

Compton Community College District

Compton CCD Student Housing
DSA Submittal

Technology Cut Sheets



DIVISION 27

CUTSHEETS

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CHATSWORTH
PRODUCTS

Cable Management and Cable Pathway



[chatsworth.com](https://www.chatsworth.com)

Maximize Network Performance with Cabling Infrastructure Solutions from Chatsworth Products

As your network gets faster, CPI will help you stay one step ahead.

Preparing your network to sustain high performance in a constantly changing environment begins with the structure that supports your network cabling and equipment. Organized, deliberate connections deliver signal performance and make it easier for technicians to troubleshoot issues and deploy new capabilities.

Here's how CPI supports your cabling infrastructure needs:

01

An Extensive Portfolio to Meet a Broad Range of Requirements

- Products are engineered for various industry applications and can be customized to meet your unique needs
- Vertical and horizontal cable management options are provided in a variety of styles, widths, heights and depths
- Competitive lead times available with many items stocked through a vast distributor network

02

Critical Cabling and Fiber Support

- Designed to support standards-based designs and installation best practice
- Proper bend radii ensures maximum quality of data transmission
- Meets high-density cabling requirements

03

Cost-Effective Solutions that Address Future Demands

- Designed to support future networking growth and cabling demands
- Products are engineered to simplify network maintenance and costs
- Allows for easy moves, adds and changes to connections, saving time and money





Supporting Your Cabling Needs—Anywhere Your Network Goes

CPI's customer-centric approach is to discover your requirements, then make recommendations based on your needs.

Whether you are upgrading your current infrastructure or designing a new installation, trust the experts at CPI to deliver the most comprehensive line of cable management and pathway products in the industry. CPI's simple and effective solutions help network networking managers to easily manage and protect cables while maximizing network infrastructure uptime.

From robust solutions for high-density applications to versatile and economical products for lower-density networking needs, CPI has a solution for you.



Smart Approach to Cable Management and Pathway Systems

- Motive® Cable Manager
- Adjustable Cable Runway



Standard Cable Management and Pathway Systems

- Evolution® Cable Manager
- Velocity® Cable Manager
- Master Cabling Sections
- Universal Cable Runway
- UL® Classified Cable Runway



Integrated Solutions

- Two- and Four-Post Racks
- Seismic Bracing
- Bonding Busbars
- Power Distribution Units

Motive® Cable Management

A new generation of cable management provides an innovative design that adapts to the cable, and not the other way around.

Motive® Cable Manager offers a level of innovation and sophisticated engineering that is unprecedented in the industry. The patented design features a unique central track system that supports a set of tool-less accessories to provide unlimited adjustability within the cable manager, optimizing use of interior space and inherently ensuring compliance to best practices.



High Configurability and Cabling Best Practices

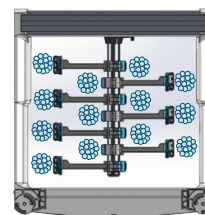
Motive Cable Manager was carefully engineered to promote proper cabling practices regarding cable slack, bend radii and organization.

Attention to Detail

Numerous design elements enhance user experience, and promote intuitive use. For example, every front door features an integrated hook, providing a dedicated space for technicians to hang a test meter.

Supports Current and Future Cabling Needs

Motive addresses advanced Power over Ethernet (PoE) applications where higher wattages require adequately spaced, smaller cable bundles to avoid excessive heat accumulation.



Top drawing view of Single-Sided Motive Cable Manager (P/N 32614) showing efficient use of space and smaller cable bundles.

Maintain a High-Speed Network—Effortlessly

Patented, award-winning design provides a new approach to cable management.

Every Motive Vertical Cable Manager includes tool-less accessories to support a variety of applications right out of the box:



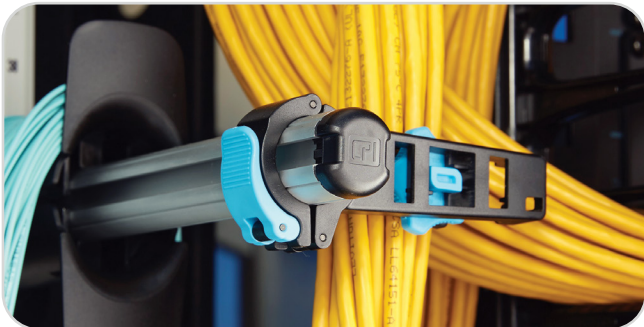
Accessory Rod

Mounts to Motive's central track. It features tool-less, vertical adjustability and serves as the foundation for all of Motive's cable management accessories.



Cable Bundle Swivel

Attaches directly to Motive's central track, Accessory Rod or Rotating Management Finger and allows for quick attachment, removal and adjustment of cable bundles.



Rotating Management Finger

Attaches to the Accessory Rod and provides cable bundle support and bundle segregation at any point within the cable manager.



Half Spool

Snaps onto the Accessory Rod to provide slack management and bend support. Use two spools to create a complete round spool.



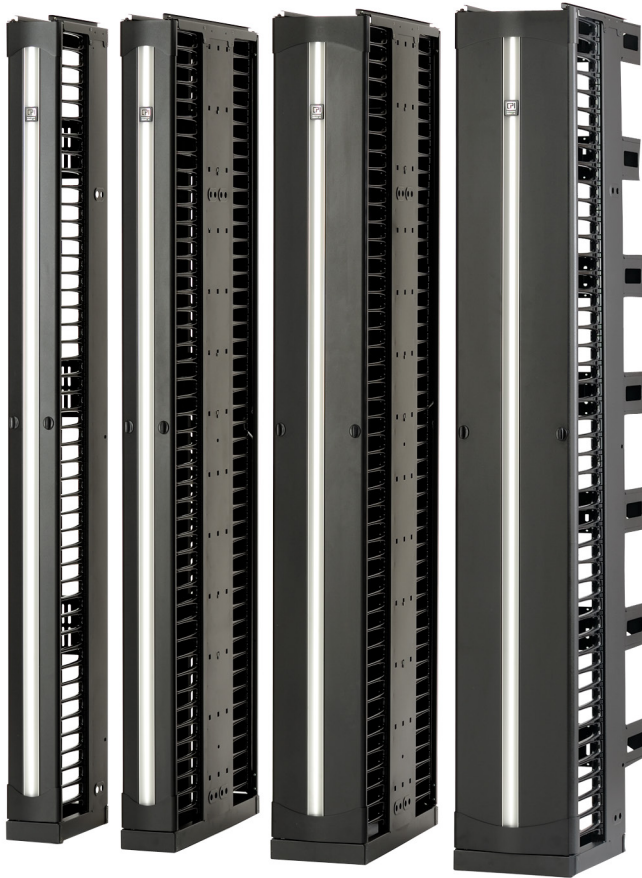
Tool-less Fiber Bend Radius Kit (sold separately)

It snaps onto the finger manager without any tools and can be used for new or retrofit applications. Also compatible with other CPI cable managers.

Evolution[®] Cable Management

CPI's most popular cable manager provides a patented, engineered solution for managing high-density copper cabling and delivering increased performance to match today's data center needs.

Evolution[®] Cable Manager is a reliable, feature-rich cable management solution that delivers a variety of benefits designed to help data center operators meet today's high-density data center application needs. It also includes adjustable mid-panels, easy-to-use front/back doors and interior features that help maximize the capacity and utility of high-density cable management in both vertical and horizontal configurations.



High Performance

Solid construction supports large bundles of heavy cables such as Cat 6a, while sturdy T-shaped cable guides resist bending and deflection and help guide and organize cables.

Dependability

A variety of accessories help effectively address bend radii requirements and cabling best practices, while a patented movable mid-section on double-sided managers allows personalized accessory placement for optimal space utilization.

Accessibility

A removable, single-latch, hinged front/back door provides easy access to cables while rounded edges on the cable guides protect cables as they enter and exit the storage space.



Velocity® Cable Management

Create vertical and horizontal pathways that store and organize premise cables and patch cords on two- and four-post racks with this economical cable management solution.

Velocity® Cable Management is an economical cable management solution for everyday use in telecommunication rooms, equipment rooms and lab spaces. It's also perfect for creating a complete vertical or horizontal pathway for premise cabling and patch cords on CPI Rack Systems and can be paired with a number of additional accessories to increase cable management versatility.



Tool-less Assembly

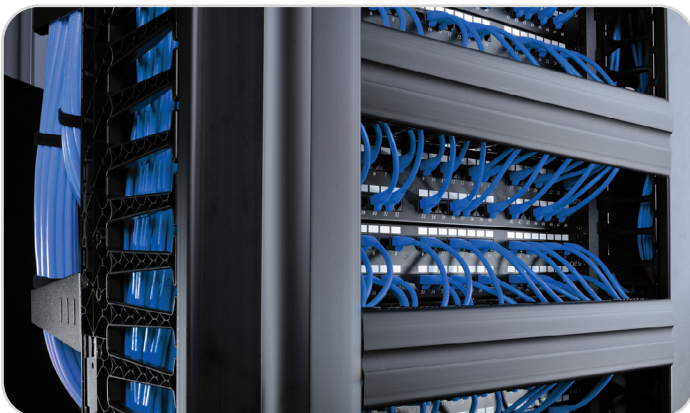
Quick and easy tool-less snap together design means components snap together quickly, taking approximately 3 to 5 minutes to unpack, assemble and install.

Compact Packaging

Reduce waste, freight costs and use less storage space thanks to compact packaging that's 25%–57% smaller than comparable managers.

Simplified Cable Management

T-shaped cable guides and openings on the sides of the manager align with each rack-mount unit and have rounded edges to protect cables from snags.

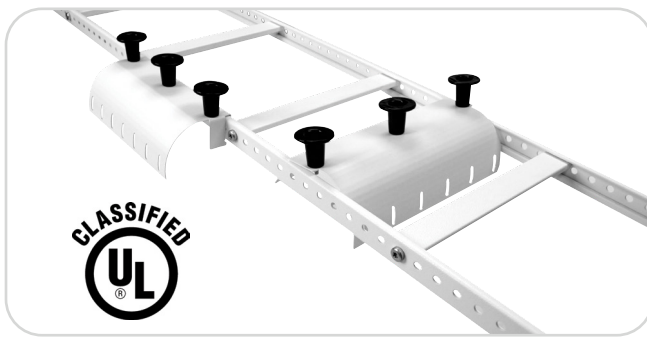


Cable Runway

CPI Cable Runway systems combine quality fit and function in every design component.

New technologies and a more connected life are challenging organizations to deliver high-performing and reliable networks. An important part of the network is the pathway infrastructure to support and secure cabling from the data center or equipment room to workstations.

**CPI-recommended solution for ICT and facilities equipment rooms:
Highly flexible. Easily adaptable.**



Adjustable Cable Runway

Allows the cross-members to be moved as needed, so cables can enter and exit the pathway precisely where required while preserving bend radii. The adjustable design simplifies cabling installation above racks, cabinets and cable managers, helping to improve the efficiency of technicians and installers.



Tool-less Radius Drops

Attach anywhere needed to provide critical support where cables enter and exit the pathway.



Tool-less Pathway Divider

Divides cable runway into multiple pathways and organizes them by media type or destination.



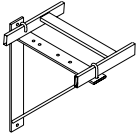
PatchRack for Cable Runway

The miniature two-post rack that attaches to CPI Cable Runway to save rack-mount space by placing patch panels or interconnect equipment above the rack or cabinet. Use PatchRack to create a zone network in the data center.

Ensure Reliability, Flexibility and Rapid Deployment

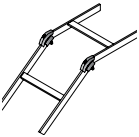
CPI Cable Runway systems can be tailored to meet the specific requirements of each facility and are adaptable for future growth.

Create a complete pathway, enhance cable transitions and promote proper bend radii for better data transmission by including several types of accessories, including:



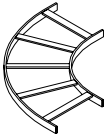
Cable Runway Supports

Attach Cable Runway to the wall, ceiling, floor or the tops of racks and cabinets.



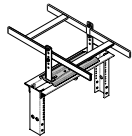
Cable Runway Splices

Pathway components that connect or form sections of Cable Runway together with splice hardware.



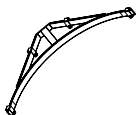
Cable Runway Bends

Create gradual right, left, up or down turns in the Cable Runway. The pre-fabricated pathway transitions include the E-Bend, Outside Radius Bend and Corner Bracket.



Cable Runway Elevation Kits

Elevate Cable Runway above racks or cabinets to allow a full radius as cables exit the pathway to enter the rack.



Cable Runway Corner Bracket

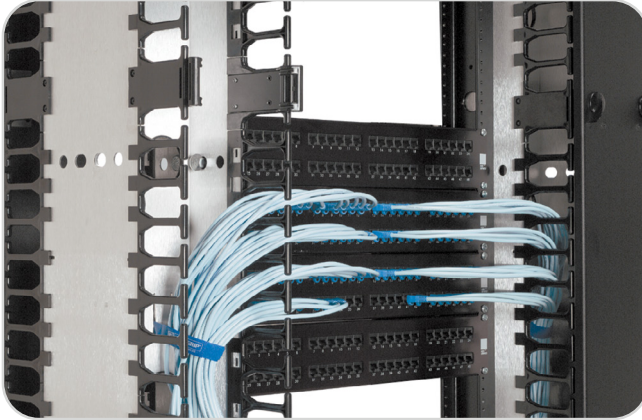
Add a curve to Cable Runway corners at L-, T- or X-shaped intersections.



Additional Solutions

Broad range of practical solutions for high- or low-density cabling applications.

CPI offers all the cable management solutions that you need to ensure your premise network will support emerging technologies, increasing densities and future readiness.



Master Cabling Section (MCS) and Combination Cabling Section (CCS)

For medium-density cabling applications, the MCS and CCS provide patented, plastic T-shaped cable management fingers and openings that align with each U space on the rack.

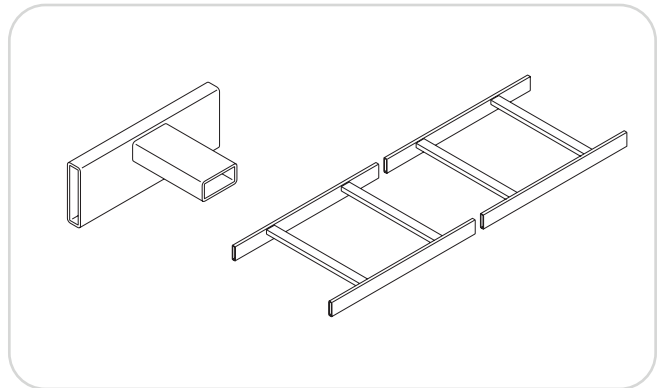


Universal Runway

Traditional pathway solution for distribution over racks in equipment rooms. Note that cross-members are fixed in place.

“For the design of the solution, I like the interoperability of CPI products. I can pick and choose and assemble a solution.”

Magnus Askautrud,
Business Development Manager, Coromatic



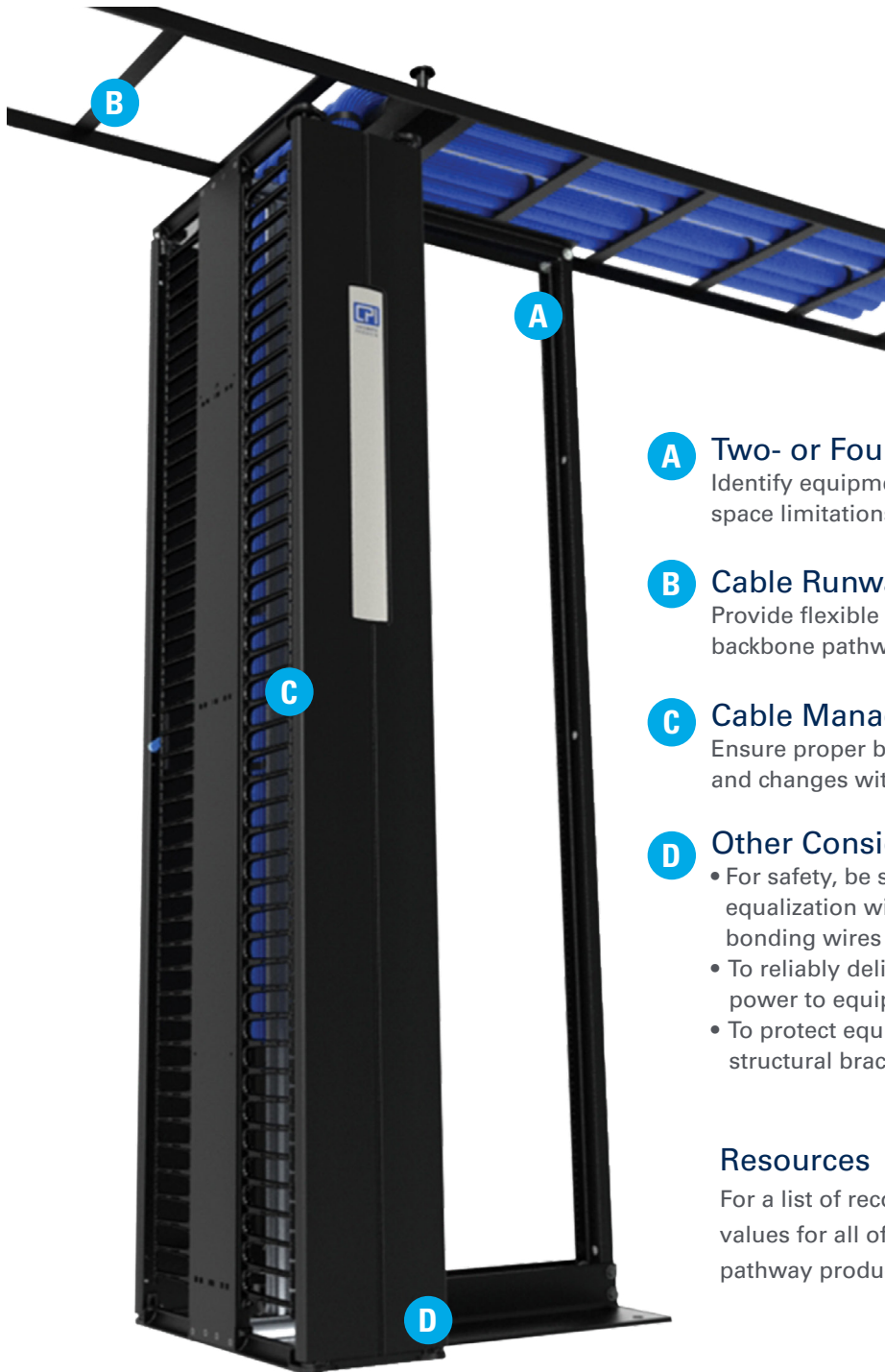
UL® Classified Runway

Bonds when you splice it together, and features 9" (228.6 mm) spacing to comply with TELCO-style standards.

Simplify Deployment with an Integrated Solution

CPI is the single source for a complete system—racks, cable management and pathway products.

Protect network integrity by providing superior support for cable and cord management, helping you to ensure signal quality and network speed.



A Two- or Four-Post Racks

Identify equipment support requirements and space limitations

B Cable Runway and Pathway

Provide flexible support for horizontal, vertical, and backbone pathways

C Cable Management and Accessories

Ensure proper bend radii and easy moves, adds and changes with space-saving, tool-less products

D Other Considerations:

- For safety, be sure there is proper electric equalization with bonding busbars and bonding wires
- To reliably deliver, remotely monitor and control power to equipment
- To protect equipment in seismic areas, select structural bracing for racks and runway

Resources

For a list of recommended and maximum cable fill values for all of CPI's cable management and cable pathway products, visit [chatsworth.com/cable-fill](https://www.chatsworth.com/cable-fill).



**CHATSWORTH
PRODUCTS**

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about CPI solutions at:
chatsworth.com

+1-800-834-4969 (U.S. & Canada)
or techsupport@chatsworth.com

chatsworth.com

Manufacturing Capability and Global Availability

Headquartered in the United States, CPI operates from multiple sites worldwide, including offices in Mexico, Canada, China, the Middle East and the United Kingdom. CPI's manufacturing facilities are located in the United States, Asia and Europe.

Standard products are readily available through a global network of industry-leading distributors. With stock availability, and CPI's consistently competitive factory lead times, you can be assured that CPI solutions will be accessible to meet your project scheduling needs.

How to Buy

CPI sales are conducted in partnership with a global network of distributors, contractors and resellers to ensure a high level of stock availability. Use CPI's Online Catalog to place an order with a distributor near you. Go to chatsworth.com to learn more.

About CPI

CPI, a 100% employee-owned company, was founded in June 1991, when 90 workers joined together and purchased the Dracon Division of Harris Corporation using an Employee Stock Ownership Plan (ESOP). Employee ownership is central to the success of CPI. Employee owners are committed to a philosophy of quality through teamwork, caring and commitment, which are extended to customers through our solutions and services.



All products quoted are subject to availability based on manufacturing capacity and shipping dates should be considered estimates only. While every effort has been made to ensure the accuracy of all information, CPI does not accept liability for any errors or omissions and reserves the right to change information and descriptions of listed services and products.

