0.11 9.2	222 0.10 9.1				

MAXIMUM MOTOR FRAME SIZE: 48

075D BCRD/BCRD-E

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	0.875	1.00	1.125	1.25	1.375
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	940	322 0.02 3.7	217 0.02 3.5										
	1060	363 0.02 4.4	278 0.02 4.5										
	1180	404 0.03 5.0	327 0.03 4.7	214 0.03 4.7									
	1300	445 0.04 5.5	372 0.04 5.2	291 0.05 5.3									
	1420	486 0.05 6.0	419 0.06 6.0	355 0.06 5.6	242 0.06 5.4								
	1540	527 0.06 6.6	467 0.07 6.6	412 0.07 6.2	327 0.08 6.5	167 0.06 5.6							
	1660	568 0.08 7.5	514 0.09 7.5	459 0.09 7.0	393 0.09 7.4	296 0.09 6.7							
	1780	609 0.10 8.5	560 0.11 8.5	504 0.11 8.0	456 0.11 7.9	378 0.12 8.4	260 0.11 7.5						
	1900	650 0.12 9.4	605 0.13 9.4	550 0.14 9.2	510 0.14 8.7	445 0.14 9.2	365 0.14 8.9	225 0.12 8.1					

MAXIMUM MOTOR FRAME SIZE: 48

085D BCRD/BCRD-E

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	0.875	1.00	1.125	1.25	1.50
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	715	325 0.01 4.1	229 0.01 2.6										
	975	444 0.02 7.4	388 0.02 5.6	297 0.02 4.7									
	1200	546 0.03 9.9	504 0.04 9.6	445 0.04 6.5	368 0.04 6.4	232 0.03 4.8							
	1450	660 0.06 13.1	627 0.06 13.1	587 0.06 10.9	533 0.07 8.7	472 0.07 9.1	393 0.07 6.9						
	1600	728 0.08 14.7	699 0.08 14.7	665 0.08 13.5	622 0.09 10.8	570 0.09 9.9	513 0.09 10.2	441 0.09 8.2	332 0.08 7.4				
	1750	796 0.10 16.1	770 0.11 16.1	740 0.11 16.1	705 0.11 13.2	661 0.11 11.1	613 0.12 11.2	560 0.12 11.5	496 0.12 9.4	412 0.11 8.3			
	1880	855 0.13 16.8	831 0.13 16.8	804 0.13 16.8	773 0.14 15.1	737 0.14 12.7	693 0.14 11.5	648 0.14 12.1	598 0.14 11.9	538 0.14 10.5	464 0.14 8.9		
	2075	944 0.17 18.4	922 0.18 18.4	898 0.18 18.4	872 0.18 17.7	843 0.18 15.8	808 0.19 13.6	769 0.19 12.5	728 0.19 13.0	685 0.19 13.3	635 0.19 12.4	578 0.19 10.8	
	2280	1037 0.23 19.3	1017 0.23 19.3	996 0.24 19.3	973 0.24 19.3	949 0.24 18.1	921 0.24 16.2	890 0.25 14.7	854 0.25 13.7	817 0.25 13.7	779 0.26 14.1	738 0.26 14.0	639 0.25 11.9

MAXIMUM MOTOR FRAME SIZE: 48

NOTES:
1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Values shown are for installation Type A: Free inlet fan hemispherical sone levels.

100D BCRD/BCRD-E

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	0.875	1.00	1.125	1.25	1.375
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	775	725 0.03 4.8	591 0.03 4.2	448 0.03 3.9									
	925	865 0.05 6.5	749 0.06 5.7	651 0.06 6.3	498 0.06 5.4								
	1250	1169 0.13 10.0	1080 0.14 10.1	999 0.14 8.7	924 0.14 9.3	856 0.15 10.0	755 0.15 8.2						
	1510	1412 0.23 14.0	1337 0.24 14.0	1267 0.24 12.3	1202 0.25 11.6	1139 0.25 11.8	1081 0.26 12.7	1024 0.26 12.7	946 0.26 10.8	812 0.25 10.4			
1/3	1590	1487 0.26 14.9	1416 0.27 14.9	1349 0.28 13.6	1285 0.29 12.6	1225 0.29 12.5	1167 0.30 13.3	1114 0.30 14.1	1057 0.30 13.5	970 0.30 11.0	834 0.29 11.2		
	1665	1557 0.30 16.1	1489 0.31 16.1	1424 0.32 14.9	1363 0.33 13.8	1305 0.33 13.3	1248 0.34 13.6	1196 0.34 14.5	1145 0.35 15.0	1085 0.35 13.7	990 0.34 12.1	851 0.33 12.2	

MAXIMUM MOTOR FRAME SIZE: 56

100DHP BCRD/BCRD-E

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0.50	0.625	0.75	0.875	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	1275	331 0.04 5.4											
	1400	436 0.06 8.3	344 0.06 6.3										
	1600	570 0.09 9.9	513 0.09 10.2	441 0.09 8.2	332 0.08 7.4								
	1820	702 0.13 11.9	657 0.13 11.3	608 0.13 11.6	553 0.13 11.2	484 0.13 8.7							
	2280	949 0.24 18.1	921 0.24 16.2	890 0.25 14.7	854 0.25 13.7	817 0.25 13.7	738 0.26 14.0	639 0.25 11.9	499 0.24 10.8				
1/3	2415	1016 0.29 19.5	992 0.29 18.3	965 0.29 16.4	933 0.30 15.3	899 0.30 14.4	829 0.30 14.8	748 0.31 14.8	647 0.30 11.9	495 0.28 11.4			
	2550	1083 0.33 22	1061 0.34 21	1037 0.34 18.7	1010 0.35 17.4	979 0.35 16.3	914 0.36 15.6	844 0.36 16.4	763 0.36 15.3	662 0.35 12.6	502 0.32 12.5		
1/2	2725	1169 0.41 24	1149 0.41 24	1128 0.41 23	1105 0.42 21	1079 0.42 19.4	1020 0.43 17.5	958 0.44 17.6	892 0.44 17.9	815 0.44 16.9	722 0.43 14.1	596 0.41 14.1	
	2900	1254 0.49 27	1235 0.49 27	1216 0.49 26	1196 0.50 24	1174 0.50 23	1123 0.51 20	1066 0.52 19.3	1008 0.53 19.5	944 0.53 20	872 0.53 18.9	786 0.52 16.4	681 0.51 15.8

MAXIMUM MOTOR FRAME SIZE: 56

120D BCRD/BCRD-E

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	0.875	1.00	1.125	1.25	1.50
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	575	745 0.02 3.1	563 0.02 2.7										
	825	1068 0.06 6.3	940 0.06 5.4	817 0.07 5.6	633 0.07 4.9								
	1050	1360 0.12 9.2	1255 0.12 8.7	1163 0.13 7.9	1067 0.13 7.9	942 0.14 8.2							
	1300	1684 0.22 12.6	1598 0.23 12.6	1517 0.24 11.5	1444 0.25 10.8	1371 0.25 10.7	1284 0.26 11.3	1181 0.26 11.3	1068 0.26 10.1				
1/3	1365	1768 0.25 13.6	1686 0.27 13.6	1609 0.28 12.7	1537 0.28 11.7	1469 0.29 11.6	1393 0.30 11.7	1302 0.30 12.3	1200 0.30 11.7	1084 0.30 10.3			
	1430	1852 0.29 14.5	1774 0.30 14.5	1699 0.32 13.8	1629 0.32 12.9	1565 0.33 12.4	1497 0.34 12.5	1417 0.34 13.1	1324 0.35 13.3	1226 0.35 12.5	1099 0.34 11.3		
1/2	1540	1994 0.36 16.4	1921 0.38 16.4	1852 0.39 15.7	1785 0.40 14.7	1723 0.41 13.9	1663 0.42 13.8	1598 0.42 14.0	1523 0.43 14.7	1437 0.43 14.8	1346 0.43 14.0	1245 0.43 12.6	
	1650	2137 0.45 17.9	2068 0.46 17.9	2003 0.48 17.9	1940 0.49 16.8	1880 0.50 15.9	1824 0.51 15.5	1767 0.51 15.1	1705 0.52 15.6	1634 0.53 16.0	1555 0.53 16.5	1470 0.53 15.9	1265 0.53 13.5

MAXIMUM MOTOR FRAME SIZE: 56

NOTES:
1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Values shown are for installation Type A: Free inlet fan hemispherical sone levels.