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GLOBALTRAC WIRE MESH CABLE TRAY SYSTEM

KEY FEATURES

- Easy to use pathway solution that supports large quantities of network cables
- Can be cut and formed to create smooth curved transitions around obstacles
- Open top design makes cable moves, adds and changes easier
- Available in multiple heights and widths to match cable fill requirements
- Easy to splice together
- Support trays from the floor, ceiling or wall

APPLICATIONS

- Use the GlobalTrac Wire Mesh Cable Tray System to distribute network cables to equipment cabinets and racks in the data center and network equipment rooms or to individual office spaces in commercial buildings.

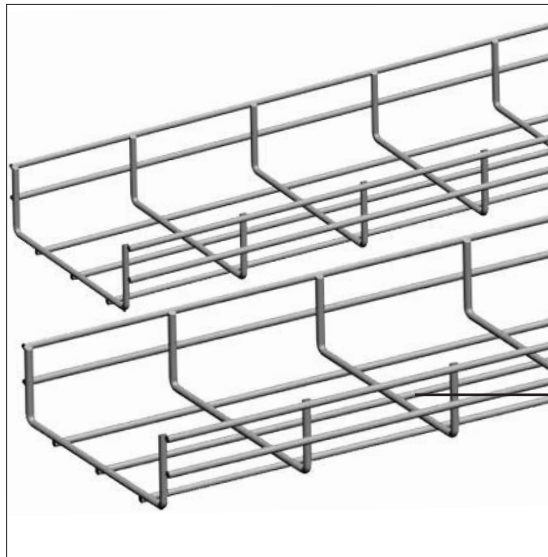
USE WITH

- CPI Rack Systems
- CPI Cabinet, Enclosure and Containment Systems
- CPI Zone Cabling and Wireless Enclosures

RELATED ACCESSORIES

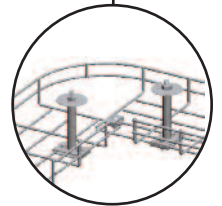
- CPI Grounding and Bonding Products

Availability: Exclusively Asia Pacific



GlobalTrac Wire Mesh Cable Tray

Cut and form tray to create turns and transitions.



CPI's GlobalTrac Wire Mesh Cable Tray System is an excellent solution for indoor cable pathway applications to create point-to-point pathways for network cabling in data centers, network equipment rooms and office spaces.

All GlobalTrac Wire Mesh Cable Trays can be cut and formed into smooth turns, and it transitions easily, adapting to most locations to avoid existing pathway obstacles. The tray provides excellent load bearing capability and protection for cables. Manufactured from 5 mm diameter steel wire that is welded into a 2" x 4" (50 mm x 100 mm) rectangular pattern, GlobalTrac is available in a choice of three heights and 12 widths to match cable fill requirements. Standard 10'L (3 m) sections can be cut and formed into smooth horizontal or vertical transitions. The tray is available in zinc plated or painted black finish. Select tray size based on cable fill requirements. Select splices and supports to match the location.

Ordering information is listed on the following pages. Contact CPI Technical Support for assistance with configurations.

US & Canada

+1-800-834-4969
Toronto, Ontario, Canada
+905-850-7770
chatsworth.com

Latin America

+52-55-5203-7525
Toll Free within Mexico
01-800-01-7592
chatsworth.com.co

Europe

+44-1628-524-834
chatsworthproducts.co.uk

Middle East & Africa

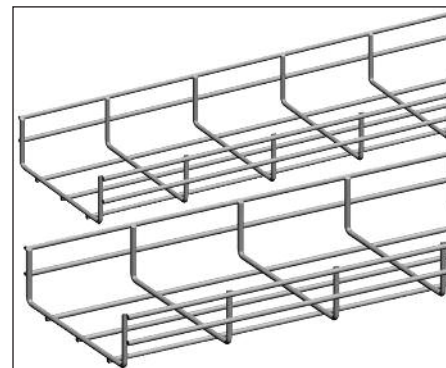
Dubai, UAE
+971-4-2602125
chatsworthproducts.co.uk

Asia Pacific

+86 21 6880-0266
chatsworth.com.cn

SPECIFICATIONS

- Provides short span support of low voltage, telecommunications, network and fiber optic cables
- For indoor use only, in environmentally controlled areas; may not be used outdoors or in harsh environments
- Available sizes:
 - See Ordering Information
- Cable Fill Capacity:
 - See Ordering Information
- Material:
 - Medium carbon steel wire, 5 mm diameter
- Construction:
 - Welded at 2" x 4" (50 mm x 100 mm) intersections
- Finish:
 - Two options
 - Electro-Zinc Plated, >=12 µm (microns) thick, meets BS EN 12329:2000 requirements
 - Painted, black powder coat, 60 µm (microns) to 100 µm (microns) thick, meets JG/T3045-1998 requirements
- Safe Working Load
 - See Ordering Information; support every 1.5 m (5')
 - Meets Clause 5.2.6-5.2.9, NEMA VE 1 and 2002/CSA C22.2 No. 126.1-02 requirements
 - Exceeds Clause 10.4, BS EN61537:2007 Cable Management – Cable Tray Systems and Cable Ladder Systems requirements
- Installation Hardware:
 - Support every 1.5 m (5') of span, and on both sides of each splice, intersection or change in elevation
 - Order splices, support brackets and installation hardware separately to match job site requirements



Part Number and Finish		Nominal Dimensions				Cable Fill Area		Estimated Loose Cable Fill (Max)		Max Load 5'L (1.5 m) Span		Shipping Weight	
Electro-Zinc Plated	Painted Black	Height		Width		in ²	mm ²	.30" OD	7.5 mm	lb/ft	kg/m	lb	kg
		in	mm	in	mm								
84811-502	84811-702	2	50	2	50	4	2500	29	28	38	57	9.0	4.1
84811-504	84811-704	2	50	4	100	8	5000	58	56	43	65	11.0	5.0
84811-506	84811-706	2	50	6	150	12	7500	88	85	49	74	12.0	5.4
84811-508	84811-708	2	50	8	200	16	10000	117	113	54	82	14.0	6.4
84811-512	84811-712	2	50	12	300	24	15000	176	170	60	90	17.0	7.7
84811-516	84811-716	2	50	16	400	32	20000	235	226	65	98	20.0	9.1
84811-518	84811-718	2	50	18	450	36	22500	264	255	71	106	21.0	9.5
84811-520	84811-720	2	50	20	500	40	25000	294	283	77	114	23.0	10.4
84811-524	84811-724	2	50	24	600	48	30000	352	340	82	123	26.0	11.8
84821-504	84821-704	4	100	4	100	16	10000	117	113	93	140	14.0	6.4
84821-506	84821-706	4	100	6	150	24	15000	176	170	97	146	16.0	7.3
84821-508	84821-708	4	100	8	200	32	20000	235	226	99	150	18.0	8.2
84821-512	84821-712	4	100	12	300	48	30000	352	340	101	153	21.0	9.5
84821-516	84821-716	4	100	16	400	64	40000	470	453	106	160	24.0	10.9
84821-518	84821-718	4	100	18	450	72	45000	529	510	115	173	25.0	11.3
84821-520	84821-720	4	100	20	500	80	50000	588	566	120	180	27.0	12.2
84821-524	84821-724	4	100	24	600	96	60000	705	680	123	186	30.0	13.6
84821-528	84821-728	4	100	28	700	112	70000	823	793	127	192	31.0	14.1
84821-532	84821-732	4	100	32	800	128	80000	941	907	131	198	33.0	15.0
84821-536	84821-736	4	100	36	900	144	90000	1058	1020	135	204	34.0	15.4
84831-506	84831-706	6	150	6	150	36	22500	264	255	128	194	21.0	9.5
84831-508	84831-708	6	150	8	200	48	30000	352	340	132	200	22.0	10.0
84831-512	84831-712	6	150	12	300	72	45000	529	510	139	210	25.0	11.3
84831-516	84831-716	6	150	16	400	96	60000	705	680	141	213	28.0	12.7
84831-518	84831-718	6	150	18	450	108	67500	794	765	143	216	29.0	13.2
84831-520	84831-720	6	150	20	500	120	75000	882	850	146	221	31.0	14.1
84831-524	84831-724	6	150	24	600	144	90000	1058	1020	148	224	34.0	15.4
84831-528	84831-728	6	150	28	700	168	105000	1235	1190	150	227	37.0	16.8
84831-532	84831-732	6	150	32	800	192	120000	1411	1360	152	230	40.0	18.1
84831-536	84831-736	6	150	36	900	216	135000	1588	1530	154	233	43.0	19.5

Dimensions above are nominal. All trays are 118" (3000 mm), approximately 10'L (3 m).

Available outside of the US and Canada.

ORDERING INFORMATION

Splices

Use splices to connect cable trays together to form end-to-end junctions, turns or intersections. Splices are sold in multi-packs. A minimum of three splices are used for each connection. More splices are used on wider trays.

Standard Splice Kit

- Universal SpliceKit used to connect sections of wire mesh cable tray together end-to-end, at intersections and turns
- A minimum of three splices are required for every connection; wider trays require more splices
- Each splice includes two washers, an M6 bolt and nut
- The two washers wrap around adjacent wires on the tray connecting the tray together
- Sold individually or in packs of 50

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84738-501	84738-701	Standard Splice Kit, Each	1 (0.5)
84738-550	84738-750	Standard Splice Kit, 50 Pack	4 (1.8)

Spacer Splice Kit

- Enhanced version of the Standard Splice Kit used to connect sections of wire mesh cable tray together end-to-end, at intersections and turns
- A minimum of three splices are required for every connection; wider trays require more splices
- Each splice includes two washers (one with spacer tabs), an M6 bolt and nut
- The two washers wrap around adjacent wires on the tray connecting the tray together; a tab stamped into one washer keeps trays spaced evenly apart
- Sold individually or in packs of 50

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84728-501	84728-701	Spacer Splice Kit, Each	1 (0.5)
84728-550	84728-750	Spacer Splice Kit, 50 Pack	4 (1.8)

Splice Bar

- Used to connect and strengthen end-to-end connections of wire mesh cable tray and to make turns, risers and reducers
- Each splice includes the bar, three washers, three M6 bolts and nuts
- Recommended for all trays that are 18"W (450 mm) or wider
- Manufactured from steel
- Sold individually or in packs of 50

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84739-501	84739-701	Splice Bar, Each	1 (0.5)
84739-550	84739-750	Splice Bar, 50 Pack	16 (7.3)

90° Splice Bar Kit

- Used to connect and strengthen intersections, tees and crosses of wire mesh cable tray
- Each splice includes the 90 degree bar, four washers, four M6 bolts and four nuts
- Recommended for all trays that are 18"W (450 mm) or wider
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84740-501	84740-701	90° Splice Bar Kit	1 (0.5)

Spring Splice

- Boltless alternative to Standard Splice Kit
- Quick installation with included tool; no hardware required
- Used in combination with the Tool-Less Splice Kit to make boltless end-to-end connections of wire mesh cable tray
- Used on the sides of the tray, wraps around adjacent wires on the tray connecting the tray together
- Recommended for trays under 18"W (450 mm)
- Sold individually or in packs of 50

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84834-501	84834-701	Spring Splice, Each	1 (0.5)
84834-550	84834-750	Spring Splice, 50 Pack	7 (3.2)

Tool-Less Splice Kit

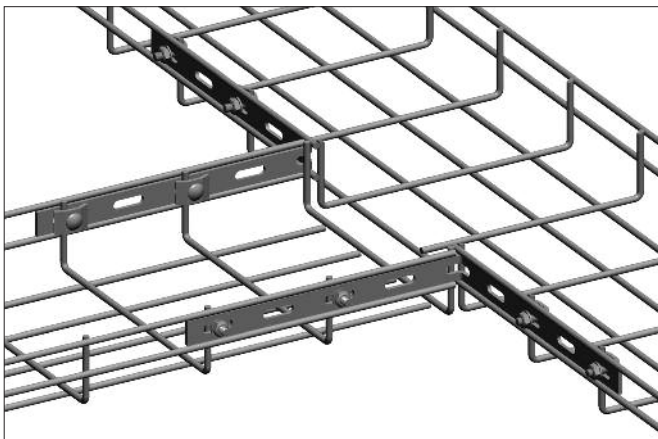
- Boltless alternative to Standard Splice Kit
- Used in combination with the Spring Splice to make boltless end-to-end connections of wire mesh cable tray
- Used on the bottom of the tray, wraps around adjacent wires on the tray connecting the tray together
- Recommended for trays under 18"W (450 mm)
- Sold individually or in packs of 50

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84835-501	84835-701	Tool-Less Splice Kit, Each	1 (0.5)
84835-550	84835-750	Tool-Less Splice Kit, 50 Pack	4 (1.8)

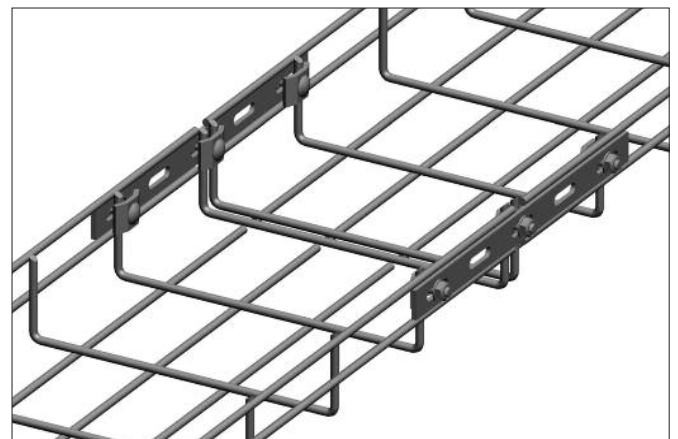
Fast Lock

- Boltless alternative to Standard Splice Kit
- Used to make smooth turns in the tray with boltless connections
- Used on the sides of the tray, wraps around adjacent wires on the tray connecting the tray together
- Recommended for trays under 18"W (450 mm)
- Sold individually or in packs of 50

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84836-501	84836-701	Fast Lock, Each	1 (0.5)
84836-550	84836-750	Fast Lock, 50 Pack	2 (0.9)



90° Splice Bar (84740-X01) installed on GlobalTrac Wire Basket Tray.



Splice Bar (84739-X01) installed on GlobalTrac Wire Basket Tray.

ORDERING INFORMATION

Supports

Support GlobalTrac Wire Mesh Cable Tray from overhead threaded rod, from the wall or under raised floors using the following supports. Support cable tray every 1.5 m (5') or less on straight runs and on both sides of each turn, transition of within 0.6 m (2') of every splice or intersection. Refer to the cable tray order table for maximum safe working loads. Order installation hardware separately.



2" (50 mm) Tray Holder

- Ceiling support for 2"W (50 mm) cable tray
- Suspends tray from a single M10 threaded rod
- Order threaded rod and installation hardware separately
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84729-501	84729-701	2" (50 mm) Tray Holder	1 (0.5)



Edge Hanger

- Used in pairs to support cable trays up to 12"W (300 mm) from the ceiling using M10 threaded rods
- Order threaded rods and installation hardware separately
- The side of the tray is supported in the two J-shaped hooks at the bottom of the hanger
- Manufactured from steel
- Sold individually or in packs of 50

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84731-501	84731-701	Edge Hanger, Each	1 (0.5)
84731-550	84731-750	Edge Hanger, 50 Pack	5 (2.3)



Ceiling Bracket

- Used to hang wire mesh cable tray vertically from the ceiling
- Bracket attaches to the ceiling with M10 hardware
- Order installation hardware separately
- Manufactured from steel
- Sold individually

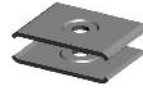
Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84732-501	84732-701	Ceiling Bracket	1 (0.5)



Trapeze Support Bracket

- Used to support cable tray from the ceiling using a pair of M10 threaded rods
- Order threaded rods and installation hardware separately
- Tray slips into slots on the bar; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84730-504	84730-704	For 4"W (100 mm) Tray	1 (0.5)
84730-506	84730-706	For 6"W (150 mm) Tray	1 (0.5)
84730-508	84730-708	For 8"W (200 mm) Tray	1 (0.5)
84730-512	84730-712	For 12"W (300 mm) Tray	2 (0.9)
84730-516	84730-716	For 16"W (400 mm) Tray	2 (0.9)
84730-518	84730-718	For 18"W (450 mm) Tray	2 (0.9)
84730-520	84730-720	For 20"W (500 mm) Tray	2 (0.9)
84730-524	84730-724	For 24"W (600 mm) Tray	2 (0.9)



Clamp Washer Kit

- Used to securely fasten two layers of wire mesh when connecting trays at 90-degree bends or intersections
- Each kit includes a pair of clamp washers
- Order M10 installation hardware separately
- Manufactured from steel
- Sold individually or in packs of 50

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84746-501	84746-701	Clamp Washer Kit, Each	1 (0.5)
84746-550	84746-750	Clamp Washer Kit, 50 Pack	5 (2.3)



M Shape Bar

- Used to support cable tray from the ceiling using a pair of M10 threaded rods
- Order threaded rods and installation hardware separately
- Tray slips into slots on the bar; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84735-504	84735-704	For 4"W (100 mm) Tray	1 (0.5)
84735-506	84735-706	For 6"W (150 mm) Tray	1 (0.5)
84735-508	84735-708	For 8"W (200 mm) Tray	1 (0.5)
84735-512	84735-712	For 12"W (300 mm) Tray	2 (0.9)
84735-516	84735-716	For 16"W (400 mm) Tray	2 (0.9)
84735-518	84735-718	For 18"W (450 mm) Tray	2 (0.9)
84735-520	84735-720	For 20"W (500 mm) Tray	2 (0.9)
84735-524	84735-724	For 24"W (600 mm) Tray	3 (1.4)



U Channel Bar Kit

- Used to support cable tray from the ceiling using a pair of M10 threaded rods
- Order threaded rods and installation hardware separately
- Tray secures to U channel with included spring nut and clip hardware
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84736-504	84736-704	For 4"W (100 mm) Tray	3 (1.4)
84736-506	84736-706	For 6"W (150 mm) Tray	4 (1.8)
84736-508	84736-708	For 8"W (200 mm) Tray	4 (1.8)
84736-512	84736-712	For 12"W (300 mm) Tray	4 (1.8)
84736-516	84736-716	For 16"W (400 mm) Tray	4 (1.8)
84736-518	84736-718	For 18"W (450 mm) Tray	4 (1.8)
84736-520	84736-720	For 20"W (500 mm) Tray	4 (1.8)
84736-524	84736-724	For 24"W (600 mm) Tray	4 (1.8)
84736-528	84736-728	For 28"W (700 mm) Tray	5 (2.3)
84736-532	84736-732	For 32"W (800 mm) Tray	5 (2.3)
84736-536	84736-736	For 36"W (900 mm) Tray	5 (2.3)



Cantilever Wall Bracket

- Used to support cable tray against the wall
- Order M10 wall installation hardware separately
- Tray slips into slots on the bracket; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84745-506	84745-706	For 6"W (150 mm) Tray	3 (1.4)
84745-508	84745-708	For 8"W (200 mm) Tray	3 (1.4)
84745-512	84745-712	For 12"W (300 mm) Tray	3 (1.4)
84745-516	84745-716	For 16"W (400 mm) Tray	4 (1.8)
84745-518	84745-718	For 18"W (450 mm) Tray	4 (1.8)
84745-520	84745-720	For 20"W (500 mm) Tray	4 (1.8)
84745-524	84745-724	For 24"W (600 mm) Tray	4 (1.8)



Spring Clip

- Used to secure tray to 1.6"W (41 mm) U-channel bar
- Order U-channel bar and installation hardware separately
- Clip is manufactured from steel
- Sold individually or in packs of 50

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84837-501	84837-701	Spring Clip, Each	1 (0.5)
84837-550	84837-750	Spring Clip, 50 Pack	2 (0.9)

ORDERING INFORMATION (Supports - continued from page 4)



Power Box Bracket

- Used to attach 2"W (50 mm) or 4"W (100 mm) cable tray to a wall or the floor
- Also used to attach an electrical junction box to the side of tray
- Order floor installation hardware or junction box separately
- Tray slips into slots on the bracket; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84742-501	84742-701	Power Box Bracket	1 (0.5)



Floor Stand, 2"W (50 mm)

- Used to attach 2"W (50 mm) cable tray to the floor
- Order M10 floor installation hardware separately
- Tray slips into slots on the bracket; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84812-502	84812-702	Floor Stand, 2"W (50 mm)	1 (0.5)



L Support Bracket

- Used to support cable tray against the wall
- Order M10 wall installation hardware separately
- Tray slips into slots on the bracket; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84734-504	84734-704	For 4"W (100 mm) Tray	1 (0.5)
84734-506	84734-706	For 6"W (150 mm) Tray	2 (0.9)
84734-508	84734-708	For 8"W (200 mm) Tray	2 (0.9)
84734-512	84734-712	For 12"W (300 mm) Tray	2 (0.9)



Floor Stand, 4"W (100 mm)

- Used to attach 4"W (100 mm) cable tray to the floor
- Order M10 floor installation hardware separately
- Tray slips into slots on the bracket; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84812-504	84812-704	Floor Stand, 4"W (100 mm)	1 (0.5)



Bridge Type Floor Stand

- Used to support cable tray from the floor
- Order M10 floor installation hardware separately
- Tray slips into slots on the bracket; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84813-504	84813-704	For 4"W (100 mm) Tray	3 (1.4)
84813-506	84813-706	For 6"W (150 mm) Tray	4 (1.8)
84813-508	84813-708	For 8"W (200 mm) Tray	4 (1.8)
84813-512	84813-712	For 12"W (300 mm) Tray	4 (1.8)
84813-516	84813-716	For 16"W (400 mm) Tray	4 (1.8)
84813-518	84813-718	For 18"W (450 mm) Tray	5 (2.3)
84813-520	84813-720	For 20"W (500 mm) Tray	5 (2.3)
84813-524	84813-724	For 24"W (600 mm) Tray	5 (2.3)



Triangle Support Bracket

- Used to support cable tray against the wall
- Order M10 wall installation hardware separately
- Tray slips into slots on the bracket; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84733-504	84733-704	For 4"W (100 mm) Tray	1 (0.5)
84733-506	84733-706	For 6"W (150 mm) Tray	1 (0.5)
84733-508	84733-708	For 8"W (200 mm) Tray	1 (0.5)
84733-512	84733-712	For 12"W (300 mm) Tray	2 (0.9)
84733-516	84733-716	For 16"W (400 mm) Tray	2 (0.9)
84733-518	84733-718	For 18"W (450 mm) Tray	2 (0.9)
84733-520	84733-720	For 20"W (500 mm) Tray	3 (1.4)
84733-524	84733-724	For 24"W (600 mm) Tray	3 (1.4)



Flag Type Floor Stand

- Used to support cable tray from the floor
- Order M10 floor installation hardware separately
- Stand is 12"H (300 mm); support adjusts in height
- Tray slips into slots on the bracket; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

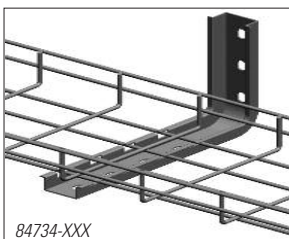
Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84814-504	84814-704	For 4"W (100 mm) Tray	2 (0.9)
84814-506	84814-706	For 6"W (150 mm) Tray	2 (0.9)
84814-508	84814-708	For 8"W (200 mm) Tray	2 (0.9)
84814-512	84814-712	For 12"W (300 mm) Tray	3 (1.4)
84814-516	84814-716	For 16"W (400 mm) Tray	3 (1.4)
84814-518	84814-718	For 18"W (450 mm) Tray	4 (1.8)
84814-520	84814-720	For 20"W (500 mm) Tray	4 (1.8)
84814-524	84814-724	For 24"W (600 mm) Tray	4 (1.8)



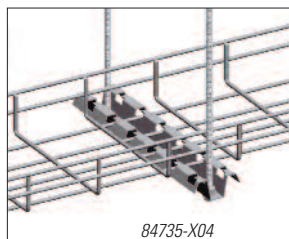
Pedestal Clamp Bracket

- Used to support cable tray up to 20"W (500mm) from a pair of adjacent raised floor pedestals
- Includes two Pedestal Clamps and a 22"L (550 mm) bracket
- Tray slips into slots on the bracket; fold tabs down to secure tray
- Manufactured from steel
- Sold individually

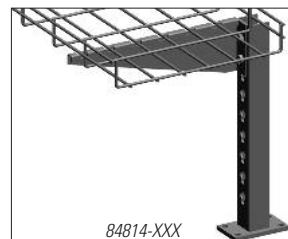
Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84737-701	84737-701	Pedestal Clamp Bracket	3 (1.4)



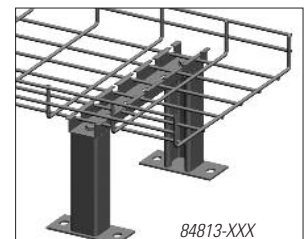
84734-XXX



84735-X04



84814-XXX



84813-XXX

ORDERING INFORMATION

Accessories

Cable management accessories to guide, separate and protect cables within cable tray, and grounding lugs to bond sections of tray together.



Radius Drop

- Used to support cable as it exits or enters the tray
- Tabs slip over tray wires; fold tabs down to secure to tray
- Manufactured from steel, 3.5"W (90 mm), 2" (50 mm) radius
- Sold individually

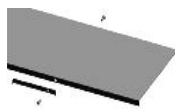
Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84741-501	84741-701	Radius Drop	1 (0.5)



Cable Tray Divider

- Used to separate cables inside the tray
- Tabs slip over tray wires; fold tabs down to secure to tray
- Manufactured from steel, 39"L (1000 mm)
- Order three to support 118"L (3000 mm) section of tray
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84743-502	84743-702	For 2"H (50 mm) Tray	2 (0.9)
84743-504	84743-704	For 4"H (100 mm) Tray	3 (1.4)
84743-506	84743-706	For 6"H (150 mm) Tray	4 (1.8)



Cable Tray Cover

- Used to cover trays and protect cable
- Tabs slip over tray wires; fold tabs down to secure to tray
- Manufactured from steel, 59"L (1500 mm)
- Order two to support 118"L (3000 mm) section of tray
- Sold individually, note length is less than tray

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
84744-502	84744-702	For 2"W (50 mm) Tray	3 (1.4)
84744-504	84744-704	For 4"W (100 mm) Tray	4 (1.8)
84744-506	84744-706	For 6"W (150 mm) Tray	6 (2.7)
84744-508	84744-708	For 8"W (200 mm) Tray	7 (3.2)
84744-512	84744-712	For 12"W (300 mm) Tray	9 (4.1)
84744-516	84744-716	For 16"W (400 mm) Tray	12 (5.4)
84744-518	84744-718	For 18"W (450 mm) Tray	13 (5.9)
84744-520	84744-720	For 20"W (500 mm) Tray	15 (6.8)
84744-524	84744-724	For 24"W (600 mm) Tray	17 (7.7)



Cable Roller

- Pulley used during cable installation to ease tension when pulling cables around turns
- Attaches to the bottom of the tray with included bracket
- Manufactured from steel
- Sold individually

Part Number	Description	Shipping Weight lb (kg)
Zinc		
84815-501	Cable Roller, Electro-Zinc Plated	1 (0.5)



End Cap

- Used to cover and close the end of a tray and protect cable
- Tabs slip over tray wires; fold tabs down to secure to tray
- Manufactured from steel
- Sold individually

Part Number		Description	Shipping Weight lb (kg)
Zinc	Black		
For 2"H (50 mm) Tray			
84816-502	84816-702	For 2"W (50 mm) Tray	1 (0.5)
84816-504	84816-704	For 4"W (100 mm) Tray	1 (0.5)
84816-506	84816-706	For 6"W (150 mm) Tray	1 (0.5)
84816-508	84816-708	For 8"W (200 mm) Tray	1 (0.5)
84816-512	84816-712	For 12"W (300 mm) Tray	1 (0.5)
84816-516	84816-716	For 16"W (400 mm) Tray	1 (0.5)
84816-518	84816-718	For 18"W (450 mm) Tray	1 (0.5)
84816-520	84816-720	For 20"W (500 mm) Tray	1 (0.5)
84816-524	84816-724	For 24"W (600 mm) Tray	1 (0.5)
For 4"H (100 mm) Tray			
84817-504	84817-704	For 4"W (100 mm) Tray	1 (0.5)
84817-506	84817-706	For 6"W (150 mm) Tray	1 (0.5)
84817-508	84817-708	For 8"W (200 mm) Tray	1 (0.5)
84817-512	84817-712	For 12"W (300 mm) Tray	1 (0.5)
84817-516	84817-716	For 16"W (400 mm) Tray	1 (0.5)
84817-518	84817-718	For 18"W (450 mm) Tray	1 (0.5)
84817-520	84817-720	For 20"W (500 mm) Tray	1 (0.5)
84817-524	84817-724	For 24"W (600 mm) Tray	1 (0.5)
84817-528	84817-728	For 28"W (700 mm) Tray	1 (0.5)
84817-532	84817-732	For 32"W (800 mm) Tray	2 (0.9)
84817-536	84817-736	For 36"W (900 mm) Tray	2 (0.9)
For 6"H (150 mm) Tray			
84818-506	84818-706	For 6"W (150 mm) Tray	1 (0.5)
84818-508	84818-708	For 8"W (200 mm) Tray	1 (0.5)
84818-512	84818-712	For 12"W (300 mm) Tray	1 (0.5)
84818-516	84818-716	For 16"W (400 mm) Tray	1 (0.5)
84818-518	84818-718	For 18"W (450 mm) Tray	1 (0.5)
84818-520	84818-720	For 20"W (500 mm) Tray	1 (0.5)
84818-524	84818-724	For 24"W (600 mm) Tray	1 (0.5)
84818-528	84818-728	For 28"W (700 mm) Tray	1 (0.5)
84818-532	84818-732	For 32"W (800 mm) Tray	2 (0.9)
84818-536	84818-736	For 36"W (900 mm) Tray	2 (0.9)

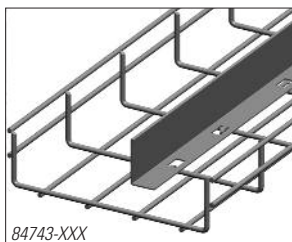


Split Bolt Grounding Clamp

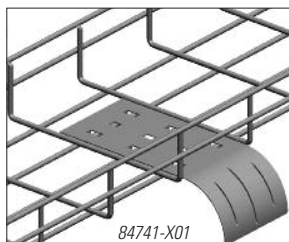
- Ground lug used to bond cable tray sections together
- Attaches to the cable tray and secures conductor against tray wire
- Two options: copper or copper plated
- Sold individually or in packs of 10

Part Number		Description	Shipping Weight lb (kg)
Each	Pack of 10		
84838-001	84838-010	For 3.5 to 5 mm diameter wires, copper	2 (0.9)
84838-002	84838-020	For 5.5 to 6 mm diameter wires, copper plated	3 (1.4)

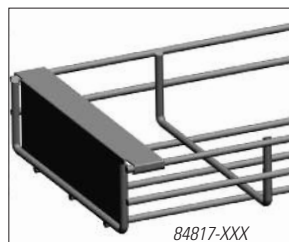
Note: Shipping Weights are for the pack of 10.



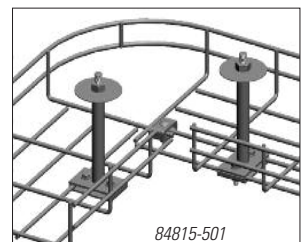
84743-XXX



84741-X01



84817-XXX



84815-501



Universal Rack

Use with vertical and horizontal cable managers to support interconnect and network equipment in telecommunications rooms, equipment rooms and data centers. Use with shelves to support equipment.



ADVANTAGES

Marked and Numbered rack-mount units (U)
U marks simplify equipment installation



Bonding Studs
Located directly on rack channel



Mounting
Holes in base angle for floor attachment



HCAI OPM-0261

KEY FEATURES

- Supports 19" rack-mount equipment designed for two-post panel mounting like patch panels and network switches or use with shelves to support computer servers.
- Easy positioning of equipment or shelves with marked and numbered rack-mount spaces.
- Quick attachment of equipment with threaded equipment mounting holes and included equipment-mounting screws.
- Delivers unassembled in a single carton — quick and easy bolt-together assembly takes less than 10 minutes.
- Lightweight aluminum construction for easy transport and positioning during installation.
- Integrated grounding with a built-in attachment point for a ground (earthing) connection.
- Attach CPI vertical cable managers to the side of the rack through pre-punched holes.
- Secure the rack to the floor quickly with a concrete, wood or raised floor installation kit through pre-punched holes in base angle.

SPECIFICATIONS

Description	Open floor-mount two-post rack supports 19"W EIA, 23"W or 35"W rack-mount equipment
Use	For indoor use only, in environmentally controlled areas; may not be used outdoors, in industrial or harsh environments, or in plenum spaces
Available sizes	Heights: See Dimension Table
	Width: 20.3" (515.9 mm), 24.3" (617.5 mm), 26.3" (922.3 mm) Depth: 15" (381 mm)
Equipment space	Heights: See Dimension Table
	Width: 19" EIA (17-3/4" clearance), 23" (21-3/4" clearance), 35" (33-3/4" clearance) Depth: 20"D (508 mm)
Cable Management	Use vertical and horizontal cable managers, sold as accessories
Load capacity	1,500 lb (680.4 kg) of equipment; weight must be evenly distributed, and rack must be properly secured to floor
Bonding/Grounding	Top angles, base angles and side channels are electrically bonded by assembly hardware - One exception - top angles are not electrically bonded on Flush Bolted Racks (P/N 467XX) - A masked mounting location for ground lug with two 1/4-20 threaded studs spaced 5/8" apart is provided inside the side channel - Racks that are over 6'H (1.8 m) have top and bottom mounting locations - Use the CPI Grounding Jumper (P/N 40159-008) as a rack bonding conductor
Certifications	- EIA-310-D compliant
	- Select models are UL Listed as a communications circuit accessory - OSHPD Preapproval of Manufacturer's Certification (OPM-0261)
Material	Aluminum extrusion
Construction	Bolted assembly, Ships unassembled
Finish	Clear grained aluminum or Epoxy-polyester hybrid powder coat paint. Available in black, gray, computer beige or glacier white

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Asia Pacific

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chatsworth.com.cn



CHATSWORTH
PRODUCTS

ORDERING MATRIX:

- UL Listed racks offered in multiple heights and 19" or 23" widths
- For heavy-duty, high-capacity installations.

Top Bar or Angles	
460	Two Top Bars
463	Two Top Angles
467	Two Top Angles, Flush Bolted
483	UL Listed (With Two Top Angles)

Width - in	
5	19 EIA Channel
8	23 Channel

Mounting Holes	
3	Mounting Holes Both Sides

Color	
1	Gray
2	Computer Beige
5	Clear
7	Black
E	Glacier White

Height		
31	3 (0.9)	17U
20	4 (1.2)	24U
19	5 (1.5)	31U
00	5.6 (1.7)	34U
01	6 (1.8)	38U
02	6.6 (2.0)	41U
03	7 (2.1)	45U
05	7.6 (2.3)	48U
15	8 (2.4)	51U
17	8.6 (2.6)	55U
08	9 (2.7)	58U

4XX	X	X	-	X	XX
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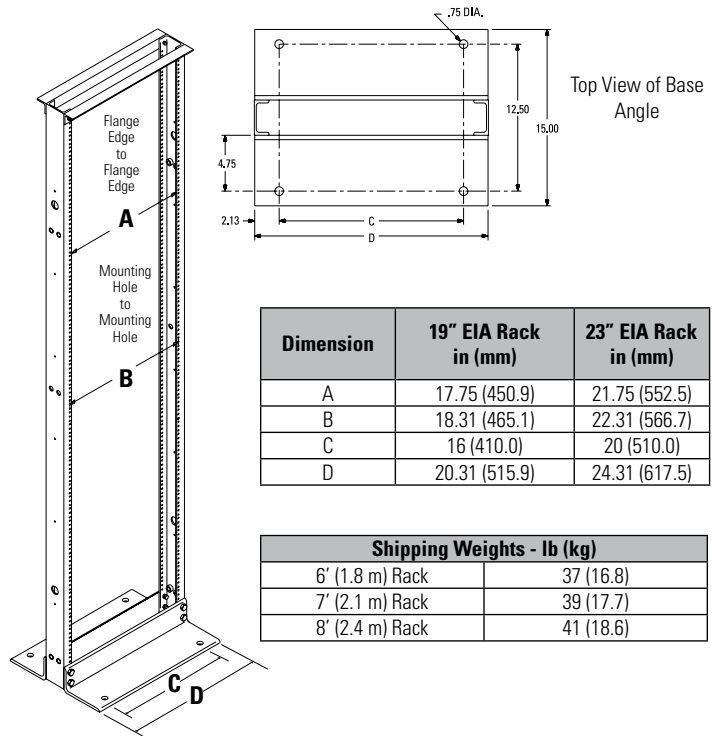
Universal Rack is a heavy duty storage solution for patch panels and network switches and can be used with shelves to hold computer servers. Universal Rack uses less floor space than a cabinet or a four-post rack. Use Universal Rack in telecommunications rooms or equipment rooms to save floor space and hold heavy equipment.

Universal Rack meets project specifications. Universal Rack holds 1,500 lb (680.4 kg) of equipment, has integrated grounding and is available UL and cUL Listed as a communications circuit accessory. Universal Rack supports 19", 23" or 35" wide rack-mount equipment and shelves and is available in several heights. Equipment attaches to the front or rear of the 3"D (76 mm) vertical mounting channels with screws. Equipment mounting positions are marked and numbered making it easy to position and install equipment or shelves.

Racks deliver unassembled in a compact carton. Universal Rack is easy to assemble. Components bolt together with included hardware. Assembly holes in the rack uprights are threaded. Assembly takes approximately 10 minutes. Two-post racks must be secured to building structure. Universal Rack has pre-punched base angles making it easy to attach the rack to the floor. Use a CPI installation kit for wood, slab or raised floors.

Most Universal Rack applications require cable management. Vertical cable managers attach directly to the side of Universal Rack. CPI cable managers organize cables by-rack-mount-space simplifying future moves, adds and changes to the network. The best solution includes horizontal managers in between patch panels and network switches to fan patch cords into individual port connections. See reverse for product selection.

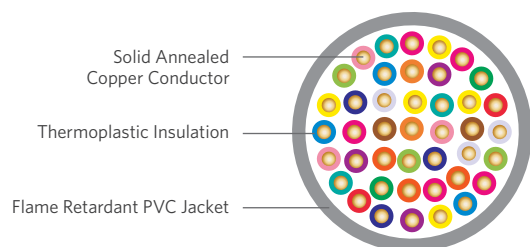
DIMENSIONS



For product CSI Specs visit the Support & Downloads page on chatsworth.com.

Category 3

CMR/CMP 2-Pair - 400-Pair



SPECIFICATIONS

Pair Count	Available in 2-pair up to 400-pair
Conductor	Solid annealed copper
AWG (mm)	24 (0.51)
Insulation	Thermoplastic
Jacket	CMR: Flame retardant (FR) PVC CMP: FR, low smoke PVC
Characteristic Impedance (Ohms)	100 ± 15
Performance Compliance	UL 444 CSA C22.2 No. 214-08 UL 1666 NFPA 262 ANSI/TIA-568-C.2 ANSI/ICEA S-90-661-2008 Article 800, NEC (NFPA 70) RoHS-compliant
NRTL Programs	UL, c(UL) Listed CMR UL, c(UL) Listed CMP

PRODUCT DESCRIPTION

The ideal choice for LAN transmission with specified bandwidth up to 16 MHz. These cables are used for voice and data communications and can handle application bandwidths up to 16 MHz. Other uses for these cables include indoor use on customer premises for the interconnection of telephone key systems, PBX and intercom systems. Product is offered for both plenum (CMP) and riser (CMR) applications.