140D BCRD/BCRD-E

Outlet Area = 2.34 ft² **Fan Efficiency Grade: FEG67**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.5	0.625	0.75	0.875	1.00	1.25	1.50	1.75
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	475	850 0.02 2.2	584 0.02 2.0										
	550	984 0.03 3.2	762 0.03 3.0										
	825	1477 0.09 6.8	1345 0.10 6.7	1183 0.11 6.2	1017 0.11 6.2								
	1105	1978 0.22 11.0	1883 0.24 11.0	1779 0.25 10.5	1659 0.25 9.6	1536 0.26 10.2	1415 0.26 10.3	1264 0.26 8.7					
1/3	1165	2085 0.26 12.0	1996 0.28 12.0	1898 0.29 11.6	1788 0.30 10.7	1670 0.30 10.8	1558 0.30 11.6	1433 0.30 10.6					
	1225	2193 0.30 13.0	2108 0.32 13.0	2016 0.33 13.0	1915 0.34 11.7	1803 0.35 11.6	1694 0.35 12.3	1586 0.35 12.4	1457 0.35 11.1				
1/2	1310	2345 0.37 14.4	2266 0.39 14.4	2181 0.41 14.8	2091 0.42 13.8	1989 0.42 13.3	1883 0.43 13.4	1783 0.43 14.2	1681 0.43 13.9	1559 0.43 12.1			
	1400	2506 0.45 16.2	2432 0.47 16.2	2354 0.49 16.2	2272 0.51 16.1	2181 0.51 15.6	2083 0.52 15.2	1985 0.52 15.4	1892 0.52 16.3	1796 0.53 15.9	1544 0.52 12.7		
3/4	1500	2685 0.55 19.0	2616 0.58 19.0	2544 0.60 19.0	2469 0.61 18.6	2388 0.63 17.9	2300 0.63 16.9	2208 0.64 16.7	2117 0.64 17.3	2031 0.64 17.9	1840 0.65 16.2		
	1605	2873 0.68 21	2809 0.70 21	2742 0.73 21	2673 0.75 21	2600 0.76 19.9	2522 0.77 18.8	2438 0.78 18.5	2351 0.78 18.2	2266 0.79 18.9	2104 0.79 19.4	1911 0.79 16.9	
1	1685	3016 0.79 23	2955 0.81 23	2892 0.84 23	2827 0.86 23	2758 0.88 22	2687 0.89 21	2609 0.90 19.7	2527 0.90 19.5	2445 0.91 19.6	2288 0.91 21	2125 0.92 19.9	1921 0.91 16.7
	1765	3159 0.90 24	3101 0.93 24	3041 0.96 24	2979 0.98 24	2915 1.00 24	2848 1.02 23	2777 1.03 22	2701 1.03 21	2622 1.04 21	2468 1.05 22	2320 1.05 22	2150 1.05 20

MAXIMUM MOTOR FRAME SIZE: 143T

140DHP BCRD/BCRD-E

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0.50	0.625	0.75	0.875	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	1310	499 0.07 6.4											
	1750	870 0.17 11.6	811 0.17 12.2	747 0.17 12.4	677 0.17 10.9	600 0.16 10.4							
	2015	1069 0.25 14.7	1018 0.26 13.9	966 0.26 14	913 0.26 14.9	857 0.26 15.0	731 0.25 12.4						
1/3	2125	1147 0.30 16.4	1101 0.30 15.2	1052 0.30 15	1003 0.30 15.3	952 0.30 16.1	841 0.30 14.7	715 0.29 13.8					
	2235	1224 0.34 17.8	1182 0.35 16.9	1136 0.35 16	1089 0.35 16	1043 0.35 16.5	943 0.35 16.7	830 0.34 14.2					
1/2	2400	1337 0.42 21	1300 0.42 19.7	1259 0.43 18.8	1217 0.43 17.9	1173 0.43 17.8	1085 0.43 19.1	989 0.43 18.5	882 0.43 15.7				
	2560	1445 0.51 23	1411 0.51 23	1375 0.52 22	1337 0.52 21	1296 0.52 19.9	1215 0.53 20	1130 0.53 21	1039 0.52 20	937 0.52 17.4	825 0.5 18.3		
3/4	2790	1597 0.65 28	1567 0.66 26	1536 0.66 26	1503 0.67 25	1468 0.67 24	1394 0.68 23	1319 0.68 23	1242 0.68 24	1159 0.68 24	1070 0.67 21	973 0.66 21	
	2920	1682 0.74 29	1654 0.75 29	1625 0.76 28	1594 0.76 27	1562 0.77 26	1493 0.78 25	1422 0.78 24	1349 0.78 25	1274 0.78 26	1194 0.78 25	1107 0.77 22	1014 0.76 22

MAXIMUM MOTOR FRAME SIZE: 56

NOTES:
1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Values shown are for installation Type A: Free inlet fan hemispherical sone levels.

160D BCRD/BCRD-E

Outlet Area = 2.53 ft² **Fan Efficiency Grade: FEG75**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	0.875	1.00	1.25	1.50	1.75
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	475	1321 0.03 3.2	1001 0.04 2.8										
	625	1738 0.07 5.5	1519 0.08 4.8	1235 0.08 4.9									
	775	2155 0.13 7.9	1987 0.14 7.6	1783 0.15 6.5	1551 0.15 7.0	1199 0.15 5.8							
	930	2586 0.23 10.6	2449 0.24 10.6	2296 0.25 9.6	2117 0.26 8.7	1927 0.26 9.2	1697 0.26 9.1						
1/3	975	2711 0.26 11.4	2582 0.27 11.4	2438 0.28 10.4	2273 0.30 9.7	2093 0.30 9.8	1898 0.30 10.0	1634 0.30 8.8					
	1020	2837 0.30 12.1	2713 0.31 12.1	2578 0.32 11.5	2425 0.33 10.4	2255 0.34 10.0	2078 0.35 10.6	1865 0.34 10.3	1547 0.33 9.0				
1/2	1100	3059 0.38 13.3	2945 0.39 13.3	2822 0.40 13.0	2687 0.41 12.0	2535 0.43 11.2	2376 0.43 11.4	2209 0.44 12.0	2006 0.43 11.5	1724 0.42 10.1			
	1180	3282 0.46 14.5	3176 0.48 14.5	3063 0.49 14.5	2942 0.50 13.6	2807 0.52 12.7	2661 0.53 12.3	2512 0.54 12.8	2354 0.54 13.2	2164 0.53 12.6			
3/4	1260	3504 0.57 16.2	3405 0.58 16.2	3301 0.59 16.2	3190 0.61 15.4	3070 0.62 14.5	2938 0.64 13.7	2800 0.65 13.6	2660 0.65 14.1	2510 0.65 14.5	2116 0.64 13.0		
	1340	3727 0.68 17.6	3634 0.70 17.6	3537 0.71 17.6	3435 0.73 17.2	3326 0.74 16.2	3207 0.76 15.3	3080 0.77 14.7	2949 0.78 14.7	2817 0.79 15.5	2515 0.78 15.5	2059 0.75 13.8	
1	1405	3907 0.78 18.6	3819 0.8 18.6	3727 0.82 18.6	3631 0.83 18.6	3529 0.85 17.8	3420 0.86 16.7	3303 0.88 16.3	3179 0.89 15.8	3054 0.90 16.2	2791 0.91 17.2	2453 0.89 16.5	
	1475	4102 0.91 20	4018 0.92 20	3931 0.94 20	3840 0.96 19.7	3745 0.97 19.4	3645 0.99 18.4	3537 1.01 17.6	3422 1.02 16.9	3304 1.04 16.8	3063 1.05 17.9	2786 1.05 18.2	2410 1.02 16.0

MAXIMUM MOTOR FRAME SIZE: 143T

160DHP BCRD/BCRD-E

Outlet Area = 2.53 ft² **Fan Efficiency Grade: FEG63**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0.50	0.625	0.75	0.875	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	1100	1021 0.16 8.7	872 0.15 7.6										
	1225	1231 0.21 9.8	1133 0.21 10.2	1003 0.21 9.3	826 0.21 8.4								
	1300	1352 0.25 10.2	1263 0.25 11.1	1162 0.26 11.1	1029 0.26 9.8	850 0.24 9.0							
1/3	1370	1464 0.29 11.0	1377 0.29 11.7	1291 0.30 12.4	1186 0.30 11.8	1051 0.30 9.7							
	1435	1567 0.34 11.7	1482 0.33 12.0	1401 0.34 12.7	1314 0.34 12.8	1204 0.35 12.2							
1/2	1545	1737 0.42 13.4	1658 0.42 12.9	1580 0.42 13.4	1505 0.42 14.2	1425 0.43 14.4	1208 0.43 11.9						
	1655	1902 0.52 14.6	1830 0.52 14.4	1757 0.51 14.4	1685 0.51 14.9	1615 0.52 15.8	1454 0.53 15.5	1229 0.52 12.5					
3/4	1770	2071 0.63 16.7	2006 0.64 16.2	1938 0.63 16.1	1869 0.63 16.1	1802 0.63 16.5	1669 0.64 17.4	1503 0.65 16.5	1280 0.63 13.6				
	1890	2244 0.77 18.6	2185 0.77 17.9	2123 0.77 17.4	2059 0.77 17.9	1995 0.76 17.3	1871 0.77 18.4	1741 0.79 18.9	1575 0.79 17.6	1362 0.77 14.8			
1	1980	2372 0.88 20	2317 0.89 19.7	2259 0.89 18.9	2199 0.89 18.7	2138 0.88 18.5	2017 0.88 18.8	1899 0.90 20	1764 0.91 20	1590 0.90 17.7	1374 0.88 16.3		
	2075	2506 1.01 21	2454 1.02 21	2401 1.02 21	2345 1.02 19.9	2287 1.02 19.8	2169 1.01 19.8	2057 1.02 21	1941 1.04 22	1801 1.05 21	1626 1.04 18.5	1410 1.00 17.4	

MAXIMUM MOTOR FRAME SIZE: 143T

NOTES:
1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Values shown are for installation Type A: Free inlet fan hemispherical sone levels.

TCF
TWIN CITY FAN

180D BCRD/BCRD-E

Outlet Area = 3.37 ft² **Fan Efficiency Grade: FEG60**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.5	0.75	1.00	1.25	1.50	1.75	2.00	2.25
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	475	2320 0.08 5.5	1826 0.09 4.2	1376 0.10 4.5									
	575	2809 0.15 8.0	2389 0.16 6.5	2036 0.17 6.4	1632 0.17 6.2								
	660	3224 0.22 9.9	2857 0.24 8.9	2516 0.25 7.7	2225 0.26 8.3	1852 0.26 7.9							
1/3	690	3371 0.25 10.6	3020 0.27 9.6	2685 0.29 8.2	2409 0.30 8.8	2084 0.30 9.0							
	725	3542 0.29 11.4	3207 0.31 10.8	2882 0.33 8.9	2613 0.34 9.3	2328 0.35 10.0							
1/2	780	3810 0.37 13.0	3498 0.39 12.3	3192 0.41 10.4	2924 0.42 10	2681 0.43 11.1	2019 0.43 9.5						
	830	4055 0.44 14.3	3761 0.47 13.9	3472 0.48 11.8	3203 0.50 11.2	2977 0.51 11.8	2440 0.53 12.1						
3/4	890	4348 0.54 15.8	4073 0.57 15.8	3804 0.59 13.9	3541 0.61 12.6	3316 0.62 12.6	2864 0.64 14.0	2229 0.63 11.3					
	950	4641 0.66 17.6	4383 0.69 17.6	4131 0.71 15.9	3880 0.73 14.2	3652 0.75 14.0	3250 0.77 15.0	2752 0.79 15.0	1968 0.71 12.1				
1	1000	4885 0.77 19.0	4640 0.80 19	4400 0.83 17.2	4160 0.85 15.7	3933 0.87 15.0	3550 0.90 15.8	3119 0.92 17.0	2540 0.89 14.2				
	1045	5105 0.88 20	4870 0.91 20	4640 0.94 19.1	4411 0.96 17.2	4187 0.98 16.1	3808 1.01 16.6	3422 1.04 17.9	2940 1.05 17.0	2215 0.95 14.2			
1-1/2	1120	5471 1.08 22	5252 1.12 22	5036 1.15 22	4823 1.18 20	4610 1.20 18.8	4229 1.23 17.9	3894 1.26 19.1	3501 1.29 20	3010 1.28 18.0	2273 1.15 15.8		
	1195	5838 1.32 25	5632 1.35 25	5429 1.39 25	5230 1.42 23	5028 1.44 21	4649 1.48 19.7	4331 1.52 20	3998 1.55 22	3608 1.57 22	3117 1.54 19.5	2397 1.39 17.6	
2	1255	6131 1.53 27	5935 1.56 27	5741 1.60 27	5551 1.63 25	5360 1.66 23	4988 1.71 22	4670 1.75 21	4370 1.78 22	4026 1.81 24	3627 1.82 23	3115 1.75 20	
	1315	6424 1.76 29	6237 1.80 29	6052 1.83 29	5869 1.87 27	5688 1.90 26	5326 1.95 23	5005 1.99 23	4722 2.03 23	4417 2.06 25	4071 2.09 26	3662 2.08 24	3137 1.99 21

MAXIMUM MOTOR FRAME SIZE: 145T

180DHP BCRD/BCRD-E

Outlet Area = 3.37 ft² **Fan Efficiency Grade: FEG67**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	775	1089 0.14 6.9											
	890	1597 0.22 9.9											
	935	1755 0.26 10.5	1260 0.25 8.6										
1/3	980	1900 0.30 10.8	1488 0.30 10.8										
	1025	2035 0.34 11.6	1700 0.34 12.3										
1/2	1105	2260 0.42 12.9	2010 0.43 13.7	1585 0.42 12.0									
	1185	2476 0.51 14.8	2280 0.53 14.8	1969 0.53 15.3	1502 0.50 12.0								
3/4	1270	2701 0.63 16.9	2535 0.64 15.9	2300 0.65 16.9	1945 0.65 15.6	1451 0.59 12.8							
	1355	2925 0.76 18.7	2772 0.78 17.4	2590 0.79 17.5	2325 0.79 18.4	1950 0.78 15.5							
1	1420	3096 0.87 20	2948 0.89 18.7	2792 0.90 18.4	2572 0.91 19.5	2270 0.91 18.5	1880 0.87 14.6						
	1490	3281 1.00 22	3135 1.02 19.8	2994 1.04 19.2	2814 1.05 20	2569 1.05 20	2238 1.04 18.1	1843 0.98 15.4					
1-1/2	1595	3557 1.21 25	3413 1.24 22	3284 1.26 21	3143 1.28 21	2957 1.29 22	2718 1.29 22	2404 1.28 20	2046 1.22 17.0				
	1705	3844 1.47 29	3702 1.50 26	3579 1.53 24	3457 1.55 23	3315 1.57 24	3132 1.58 25	2905 1.58 25	2615 1.57 22	2289 1.52 19.5			
2	1790	4065 1.70 33	3926 1.73 28	3804 1.76 26	3689 1.78 25	3568 1.81 25	3418 1.82 25	3230 1.83 27	3006 1.82 27	2721 1.81 25	2411 1.76 21	2004 1.63 20	
	1875	4286 1.94 36	4150 1.98 31	4028 2.01 29	3918 2.04 28	3807 2.06 27	3683 2.08 27	3527 2.10 28	3339 2.10 28	3119 2.10 28	2842 2.08 26	2546 2.03 22	2178 1.91 22

MAXIMUM MOTOR FRAME SIZE: 145T

NOTES:
1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Values shown are for installation Type A: Free inlet fan hemispherical sone levels.

210D BCRD/BCRD-E

Outlet Area = 4.61 ft² **Fan Efficiency Grade: FEG56**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	1.00	1.25	1.50	1.75	2.00
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	480	3078	2673	2193	1535								
		0.15 7.0	0.17 6.2	0.18 6.1	0.18 5.2								
	535	3431	3080	2646	2203	1471							
		0.21 8.7	0.23 7.9	0.25 6.9	0.26 7.2	0.24 6.3							
1/3	550	3527	3188	2766	2346	1709							
		0.23 9.2	0.25 8.5	0.27 7.2	0.28 7.8	0.26 6.5							
	595	3816	3507	3125	2747	2311	1588						
		0.29 10.5	0.31 10.1	0.33 8.3	0.35 8.8	0.35 8.2	0.32 7.4						
1/2	650	4168	3890	3558	3199	2845	2407	1705					
		0.37 12.5	0.40 12.5	0.42 10.2	0.44 9.8	0.46 10.5	0.46 9.1	0.42 8.5					
	680	4361	4096	3789	3439	3111	2739	2188					
		0.43 13.4	0.45 13.4	0.48 11.4	0.50 10.5	0.52 11.3	0.53 10.8	0.50 9.3					
3/4	720	4617	4369	4089	3758	3446	3120	2732					
		0.51 15.1	0.53 15.1	0.56 13.3	0.59 11.6	0.61 12.2	0.63 12.7	0.63 11.2					
	770	4938	4707	4452	4154	3850	3562	3244	2298				
		0.62 17.0	0.65 17.0	0.68 15.7	0.70 13.7	0.73 13.3	0.76 14.3	0.77 14.3	0.72 11.8				
1	800	5130	4909	4667	4389	4089	3812	3520	2745				
		0.70 18.2	0.72 18.2	0.75 17.2	0.78 15.0	0.81 14.3	0.84 14.8	0.86 15.4	0.83 12.5				
	855	5483	5277	5054	4808	4527	4257	3999	3412	2478			
		0.85 20	0.88 20	0.91 19.2	0.94 17.6	0.97 16.1	1.00 16.1	1.03 16.7	1.05 16.3	0.97 14.1			
1-1/2	900	5772	5577	5368	5141	4882	4616	4369	3848	3148			
		0.99 22	1.02 22	1.05 21	1.09 19.8	1.12 18.1	1.15 17.3	1.19 17.7	1.23 18.4	1.20 15.3			
	975	6253	6073	5884	5681	5459	5213	4970	4514	4005	3292		
		1.26 25	1.29 25	1.33 25	1.36 23	1.40 22	1.44 20	1.47 19.6	1.54 21	1.56 20	1.50 17.5		
2	1010	6477	6304	6122	5929	5721	5488	5248	4806	4337	3766	2905	
		1.40 27	1.44 27	1.47 27	1.51 26	1.54 24	1.58 22	1.62 21	1.69 22	1.73 22	1.72 19.1	1.6 18.2	
	1075	6894	6732	6563	6385	6196	5989	5765	5333	4918	4455	3864	3028
		1.69 31	1.73 31	1.76 31	1.80 29	1.84 27	1.88 25	1.92 24	2.00 23	2.07 24	2.10 24	2.06 20	1.92 20