APPLICATIONS

- 4 Mbps token ring (IEEE 802.5)
- Analog voice
- 10 Mbps 10BASE-T Ethernet (IEEE 802.3)
- Telecommunications closet wiring

FEATURES

- CMR and CMP constructions use extremely flexible, FR-PVC jacket
- Jacket color options
- Band marked or striped insulated conductors

BENEFITS

- Easier and less time-consuming installations, no kinking of outer jacket
- Improves backbone sub-system identification, reduces labor and mistakes
- Reduces termination time and improves circuit identification

PART NUMBERS AND PHYSICAL CHARACTERISTICS

Listing	Part Number	Pair Count	Jacket Color	Nominal Diameter in (mm)	Approx. Weight lbs/kft (kg/km)	Package	Packages per Pallet
CMR	18-042-13	2	Beige	0.12 (3.1)	9 (13)	1,000' POP™ box	45
CMR	18-042-33	2	Gray	0.12 (3.1)	9 (13)	1,000' POP box	45
CMR	18-141-13	3	Beige	0.14 (3.5)	12 (18)	1,000' POP box	45
CMR	18-141-33	3	Gray	0.14 (3.5)	12 (18)	1,000' POP box	45
CMR	18-241-13	4	Beige	0.16 (3.9)	15 (22)	1,000' POP box	45
CMR	18-241-23	4	Blue	0.16 (3.9)	15 (22)	1,000' POP box	45
CMR	18-241-33	4	Gray	0.16 (3.9)	15 (22)	1,000' POP box	45
CMR	18-241-43	4	White	0.16 (3.9)	15 (22)	1,000' POP box	45
CMR	18-341-13	6	Beige	0.19 (4.8)	22 (32)	1,000' POP box	45
CMR	18-341-33	6	Gray	0.19 (4.8)	22 (32)	1,000' POP box	45
CMR	18-872-13	12	Beige	0.27 (6.9)	47 (71)	1,000' Plywood reel	16
CMR	18-872-33	12	Gray	0.27 (6.9)	47 (71)	1,000' Plywood reel	16
CMR	18-475-13	25	Beige	0.38 (9.6)	92 (137)	1,000' Plywood reel	12
CMR	18-499-13	25	Beige	0.38 (9.6)	92 (137)	Cut to length	1
CMR	18-475-33	25	Gray	0.38 (9.6)	92 (137)	1,000' Plywood reel	12
CMR	18-499-33	25	Gray	0.38 (9.6)	92 (137)	Cut to length	1
CMR	18-579-13	50	Beige	0.56 (14.2)	187 (279)	1,000' Plywood reel	4
CMR	18-599-13	50	Beige	0.56 (14.2)	187 (279)	Cut to length	1
CMR	18-579-33	50	Gray	0.56 (14.2)	187 (279)	1,000' Plywood reel	4
CMR	18-599-33	50	Gray	0.56 (14.2)	187 (279)	Cut to length	1
CMR	18-789-13	100	Beige	0.74 (18.7)	361 (538)	Cut to length	1
CMR	18-789-33	100	Gray	0.74 (18.7)	361 (538)	Cut to length	1
CMR	18-D99-33	150	Gray	0.92 (23.4)	541 (807)	Cut to length	1
CMR	18-A99-33	200	Gray	1.05 (26.6)	711 (1,060)	Cut to length	1
CMR	18-B99-33	300	Gray	1.27 (32.2)	1,049 (1,564)	Cut to length	1
CMR	18-C99-33	400	Gray	1.45 (36.9)	1,386 (2,067)	Cut to length	1
CMP	18-041-36	2	Gray	0.13 (3.3)	10 (15)	1,000' POP box	45
CMP	18-141-36	3	Gray	0.15 (3.7)	14 (20)	1,000' POP box	45
CMP	18-241-26	4	Blue	0.16 (4.2)	17 (26)	1,000' POP box	45
CMP	18-241-36	4	Gray	0.16 (4.2)	17 (26)	1,000' POP box	45
CMP	18-241-46	4	White	0.16 (4.2)	17 (26)	1,000' POP box	45
CMP	18-241-56	4	Green	0.16 (4.2)	17 (26)	1,000' POP box	45
CMP	18-341-36	6	Gray	0.20 (5.0)	24 (37)	1,000' POP box	45
CMP	18-341-46	6	White	0.20 (5.0)	24 (37)	1,000' POP box	45
CMP	18-872-46	12	White	0.30 (7.6)	49 (73)	1,000' Plywood reel	16
CMP	18-475-36	25	Gray	0.43 (10.9)	114 (171)	1,000' Plywood reel	12
CMP	18-499-36	25	Gray	0.43 (10.9)	114 (171)	Cut to length	1
CMP	18-475-46	25	White	0.43 (10.9)	114 (171)	1,000' Plywood reel	12
CMP	18-499-46	25	White	0.43 (10.9)	114 (171)	Cut to length	1
CMP	18-579-36	50	Gray	0.60 (15.3)	227 (339)	1,000' Plywood reel	4
CMP	18-599-36	50	Gray	0.60 (15.3)	227 (339)	Cut to length	1
CMP	18-799-36	100	Gray	0.84 (21.3)	446 (665)	Cut to length	1
CMP	18-799-46	100	White	0.84 (21.3)	446 (666)	Cut to length	1
CMP	18-A99-36	200	Gray	1.16 (29.4)	850 (1,268)	Cut to length	1
CMP	18-B99-36	300	Gray	1.44 (36.7)	1,315 (1,960)	Cut to length	1
CMP	18-B99-46	300	White	1.44 (36.7)	1,315 (1,961)	Cut to length	1
CMP	18-C99-36	400	Gray	1.64 (41.7)	1,720 (2,565)	Cut to length	1

ALTOS® Loose Tube, Gel-Free, All-Dielectric Cable with FastAccess® Technology

CORNING

Corning ALTOS® cable with FastAccess® technology is an all-dielectric gel-free cable designed for outdoor and limited indoor use for campus backbones in lashed aerial and duct installations. The innovative FastAccess technology feature combined with the all-dielectric gel-free loose tube design simplifies removal of the cable jacket reducing cable end access time by at least 50 percent. Equally important is the overall reduction in risk of inadvertent fiber damage and risk to installers from sharp cable access tools. The cable is fully waterblocked using craft-friendly, water-swellaible materials, which means no clean up is required. The flexible buffer tubes are easy to route in closures, and the SZ-stranded, loose tube design isolates fibers from installation and environmental rigors while allowing easy mid-span access. The all-dielectric gel-free cable construction requires no bonding or grounding, and these cables have a medium-density polyethylene jacket that is rugged, durable and easy to handle. A variety of fiber types are available including 62.5 µm and 50 µm, single-mode and hybrid versions, as well as fibers with Gigabit and 10 Gigabit Ethernet performance.

Features and Benefits

Contains FastAccess® technology

Innovative cable jacket feature reduces cable end access time, reduces overall risk of inadvertent fiber damage, as well as, risk to installers from sharp cable access tools

Polyethylene jacket

Rugged, durable and easy to strip (while providing superior protection against UV radiation, fungus, abrasion and other environmental factors)

Fully waterblocked loose tube all-dielectric gel-free design

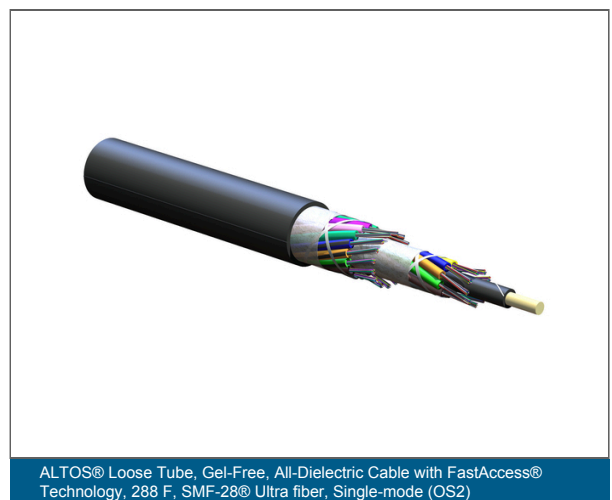
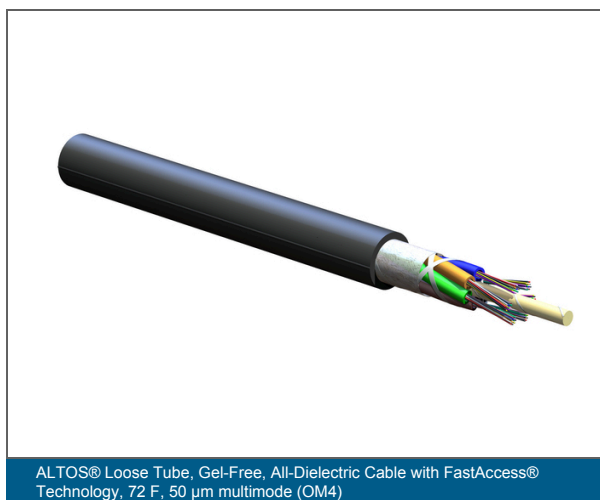
Simple access and no clean up

Industry-standard performance

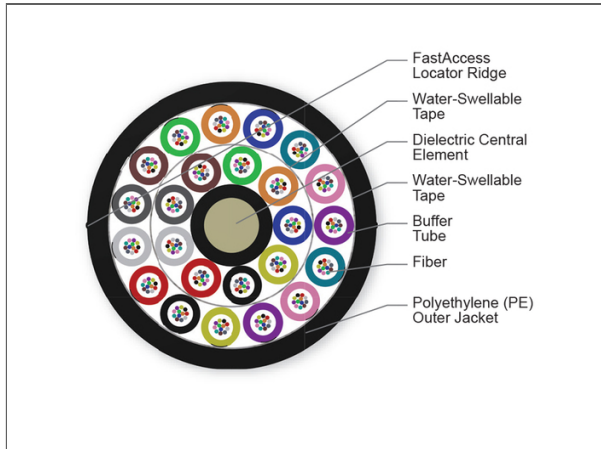
Meets the requirements of Telcordia GR-20, Issue 3 and ICEA S-87-640

Available in 62.5 µm, 50 µm, single-mode and hybrid versions

Ready for any application including Gigabit Ethernet and 10 Gigabit Ethernet



ALTOS® Loose Tube, Gel-Free, All-Dielectric Cable with FastAccess® Technology



ALTOS® Loose Tube, Gel-Free, All-Dielectric Cable with FastAccess® Technology, 288 F, SMF-28® Ultra fiber, Single-mode (OS2)

Standards	
RoHS	Free of hazardous substances according to RoHS 2011/65/EU
Common Installations	Outdoor lashed aerial and duct, indoor when installed according to National Electrical Code® (NEC®) Article 770
Design and Test Criteria	ANSI/ICEA S-87-640

Specifications

General Specifications	
Environment	Outdoor
Product Type	Dielectric
Cable Type	Loose Tube

Temperature Range	
Temperature Range, Storage	-40 °C - 70 °C (-40 °F - 158 °F)
Temperature Range, Installation	-30 °C - 70 °C (-22 °F - 158 °F)

ALTOS® Loose Tube, Gel-Free, All-Dielectric Cable with FastAccess® Technology



Temperature Range	
Temperature Range, Operation	-40 °C - 70 °C (-40 °F - 158 °F)
Notes	Corning recommends storing cable in a proper temperature environment prior to installation to allow the cable temperature to meet installation temperature range specifications for best installation results.

Design Characteristics Cable				
Fiber Count	Fibers per Tube	Number of Tube Positions	Number of Active Tubes	Buffer Tube Diameter
2	2	6	1	2.5 mm (0.1 in)
4	4	6	1	2.5 mm (0.1 in)
6	6	6	1	2.5 mm (0.1 in)
12 - 72	12	6	1 - 6	2.5 mm (0.1 in)
96	12	8	8	2.5 mm (0.1 in)
144	12	12	12	2.5 mm (0.1 in)
192 - 216	12	18	16 - 18	2.5 mm (0.1 in)
288	12	24	24	2.5 mm (0.1 in)

Mechanical Characteristics Cable					
Fiber Count	Nominal Outer Diameter	Max. Tensile Strength, Short-Term	Max. Tensile Strength, Long-Term	Min. Bend Diameter Installation	Min. Bend Diameter Operation
2 - 72	10.5 mm (0.41 in)	2700 N (606.98 lbf)	890 N (200.08 lbf)	316 mm (12.44 in)	210 mm (8.27 in)
96	12.2 mm (0.48 in)	2700 N (606.98 lbf)	890 N (200.08 lbf)	366 mm (14.41 in)	244 mm (9.61 in)
144	15.8 mm (0.62 in)	2700 N (606.98 lbf)	890 N (200.08 lbf)	474 mm (18.66 in)	316 mm (12.44 in)
192 - 216	16 mm (0.63 in)	2700 N (606.98 lbf)	890 N (200.08 lbf)	480 mm (18.9 in)	320 mm (12.6 in)
288	18.2 mm (0.72 in)	2700 N (606.98 lbf)	890 N (200.08 lbf)	546 mm (21.5 in)	364 mm (14.33 in)

ALTOS® Loose Tube, Gel-Free, All-Dielectric Cable with FastAccess® Technology



Transmission Performance

Multimode				
Fiber Category	OM1	OM2	OM3	OM4
Fiber Code	K	T	T	T
Performance Option Code	30	31	80	90
Fiber Core Diameter	62.5 μm	50 μm	50 μm	50 μm
Wavelengths	850 nm / 1300 nm	850 nm / 1300 nm	850 nm / 1300 nm	850 nm / 1300 nm
Maximum Attenuation	3.4 dB/km / 1.0 dB/km	3.0 dB/km / 1.0 dB/km	3.0 dB/km / 1.0 dB/km	3.0 dB/km / 1.0 dB/km
Serial 1 Gigabit Ethernet	300 MHz*km / 550 MHz*km	750 MHz*km / 500 MHz*km	1000 MHz*km / 600 MHz*km	1100 MHz*km / 600 MHz*km
Serial 10 Gigabit Ethernet	33 MHz*km / -	150 MHz*km / -	300 MHz*km / -	550 MHz*km / -
Min. Overfilled Launch (OFL) Bandwidth	200 MHz*km / 500 MHz*km	700 MHz*km / 500 MHz*km	1500 MHz*km / 500 MHz*km	3500 MHz*km / 500 MHz*km
Minimum Effective Modal Bandwidth (EMB)	220 MHz*km / -	950 MHz*km / -	2000 MHz*km / -	4700 MHz*km / -

Transmission Performance

Single-mode					
Performance Option Code	01	19	22	00	01
Fiber Category	G.655	G.652	G.652.D/G.657.A1	G.652.D	G.652.D
Fiber Name	LEAF® fiber	SMF-28® ULL	SMF-28® Ultra fiber	Single-mode (OS2)	Single-mode (OS2)
Wavelengths	1310 nm / 1383 nm / 1550 nm	1310 nm / 1383 nm / 1550 nm	1310 nm / 1383 nm / 1550 nm	1310 nm / 1383 nm / 1550 nm	1310 nm / 1383 nm / 1550 nm
Fiber Code	F	P	Z	E	E

ALTOS® Loose Tube, Gel-Free, All-Dielectric Cable with FastAccess® Technology



Single-mode					
Maximum Attenuation	- / - / 0.25 dB/km	0.33 dB/km / - / 0.19 dB/km	0.34 dB/km / 0.34 dB/km / 0.22 dB/km	0.35 dB/km / 0.35 dB/km / 0.25 dB/km	0.4 dB/km / 0.4 dB/km / 0.3 dB/km



1 Select fiber count.

Standard offerings:

012 048 096 216
024 060 144 288
036 072 192

2 Select fiber code.

K = 62.5 μm multimode (OM1)
T = 50 μm multimode (OM2/OM3/OM4)
E = Single-mode (G.652.D)
Z = Single-mode (G.652.D/G.657.A1) SMF-28® Ultra fiber
P = Single-mode (G.652) SMF-28® ULL
F = Single-mode (G.655) LEAF®
D = TXF™ Single-mode (G.654.E)

3 Defines cable type.

U = ALTOS® Loose Tube Cable with 2.5 mm buffer tubes

1) Cable outer diameter may change. Example: 48 F cable with 6 fibers per tube will require 8 active buffer and have an OD like a standard 96 F cable.

4 Defines outer jacket.

4 = All-dielectric

5 Select fiber placement.

T = 12 fibers/buffer tube (standard)
6 = 6 fibers/buffer tube
See Note 1.

6 Select length markings.

3 = Markings in meters
4 = Markings in feet (standard)

7 Defines special jacket feature.

7 = ALTOS® Cable with FastAccess™ Technology

8 Select performance option code.

30 = 62.5 μm multimode (OM1)
31 = 50 μm multimode (OM2)
80 = 50 μm multimode (OM3)
90 = 50 μm multimode (OM4)
01 = Single-mode (OS2) (Max. attenuation 0.4/0.4/0.3 dB/km)
00 = Single-mode (OS2) (Max. attenuation 0.35/0.35/0.25 dB/km)
22 = Single-mode (OS2) (Max. attenuation 0.34/0.34/0.22 dB/km)
19 = Single-mode (Ultra Low-Loss) (Max. attenuation 0.33/-/0.19 dB/km)
01 = Single-mode (TXF) (Max. attenuation -/-/0.20 dB/km)
01 = Single-mode NZDSF* (Max. attenuation -/-/0.25 dB/km)
**Non-Zero Dispersion-Shifted Single-mode Fiber*

9 Defines cable type.

D = ALTOS® Gel-Free Cable

10 Defines special requirements.

20 = No special requirements



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Category 6

CMR/CMP



SPECIFICATIONS

Pair Count	4
Conductor	Solid annealed copper
AWG (mm)	23 (0.57)
Insulation	CMR: Polyolefin CMP: FEP
Insulation Colors	Pair 1: ColorTip Light Blue, Blue Pair 2: ColorTip Light Orange, Orange Pair 3: ColorTip Light Green, Green Pair 4: ColorTip Light Brown, Brown
Jacket	CMR: Flame retardant (FR) PVC CMP: FR, low smoke PVC
Characteristic Impedance (Ohms)	100 ± 15
Nominal Velocity of Propagation (%)	CMR: 70 CMP: 73
Performance Compliance	UL 444 CSA C22.2 No. 214-08 UL 1666 NFPA 262 ANSI/TIA-568-C.2 Article 800, NEC (NFPA 70) RoHS-compliant
NRTL Programs	UL Verified CAT 6 UL, c(UL) Listed CMR UL, c(UL) Listed CMP

PRODUCT DESCRIPTION

Superior Essex Series 77 product line provides exceptional value for jobs that require standards compliant Category 6 cable at a cost-effective price.

APPLICATIONS

- 10BASE-T through 1000BASE-T Ethernet
- Power over Ethernet (PoE) - IEEE 802.3af
- PoE+ - IEEE 802.3at Type 1 and 2
- ATM and token ring

FEATURES

- Meets ANSI/TIA-568-C.2 specification
- BrakeBox® payout control system
- CableID® alpha numeric code printed every 2 feet
- QuickCount® marking system in feet and meters
- ColorTip™ circuit identification system
- Color coded box labels

BENEFITS

- Provides cost effective solution
- Adjustable tension control on reel prevents over spin and entangling of cable
- Allows both ends of a cable run to be easily identifiable without the need to separately label or tone the cable
- Provides remaining length of cable on reel
- Easily identifiable conductor mates even in low-light environments
- Easily identifies jacket colors

PART NUMBERS AND PHYSICAL CHARACTERISTICS

Listing	Part Number ¹	Nominal Diameter in (mm)	Approx. Weight lbs/kft (kg/km)	Package	Packages per Pallet
CMR	77-246-xA	0.22 (5.5)	24 (36)	1,000' BrakeBox	27
CMR	77-272-xA	0.22 (5.5)	24 (36)	1,000' Plywood reel	16
CMR	77-240-xA	0.22 (5.5)	24 (36)	1,000' POP™ box	20
CMP	77-246-xB	0.22 (5.5)	25 (37)	1,000' BrakeBox	27
CMP	77-272-xB	0.22 (5.5)	25 (37)	1,000' Plywood reel	16
CMP	77-240-xB	0.22 (5.5)	25 (37)	1,000' POP box	20

JACKET COLORS

¹Replace "x" with: Blue = 2 Gray = 3 White = 4 Green = 5 Yellow = 6 Red = 9 Orange = D Black = E

ELECTRICAL SPECIFICATIONS

Frequency MHz	Insertion Loss @ 20°C Maximum dB/100 m		NEXT Minimum dB/100 m		ACR Minimum dB/100 m		PSNEXT Minimum dB/100 m	
	TIA-568-C.2	Superior Essex	TIA-568-C.2	Superior Essex	TIA-568-C.2	Superior Essex	TIA-568-C.2	Superior Essex
	Specified	Typical	Specified	Typical	Calculated	Typical	Specified	Typical
1	2.0	1.7	74.3	82.9	72.3	82.2	72.3	81.9
4	3.8	3.4	65.3	77.6	61.5	74.2	63.3	75.0
8	5.3	4.8	60.8	74.4	55.4	68.9	58.8	71.9
10	6.0	5.4	59.3	70.1	53.3	64.7	57.3	68.3
16	7.6	6.9	56.2	69.6	48.7	62.5	54.2	67.1
20	8.5	7.8	54.8	68.7	46.3	60.7	52.8	65.7
25	9.5	8.8	53.3	66.1	43.8	58.7	51.3	64.7
31.25	10.7	9.8	51.9	67.8	41.2	56.2	49.9	63.4
62.5	15.4	14.2	47.4	64.0	32.0	47.8	45.4	59.1
100	19.8	18.2	44.3	58.0	24.5	38.7	42.3	55.0
155	25.2	23.0	41.4	54.5	16.3	31.6	39.4	52.1
200	29.0	26.6	39.8	53.8	10.8	26.5	37.8	50.6
250	32.8	30.1	38.3	51.0	5.5	21.1	36.3	48.7
300		33.4		53.8		19.4		49.1
350		36.5		50.1		14.3		47.5
400		39.5		49.1		8.0		44.5
450		42.3		44.6		3.3		43.4
500		45.1		42.9				41.7
550		47.7		41.6				39.1

Frequency MHz	PSACR Minimum dB/100 m		Return Loss Minimum dB/100 m		ELFEXT Minimum dB/100 m		PSELFEXT Minimum dB/100 m	
	TIA-568-C.2	Superior Essex	TIA-568-C.2	Superior Essex	TIA-568-C.2	Superior Essex	TIA-568-C.2	Superior Essex
	Calculated	Typical	Specified	Typical	Specified	Typical	Specified	Typical
1	70.3	80.2	20.0	26.0	67.8	78.7	64.8	76.6
4	59.5	71.6	23.0	31.1	55.8	65.9	52.8	64.2
8	53.4	67.1	24.5	34.5	49.7	60.1	46.7	58.4
10	51.3	62.9	25.0	36.3	47.8	58.1	44.8	56.4
16	46.7	60.2	25.0	37.7	43.7	54.0	40.7	52.2
20	44.3	58.1	25.0	36.0	41.8	52.1	38.8	50.3
25	41.8	56.1	24.3	38.6	39.8	50.2	36.8	48.4
31.25	39.2	53.6	23.6	38.3	37.9	48.1	34.9	46.4
62.5	30.0	45.0	21.5	32.8	31.9	41.4	28.9	40.3
100	22.5	37.0	20.1	30.7	27.8	36.8	24.8	35.2
155	14.3	29.1	18.8	28.8	24.0	33.3	21.0	31.9
200	8.8	24.0	18.0	27.6	21.8	32.6	18.8	31.8
250	3.5	18.8	17.3	28.5	19.8	32.5	16.8	31.3
300		15.8		28.6		30.8		28.9
350		11.6		29.0		26.8		25.4
400		5.0		24.9		24.7		23.5
450		1.2		23.9		23.2		21.9
500				25.0		22.5		21.5
550				24.2		22.4		22.0

HPE Aruba Networking 630 Series Campus Access Points

Fast, resilient, and secure Wi-Fi 6E connectivity



Key features

- Unlocks the 6 GHz band to more than double the available capacity
- Comprehensive tri-band coverage across 2.4 GHz, 5 GHz, and 6 GHz to deliver 3.9 Gbps maximum aggregate data rate
- Up to seven 160 MHz channels in 6 GHz support low-latency, bandwidth-hungry applications like high-definition video and augmented reality/virtual reality applications
- Unique Ultra Tri-Band (UTB) filtering enables 5 GHz and 6 GHz to operate without restrictions or interference¹
- High availability with 2.5 Gbps dual ethernet ports for hitless failover of Ethernet and power
- Built in GPS receivers and intelligent software enable APs to self-locate and act as reference points for accurate indoor location measurements

¹ The UTB feature was not supported on the initial HPE Aruba Networking AP-635 hardware, but was introduced in a hardware revision. See HPE Aruba Networking Field Bulletin AP2205-1 on the HPE Aruba Networking Support Portal for more details.