MAXIMUM MOTOR FRAME SIZE: 145T

210DHP BCRD/BCRD-E

Outlet Area = 4.61 ft² **Fan Efficiency Grade: FEG60**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/2	700	2532	1925										
		0.37 9.9	0.40 10.1										
	775	3001	2538	1900									
		0.48 11.4	0.52 12.5	0.53 12.0									
3/4	810	3215	2788	2238									
		0.53 12.4	0.59 12.8	0.61 12.9									
	875	3605	3214	2779	2217								
		0.65 14.5	0.71 13.7	0.76 15.1	0.77 14.5								
1	900	3752	3371	2968	2453								
		0.70 15.2	0.76 14.5	0.82 15.4	0.84 15.3								
	970	4152	3803	3452	3041	2541							
		0.86 18.2	0.92 16.2	0.99 16.8	1.04 17.9	1.05 17.3							
1-1/2	1050	4593	4287	3960	3629	3231	2766						
		1.06 21	1.14 19.1	1.21 18.6	1.28 19.3	1.32 20	1.33 19.4						
	1110	4916	4640	4329	4024	3692	3291	2836					
		1.23 24	1.31 21	1.39 20	1.47 20	1.53 21	1.57 21	1.57 21					
2	1150	5129	4870	4574	4278	3974	3617	3204	2695				
		1.35 25	1.44 23	1.52 21	1.60 21	1.68 23	1.73 23	1.75 22	1.72 22				
	1220	5498	5263	4995	4711	4435	4139	3792	3401	2941			
		1.58 28	1.69 26	1.78 24	1.86 23	1.95 23	2.02 25	2.07 25	2.09 25	2.07 25			
3	1300	5915	5701	5463	5200	4936	4676	4395	4069	3706	3310	2629	
		1.88 32	2.00 30	2.10 28	2.19 26	2.28 25	2.37 26	2.45 27	2.51 28	2.53 27	2.53 27	2.39 26	
	1395	6405	6210	6001	5768	5520	5275	5032	4775	4482	4155	3806	3401
		2.29 36	2.42 35	2.53 32	2.64 30	2.73 29	2.83 28	2.93 29	3.01 30	3.08 31	3.12 31	3.13 30	3.10 30

MAXIMUM MOTOR FRAME SIZE: 182T

NOTES:
1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include belt drive losses.
3. Performance ratings do not include the effects of appurtenances in the airstream.
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Values shown are for installation Type A: Free inlet fan hemispherical sone levels.

240D BCRD/BCRD-E

Outlet Area = 5.60 ft² **Fan Efficiency Grade: FEG60**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	0.875	1.00	1.25	1.50	1.75
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	410	4128 0.16 6.0	3525 0.20 5.4	2834 0.22 5.8	1981 0.21 4.7								
	435	4380 0.20 6.6	3809 0.24 6.1	3180 0.26 6.2	2487 0.26 5.4								
1/3	460	4631 0.23 7.4	4089 0.28 6.9	3525 0.30 6.7	2886 0.31 6.7	1850 0.28 5.8							
	480	4833 0.26 7.9	4312 0.31 7.5	3789 0.34 7.1	3168 0.35 7.5	2444 0.35 6.3							
1/2	530	5336 0.35 9.3	4864 0.41 9.1	4405 0.44 8.5	3856 0.47 8.8	3315 0.47 8.8	2575 0.46 7.7						
	550	5537 0.40 9.9	5082 0.45 9.7	4640 0.49 8.9	4134 0.52 9.3	3600 0.53 9.5	3002 0.53 8.2						
3/4	580	5839 0.46 10.9	5407 0.52 10.8	4987 0.57 10.0	4538 0.60 10.0	4010 0.61 10.6	3516 0.62 10.3	2806 0.60 9.2					
	625	6292 0.58 12.5	5891 0.65 12.5	5497 0.70 12.0	5106 0.73 11.6	4634 0.76 12.0	4164 0.77 12.5	3683 0.78 11.5	2992 0.75 10.8				
1	650	6544 0.65 13.3	6158 0.72 13.3	5777 0.78 12.8	5406 0.82 12.5	4977 0.85 12.6	4505 0.87 13.4	4073 0.87 13.1	3538 0.87 11.6				
	690	6947 0.78 14.9	6583 0.86 14.9	6222 0.92 14.4	5874 0.96 14.0	5502 1.00 13.9	5059 1.02 14.7	4634 1.04 14.9	4218 1.05 14.5	3688 1.04 13.0			
1-1/2	750	7551 1.01 16.8	7216 1.09 16.8	6883 1.16 16.5	6558 1.21 16.0	6236 1.26 15.8	5875 1.29 15.9	5460 1.32 16.6	5070 1.33 16.8	4695 1.34 16.6	3654 1.31 14.7		
	790	7954 1.17 18.1	7636 1.26 18.1	7320 1.34 17.6	7008 1.40 17.2	6704 1.45 16.9	6384 1.49 16.8	6013 1.53 17.3	5618 1.55 17.8	5259 1.56 18.3	4467 1.57 16.3		
2	840	8457 1.41 19.8	8158 1.50 19.8	7860 1.59 19.6	7565 1.66 19.1	7278 1.72 18.7	6989 1.77 18.6	6674 1.81 18.6	6313 1.84 18.8	5943 1.86 19.7	5271 1.89 19.7	4415 1.87 17.1	
	870	8759 1.57 21	8470 1.67 21	8183 1.75 21	7897 1.83 19.8	7618 1.89 19.5	7342 1.94 19.2	7051 1.99 19.2	6721 2.03 19.7	6360 2.06 20	5697 2.09 21	4974 2.09 18.9	3809 1.97 18.0

MAXIMUM MOTOR FRAME SIZE: 145T

240DHP BCRD/BCRD-E

Outlet Area = 5.60 ft² **Fan Efficiency Grade: FEG67**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0.50	0.625	0.75	0.875	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/2	600	3080 0.41 8.5	2656 0.43 8.7	2117 0.43 8.5									
	640	3471 0.47 9.1	3120 0.50 9.8	2692 0.52 9.5	2149 0.52 9.6								
3/4	670	3750 0.53 9.7	3435 0.57 10.3	3064 0.59 10.5	2621 0.60 10.3								
	725	4238 0.64 11.2	3970 0.68 11.2	3671 0.72 11.7	3325 0.75 11.8	2922 0.76 11.5							
1	750	4451 0.70 11.9	4201 0.74 11.6	3924 0.78 12.2	3611 0.82 12.5	3248 0.84 12.6							
	805	4909 0.83 13.4	4690 0.88 12.9	4450 0.93 13.0	4187 0.97 13.8	3896 1.01 14.1	3191 1.04 13.6						
1-1/2	860	5357 0.98 15.2	5157 1.04 14.6	4947 1.09 14.4	4718 1.14 14.5	4471 1.19 15.2	3896 1.25 15.6	3178 1.27 14.9					
	925	5878 1.18 17.1	5693 1.24 16.5	5506 1.30 16.2	5309 1.36 15.9	5096 1.41 15.9	4625 1.51 17.0	4059 1.57 17.0	3371 1.57 16.6				
2	950	6076 1.27 18.0	5896 1.33 17.4	5715 1.39 16.7	5528 1.45 16.7	5326 1.51 16.6	4883 1.61 17.7	4362 1.68 18.1	3741 1.71 17.4				
	1015	6589 1.51 19.9	6419 1.58 19.2	6251 1.64 18.7	6081 1.71 18.1	5904 1.77 18.0	5518 1.89 18.4	5084 1.99 19.5	4579 2.06 19.7	3991 2.09 18.9	3238 2.04 18.9		
3	1100	7250 1.88 23	7093 1.95 22	6936 2.01 21	6781 2.08 21	6625 2.16 21	6295 2.30 20	5931 2.42 21	5530 2.53 22	5072 2.61 22	4551 2.65 21	3940 2.64 21	
	1165	7750 2.21 25	7602 2.27 24	7454 2.34 24	7307 2.41 24	7160 2.49 23	6861 2.64 23	6537 2.78 23	6184 2.91 23	5797 3.02 24	5360 3.10 24	4869 3.15 23	4311 3.15 24

MAXIMUM MOTOR FRAME SIZE: 182T

NOTES:
1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Values shown are for installation Type A: Free inlet fan hemispherical sone levels.

300D BCRD

Outlet Area = 7.88 ft² **Fan Efficiency Grade: FEG67**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/4	330	5000 0.14 4.0	4086 0.17 5.4	3166 0.20 5.7									
	360	5454 0.18 4.6	4579 0.22 6.1	3880 0.26 6.7									
1/3	380	5757 0.22 5.3	4902 0.25 6.5	4264 0.29 7.3									
	405	6136 0.26 5.9	5303 0.30 7.1	4714 0.34 8									
1/2	430	6514 0.31 6.5	5702 0.35 7.7	5151 0.40 8.8	3222 0.43 8.6								
	450	6818 0.36 7	6021 0.40 8.3	5497 0.45 9.4	3978 0.52 9.6								
3/4	470	7120 0.41 7.7	6339 0.45 8.8	5834 0.50 10.0	4571 0.59 10.3								
	520	7878 0.55 9.1	7138 0.60 10	6652 0.65 11.5	5702 0.77 12.8	3467 0.71 10.8							
1	530	8030 0.59 9.4	7298 0.63 10.1	6814 0.68 11.9	5892 0.80 13.1	4107 0.81 12.5							
	565	8560 0.71 10.5	7855 0.75 10.9	7375 0.81 12.4	6529 0.94 14.1	5292 1.03 14.1							
1-1/2	600	9090 0.85 11.6	8412 0.90 12	7934 0.96 13.2	7144 1.09 14.9	6215 1.21 15.2	3958 1.09 13.1						
	650	9848 1.08 13.4	9203 1.13 13.4	8731 1.19 14.4	8004 1.33 15.9	7233 1.48 17.4	6039 1.56 15.9						
2	670	10150 1.18 14.3	9519 1.23 14.3	9050 1.30 15.1	8338 1.44 16.4	7602 1.59 17.8	6609 1.71 17.4	4338 1.50 14.8					
	715	10832 1.44 16.2	10228 1.49 16.2	9769 1.56 16.1	9077 1.71 17.2	8403 1.86 19.1	7659 2.02 19.5	6398 2.08 17.5					
3	750	11362 1.66 17.2	10779 1.71 17.2	10328 1.78 17.2	9643 1.94 17.8	9013 2.10 19.4	8342 2.27 21	7414 2.39 19.3	5829 2.30 18.4				
	820	12423 2.17 20	11876 2.23 20	11443 2.30 19.7	10766 2.46 19.1	10203 2.64 19.9	9604 2.82 22	8973 3.00 22	8079 3.13 20	6697 3.06 19.5			
5	850	12878 2.41 21	12345 2.47 21	11919 2.55 21	11244 2.72 20	10697 2.90 21	10129 3.09 22	9540 3.28 24	8823 3.44 23	7693 3.49 20	5744 3.13 20		
	970	14696 3.59 26	14215 3.65 26	13817 3.73 26	13157 3.91 25	12637 4.12 25	12164 4.33 25	11666 4.54 27	11155 4.76 29	10613 4.97 29	9918 5.14 28	8909 5.20 25.0	7602 4.99 25.0

MAXIMUM MOTOR FRAME SIZE: 184T

300DHP BCRD

Outlet Area = 7.88 ft² **Fan Efficiency Grade: FEG71**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/2	500	3881 0.47 8.9											
	515	4121 0.51 9.5	2721 0.52 9.6										
3/4	550	4645 0.60 10.7	3617 0.66 10.5										
	580	5066 0.69 11.4	4201 0.76 10.9										
1	610	5469 0.78 11.9	4715 0.86 11.5	3587 0.88 12.0									
	640	5860 0.88 12.5	5190 0.97 13.1	4279 1.03 12.8									
1-1/2	700	6617 1.10 14.2	6061 1.22 15.4	5372 1.31 14.2	4450 1.35 14.5								
	735	7048 1.25 15.6	6537 1.37 15.8	5931 1.48 16.3	5168 1.56 15.6	4054 1.52 15.9							
2	750	7230 1.31 16.0	6737 1.44 16.4	6160 1.56 16.9	5445 1.64 15.8	4469 1.65 16.5							
	810	7950 1.60 17.6	7512 1.75 17.7	7023 1.88 18.8	6448 2.00 18.3	5753 2.08 17.7	4824 2.07 18.2						
3	900	9007 2.10 21	8629 2.29 20	8222 2.45 20	7774 2.59 22	7261 2.72 21	6666 2.82 20	5946 2.88 21	4959 2.79 21				
	925	9297 2.25 23	8933 2.46 22	8543 2.63 21	8118 2.77 23	7640 2.91 23	7090 3.02 21	6448 3.11 21	5636 3.10 22	4430 2.90 21			
5	1000	10160 2.77 25	9831 3.00 25	9483 3.20 25	9112 3.37 25	8711 3.52 26	8266 3.67 27	7763 3.80 24	7193 3.90 24	6515 3.94 24	5629 3.85 25		
	1100	11297 3.57 29	11005 3.83 30	10699 4.07 29	10379 4.29 29	10041 4.48 29	9680 4.65 31	9289 4.81 31	8858 4.97 30	8381 5.10 27	7850 5.20 28	7234 5.25 28	6474 5.18 29

MAXIMUM MOTOR FRAME SIZE: 184T

NOTES:
1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Values shown are for installation Type A: Free inlet fan hemispherical sone levels.

360D BCRD

Outlet Area = 10.50 ft² **Fan Efficiency Grade: FEG60**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	0.875	1.00	1.25	1.50	1.75
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/3	250	7390 0.21 5.4	5833 0.25 4.1	2981 0.22 3.7									
	280	8277 0.29 6.9	6936 0.34 5.5	4828 0.35 5.2									
1/2	300	8868 0.36 7.8	7627 0.42 6.5	5885 0.44 6.2									
	320	9459 0.43 9.0	8302 0.50 7.7	6836 0.53 6.9	4624 0.49 6.6								
3/4	340	10050 0.52 9.9	8966 0.59 9.0	7703 0.63 7.6	5758 0.62 7.6								
	365	10789 0.64 11.2	9786 0.72 10.4	8688 0.77 8.9	7084 0.78 8.9	5047 0.72 8.3							
1	380	11233 0.72 12.2	10272 0.81 11.3	9239 0.86 9.6	7824 0.89 9.5	5964 0.85 9.2							
	400	11824 0.84 13.1	10915 0.93 12.9	9949 1.00 10.9	8733 1.03 10.2	7041 1.01 10.6	5076 0.91 10.0						
1-1/2	420	12415 0.97 14.7	11552 1.07 14.1	10640 1.14 12.1	9582 1.19 11.2	8103 1.19 11.6	6389 1.13 10.8						
	460	13598 1.28 17.0	12814 1.39 17.0	11989 1.48 15.0	11120 1.53 13.7	10001 1.57 13.4	8555 1.56 13.8	6994 1.49 13.1					
2	480	14189 1.46 18.1	13439 1.57 18.1	12652 1.66 16.6	11837 1.73 15.3	10859 1.77 14.6	9590 1.79 15.1	8098 1.74 14.3	6484 1.62 14.0				
	505	14928 1.69 19.7	14217 1.82 19.7	13474 1.92 18.6	12709 1.99 17.2	11860 2.05 16.2	10764 2.08 16.4	9430 2.06 16.3	8018 1.99 15.2	6349 1.82 15.1			
3	550	16258 2.19 22	15608 2.32 22	14933 2.44 22	14236 2.53 20	13518 2.60 19.4	12686 2.66 18.9	11646 2.69 19.4	10426 2.67 20	9124 2.60 18.5			
	575	16997 2.50 25	16376 2.64 25	15733 2.77 24	15070 2.87 23	14395 2.95 22	13657 3.01 21	12756 3.06 21	11692 3.08 21	10454 3.03 21	7837 2.79 19.6		
5	650	19214 3.61 31	18667 3.78 31	18105 3.92 31	17527 4.05 29	16937 4.16 29	16340 4.25 28	15706 4.32 28	14979 4.39 27	14119 4.43 28	12069 4.39 28	9860 4.19 24	
	685	20249 4.23 34	19730 4.40 34	19199 4.56 34	18654 4.70 34	18097 4.83 32	17536 4.93 32	16958 5.01 31	16334 5.08 31	15613 5.15 31	13865 5.20 31	11781 5.07 30	9583 4.76 27

MAXIMUM MOTOR FRAME SIZE: 184T

360DHP BCRD

Outlet Area = 10.50 ft² **Fan Efficiency Grade: FEG67**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1	430	6426 0.83 9.3	4046 0.82 7.9										
	460	7282 0.99 10.0	5562 1.05 8.8										
1-1/2	500	8354 1.21 11.4	7039 1.34 11.7	4872 1.30 10.4									
	525	9001 1.35 12.3	7821 1.52 13.1	6151 1.56 11.2									
2	550	9631 1.51 13.8	8545 1.71 13.9	7169 1.79 13.2	4906 1.67 12.0								
	580	10368 1.72 15.6	9372 1.95 14.9	8214 2.08 15.7	6549 2.09 13.4								
3	650	12024 2.27 21	11202 2.55 19.1	10283 2.78 19.1	9234 2.93 19.6	7842 2.96 16.9	5754 2.74 16.5						
	660	12255 2.36 22	11455 2.65 20	10558 2.89 19.1	9553 3.05 20	8254 3.10 17.8	6364 2.98 17.2						
5	750	14293 3.27 28	13648 3.60 26	12921 3.92 24	12132 4.20 23	11284 4.41 25	10289 4.53 24	9032 4.55 21	7308 4.38 21				
	785	15072 3.69 30	14469 4.03 27	13799 4.37 26	13063 4.69 24	12287 4.94 25	11431 5.12 26	10404 5.21 24	9111 5.20 22	7383 4.96 22			
7-1/2	860	16721 4.70 33	16189 5.07 31	15616 5.44 29	14988 5.82 28	14312 6.17 27	13607 6.45 27	12851 6.66 29	11991 6.81 28	10969 6.86 27	9701 6.83 26	8092 6.52 25	
	900	17592 5.31 36	17090 5.71 34	16557 6.09 32	15978 6.49 31	15351 6.87 30	14693 7.21 29	14007 7.47 30	13265 7.68 31	12420 7.82 31	11427 7.86 28	10217 7.83 27	8705 7.55 27

MAXIMUM MOTOR FRAME SIZE: 213T

NOTES:
1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Type A: Free inlet fan hemispherical sone levels.