For enterprises who need more wireless capacity and wider channels, HPE Aruba Networking 630 Series Campus APs are designed to take advantage of the 6 GHz band via three dedicated radios. By using the 6 GHz band, capacity is more than doubled—so you can meet growing demand due to bandwidth-hungry video, increasing numbers of client and IoT devices and growth in cloud. Unique to HPE Aruba Networking, the 630 Series includes ultra tri-band filtering and dual 2.5 Gbps ethernet ports to eliminate coverage gaps, provide greater resiliency, and deliver fast, secure connectivity.

More capacity and wider channels

The HPE Aruba Networking 630 Series APs are designed to take advantage of the 6 GHz band, which translates into far greater speeds, wider channels for multi-gigabit traffic, and less interference. It delivers 3.9 Gbps maximum aggregate data rates Tri-radio, 2x2:2 MIMO in all three bands (3.9 Gbps aggregate peak).

Table 1. Channel bandwidth and peak data rate

Band	Channel bandwidth	Peak data rate
6 GHz	160 MHz	2.4 Gbps
5 GHz	80 MHz	1.2 Gbps
2.4 GHz	20 MHz	287 Mbps
Total		3.9 Gbps

Advantages of 6 GHz

Wi-Fi 6E provides up to 1200 MHz in the 6 GHz band for higher throughput and improved application performance. With up to seven 160 MHz channels, Wi-Fi 6E can better support low-latency, bandwidth hungry applications like high-definition video and artificial reality/virtual reality applications. Only Wi-Fi 6E capable devices can use the 6 GHz band so there is no interference or slowdowns due to legacy devices.

Device class support

HPE Aruba Networking 630 Series APs are part of the low power indoor (LPI) device class. This fixed indoor-only class uses lower power levels and does not require an Automated Frequency Coordination service (AFC) to manage incumbent outdoor services which is required for standard class APs. The connectorized models will typically operate as Standard Power access points, but may also be allowed to operate as Low Power Indoor devices in some countries.

Less interference

HPE Aruba Networking 630 Series Access Points include HPE Aruba Networking's ultra tri-band filtering, which enables enterprises to take advantage of the high end of 5 GHz with the lower end of 6 GHz without experiencing interference. Since there is only 50 MHz between 5 GHz and the 6 GHz, without advanced filtering, enterprises would likely experience problems between the bands and would therefore be limited in the number of channels available. By applying advanced filtering capabilities, enterprises can take full use of available spectrum without creating coverage gaps or islands.

Business continuity

The HPE Aruba Networking 630 Series APs provide high availability with two HPE Smart Rate ethernet ports for hitless failover for both data and power. Configurable to 1 or 2.5 Gbps, these dual ports provide business continuity for mission critical applications.

Global readiness

While the need for more Wi-Fi capacity is recognized across the globe, countries are approaching 6 GHz differently. The HPE Aruba Networking 630 Series APs are set up to automatically update regulatory rules once 6E regulations have been approved and certified.

Extend the benefits of Wi-Fi 6

The HPE Aruba Networking 630 Series APs are based on the 802.11ax standard, which means that all its efficiency and security enhancements are also available on the 6 GHz band. Wi-Fi 6 features such as Orthogonal Frequency Division Multiple Access (OFDMA), BSS coloring etc. are fully supported on HPE Aruba Networking Wi-Fi 6E access points as well.

Advantages of OFDMA

This capability allows HPE Aruba Networking APs to handle multiple 802.11ax capable clients on each channel simultaneously, regardless of device or traffic type. Channel utilization is optimized by handling each transaction via smaller sub-carriers or resource units (RUs), which means that clients are sharing a channel and not competing for airtime and bandwidth.

Wi-Fi optimization**Client optimization**

HPE Aruba Networking's patented AI-powered ClientMatch technology eliminates sticky client issues by steering a client to the AP where it receives the best radio signal. Client Match steers traffic from the noisy 2.4 GHz band to the preferred 5 GHz or 6 GHz band depending on client capabilities. ClientMatch also dynamically steers traffic to load balance APs to improve the user experience.

Automated Wi-Fi radio frequency management

To optimize the user experience and provide greater stability, HPE Aruba Networking AirMatch allows organization to automate network optimization using machine learning. AirMatch provides dynamic bandwidth adjustments to support changing device density, enhanced roaming using an even distribution of Effective Isotropic Radiated Power (EIRP) to radios, and real-time channel assignments to mitigate co-channel interference.

Application assurance

With HPE Aruba Networking Air Slice, organizations can provide application assurance to their users that goes beyond the traditional capabilities of airtime fairness. After the SLAs are configured, Air Slice monitors network usage, automatically allocates radio resources, and dynamically adjusts radio resources as new users connect and applications sessions begin or end.

HPE Aruba Networking Advanced Cellular Coexistence (ACC)

Unique Advanced Cellular Coexistence uses built-in filtering to automatically minimize the impact of interference from cellular networks, distributed antenna systems (DAS), and commercial small cell or femtocell equipment.

Intelligent Power Monitoring (IPM)

For better insights into energy consumption, HPE Aruba Networking APs continuously monitor and report hardware energy usage. Unlike other vendor's access points, Aruba APs can also be configured to enable or disable capabilities based on available PoE power—ideal when wired switches have exhausted their power budget. Enterprises can deploy Wi-Fi 6E APs and update switching and power at a later if needed based on their actual usage.

Self-locating access points

Indoor location shouldn't require guesswork or costly or complex overlay technologies. HPE Aruba Networking's Wi-Fi 6 and 6E APs help organizations leverage their wireless investment to deliver indoor location—everywhere.

The HPE Aruba Networking 630 Series Campus APs include built-in GPS receivers and intelligent software to allow them to automatically locate themselves accurately within the universal framework of latitude and longitude.

As part of HPE Aruba Networking's indoor location solutions, they serve as reference points for client devices and other technologies using fine time measurement.

Open Locate, an emerging standard that allows APs to share their location over the air and through cloud-based APIs, enables mobile devices to locate themselves and applications to support network analytics.

Access points as an IoT platform

The HPE Aruba Networking 630 Series includes an integrated Bluetooth 5 and 802.15.4 radio for Zigbee support to simplify deploying and managing IoT-based location services, asset tracking services, security solutions and IoT sensors. There is also a USB-port extension to provide IoT connectivity to a wider range of devices. These IoT capabilities allows organizations to leverage the APs as an IoT platform, which eliminates the need for an overlay infrastructure and additional IT resources and can accelerate IoT initiatives.

In addition, Target Wake Time (TWT) establishes a schedule for when clients need to communicate with an AP. This helps improve client power savings and reduces airtime contention with other clients, which is ideal for IoT.



HPE Aruba Networking secure infrastructure

The 630 Series includes build-security capabilities such as:

WPA3 and Enhanced Open

Support for stronger encryption and authentication is provided via the latest version of WPA for enterprise-protected networks. Enhanced Open offers seamless new protection for users connecting to open networks where each session is automatically encrypted to protect user passwords and data on guest networks.

WPA2-MPSK

MPSK enables simpler passkey management for WPA2 devices—should the Wi-Fi password on one device or device type change, no additional changes are needed for other devices. This capability requires HPE Aruba Networking ClearPass Policy Manager.

Simple and secure access

To improve security and ease of management, IT can centrally configure and automatically enforce role-based policies that define proper access privileges for employees, guests, contractors, and other user groups – no matter where users connect on wired and WLANs. Dynamic Segmentation eliminates the time consuming and error-prone task of managing complex and static VLANs, ACLs, and subnets by dynamically assigning policies and keeping traffic secure and separated.

Seamless handoffs to cellular

Built on the technical foundations of Passpoint® and Wi-Fi Calling, HPE Aruba Networking Air Pass creates a roaming network across the HPE Aruba Networking enterprise customer footprint, extending cellular coverage and enhancing the visitor and subscriber experience to deliver a great experience for your guests while reducing costs and management overhead for DAS.

Flexible operation and management

Our unified APs can operate as standalone access points or with a gateway for greater scalability, security, and manageability. APs can be deployed using zero touch provisioning—without on-site technical expertise—for ease of implementation in branch offices and for remote work.

HPE Aruba Networking Aruba APs can be managed using cloud-based or on premises solutions for any campus, branch, or remote work environment. As the management and orchestration console for HPE Aruba Networking ESP (Edge Services Platform), HPE Aruba Networking Central provides a single pane of glass for overseeing every aspect of wired and wireless LANs, WANs, and VPNs. AI-powered analytics, end-to-end orchestration and automation, and advanced security features are built natively into the solution.

Summary

HPE Aruba Networking 630 Series Access Points are designed to take advantage of the 6 GHz band using three radios for comprehensive tri-band coverage to meet the growing demands of Wi-Fi due to increased use of video, growth in client and IoT devices, and expanded use of cloud. With a maximum aggregate 3.9 Gbps data rate for higher throughput and faster speeds, the 630 Series delivers added capacity, wider channels, hitless failover, and less interference between the 5 GHz and 6 GHz bands.

² The UTB feature was not supported on the initial HPE Aruba Networking AP-635 hardware, but was introduced in a hardware revision. See HPE Aruba Networking Field Bulletin AP2205-1 on the HPE Aruba Networking Support Portal for more details



Technical specifications

Hardware variants

- HPE Aruba Networking AP-634: External antenna models
- HPE Aruba Networking AP-635: Internal antenna models

Wi-Fi radio specifications

- AP type: Indoor, tri radio, 2.4GHz, 5GHz and 6GHz (concurrent) 802.11ax 2x2 MIMO
- 2.4 GHz radio: Two spatial stream Single User (SU) MIMO for up to 574 Mbps wireless data rate with 2SS HE40 802.11ax client devices
- 5 GHz radio: Two spatial stream Single User (SU) MIMO for up to 1.2 Gbps wireless data rate with 2SS HE80 802.11ax client devices
- 6 GHz radio: Two spatial stream Single User (SU) MIMO for up to 2.4 Gbps wireless data rate with 2SS HE160 802.11ax client devices
- Up to 512 associated client devices per radio, and up to 16 BSSIDs per radio (limited to 4 for the 6GHz radio)
- Supported frequency bands (country-specific restrictions apply):
 - 2.400 to 2.4835 GHz ISM
 - 5.150 to 5.250 GHz U-NII-1
 - 5.250 to 5.350 GHz U-NII-2
 - 5.470 to 5.725 GHz U-NII-2E
 - 5.725 to 5.850 GHz U-NII-3/ISM
 - 5.850 to 5.895 GHz U-NII-4
 - 5.925 to 6.425 GHz U-NII-5
 - 6.425 to 6.525 GHz U-NII-6
 - 6.525 to 6.875 GHz U-NII-7
 - 6.875 to 7.125 GHz U-NII-8
- Available bands and channels: Dependent on configured regulatory domain (country)
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum in the 5 GHz band

- Supported radio technologies:
 - 802.11b: Direct-sequence spread-spectrum (DSSS)
 - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
 - 802.11ax: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units (37 for the 6GHz radio)
- Supported modulation types:
 - 802.11b: BPSK, QPSK, CCK
 - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM and 256-QAM (proprietary extension)
 - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM and 1024-QAM (proprietary extension)
 - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, and 1024-QAM
- 802.11n high-throughput (HT) support: HT20/40
- 802.11ac very high throughput (VHT) support: VHT20/40/80
- 802.11ax high efficiency (HE) support: HE20/40/80/160
- Supported data rates (Mbps):
 - 802.11b: 1, 2, 5.5, 11
 - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
 - 802.11n: 6.5 to 300 (MCS0 to MCS15, HT20 to HT40), 400 with 256-QAM (proprietary extension)
 - 802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80); 1,083 with 1024-QAM (MCS10 and MCS11, proprietary extension)
 - 802.11ax (2.4GHz): 3.6 to 574 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40)
 - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)
 - 802.11ax (6GHz): 3.6 to 2,402 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE160)



- 802.11n/ac packet aggregation: A-MPDU, A-MSDU
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements)
 - Per radio/band (2.4 GHz/5 GHz/6 GHz): +21 dBm (18 dBm per chain)
 - Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain.
- Advanced Cellular Coexistence (ACC) minimizes the impact of interference from cellular networks
- Ultra Tri-Band (UTB) enables ultimate flexibility in 5 GHz and 6 GHz channel selection without performance degradation*
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance
- Space-time block coding (STBC) for increased range and improved reception
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput
- Transmit beam-forming (TxBF) for increased signal reliability and range
- 802.11ax Target Wait Time (TWT) to support low-power client devices
- 802.11mc Fine Timing Measurement (FTM) for precision distance ranging

Wi-Fi antennas

- HPE Aruba Networking AP-634: Two sets of two (female) RP-SMA connectors for external antennas (A0 & A1 corresponding with radio chains 0 and 1 for the 2.4GHz and 5GHz radios, and B0 & B1 corresponding with radio chains 0 and 1 for the 6GHz radio). Worst-case internal loss between radio interface and external antenna connectors: 1.0dB in 2.4GHz, 1.0dB in 5GHz and 1.0dB in 6GHz.
- HPE Aruba Networking AP-635: Integrated downtilt omni-directional antennas for 2x2

MIMO with peak antenna gain of 4.6 dBi in 2.4 GHz, 7.0 dBi in 5 GHz and 6.3 dBi in 6 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 to 40 degrees.

– Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the combined, average pattern is 2.9 dBi in 2.4 GHz, 4.9 dBi in 5 GHz and 4.3 dBi in 6 GHz.

Other interfaces and features

- EO, E1: Two Ethernet wired network ports (RJ-45)
 - Auto-sensing link speed (100/1000/2500BASE-T) and MDI/MDX
 - 2.5 Gbps speed complies with NBase-T and 802.3bz specifications
 - PoE-PD: 48Vdc (nominal) 802.3at/bt PoE (class 4 or higher)
 - 802.3az Energy Efficient Ethernet (EEE)
 - Link aggregation (LACP) support between both network ports for redundancy and increased capacity
- DC power interface: 12Vdc (nominal, +/- 5%), accepts 2.1mm/5.5mm center-positive circular plug with 9.5mm length
- USB 2.0 host interface (Type A connector)
 - Capable of sourcing up to 1A/5W to an attached device
- Bluetooth Low Energy (BLE5.0) and Zigbee (802.15.4) radio
 - BLE: up to 5 dBm transmit power (class 1) and -100 dBm receive sensitivity (125 kbps)
 - Zigbee: up to 5 dBm transmit power and -97 dBm receive sensitivity (250 kbps)
 - Integrated omnidirectional antenna with roughly 30 to 40 degrees downtilt and peak gain of 3.0 dBi
- GNSS L1 (1575.42 MHz) receiver supporting GPS, Galileo, GLONASS, and BeiDou signal

- Receive sensitivity: -160dBm (tracking)
- Integrated omnidirectional antenna with roughly 30 to 40 degrees downtilt and peak gain of 3.6dBi
- Advanced IoT Coexistence (AIC) allows concurrent operation of multiple radios in the 2.4 GHz band
- Built-in Trusted Platform Module (TPM) for enhanced security and anti-counterfeiting
- Visual indicators (four multi-color LEDs): for System (1x) and Radio (3x) status
- Reset button: factory reset, LED mode control (normal/off)
- Serial console interface (proprietary, micro-B USB physical jack)
- Kensington security slot
- Automatic thermal shutdown and recovery function
- When PoE power is supplied to both Ethernet ports, either port can be configured as the active power source
- Inactive/standby PoE power sources can be used to deliver hitless failover
- Power sources are sold separately; see the HPE Aruba Networking 630 Series Ordering Guide for details
- When powered by DC or 802.3bt (class 5) PoE, the AP will operate without restrictions.
- When powered by 802.3at (class 4) PoE with the IPM feature disabled, the AP will disable the USB port. No other restrictions will be applied.
- Operating the AP with an 802.3af (class 3 or lower) POE source is not supported (except for AP staging).

Power sources and power consumption

- The AP supports direct DC power and Power over Ethernet (PoE) on port E0 and/or E1
- When both DC and PoE power sources are available,
- DC power takes priority over PoE

Table 2. Default POE power modes (IPM disabled)

Single PoE source	Class 5 (802.3bt)	Class 4 (802.3at)	Class 3 (802.3af)
Power budget	40 W	25.5 W	13.9W
Power mode	Unrestricted	Restricted	Staging support only, no radios will be enabled
USB port	Enabled	Disabled	Staging support only, no radios will be enabled
Ethernet	Both ports enabled	Both ports enabled	Staging support only, no radios will be enabled
MIMO	2x2	2x2	Staging support only, no radios will be enabled
Max RF power reduction	0 dB	0dB	Staging support only, no radios will be enabled



- With IPM enabled, the AP will start up in unrestricted mode but may dynamically apply restrictions depending on the available power budget and actual consumption. The feature restrictions and order in which these get applied are configurable.
- Maximum (worst-case) power consumption (without/with a USB device attached):
 - DC powered: 20.7W/26.4W.
 - PoE powered: 23.8W/29.4W.
 - This assumes that up to 5W is supplied to the attached USB device.
- Maximum (worst-case) power consumption in idle mode: 8.7W/14.2W (DC) or 11.7W/17.2W (PoE).
- Maximum (worst-case) power consumption in deep-sleep mode: 1.1W (DC) or 1.9W (PoE).

Mounting details

A mounting bracket has been pre-installed on the back of the AP. This bracket is used to secure the AP to any of the mount kits (sold separately); see the HPE Aruba Networking 630 Series Ordering Guide for details.

Mechanical specifications

- Dimensions/weight (HPE Aruba Networking AP-635; unit without mount bracket):
 - 220mm (W) x 220mm (D) x 51mm (H)
 - 1300g
- Dimensions/weight (AP-635; shipping):
 - 250mm (W) x 240mm (D) x 85mm (H)
 - 1650g

Environmental specifications

- Operating conditions
 - Temperature: 0C to +50C/+32F to +122F
 - Relative humidity: 5% to 95%
 - ETS 300 019 class 3.2 environments
 - AP is plenum rated for use in air-handling spaces

- Storage conditions
 - Temperature: -25C to +55C / -13F to +131F
 - Relative humidity: 10% to 100%
 - ETS 300 019 class 1.2 environments
- Transportation conditions
 - Temperature: -40C to +70C/-40F to +158F
 - Relative humidity: up to 95%
 - ETS 300 019 class 2.3 environments

Regulatory compliance

- FCC/ISED
- CE Marked
- RED Directive 2014/53/EU
- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- UL/IEC/EN 62638-1
- EN 60601-1-1, EN60601-1-2

For more country-specific regulatory information and approvals, please see your Aruba representative.

Reliability

- Mean Time Between Failure (MTBF): 520 khrs (59 yrs) at +25C operating temperature

Regulatory model numbers

- HPE Aruba Networking AP-634 (all models): APIN0634
- HPE Aruba Networking AP-635 (all models): APIN0635



Regulatory Considerations for AP-634

The HPE Aruba Networking AP-634 will be offered in countries where there is an existing or clear and defined path to allow operation of 6 GHz radios with external connectorized antennas, either as a Low-Power Indoor (LPI) or Standard Power (SP) product. Please contact your HPE Aruba Networking representative to confirm (existing or planned) availability for the country where the AP will be deployed.