420D BCRD

Outlet Area = 11.40 ft² **Fan Efficiency Grade: FEG63**

HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	1.00	1.25	1.50	1.75	2.00
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/2	230	9414 0.31 5.3	7930 0.37 4.3	5813 0.40 4.4									
	250	10232 0.40 6.3	8872 0.47 5.2	7303 0.51 5.2									
3/4	270	11051 0.50 7.3	9794 0.58 6.3	8433 0.63 5.9	5934 0.63 5.2								
	285	11665 0.59 8.1	10476 0.68 7.2	9220 0.73 6.4	7415 0.77 6.8								
1	300	12279 0.69 8.9	11152 0.78 8.2	9983 0.84 7.1	8553 0.88 7.6	5471 0.79 6.1							
	315	12893 0.80 9.9	11822 0.89 9.4	10721 0.96 7.8	9463 1.01 8.3	7218 1.01 7.4							
1-1/2	330	13507 0.92 10.9	12486 1.02 10.2	11440 1.09 8.8	10291 1.15 8.9	8641 1.19 9.0	5396 0.98 7.0						
	360	14734 1.19 12.7	13802 1.31 12.5	12846 1.39 10.7	11853 1.45 10.0	10712 1.51 10.8	8855 1.54 10.1						
2	370	15144 1.29 13.5	14237 1.41 13.5	13308 1.50 11.5	12355 1.57 10.8	11280 1.63 11.4	9751 1.68 11.3	7010 1.51 8.9					
	395	16167 1.57 15.2	15319 1.70 15.2	14450 1.81 13.4	13574 1.88 12.2	12621 1.95 12.2	11530 2.01 13.0	9759 2.04 12.2					
3	430	17599 2.03 17.3	16822 2.17 17.3	16028 2.29 16.0	15227 2.39 14.5	14403 2.46 14.1	13498 2.53 14.3	12464 2.59 15.0	8417 2.41 11.7				
	455	18623 2.40 18.7	17889 2.55 18.7	17141 2.69 17.8	16383 2.80 16.3	15621 2.88 15.4	14804 2.95 15.4	13918 3.03 16.1	11167 3.11 15.3				
5	500	20464 3.19 22	19797 3.36 22	19120 3.51 21	18433 3.64 20	17744 3.75 18.7	17045 3.83 17.9	16298 3.91 17.9	14606 4.07 19.1	11622 4.07 16.9			
	540	22102 4.01 25	21485 4.20 25	20860 4.37 25	20227 4.52 23	19588 4.65 22	18950 4.75 21	18297 4.84 21	16865 5.02 21	15089 5.17 22	11869 5.03 18.6		
7-1/2	580	23739 4.97 28	23165 5.17 28	22585 5.36 28	21998 5.53 27	21404 5.68 26	20810 5.80 24	20215 5.91 24	18955 6.10 24	17555 6.29 25	15664 6.45 25	12437 6.17 20	
	615	25171 5.93 31	24630 6.14 31	24084 6.34 31	23532 6.52 31	22975 6.69 29	22413 6.84 27	21854 6.96 27	20709 7.17 26	19455 7.37 27	18048 7.57 28	15960 7.71 27	12702 7.23 22

MAXIMUM MOTOR FRAME SIZE: 213T

480D BCRD

Outlet Area = 14.11 ft² **Fan Efficiency Grade: FEG63**

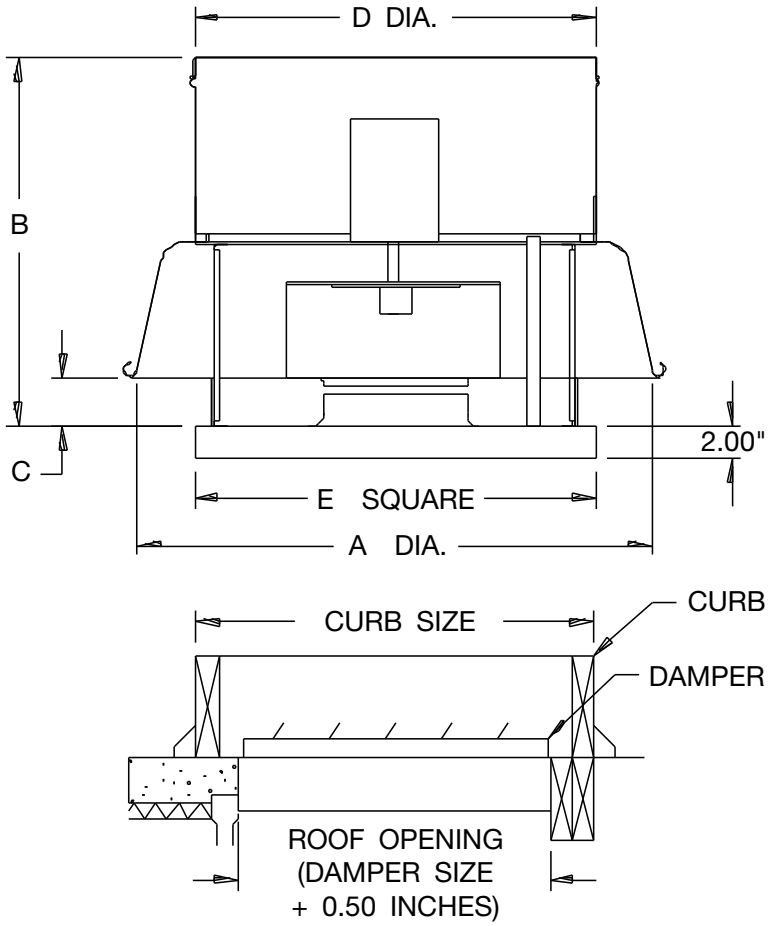
HP	RPM	STATIC PRESSURE (INCHES W.G.)											
		0	0.125	0.25	0.375	0.50	0.625	0.75	0.875	1.00	1.25	1.50	1.75
		CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone	CFM BHP Sone
1/2	190	10494 0.30 4.8	8604 0.37 4.0	4418 0.32 3.0									
	210	11599 0.41 5.7	9890 0.48 4.8	7393 0.51 4.5									
3/4	225	12427 0.50 6.5	10824 0.58 5.5	8907 0.64 6.0									
	240	13256 0.61 7.4	11745 0.69 6.4	10130 0.76 6.8	6645 0.70 5.0								
1	250	13808 0.69 8.0	12355 0.78 6.9	10874 0.85 7.2	8149 0.85 5.5								
	265	14636 0.82 8.7	13265 0.91 7.8	11921 1.00 7.7	9923 1.04 7.6								
1-1/2	285	15741 1.02 10.1	14466 1.12 9.4	13228 1.21 8.5	11702 1.28 9.1	8899 1.24 7.0							
	300	16570 1.18 11.2	15358 1.30 10.6	14177 1.39 9.4	12864 1.48 10.1	10809 1.50 9.1	6905 1.24 7.5						
2	320	17674 1.44 12.8	16538 1.56 12.5	15419 1.66 10.5	14291 1.76 10.9	12753 1.83 11.2	10144 1.76 8.9						
	335	18503 1.65 13.7	17418 1.77 13.7	16341 1.89 11.8	15292 1.99 11.4	13984 2.08 12.3	12038 2.09 11.2	8684 1.84 9.5					
3	350	19331 1.88 14.4	18293 2.01 14.4	17257 2.13 12.6	16261 2.24 12.4	15120 2.34 13.3	13570 2.40 13.2	11035 2.30 10.3					
	380	20988 2.41 16.6	20031 2.55 16.6	19076 2.68 15.4	18147 2.81 14.4	17208 2.93 14.7	16057 3.02 15.6	14548 3.07 15.4	12193 2.96 12.5	8837 2.54 11.9			
5	420	23197 3.25 19.0	22332 3.41 19.0	21467 3.56 18.8	20607 3.70 17.0	19781 3.84 16.9	18915 3.96 16.9	17874 4.07 17.9	16582 4.14 18.1	14786 4.11 16.2			
	455	25131 4.13 22	24331 4.31 22	23533 4.47 22	22735 4.63 19.7	21957 4.78 18.7	21194 4.92 18.6	20377 5.05 19.5	19407 5.17 19.9	18246 5.25 19.9	14685 5.10 16.4		
7-1/2	500	27616 5.48 24	26889 5.68 24	26162 5.86 24	25435 6.04 24	24710 6.21 22	24011 6.37 22	23317 6.53 21	22585 6.67 22	21748 6.80 23	19643 6.99 23	16297 6.79 18.8	11145 5.67 18.5
	520	28721 6.17 26	28021 6.37 26	27322 6.56 26	26624 6.75 25	25926 6.92 24	25243 7.10 23	24579 7.26 22	23899 7.42 23	23161 7.57 23	21338 7.80 25	18766 7.83 23	14603 7.15 20

MAXIMUM MOTOR FRAME SIZE: 213T

NOTES:

1. Performance certified is for Installation Type A: Free inlet, free outlet.
2. Power rating (BHP) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. The sound ratings shown are loudness values in fan sones at 5 ft. (1.5 m) in a hemispherical free field calculated per AMCA Standard 301.
5. Values shown are for installation Type A: Free inlet fan hemispherical sone levels.