Standard Power product class operation of the HPE Aruba Networking AP-634 (i.e. most countries where the platform is supported) is only supported on HPE Aruba Networking OS 10.7.0.0 and later deployments and HPE Aruba Networking OS 8.12.0.0 and later deployments that include a Mobility Conductor. Standard Power operation is not supported on Instant OS deployments or 8.x HPE Aruba Networking OS deployments without a Mobility Conductor.

- HPE Aruba Networking AP-634 (including 6GHz support):
 - HPE Aruba Networking OS and HPE Aruba Networking InstantOS 8.12.0.0, HPE Aruba Networking OS 10.7.0.0³
- HPE Aruba Networking AP-635:
 - HPE Aruba Networking OS and HPE Aruba Networking InstantOS 8.9.0.0, HPE Aruba Networking OS 10.4.0.0

Certifications

- UL2043 plenum rating
- Wi-Fi Alliance (WFA):
 - Wi-Fi CERTIFIED a, b, g, n, ac
 - Wi-Fi CERTIFIED 6E (ax, 6GHz)
 - WPA, WPA2 and WPA3 – Enterprise with CNSA option, Personal (SAE), Enhanced Open (OWE)
 - WMM, WMM-PS, W-Fi Agile Multiband
 - Passpoint (release 2)
- Bluetooth SIG
- Ethernet Alliance (PoE, PD device, class 5)

Warranty

HPE Aruba Networking’s hardware limited lifetime warranty.

Minimum operating system software versions

- AP-634 (excluding 6GHz support):
 - HPE Aruba Networking OS and HPE Aruba Networking InstantOS 8.11.2.0, HPE Aruba Networking OS 10.6.0.0

³ Standard Power product class operation of the AP-634 (i.e. most countries where the platform is supported) is only supported on HPE Aruba Networking OS 10.7.0.0 and later deployments and HPE Aruba Networking OS 8.12.0.0 and later deployments that include a Mobility Conductor. Standard Power operation is not supported on Instant OS deployments or 8.x HPE Aruba Networking OS deployments without a Mobility Conductor.



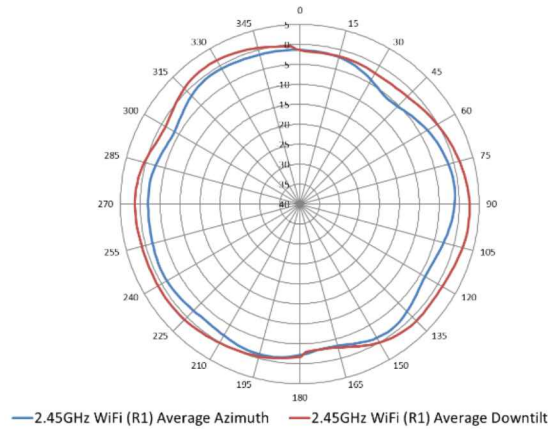
RF performance table

Band, rate	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
2.4 GHz, 802.11b		
1Mbps	18.0	-96.0
11Mbps	18.0	-88.0
2.4 GHz, 802.11g		
6Mbps	18.0	-92.0
54Mbps	16.0	-74.0
2.4 GHz, 802.11n HT20		
MCS0	18.0	-91.0
MCS7	16.0	-73.5
2.4 GHz, 802.11ax HE20		
MCS0	18.0	-91.0
MCS11	14.0	-61.0
5 GHz, 802.11a		
6Mbps	18.0	-88.0
54Mbps	16.0	-71.5
5 GHz, 802.11n HT20/HT40		
MCS0	18.0/18.0	-88.0/-85.0
MCS7	15.0/15.0	-70.0/-67.0
5 GHz, 802.11ac VHT20/VHT40/VHT80		
MCS0	18.0/18.0/18.0	-88.5/-85.5/-82.5
MCS9	14.0/14.0/14.0	-64.5/-61.5/-58.5
5 GHz, 802.11ax HE20/HE40/HE80		
MCS0	18.0/18.0/18.0	-88.5/-85.5/-82.5
MCS11	14.0/14.0/14.0	-59.0/ 56.0/-53.0
6 GHz, 802.11ax HE20/HE40/HE80/HE160		
MCS0	18.0/18.0/18.0/18.0	-90.0/-87.0/-84.0/-81.0
MCS11	14.0/14.0/14.0/14.0	-63.5/-60.5/-57.5/-54.5

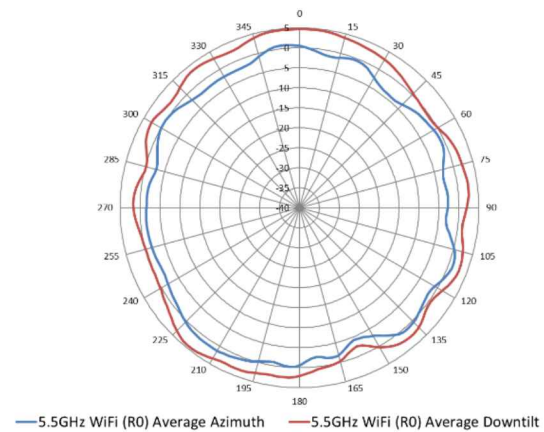
Antenna patterns AP-635

Horizontal planes (top view)

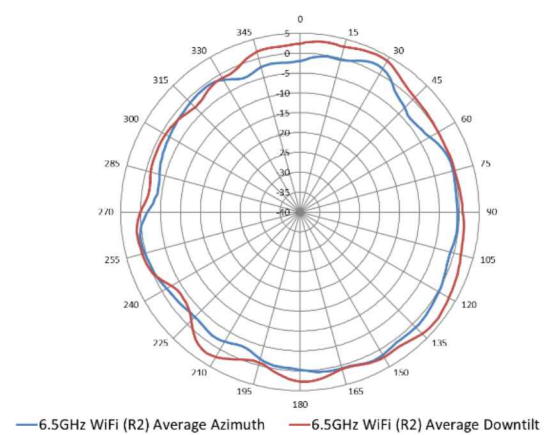
Showing both azimuth (0 degrees) and 30 degrees downtilt patterns (averaged patterns for all applicable antennas)



2.45GHz Wi-Fi antenna patterns (horizontal)



5.5GHz Wi-Fi antenna patterns (horizontal)

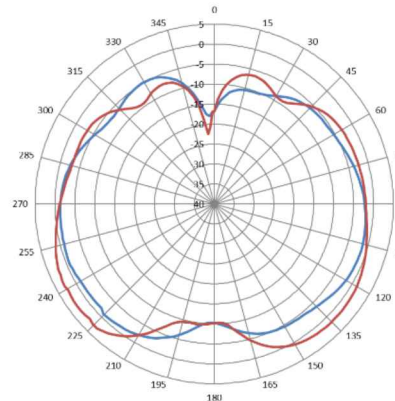


6.5GHz Wi-Fi antenna patterns (horizontal)



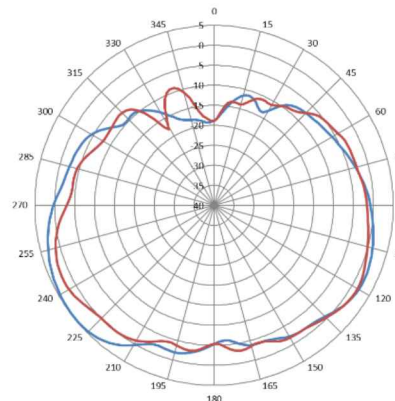
Vertical (elevation) planes (side view, AP facing down)

Showing side view with AP rotated 0 and 90 degrees (averaged patterns for all applicable antennas)



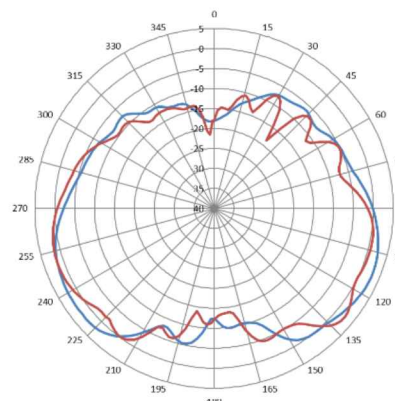
— 2.45GHz WiFi (R1) Average Elevation 0 — 2.45GHz WiFi (R1) Average Elevation 90

2.45GHz Wi-Fi antennas patterns (vertical)



— 5.5GHz WiFi (R0) Average Elevation 0 — 5.5GHz WiFi (R0) Average Elevation 90

5.5GHz Wi-Fi antenna patterns (vertical)



— 6.5GHz WiFi (R2) Average Elevation 0 — 6.5GHz WiFi (R2) Average Elevation 90

6.5GHz Wi-Fi antennas patterns (vertical)



Ordering information

Part number	Description
Internal antenna access points	
R7J24A	Aruba AP-635 (EG) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J25A	Aruba AP-635 (IL) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J26A	Aruba AP-635 (JP) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J27A	Aruba AP-635 (RW) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J28A	Aruba AP-635 (US) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
External antenna access points	
S1G49A	HPE Aruba Networking AP-634-RW Tri-radio 2x2:2 Wi-Fi 6E External Antennas Campus AP
S1G50A	HPE Aruba Networking AP-634-US Tri-radio 2x2:2 Wi-Fi 6E External Antennas Campus AP
Internal antenna access points—TAA models	
R7J29A	Aruba AP-635 (EG) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J30A	Aruba AP-635 (IL) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J31A	Aruba AP-635 (JP) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J32A	Aruba AP-635 (RW) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J33A	Aruba AP-635 (US) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
External antenna access points—TAA models	
S1G51A	HPE Aruba Networking AP-634-RWF1 TAA Tri-radio 2x2:2 Wi-Fi 6E External Antennas Campus AP
S1G52A	HPE Aruba Networking AP-634-USF1 TAA Tri-radio 2x2:2 Wi-Fi 6E External Antennas Campus AP

Note: All hardware SKUs can be managed by HPE Aruba Networking Central. Central Managed (CM) SKUs are used for simplified ordering within US and Canada only.

For more ordering information and compatible accessories, please refer to the [ordering guide](#).

Make the right purchase decision.
Contact our presales specialists.



Contact us

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HPE Aruba Networking 650 Series Wi-Fi 6E Campus Access Points

Flagship offering with the performance to meet growing enterprise needs with Wi-Fi 6E



Key features

- Comprehensive tri-band coverage across 2.4 GHz, 5 GHz, and 6 GHz to deliver up to 7.8 Gbps combined peak data rate.
- 4x4 MIMO radios to deliver peak performance and increased capacity using MU-MIMO and OFDMA (uplink and downlink for both).
- Up to seven 160 MHz channels in 6 GHz support low-latency, bandwidth-hungry applications like high-definition video and augmented reality/virtual reality applications.
- Unique ultra tri-band filtering enables 5 GHz and 6 GHz to operate without restrictions or interference.

By leveraging the 6 GHz band, Aruba 650 Series Campus APs delivers peak performance and far greater capacity than previous generations of Wi-Fi. With up to 1200 MHz of new channels, capacity is nearly tripled – so you can meet growing demand due to bandwidth-hungry video, increasing numbers of client and IoT devices and growth in cloud. Unique to Aruba, the 650 Series includes ultra tri-band filtering to minimize channel interference and dual configurable 5 Gbps ethernet ports to eliminate coverage gaps, provide greater resiliency, and deliver fast, secure connectivity.

More capacity and wider channels

The 650 Series APs are designed to take advantage of the 6 GHz band, which translates into far greater speeds, wider channels for multi-gigabit traffic, and less interference. The three 4x4 MIMO radios of the platform deliver a combined peak data rate of up to 7.8 Gbps.

Table 1. Channel bandwidth and peak data rates

Band	Channel bandwidth	Peak data rate
6 Ghz	160 MHz	4.8 Gbps
5 GHz	80 MHz	2.4 Gbps
2.4 GHz	20 MHz	574 Mbps
Total	X	7.8 Gbps

Key features

- High availability with configurable 5 Gbps dual Ethernet ports for hitless failover of ethernet and power.
- Built in GPS receivers and intelligent software enable APs to self-locate and act as reference points for accurate indoor location measurements.

Advantages of 6 GHz

Wi-Fi 6E provides up to 1200 MHz in the 6 GHz band for higher throughput and improved application performance. With up to seven 160 MHz channels, Wi-Fi 6E can better support low-latency, bandwidth hungry applications like high-definition video and artificial reality/virtual reality applications. Only Wi-Fi 6E capable devices can use the 6 GHz band so there is no interference or slowdowns due to legacy devices.

Device class support

For operation in the 6 GHz band, the 650 Series APs are part of the low power indoor (LPI) device class. This fixed indoor-only class uses lower power levels and does not require an Automated Frequency Coordination service (AFC) to manage incumbent outdoor services which is required for standard class APs.

The connectorized models will typically operate as Standard Power access points, but may also be allowed to operate as Low Power Indoor devices in some countries.

Less interference

650 Series Access Points include Aruba's ultra tri-band filtering, which enables enterprises to take advantage of the entire 5 GHz and 6 GHz bands without experiencing interference, while operating on any channel in either band concurrently, or islands. Since there is only 50 MHz between 5 GHz and the 6 GHz, without advanced filtering, enterprises would likely experience problems between the bands and would therefore be limited in the number of channels available. By applying advanced filtering capabilities, enterprises can take full use of available spectrum without creating coverage gaps

Business continuity

The Series 650 APs provide high availability with two HPE Smart Rate ethernet ports for hitless failover for both data and power. Configurable to 1, 2.5, or 5 Gbps, these dual ports provide business continuity for mission critical applications.

Global readiness

While the need for more Wi-Fi capacity is recognized across the globe, countries are approaching 6 GHz differently. The 650 Series APs are set up to automatically update regulatory rules once 6E regulations have been approved and certified.

Extend the benefits of Wi-Fi 6

The 650 Series APs are based on the 802.11ax standard, which means that all its efficiency and security enhancements are also available on the 6 GHz band. Wi-Fi 6 features such as Orthogonal Frequency Division Multiple Access (OFDMA), BSS coloring, Enhanced Open, and WPA3 are fully supported on the Aruba Wi-Fi 6E access points as well.

Advantages of OFDMA

This capability allows Aruba's APs to handle multiple 802.11ax capable clients on each channel simultaneously, regardless of device or traffic type. Channel utilization is optimized by handling each transaction via smaller sub-carriers or resource units (RUs), which means that clients are sharing a channel and not competing for airtime and bandwidth. The 650 Series APs supports up to 37 resource units, the maximum as defined in the standard for an 80 MHz channel.

Advantages of MU-MIMO

MU-MIMO can be used to increase the capacity and aggregate performance by relying on spatial multiplexing to communicate with up to four client devices simultaneously. The 650 Series APs supports 4x4 MU-MIMO in both uplink and downlink directions.

Wi-Fi optimization

Client optimization

Aruba's patented AI-powered ClientMatch technology eliminates sticky client issues by steering a client to the AP where it receives the best radio signal. Client Match steers traffic from the noisy 2.4 GHz band to the preferred 5 GHz or 6 GHz band depending on client capabilities. ClientMatch also dynamically steers traffic to load balance APs to improve the user experience.

Automated Wi-Fi radio frequency management

To optimize the user experience and provide greater stability, Aruba AirMatch allows organization to automate network optimization using machine learning. AirMatch provides dynamic bandwidth adjustments to support changing device density, enhanced roaming using an even distribution of Effective Isotropic Radiated Power (EIRP) to radios, and real-time channel assignments to mitigate co-channel interference.

Application assurance

With Air Slice, organizations can provide application assurance to their users that goes beyond the traditional capabilities of airtime fairness. After the SLAs are configured, Air Slice monitors network usage, automatically allocates radio resources, and dynamically adjusts radio resources as new users connect and applications sessions begin or end.

Aruba Advanced Cellular Coexistence (ACC) Unique to Aruba, Advanced Cellular Coexistence uses built-in filtering to automatically minimize the impact of interference from cellular networks, distributed antenna systems (DAS), and commercial small cell or femtocell equipment.

Intelligent Power Monitoring (IPM)

For better insights into energy consumption, Aruba APs continuously monitor and report hardware energy usage. Unlike other vendor's access points, Aruba APs can also be configured to enable or disable capabilities based on available PoE power – ideal when wired switches have exhausted their power budget. Enterprises can deploy Wi-Fi 6E APs and update switching and power at a later if needed based on their actual usage. Other power options include adding a power injector or using Smart PoE to combine power from two cables.

Self-locating access points

Indoor location shouldn't require guesswork or costly overlay technologies. Aruba's Wi-Fi 6 and 6E APs help organizations leverage their wireless investment to deliver indoor location – everywhere.

The 650 Series Campus APs include built-in GPS receivers and intelligent software to allow them automatically locate themselves accurately within the universal framework of latitude and longitude. As part of Aruba's indoor location solution, they serve as reference points for client devices using fine time measurements and other location technologies.

Aruba's Wi-Fi 6 and 6E APs support Open Locate, an emerging standard that allows APs to share their location over the air and through cloud-based APIs, enabling mobile devices to locate themselves and applications to support network analytics.

APs as an IoT platform

The 650 Series includes an integrated Bluetooth 5 and 802.15.4 radio for Zigbee support to simplify deploying and managing IoT-based location services, asset tracking services, security solutions, and IoT sensors. There is also a USB-port extension to provide IoT connectivity to a wider range of devices. These IoT capabilities allows organizations to leverage the Aruba APs as an IoT platform, which eliminates the need for an overlay infrastructure and additional IT resources and can accelerate IoT initiatives.

In addition, Target Wake Time (TWT) establishes a schedule for when clients need to communicate with an AP. This helps improve client power savings and reduces airtime contention with other clients, which is ideal for IoT.

Aruba secure infrastructure

The Aruba 650 Series includes build-security capabilities such as:

WPA3 and Enhanced Open

Support for stronger encryption and authentication is provided via the latest version of WPA for enterprise-protected networks. Enhanced Open offers seamless new protection for users connecting to open networks where each session is automatically encrypted to protect user passwords and data on guest networks.

WPA2-MPSK

MPSK enables simpler passkey management for WPA2 devices – should the Wi-Fi password on one device or device type change, no additional changes are needed for other devices. This capability requires ClearPass Policy Manager.

Simple and secure access

To improve security and ease of management, IT can centrally configure and automatically enforce role-based policies that define proper access privileges for employees, guests, contractors, and other user groups – no matter where users connect on wired and WLANs. Dynamic Segmentation eliminates the time consuming and error-prone task of managing complex and static VLANs, ACLs, and subnets by dynamically assigning policies and keeping traffic secure and separated.

Seamless handoffs to cellular

Built on the technical foundations of Passpoint® and Wi-Fi Calling, Air Pass creates a roaming network across the Aruba enterprise customer footprint, extending cellular coverage and enhancing the visitor and subscriber experience to deliver a great experience for your guests while reducing costs and management overhead for DAS.

Flexible operation and management

Our unified APs can operate as standalone access points or with a gateway for greater scalability, security, and manageability. APs can be deployed using zero touch provisioning – without on-site technical expertise – for ease of implementation in branch offices and for remote work.

Aruba APs can be managed using cloud-based or on-premises solutions for any campus, branch, or remote work environment. As the management and orchestration console for Aruba ESP (Edge Services Platform), Aruba Central provides a single pane of glass for overseeing every aspect of wired and wireless LANs, WANs,

and VPNs. AI-powered analytics, end-to-end orchestration and automation, and advanced security features are built natively into the solution.

Summary

Aruba 650 Series Access Points are designed to take advantage of the 6GHz band using three 4x4 MIMO radios for comprehensive tri-band coverage to meet the growing demands of Wi-Fi due to increased use of video, growth in client and IoT devices, and expanded use of cloud. With a maximum combined 7.8 Gbps data rate for higher throughput and faster use, the 650 Series raises the bar in terms of capacity, wider channels, hitless failover, and less interference between the 5 GHz and 6 GHz bands.

Specifications**Hardware variants**

- AP-654: External antenna models
- AP-655: Internal antenna models.

Wi-Fi radio specifications

- AP type: Indoor, tri-radio, 2.4 GHz, 5 GHz and 6 GHz (concurrent) 802.11ax 4x4 MIMO.
- 2.4 GHz radio: Four spatial streams MIMO for up to 1,147 Mbps wireless data rate with HE40 802.11ax client devices (574 Mbps for HE20).
- 5 GHz radio: Four spatial streams MIMO for up to 2.4 Gbps wireless data rate with HE80 802.11ax client devices.
- 6 GHz radio: Four spatial streams MIMO for up to 4.8 Gbps wireless data rate with HE160 802.11ax client devices.
- Both downlink and uplink MU-MIMO in 6 GHz and 5 GHz, downlink only in 2.4 GHz.
- Up to 512 associated client devices per radio, and up to 16 BSSIDs per radio (limited to 4 for the 6 GHz radio).