Model DCRD, Direct Drive



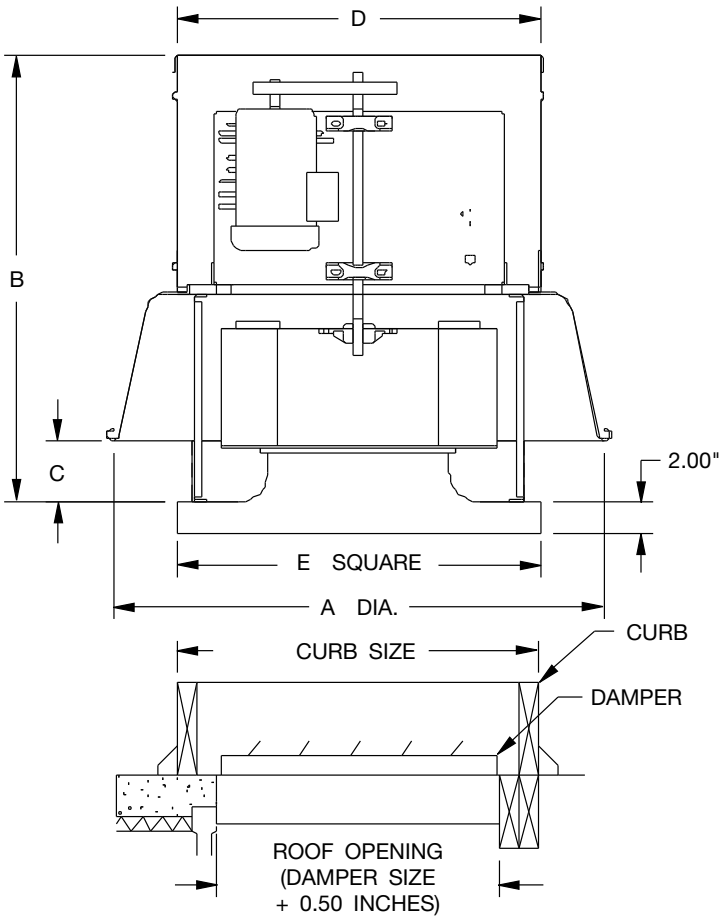
Notes:
1. All dimensions are in inches unless otherwise noted.
2. Dimensions are not to be used for construction.
3. Outside dimensions of dampers are nominal.
4. Outside dimensions of roof curb should be 1" to 1.50" less than inside curb cap dimension 'E', depending on thickness of flashing material used. If curb hinges are used, specify 1.50" difference.
5. Self-flashing roof curbs are 1" larger than canted curbs.

EC MOTOR SIZES	PSC MOTOR SIZES	FAN DIMENSIONS					CANTED CURB SIZE	DAMPER SIZE	AVG. SHIP WT. (LBS.)
		A	B	C	D	E			
060BE/070BE	060B/070B	18.50	15.63	2.06	15.12	17.00	15.5x15.5	10x10	30
080BE	080B	18.50	15.63	2.06	15.12	17.00	15.5x15.5	10x10	32
085BE/090BE/095BE	085B/090B/095B	21.00	19.31	2.63	15.12	17.00	15.5x15.5	10x10	43
100BE	100B	21.00	17.31	2.63	15.12	17.00	15.5x15.5	10x10	48
120BE	120B	27.50	22.38	3.63	22.00	20.00	18.5x18.5	14x14	50
130BE	130B	27.50	23.25	4.44	22.00	24.00	22.5x22.5	18x18	65
140BE	140B	27.50	23.50	4.69	22.00	24.00	22.5x22.5	18x18	67
150BE	150B	30.44	26.75	4.63	24.00	24.00	22.5x22.5	18x18	77
160BE	160B	30.44	27.25	5.19	24.00	24.00	22.5x22.5	18x18	82
170BE	170B	38.38	29.25	4.06	30.00	30.00	28.5x28.5	24x24	95
180BE	180B	38.38	30.25	5.06	30.00	30.00	28.5x28.5	24x24	100

D-4051F

DIMENSIONS NOT TO BE USED FOR CONSTRUCTION. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.

Model BCRD, Belt Driven



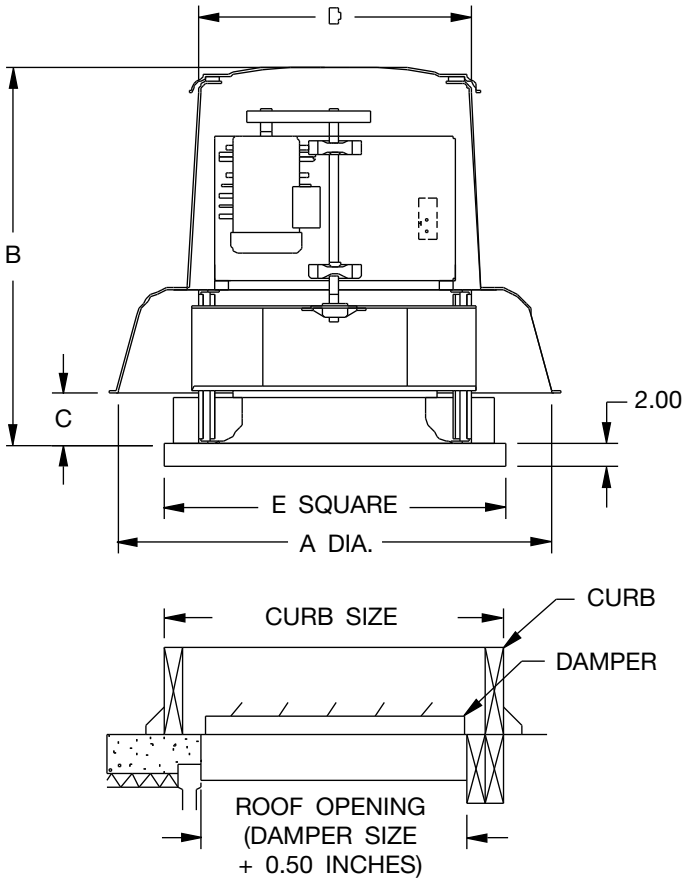
Notes:
1. All dimensions are in inches unless otherwise noted.
2. Dimensions are not to be used for construction.
3. Outside dimensions of dampers are nominal.
4. Outside dimensions of roof curb should be 1" to 1.50" less than inside curb cap dimension 'E', depending on thickness of flashing material used. If curb hinges are used, specify 1.50" difference.
5. Self-flashing roof curbs are 1" larger than canted curbs.

SIZE	FAN DIMENSIONS					CANTED CURB SIZE	DAMPER SIZE	AVG. SHIP WT. (LBS.)
	A	B	C	D	E			
070D/075D	25.88	22.13	2.06	22.00	17.00	15.5 x 15.5	10 x 10	58
085D	27.50	23.94	2.38	22.00	17.00	15.5 x 15.5	10 x 10	67
100D/100DHP	27.50	23.94	2.38	22.00	20.00	18.5 x 18.5	14 x 14	74
120D	30.44	28.13	2.56	24.00	20.00	18.5 x 18.5	14 x 14	78
140D	30.44	28.25	2.81	24.00	24.00	22.5 x 22.5	18 x 18	93
140DHP	30.44	28.25	2.81	24.00	24.00	22.5 x 22.5	18 x 18	88
160D/160DHP	32.63	29.00	3.38	24.00	26.00	24.5 x 24.5	20 x 20	107
180D/180DHP	38.38	33.88	3.75	30.00	30.00	28.5 x 28.5	24 x 24	130
210D/210DHP	38.38	34.06	4.00	30.00	30.00	28.5 x 28.5	24 x 24	160
240D/240DHP	43.13	35.88	4.88	30.00	34.00	32.5 x 32.5	28 x 28	220
300D/300DHP	51.38	38.88	4.88	42.00	40.00	38.5 x 38.5	34 x 34	270
360D/360DHP	60.75	44.38	6.88	50.00	46.00	44.5 x 44.5	40 x 40	360
420D	65.81	47.81	7.00	50.00	52.00	50.5 x 50.5	46 x 46	420
480D	74.06	50.25	7.75	58.00	58.00	56.5 x 56.5	50 x 50	475

D-4105G

DIMENSIONS NOT TO BE USED FOR CONSTRUCTION. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.

Model BCRD-E, Belt Driven, Endurex™ Housing

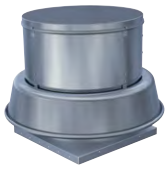


Notes:
1. All dimensions are in inches unless otherwise noted.
2. Dimensions are not to be used for construction.
3. Outside dimensions of dampers are nominal.
4. Outside dimensions of roof curb should be 1" to 1.50" less than inside curb cap dimension 'E', depending on thickness of flashing material used. If curb hinges are used, specify 1.50" difference.
5. Self-flashing roof curbs are 1" larger than canted curbs.

SIZE	FAN DIMENSIONS					CANTED CURB SIZE	DAMPER SIZE	AVG. SHIP WT. (LBS.)
	A	B	C	D	E			
070D/ 075D	25.87	21.75	2.03	20.68	17.00	15.5 x 15.5	10 x 10	58
085D	27.88	26.25	2.41	22.44	17.00	15.5 x 15.5	10 x 10	67
100D	27.88	26.25	2.41	22.44	20.00	18.5 x 18.5	14 x 14	74
120D	30.96	29.19	2.56	22.44	20.00	18.5 x 18.5	14 x 14	78
140D	30.96	29.44	2.81	22.44	24.00	22.5 x 22.5	18 x 18	93
160D	33.81	33.25	3.36	24.50	26.00	24.5 x 24.5	20 x 20	107
180D	39.54	36.06	3.75	27.25	30.00	28.5 x 28.5	24 x 24	130
210D	39.54	36.31	4.00	27.25	30.00	28.5 x 28.5	24 x 24	160
240D	43.00	37.44	4.83	27.25	34.00	32.5 x 32.5	28 x 28	220

D-4106B

DIMENSIONS NOT TO BE USED FOR CONSTRUCTION. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.



Model

DCRD

Roof exhaust fans shall be of the direct drive centrifugal type, Model DCRD, as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

PERFORMANCE — Fans shall be tested in accordance with AMCA 210 and AMCA 300 test codes for air moving devices and shall be guaranteed by the manufacturer to deliver rated published performance levels. Fans shall be licensed to bear the AMCA certified ratings seal for both sound and air. Models shall be cULus 705 listed.

CONSTRUCTION — Fans shall be constructed of aluminum for durability and appearance. Fan spinnings shall have a rolled bead edge for rigidity. Units shall have a deep venturi inlet to prevent snow and rain entry into the building. The curb cap shall include prepunched mounting holes for ease of installation. A conduit chase constructed of electrical metallic tubing shall be provided to the motor compartment. The curb base shall provide protection from weather. Fans shall bear a permanently attached nameplate displaying model and serial number of the unit for future identification.

MOTOR ASSEMBLY — Motor assembly shall be mounted on vibration isolators to eliminate vibration and noise transmission into the ductwork. Motors shall be mounted out of the exhaust airstream.

WHEEL — Fan wheels shall be of the centrifugal backward inclined type, containing a matching inlet venturi for optimum unit performance. Wheels shall be statically and dynamically balanced.

MOTOR — Motors shall be heavy-duty ball bearing type, closely matched to the fan load. All single-phase ODP motors shall contain thermal overload protection. All motors shall be UL and /or CSA recognized. Motors for use with speed control shall provide good speed controllability without any objectionable noise.

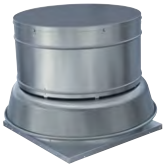
DISCONNECT SWITCH — A NEMA 1 disconnect switch shall be supplied with wiring leading from the motor to the junction box (ODP and TEFC motors).

ACCESSORIES — When specified, accessories such as backdraft damper, roof curb, curb hinge, retaining chain, security hasp, variable speed controller, NEMA 3R, 4 disconnect switch, firestat, aluminum bird screen, aluminum insect screen and special coatings shall be provided by Twin City Fan & Blower to maintain one source responsibility.

FACTORY RUN TEST — All fans prior to shipment shall be completely assembled and test run as a unit at operating speed or maximum RPM allowed for the particular construction type. Each wheel shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. Balance readings shall be taken by electronic type equipment in the axial, vertical, and horizontal directions on each of the bearings. Records shall be maintained and a written copy shall be available upon request.

GUARANTEE — The manufacturer shall guarantee the workmanship and materials for its roof and wall mounted centrifugal exhaust fans for at least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first.

TCF
TWIN CITY FAN



Model

BCRD

Roof mounted exhaust fans shall be of the belt driven centrifugal type, Model BCRD (Spun Aluminum Housing) and as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

PERFORMANCE — Fans shall be tested in accordance with AMCA 210 and AMCA 300 test codes for air moving devices and shall be guaranteed by the manufacturer to deliver rated published performance levels. Fans shall be licensed to bear the AMCA certified ratings seal for both sound and air. Models shall be cULus 705 listed.

CONSTRUCTION — BCRD fans housings shall be -constructed of spun aluminum and shall offer finish durability and aesthetic appearance. Fan spinnings shall have a rolled bead edge for rigidity. All units have a deep venturi inlet to prevent snow and rain entry into the building. The curb cap shall include prepunched mounting holes for ease of installation. A conduit chase constructed of electrical metallic tubing shall be provided to the motor compartment. The curb base shall provide protection from weather. Lifting lugs shall be provided inside the motor compartment for ease of handling and installation. Fans shall bear a permanently attached nameplate displaying model and serial number of the unit for future identification.

MOTOR AND DRIVE ASSEMBLY — Motor and drive assembly shall be mounted on vibration isolators to eliminate vibration and noise transmission into the ductwork. Motors and drives shall be mounted out of the exhaust airstream.

WHEEL — Fan wheels shall be of the centrifugal backward inclined type, containing a matching inlet venturi for optimum unit performance. Wheels shall be statically and dynamically balanced.

SHAFT — Fan shafts shall be precision-ground and polished. Shafts shall have a first critical speed of at least 125% of the fan's maximum operating speed.

BEARINGS — Bearings shall be of the one-piece, pillow block type with relubricable zerk fittings. Bearings shall be designed for air handling service with a minimum L-10 life in excess of 100,000 hours; L-50 500,000 hours at the maximum cataloged operating speed. Bearing mounting plate shall have self-aligning tabs for exact locating and alignment of bearings.

DRIVE — Drive assembly shall be constructed of heavy-gauge galvanized steel. Drives shall be sized for a minimum of 150% of driven horsepower. Machined, cast iron motor sheaves shall be adjustable for final system balance.

MOTOR — Motors shall be heavy-duty ball bearing type, closely matched to the fan load. All single-phase ODP motors shall contain thermal overload protection. All motors shall be UL and /or CSA recognized. Motor adjustment shall allow precise belt tensioning for optimum belt life and one-person adjustment and servicing.

DISCONNECT SWITCH — A NEMA 1 disconnect switch shall be supplied with wiring leading from the motor to the junction box (ODP and TEFC motors).

ACCESSORIES — When specified, accessories such as backdraft damper, roof curb, curb hinge, retaining chain, security hasp, NEMA 3R, 4 disconnect switch, 2-speed switch, firestat, aluminum bird screen, aluminum insect screen and special coatings shall be provided by Twin City Fan & Blower to maintain one source responsibility.

FACTORY RUN TEST — All fans prior to shipment shall be completely assembled and test run as a unit at operating speed or maximum RPM allowed for the particular construction type. Each wheel shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. Balance readings shall be taken by electronic type equipment in the axial, vertical, and horizontal directions on each of the bearings. Records shall be maintained and a written copy shall be available upon request.

GUARANTEE — The manufacturer shall guarantee the workmanship and materials for its roof and wall mounted centrifugal exhaust fans for at least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first.

Model

BCRD-E

Roof mounted exhaust fans shall be of the belt driven centrifugal type, Model BCRD-E (Endurex™ Polymeric Housing), as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

PERFORMANCE — Fans shall be tested in accordance with AMCA 210 and AMCA 300 test codes for air moving devices and shall be guaranteed by the manufacturer to deliver rated published performance levels. Fans shall be licensed to bear the AMCA certified ratings seal for both sound and air. Models shall be cULus 705 listed.

CONSTRUCTION — BCRD-E housings shall be constructed of Endurex™ for impact, weather, corrosion and UV resistance. All units have a deep venturi inlet to prevent snow and rain entry into the building. The curb cap shall include prepunched mounting holes for ease of installation. A conduit chase constructed of electrical metallic tubing shall be provided to the motor compartment. The curb base shall provide protection from weather. Lifting lugs shall be provided inside the motor compartment for ease of handling and installation. Fans shall bear a permanently attached nameplate displaying model and serial number of the unit for future identification.

MOTOR AND DRIVE ASSEMBLY — Motor and drive assembly shall be mounted on vibration isolators to eliminate vibration and noise transmission into the ductwork. Motors and drives shall be mounted out of the exhaust airstream.

WHEEL — Fan wheels shall be of the centrifugal backward inclined type, containing a matching inlet venturi for optimum unit performance. Wheels shall be statically and dynamically balanced.

SHAFT — Fan shafts shall be precision-ground and polished. Shafts shall have a first critical speed of at least 125% of the fan's maximum operating speed.

BEARINGS — Bearings shall be of the one-piece, pillow block type with relubricable zerk fittings. Bearings shall be designed for air handling service with a minimum L-10 life in excess of 100,000 hours; L-50 500,000 hours at the maximum cataloged operating speed. Bearing mounting plate shall have self-aligning tabs for exact locating and alignment of bearings.

DRIVE — Drive assembly shall be constructed of heavy-gauge galvanized steel. Drives shall be sized for a minimum of 150% of driven horsepower. Machined, cast iron motor sheaves shall be adjustable for final system balance.

MOTOR — Motors shall be heavy-duty ball bearing type, closely matched to the fan load. All single-phase ODP motors shall contain thermal overload protection. All motors shall be UL and /or CSA recognized. Motor adjustment shall allow precise belt tensioning for optimum belt life and one-person adjustment and servicing.

DISCONNECT SWITCH — A NEMA 1 disconnect switch shall be supplied with wiring leading from the motor to the junction box (ODP and TEFC motors).

ACCESSORIES — When specified, accessories such as backdraft damper, roof curb, curb hinge, retaining chain, security hasp, NEMA 3R, 4 disconnect switch, 2-speed switch, firestat, aluminum bird screen, aluminum insect screen and special coatings shall be provided by Twin City Fan & Blower to maintain one source responsibility.

FACTORY RUN TEST — All fans prior to shipment shall be completely assembled and test run as a unit at operating speed or maximum RPM allowed for the particular construction type. Each wheel shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. Balance readings shall be taken by electronic type equipment in the axial, vertical, and horizontal directions on each of the bearings. Records shall be maintained and a written copy shall be available upon request.

GUARANTEE — The manufacturer shall guarantee the workmanship and materials for its roof and wall mounted centrifugal exhaust fans for at least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first. All Endurex™ housing components shall have a limited lifetime warranty.

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