- Supported frequency bands (country-specific restrictions apply):
 - 2.400 to 2.4835 GHz ISM
 - 5.150 to 5.250 GHz U-NII-1
 - 5.250 to 5.350 GHz U-NII-2A
 - 5.470 to 5.725 GHz U-NII-2C
 - 5.725 to 5.850 GHz U-NII-3/ISM
 - 5.850 to 5.895 GHz U-NII-4
 - 5.925 to 6.425 GHz U-NII-5
 - 6.425 to 6.525 GHz U-NII-6
 - 6.525 to 6.875 GHz U-NII-7
 - 6.875 to 7.125 GHz U-NII-8
- Available bands and channels: Dependent on configured regulatory domain (country).
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum in the 5 GHz band.
 - Including Zero-Wait DFS (ZWDFS) to accelerate channel changes
- Supported radio technologies:
 - 802.11b: Direct-sequence spread-spectrum (DSSS)
 - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
 - 802.11ax: Orthogonal frequency-division multiple access (OFDMA) with up to 37 resource units (for an 80 MHz channel)
- Supported modulation types:
 - 802.11b: BPSK, QPSK, CCK
 - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM and 256-QAM (proprietary extension)
 - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM and 1024-QAM (proprietary extension)
 - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM and 1024-QAM
- 802.11n high-throughput (HT) support: HT20/40
- 802.11ac very high throughput (VHT) support: VHT20/40/80/160(80+80)
- 802.11ax high efficiency (HE) support: HE20/40/80/160
- Supported data rates (Mbps):
 - 802.11b: 1, 2, 5.5, 11
 - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
 - 802.11n: 6.5 to 600 (MCS0 to MCS31, HT20 to HT40), 800 with 256-QAM (proprietary extension)
 - 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4, VHT20 to VHT160(80+80)); VHT80); 2,167 with 1024-QAM (MCS10 and MCS11, proprietary extension)
 - 802.11ax (2.4 GHz): 3.6 to 1,147 (MCS0 to MCS11, NSS = 1 to 4, HE20 to HE40)
 - 802.11ax (5 GHz): 3.6 to 2,402 (MCS0 to MCS11, NSS = 1 to 4, HE20 to HE160(80+80))HE80)
 - 802.11ax (6 GHz): 3.6 to 4,804 (MCS0 to MCS11, NSS = 1 to 4, HE20 to HE160)
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements):
 - Per radio/band (2.4 GHz / 5 GHz / 6 GHz): +24 dBm (18dBm per chain)
 - Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain.
- Advanced Cellular Coexistence (ACC) minimizes the impact of interference from cellular networks
- Ultra Tri-Band (UTB) enables ultimate flexibility in 5 GHz and 6 GHz channel selection without performance degradation
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance
- Space-time block coding (STBC) for increased range and improved reception
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput
- Transmit beam-forming (TxBF) for increased signal reliability and range

- 802.11ax Target Wait Time (TWT) to support low-power client devices
- 802.11mc Fine Timing Measurement (FTM) for precision distance ranging

Wi-Fi antennas

- AP-654: Two sets of four (female) RP-SMA connectors for external antennas (A0 through A3 corresponding with radio chains 0 through 3 for the 2.4 GHz and 5 GHz radios, and B0 through B3 corresponding with radio chains 0 through 3 for the 6 GHz radio). Worst-case internal loss between radio interface and external antenna connectors: 1.0dB in 2.4 GHz, 1.0dB in 5 GHz and 1.0dB in 6 GHz.
- AP-655: Integrated downtilt omnidirectional antennas for 4x4 MIMO with peak antenna gain of 4.8dBi in 2.4 GHz, 5.3dBi in 5 GHz and 5.4dBi in 6 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 to 40 degrees.

– Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the combined, average pattern is 3.3dBi in 2.4 GHz, 2.9dBi in 5 GHz and 4.0dBi in 6 GHz.

Other interfaces

- E0, E1: Two Ethernet wired network ports (RJ-45)
 - Auto-sensing link speed (100/1000/2500/5000BASE-T) and MDI/MDX
 - 2.5 Gbps and 5 Gbps speeds comply with NBase-T and 802.3bz specifications
 - POE-PD: 48Vdc (nominal) 802.3af/at/bt POE (class 3 or higher)
 - 802.3az Energy Efficient Ethernet (EEE)
 - Link aggregation (LACP) support between both network ports for redundancy and increased capacity

Table 2. Default PoE power modes (IPM disabled) - Single PoE source

Single PoE source	Class 6 (802.3bt)	Class 5 (802.3bt)	Class 4 (802.3at)	Class 3 (802.3af)
Power budget	51W	40W	25.5W	13.9W
Power mode	Unrestricted	Restricted	Restricted	
USB port	Enabled	Disabled	Disabled	
Ethernet	Both ports enabled	Second port disabled	Second port disabled	Not supported
MIMO	4x4	2x2	2x2	
Max RF power reduction	0dB	0dB	0dB	

Table 3. Default PoE power modes (IPM disabled) - Dual PoE source

Dual PoE source	Class 5 + class 3+	Class 4 + class 4	Class 4 + class 3	Class 3 + class 3
Power budget	53.9W+	51W	39.4W	27.8W
Power mode	Unrestricted	Unrestricted	Restricted	Restricted
USB port	Enabled	Enabled	Disabled	Disabled
Ethernet	Both ports enabled	Both ports enabled	Both ports enabled	Both ports enabled
MIMO	4x4	4x4	4x4	2x2
Max RF power reduction	0dB	0dB	3dB	0dB



- DC power interface: 12Vdc (nominal, +/- 5%), accepts 2.1mm/5.5mm center-positive circular plug with 9.5mm length
- USB 2.0 host interface (Type A connector)
 - Capable of sourcing up to 1A / 5W to an attached device
- Bluetooth Low Energy (BLE5.0) and Zigbee (802.15.4) radio
 - BLE: up to 6dBm transmit power and -101dBm receive sensitivity (125 kbps)
 - Zigbee: up to 6dBm transmit power and -99dBm receive sensitivity (250 kbps)
 - Integrated omnidirectional antenna with roughly 30 to 40 degrees downtilt and peak gain of 3.6dBi
- GNSS L1 (1575.42 MHz) receiver supporting GPS, Galileo, GLONASS, and BeiDou signal
 - Receive sensitivity: -162dBm (tracking)
 - Integrated omnidirectional antenna with roughly 30 to 40 degrees downtilt and peak gain of 3.1dBi
- Advanced IOT Coexistence (AIC) allows concurrent operation of multiple radios in the 2.4 GHz band
- Built-in Trusted Platform Module (TPM) for enhanced security and anti-counterfeiting
- Visual indicators (four multi-color LEDs): for System (1x) and Radio (3x) status
- Reset button: factory reset, LED mode control (normal/off)
- Serial console interface (proprietary, micro-B USB physical jack)
- Kensington security slot
- Automatic thermal shutdown and recovery function

Power sources and power consumption

- The AP supports direct DC power and Power over Ethernet (POE) on port E0 and/or E1
- When POE power is supplied to both Ethernet ports, the AP combines power from both sources (SmartPOE feature), using E0 as the primary source and E1 as secondary
- When both DC and POE power sources are available, DC power takes priority over POE

- Power sources are sold separately; see the 650 Series Ordering Guide for details
- The AP supports various power modes depending on the available power source(s) and configuration.
 - With IPM disabled, the AP may apply some static restrictions, see table above. No additional restrictions will be applied.
 - With IPM enabled, the AP will start up in unrestricted mode but may dynamically apply restrictions depending on the available power budget and actual consumption.

The feature restrictions and order in which these get applied are configurable.

- When powered by direct DC power, the AP operates without restrictions.
- Powering the AP from a single 802.3af (class 3 or lower) POE source is not supported, regardless of IPM status.
- Maximum (worst-case) power consumption (without /with a USB device attached):
 - DC powered: 36.0W/42.5W.
 - POE powered: 40.3W/46.5W.
 - This assumes that up to 5W is supplied to the attached USB device.
- Maximum (worst-case) power consumption in idle mode: 14.3W/20.2W (DC) or 16.9W/22.7W (POE).
- Maximum (worst-case) power consumption in deep-sleep mode: 2.4W (DC) or 4.0W (POE).

Using IPM to avoid platform restrictions

Operating the 650 Series AP from a single 802.3af source requires some restrictions, but the IPM feature allows doing that in a flexible way.

The following configurations (with IPM enabled) are some examples of how the AP can remain within the 802.3af budget without any additional restrictions:

- No power drawn from USB, transmit power on all radios limited to 18dBm or less
- No power drawn from USB, single Ethernet, transmit power on all radios limited to 21dBm or less
- No power drawn from USB, single Ethernet, any one radio disabled

Mounting details

A mounting bracket has been pre-installed on the back of the AP. This bracket is used to secure the AP to any of the mount kits (sold separately); see the 650 Series Ordering Guide for details.

Mechanical specifications

- Dimensions/weight (AP-655; unit without mount bracket):
 - 260mm (W) x 260mm (D) x 60mm (H)
 - 1,800g
- Dimensions/weight (AP-655; shipping):
 - 285mm (W) x 285mm (D) x 95mm (H)
 - 2,300g

Environmental specifications

- Operating conditions
 - Temperature: 0C to +50C / +32F to +122F
 - Relative humidity: 5% to 95%
 - ETS 300 019 class 3.2 environments
 - AP is plenum rated for use in air-handling spaces
- Storage conditions
 - Temperature: -25C to +55C / -13F to +131F
 - Relative humidity: 10% to 100%
 - ETS 300 019 class 1.2 environments
- Transportation conditions
 - Temperature: -40C to +70C / -40F to +158F
 - Relative humidity: up to 95%
 - ETS 300 019 class 2.3 environments

Reliability

Mean Time Between Failure (MTBF): 544khrs (62yrs) at +25C operating temperature.

Regulatory compliance

- FCC/ISED
- CE Marked
- RED Directive 2014/53/EU
- EMC Directive 2014/30/EU

- Low Voltage Directive 2014/35/EU
- UL/IEC/EN 62638-1
- EN 60601-1-1, EN60601-1-2

For more country-specific regulatory information and approvals, please see your Aruba representative.

Regulatory model numbers

- AP-654 (all models): APIN0654
- AP-655 (all models): APIN0655

Regulatory considerations for AP-654

The AP-654 will only be offered in countries where there's an existing or clear and defined path to allow operation of 6 GHz radios with external connectorized antennas, either as a Low-Power Indoor (LPI) or Standard Power (SP) product. Please contact your HPE Aruba Networking representative to confirm (existing or planned) availability for the country where the AP will be deployed.

Standard Power product class operation of the AP-634 (i.e. most countries where the platform is supported) is only supported on ArubaOS 10.7.0.0 and later deployments and ArubaOS 8.12.0.0 and later deployments that include a Mobility Conductor. Standard Power operation is not supported on Instant OS deployments or 8.x ArubaOS deployments without a Mobility Conductor.

Certifications

- UL2043 plenum rating
- Wi-Fi Alliance (WFA):
 - Wi-Fi CERTIFIED a, b, g, n, ac
 - Wi-Fi CERTIFIED 6E (ax, 6 GHz)
 - WPA, WPA2 and WPA3 – Enterprise with CNSA option, Personal (SAE), Enhanced Open (OWE)
 - WMM, WMM-PS, W-Fi Agile Multiband
 - Passpoint (release 2)
- Bluetooth SIG
- Ethernet Alliance (POE, PD device, class 6)

Warranty

Aruba's hardware limited lifetime warranty.

Minimum operating system software versions

- AP-654 (excluding 6 GHz support):
 - ArubaOS and Aruba InstantOS 8.11.2.0, ArubaOS 10.6.0.0

- AP-654 (including 6 GHz support):
 - ArubaOS and Aruba InstantOS 8.12.0.0, ArubaOS 10.7.0.0¹
- AP-655:
 - ArubaOS and Aruba InstantOS 8.10.0.1, ArubaOS 10.4.0.0

¹ Standard Power product class operation of the AP-654 (i.e. most countries where the platform is supported) is only supported on ArubaOS 10.7.0.0 and later deployments and ArubaOS 8.12.0.0 and later deployments that include a Mobility Conductor. Standard Power operation is not supported on Instant OS deployments or 8.x ArubaOS deployments without a Mobility Conductor.



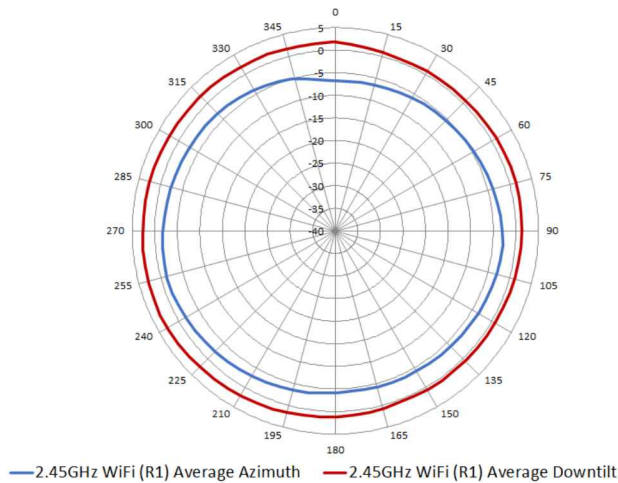
RF performance table

Band, rate	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
2.4 GHz, 802.11b		
1 Mbps	18.0	-98.0
11 Mbps	18.0	-89.0
2.4 GHz, 802.11g		
6 Mbps	18.0	-92.0
54 Mbps	18.0	-76.0
2.4 GHz, 802.11n HT20		
MCS0	18.0	-93.0
MCS7	17.0	-74.0
2.4 GHz, 802.11ax HE20		
MCS0	18.0	-93.0
MCS7	16.0	-74.0
MCS9	15.0	-70.0
MCS11	13.0	-64.0
5 GHz, 802.11a		
6 Mbps	18.0	-91.0
54 Mbps	18.0	-73.0
5 GHz, 802.11n HT20 / HT40		
MCS0	18.0 / 18.0	-91.0 / -88.0
MCS7	16.0 / 16.0	-70.0 / -67.0
5 GHz, 802.11ac VHT20 / VHT40 / VHT80/VHT(80+80)		
MCS0	18.0 / 18.0 / 18.0	-91.0 / -88.0 / -85.0 / -82.0
MCS7	16.0 / 16.0 / 16.0 / 16.0	-71.0 / -68.0 / -65.0 / -62.0
5 GHz, 802.11ax HE20 / HE40 / HE80/HE(80+80)		
MCS0	18.0 / 18.0 / 18.0 / 18.0	-91.0 / -88.0 / -85.0 / -82.0
MCS7	16.0 / 16.0 / 16.0 / 16.0	-71.0 / -68.0 / -65.0 / -62.0
MCS9	15.0 / 15.0 / 15.0 / 15.0	-66.0 / -63.0 / -60.0 / -57.0
MCS11	13.0 / 13.0 / 13.0 / 13.0	-62.0 / -59.0 / -56.0 / -53.0
6 GHz, 802.11ax HE20 / HE40 / HE80 / HE160		
MCS0	18.0 / 18.0 / 18.0 / 18.0	-90.0 / -87.0 / -84.0 / -81.0
MCS7	16.0 / 16.0 / 16.0 / 16.0	-74.0 / -71.0 / -68.0 / -65.0
MCS9	15.0 / 15.0 / 15.0 / 15.0	-68.0 / -65.0 / -62.0 / -59.0
MCS11	13.0 / 13.0 / 13.0 / 13.0	-63.0 / -60.0 / -57.0 / -54.0

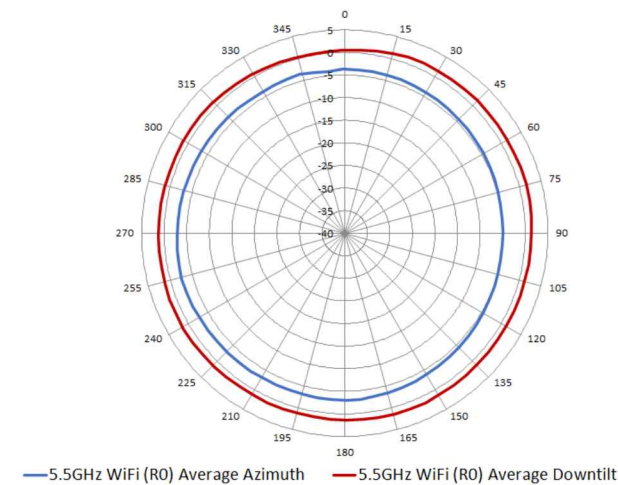
Antenna patterns AP-655

Horizontal planes (top view)

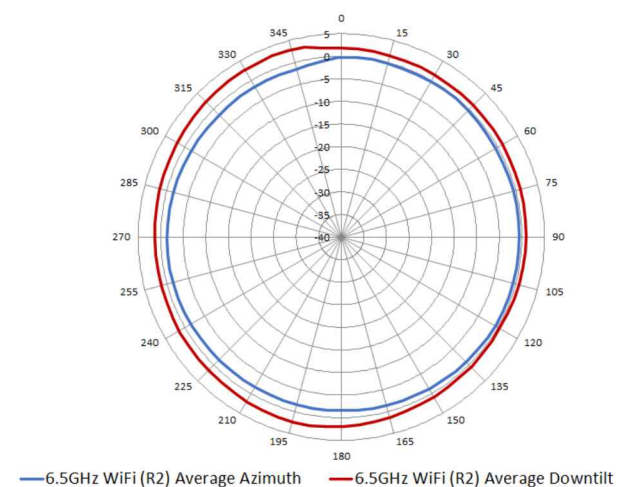
Showing azimuth (0 degrees) and 30 degrees downtilt patterns (averaged patterns for all applicable antennas)



2.45 GHz Wi-Fi antenna patterns (horizontal)



5.5 GHz Wi-Fi antenna patterns (horizontal)



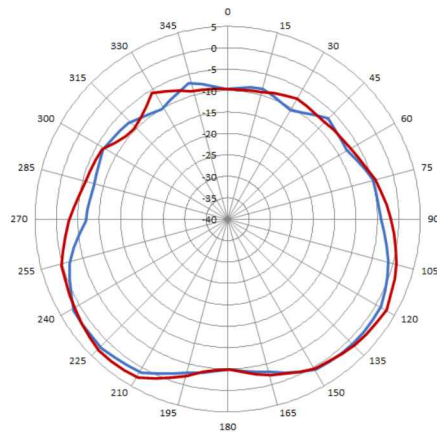
6.5 GHz Wi-Fi antenna patterns (horizontal)



Antenna patterns AP-655

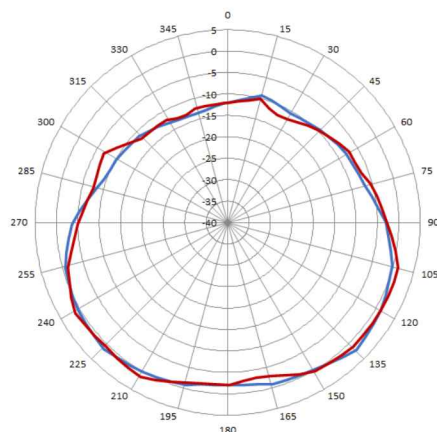
Vertical (elevation) planes (side view, AP facing down)

Showing side view with AP rotated 0 and 90 degrees (averaged patterns for all applicable antennas)



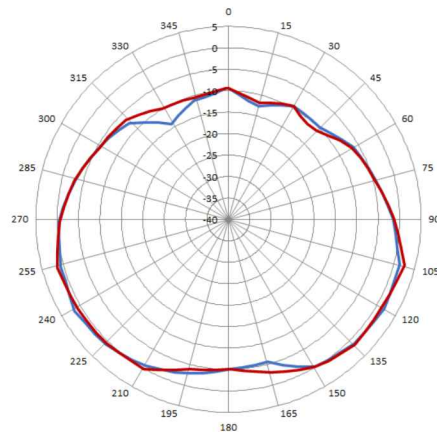
— 2.45GHz WiFi (R1) Average Elevation 0 — 2.45GHz WiFi (R1) Average Elevation 90

2.45 GHz Wi-Fi antennas patterns (vertical)



— 5.5GHz WiFi (R0) Average Elevation 0 — 5.5GHz WiFi (R0) Average Elevation 90

5.5 GHz Wi-Fi antenna patterns (vertical)



— 6.5GHz WiFi (R2) Average Elevation 0 — 6.5GHz WiFi (R2) Average Elevation 90

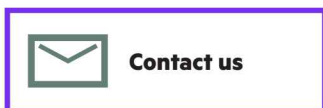
6.5 GHz Wi-Fi antennas patterns (vertical)



Ordering information

Part number	Description
Internal antenna access points	
R7J35A	Aruba AP-655 (EG) Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J36A	Aruba AP-655 (IL) Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J37A	Aruba AP-655 (JP) Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J38A	Aruba AP-655 (RW) Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J39A	Aruba AP-655 (US) Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
External antenna access points	
S1G53A	HPE Aruba Networking AP-654-RW Tri-radio 4x4:4 Wi-Fi 6E External Antennas Campus AP
S1G54A	HPE Aruba Networking AP-654-US Tri-radio 4x4:4 Wi-Fi 6E External Antennas Campus AP
Internal antenna access points – TAA models	
R7J40A	Aruba AP-655 (EG) TAA Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J41A	Aruba AP-655 (IL) TAA Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J42A	Aruba AP-655 (JP) TAA Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J43A	Aruba AP-655 (RW) TAA Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J44A	Aruba AP-655 (US) TAA Tri-radio 4x4:4 802.11ax Wi-Fi 6E Internal Antennas Campus AP
External antenna access points – TAA models	
S1G55A	HPE Aruba Networking AP-654-RWF1 TAA Tri-radio 4x4:4 Wi-Fi 6E External Antennas Campus AP
S1G56A	HPE Aruba Networking AP-654-USF1 TAA Tri-radio 4x4:4 Wi-Fi 6E External Antennas Campus AP
For compatible accessories, see the 650 Series Ordering Guide.	

Make the right purchase decision.
Contact our presales specialists.



HPE Aruba Networking 670 Series Outdoor APs

High-performance Wi-Fi 6E for outdoor with 670EX
for hazardous locations



Key features

- Ideal for outdoor and environmentally challenging locations.
- Tri-band coverage across 2.4 GHz, 5 GHz, and 6 GHz for 3.9 Gbps peak aggregate data rate.
- Industrial IoT-ready with high-power Bluetooth and Zigbee radios.
- Fast wired connectivity with 2.5GbE and 1GbE SFP ports.
- Standard Power (SP) device operation and self-locating with embedded GPS receiver.
- Class 1 Division 2 and ATEX Zone 2 certified¹ AP-670EX models.

¹ Currently in process with certification labs.

Weatherproof, temperature hardened, and ready for hazardous environments, the HPE Aruba Networking 670 Series Outdoor APs bring high performance Wi-Fi 6E to outdoor and environmentally challenging locations.

The 670 Series delivers more wireless capacity and wider channels taking advantage of [Wi-Fi 6E](#) and the 6 GHz band to more than double capacity to meet the speed and reliability needed by enterprise and industrial IoT environments.

With integrated high-power Bluetooth and Zigbee radios, fast wired connectivity, and a limited lifetime warranty, the 670 Series provides high-performance outdoor connectivity you can depend on, delivering up to 3.9Gbps maximum aggregate data rates with a Tri-radio 2x2:2 MIMO AP.

For the most extreme conditions, the 670 Series includes 670EX models that are Hazardous Location (HazLoc) compliant¹,

making them ideal for environments such as oil rigs, industrial manufacturing, and transportation sites.

Ruggedized and outdoor ready

Purpose-built to survive harsh outdoor environments and deliver maximum wireless capacity and range, the 670 Series APs withstand exposure to extreme high and low temperatures, persistent moisture, and precipitation. They are fully sealed to keep out airborne contaminants and all electrical interfaces include industrial-strength surge protection. Available with choice of internal antenna (omni, directional, or point-to-point) to optimize wireless coverage, the 670 Series also includes EX models for additional protection for hazardous locations and harsh outdoor environments, and TAA models.

670 AP models for outdoor environments

The 670 models (AP-675, AP-677, AP-679) are ideal for deployment in harsh outdoor weather conditions such as parking lots, stadiums, and public venues.

670EX AP models for hazardous environments

The 670EX models (AP-675EX, AP-677EX, AP-679EX) are Class 1 Division 2 and ATEX Zone 2 certified¹ to survive in extreme environments making them ideal for outdoor oil rigs, industrial manufacturing, mining facilities, and transportation sites. Also ideal for deployment where networks need to be protected from extreme temperatures, flammable gases or vapors, and dust concentrations.

Wi-Fi 6E for faster speeds, more capacity

670 Series APs are designed to take advantage of Wi-Fi 6E and the 6 GHz band, which translates into far greater speeds, wider channels for multi-gigabit traffic, and less interference. The 670 Series delivers 3.9 Gbps maximum aggregate data rates with tri-radio, 2x2:2 MIMO in all three bands (3.9 Gbps aggregate peak).

Advantages of 6 GHz

Wi-Fi 6E provides up to 1200 MHz in the 6 GHz band for higher throughput and improved application performance. With up to seven 160 MHz channels, Wi-Fi 6E can better support low-latency, bandwidth hungry applications like high-definition video and augmented reality/virtual reality applications. Only Wi-Fi 6E capable devices can use the 6 GHz band so there is no interference or slowdowns since legacy devices use the 5 GHz or 2.4 GHz bands. And to ensure both 6E and legacy devices are supported, the 670 Series provides flexible coverage across the 2.4 GHz, 5 GHz, and 6 GHz bands.

Band	Channel bandwidth	Peak data rate
6 GHz	160 MHz	2.4 Gbps
5 GHz	80 MHz	1.2 Gbps
2.4 GHz	20 MHz	287 Mbps
Total		3.9 Gbps

Standard power support

HPE Aruba Networking 670 Series Outdoor APs will operate as Standard Power (SP) devices and, where required, will use an Automated Frequency Coordination service (AFC) before enabling the 6GHz radio to protect incumbent outdoor services (such as microwave links, broadcast auxiliary service, and cable television relay service) in the 6 GHz band. Note that the AP will only enable the 6GHz radio once the standard power requirements are met and the 6GHz radio is authorized, however the 2.4 GHz and 5 GHz radios will function normally regardless of the 6GHz radio's state.

6 GHz global readiness

At launch, the 670 Series will be orderable in U.S. and Canada only. Other countries may become available as they begin or announce their 6GHz certification standards and requirements. While the need for more Wi-Fi capacity is recognized across the globe, countries are approaching the 6 GHz band differently. HPE Aruba Networking 670 Series APs are set up to automatically update regulatory rules once Wi-Fi 6E regulations have been approved and certified.

Extends the benefits of Wi-Fi 6

HPE Aruba Networking 670 Series APs are based on the 802.11ax (Wi-Fi 6) standard, which means that all its efficiency and security enhancements are also available on the 6 GHz band. Wi-Fi 6 features such as Orthogonal Frequency Division Multiple Access (OFDMA), BSS coloring etc., are fully supported on the HPE Aruba Networking Wi-Fi 6E APs as well.

Advantages of OFDMA

This capability allows HPE Aruba Networking APs to handle multiple 802.11ax capable clients on each channel simultaneously, regardless of device or traffic type. Channel utilization is optimized by handling each transaction via smaller sub-carriers or resource units (RUs), which means that clients are sharing a channel and not competing for airtime and bandwidth.

Simplified deployment and operations

HPE Aruba Networking APs can operate as standalone APs or with a gateway for greater scalability, security, and manageability. APs can be deployed using zero touch provisioning—without on-site technical expertise—for ease of implementation in branch offices and for remote work.

HPE Aruba Networking APs can be managed using cloud-based or on-premises solutions for any campus, branch, or remote work environment. With HPE Aruba Networking Central, onboarding, configuring, and provisioning are simpler and require no manual CLI configuration or maintenance windows. Once the AP is plugged in, the device connects and receives its running configuration from the cloud using zero touch provisioning, which allows remote workers and offices to onboard and configure wireless connectivity without any on-site IT support. Central licenses are available in 1-, 3-, 5-, 7-, and 10-year increments, making it easy to align requirements for AIOps, security, and other desired management features. See the [Central Ordering Guide](#).



Flexible power deployment

Power via PoE 802.3bt (802.3at w/IPM) or for AC or DC power, use outdoor power injector (PD-9501-5GCO AD/DC Outdoor PoE Injectors).

Key Wi-Fi features

Wi-Fi 6E

HPE Aruba Networking 670 Series Outdoor APs meet the requirements for Wi-Fi 6E (802.11ax) for greater efficiency including OFDMA, MU-MIMO, and Target Wake Time to extend the battery life of devices.

Client optimization

HPE Aruba Networking's patented AI-powered ClientMatch technology eliminates sticky client issues by steering a client to the AP where it receives the best radio signal. Client Match steers traffic from the noisy 2.4 GHz band to the preferred 5 GHz or 6 GHz band depending on client capabilities. ClientMatch also dynamically steers traffic to load balance APs to improve the user experience.

RF optimization

Machine learning-based radio frequency optimization known as AirMatch dynamically adjusts resources such as power to optimize coverage and eliminate coverage gaps.

HPE Aruba Networking Advanced Cellular Coexistence

Unique Advanced Cellular Coexistence (ACC) uses built-in filtering to automatically minimize the impact of interference from cellular networks, distributed antenna systems (DAS), and commercial small cell or femtocell equipment.

Self-locating APs

The 670 Series APs include built-in GPS receivers and fine time measurement (FTM) to allow them to automatically locate themselves accurately within the universal framework of latitude and longitude. As part of HPE Aruba Networking's location solutions, they serve as reference points for client devices and other technologies using fine time measurement.

Open Locate, an emerging standard that allows APs to share their location over the air and through cloud-based APIs, enables mobile devices to locate themselves and applications to support network analytics.

IoT ready

HPE Aruba Networking 670 Series Outdoor APs include integrated high-power Bluetooth and 802.15.4 radios for Zigbee support to simplify deploying and managing IoT-based location services, asset tracking services, security solutions, and IoT sensors. There are also two USB-ports to provide IoT connectivity to a wider range of devices. These IoT capabilities allow organizations to leverage our APs as an IoT transport, which eliminates the need for an overlay infrastructure and additional IT resources and can accelerate IoT initiatives.

In addition, Target Wake Time (TWT) establishes a schedule for when clients need to communicate with an AP. This helps improve client power savings and reduces airtime contention with other clients, which is ideal for IoT.

The Advanced IoT Coexistence (AIC) feature uses built-in filtering to allow Wi-Fi, Bluetooth and Zigbee radios to operate at maximum capacity without the impact of interference.

Intelligent power monitoring (IPM)

For better insights into energy consumption, our APs continuously monitor and report hardware energy usage. Unlike other vendor's APs, our APs can also be configured to enable or disable capabilities based on available PoE power – ideal when wired switches have exhausted their power budget. Enterprises can deploy Wi-Fi 6E APs and update switching and power at a later date if needed based on their actual usage.

Key security features

AI client insights

ML-based classification of all clients via Client Insights uses deep packet inspection to provide additional context and behavioral information that help ensure devices are receiving proper policy enforcement and continuously monitor for rogue devices.

User and device authentication

Cloud-native Network Access Control (NAC) provided by HPE Aruba Networking Central further simplifies how IT controls network access while providing a frictionless experience for end users. Global policy automation and orchestration enables IT to define and maintain global policies at scale with ease, using UI-driven, intuitive workflows that automatically translate security intent into policy design and map user roles for employees, contractors, guests, and devices to their proper access privileges.

Intrusion detection

HPE Aruba Networking Central utilizes the Rogue AP Intrusion Detection Service (RAPIDS) to identify and resolve issues caused by rogue APs and clients. Wired and wireless data is automatically correlated to identify potential threats, thereby strengthening network security, and improving incident response processes by reducing false positives.

Web content filtering

Web Content Classification (WebCC) classifies websites by content category and rates them by reputation and risk score, enabling IT to block malicious sites to help prevent phishing, DDoS, botnets, and other common attacks.

WPA3 and Enhanced Open

As part of Wi-Fi 6E (802.11ax), WPA3 ensures stronger encryption and authentication while Enhanced Open offers protection for users connecting to open networks by automatically encrypting each session to protect user passwords and data on guest networks.

WPA2-MPSK

MPSK enables simpler passkey management for WPA2 devices – should the Wi-Fi password on one device or device type change, no additional changes are needed for other devices (requires ClearPass Policy Manager).



Trusted platform module (TPM)

For enhanced device assurance, all HPE Aruba Networking APs include an installed TPM for secure storage of credentials and keys, and boot code.

Simple and secure access

To improve security and ease of management, IT can centrally configure and automatically enforce role-based policies that define proper access privileges for employees, guests, contractors, and other user groups – no matter where users connect on wired and WLANs. Dynamic Segmentation eliminates the time consuming and error-prone task of managing complex and static VLANs, ACLs, and subnets by dynamically assigning policies and keeping traffic secure and separated.

Standards based technologies**HPE Aruba Networking 670 Series Outdoor APs also include the following standards-based technologies:**

- Transmit Beamforming to increase signal reliability and range
- Dynamic Frequency Selection (DFS) to optimize use of available RF spectrum
- Maximum Rate Combining (MRC) for improved receiver performance
- Cyclic Delay/Shift Diversity (CDD/CSD) to deliver greater downlink RF performance
- Space-Time Block Coding (STBC) to increase range and improve reception
- Low-Density Parity Check (LDPC) to provide high-efficiency error correction and improve throughput

Specifications**Hardware variants**

- HPE Aruba Networking AP-675
 - Built-in Omnidirectional Antennas
 - 2.4 GHz Antennas 3.5dBi
 - 5 GHz Antennas 5dBi
 - 6 GHz Antennas 5dBi
 - BLE/Zigbee: Integrated omnidirectional antenna with peak gain of 6dBi
- HPE Aruba Networking AP-677
 - Built-in Directional Antennas
 - 2.4 GHz Antennas 5.6dBi
 - 5 GHz Antennas 6dBi
 - 6 GHz Antennas 7dBi
 - BLE/Zigbee: Integrated omnidirectional antenna with peak gain of 8dBi

- HPE Aruba Networking AP-679
 - Built-in Dynamic Directional Antennas
 - 2.4 GHz Antennas 6dBi
 - 5 GHz Antennas
 - Wide 9dBi
 - Narrow 12dBi
 - 6 GHz Antennas
 - Wide 9dBi
 - Narrow 13dBi
 - BLE/Zigbee: Integrated omnidirectional antenna with peak gain of 6dBi

Wi-Fi radio specifications

- AP type: Outdoor, tri radio, 2.4GHz, 5GHz and 6GHz (concurrent) 802.11ax 2x2 MIMO
- 2.4 GHz radio: Two spatial stream Single User (SU) MIMO for up to 574 Mbps wireless data rate with 2SS HE40 802.11ax client devices
- 5 GHz radio: Two spatial stream Single User (SU) MIMO for up to 1.2 Gbps wireless data rate with 2SS HE80 802.11ax client devices
- 6 GHz radio: Two spatial stream Single User (SU) MIMO for up to 2.4 Gbps

wireless data rate with 2SS HE160 802.11ax client devices

- Up to 512 associated client devices per radio, and up to 16 BSSIDs per radio (limited to 8 for the 6GHz radio)
- Supported frequency bands (country-specific restrictions apply):
 - 2.400 to 2.4835 GHz ISM
 - 5.150 to 5.250 GHz U-NII-1
 - 5.250 to 5.350 GHz U-NII-2
 - 5.470 to 5.725 GHz U-NII-2E
 - 5.725 to 5.850 GHz U-NII-3/ISM
 - 5.850 to 5.895 GHz U-NII-4
 - 5.925 to 6.425 GHz U-NII-5
 - 6.425 to 6.525 GHz U-NII-6
 - 6.525 to 6.875 GHz U-NII-7
 - 6.875 to 7.125 GHz U-NII-8
- Available bands and channels: Dependent on configured regulatory domain (country)
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum in the 5 GHz band
- Supported radio technologies:
 - 802.11b: Direct-sequence spread-spectrum (DSSS)
 - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
 - 802.11ax: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units (37 for the 6GHz radio)
- Supported modulation types
 - 802.11b: BPSK, QPSK, CCK
 - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM and 256-QAM (proprietary extension)
 - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM and 1024-QAM (proprietary extension)
 - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, and 1024-QAM
- 802.11n high-throughput (HT) support: HT20/40

- 802.11ac very high throughput (VHT) support: VHT20/40/80
 - 802.11ax high efficiency (HE) support: HE20/40/80/160
 - Supported data rates (Mbps):
 - 802.11b: 1, 2, 5.5, 11
 - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
 - 802.11n: 6.5 to 300 (MCS0 to MCS15, HT20 to HT40), 400 with 256-QAM (proprietary extension)
 - 802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80); 1,083 with 1024-QAM (MCS10 and MCS11, proprietary extension)
 - 802.11ax (2.4GHz): 3.6 to 574 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40)
 - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)
 - 802.11ax (6GHz): 3.6 to 2,402 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE160)
 - 802.11n/ac packet aggregation: A-MPDU, A-MSDU
 - Transmit power: Configurable in increments of 0.5 dBm
 - Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements)
 - Per radio/band (2.4 GHz/5 GHz/6 GHz): +25 dBm (22 dBm per chain)
 - Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain.
 - Advanced Cellular Coexistence (ACC) minimizes the impact of interference from cellular networks
 - Maximum ratio combining (MRC) for improved receiver performance
 - Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance
 - Space-time block coding (STBC) for increased range and improved reception
 - Low-density parity check (LDPC) for high-efficiency error correction and increased throughput
 - Transmit beamforming (TxBF) for increased signal reliability and range
 - 802.11ax Target Wait Time (TWT) to support low-power client devices
 - 802.11mc Fine Timing Measurement (FTM) for precision distance ranging
- Wi-Fi antennas**
- HPE Aruba Networking AP-675: Two integrated tri-band omni-directional antennas for 2x2 MIMO with antenna gain of 3.8dBi in 2.4GHz, 5.7dBi in 5GHz, and 5.9dBi in 6GHz. Built-in antennas are optimized for a horizontally mounted orientation of the AP. The downtilt angle for maximum gain is roughly 5-10 degrees.
 - A mix of horizontally and vertically polarized antenna elements are used
 - Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the combined, average pattern is 4.6dBi in 2.4GHz, 7.9dBi in 5GHz, and 6.2dBi in 6GHz
 - HPE Aruba Networking AP-677: Two integrated tri-band directional antennas for 2x2 MIMO with antenna gain of 6.9dBi in 2.4GHz, 6.5dBi in 5GHz, and 6.9dBi in 6GHz. Built-in antennas are optimized for either wall/pole vertically oriented (or with downtilt), or down-firing in a horizontally mounted orientation of the AP. The antenna beamwidth is approx. 90° x 90°.
 - Cross-polarized antenna elements are used
 - Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the combined, average pattern is 6.9dBi in 2.4GHz, 6.5dBi in 5GHz, and 6.9dBi in 6GHz
 - HPE Aruba Networking AP-679: Integrated tri-band directional antennas for 2x2 MIMO with two different modes for the 5 GHz and 6 GHz antennas (a wider 90°x30° antenna, and a narrow 30°x30°) that are software provisioned. The built-in antennas are optimized for either wall/pole vertically oriented (or with downtilt), or down-firing in a horizontally mounted orientation of the AP. The antenna beamwidth is approx. 90° x 90°.
 - Wide 90°x30° has 7.1dBi in 5GHz and 8.1dBi in 6GHz (peak of 7.7dBi and 8.6dBi respectively)
 - Narrow 30°x30° has 10.5dBi in 5GHz and 10.1dBi in 6GHz (peak of 11dBi and 11.2dBi respectively)
 - 6.1dBi in 2.4GHz (approx. 90°x90°) in either mode
 - 6.6dBi for BLE/IoT in either mode
 - Cross-polarized antenna elements are used
- Other interfaces and features**
- Wired network interface (E0)
 - Auto-sensing link speed (100/1000/2500BASE-T) and MDI/MDX
 - 2.5 Gbps speed complies with NBASE-T and 802.3bz specifications
 - PoE-PD: 48 Vdc (nominal) 802.3at/bt PoE (Class 4 or higher)
 - 802.3az Energy Efficient Ethernet (EEE)
 - Wired Network Interface (E1)
 - SFP Fiber Port
 - When used in operation it is expected that this is the primary uplink port
 - Only recommended industrial temperature SFP modules should be used for optimal performance
 - USB 2.0 host interface (Type C connector), supporting 2A/10W maximum
 - USB 2.0 host interface (Type A connector), supporting 1A/5W maximum
 - Bluetooth Low Energy (BLE5.0) and Zigbee (802.15.4) radio
 - BLE: up to 8 dBm transmit power (class 1) and -100 dBm receive sensitivity (125 kbps)
 - Zigbee: up to 8 dBm transmit power and -97 dBm receive sensitivity (250 kbps)
 - GNSS L1 (1575.42 MHz) receiver supporting GPS, Galileo, GLONASS, and BeiDou signal
 - Receive sensitivity: -163 dBm (tracking)
 - Integrated antenna with gain of ~2 dBi
 - Advanced IoT Coexistence (AIC) allows concurrent operation of multiple radios in the 2.4 GHz band

- Built-in Trusted Platform Module (TPM) for enhanced security and anti-counterfeiting
- Visual indicators for System and Radio status (1x multi-color LED), auto-disable after 15 min when up
- Reset button: factory reset, LED mode control (normal/off)
- Serial console interface (proprietary, USB-C physical jack)
- Automatic thermal shutdown and recovery function

Power sources and power consumption

- The AP supports Power over Ethernet (PoE) on port E0
- Power sources are sold separately; see the HPE Aruba Networking 67 Series Ordering Guide for details

- When powered by 802.3bt (class 6) PoE, the AP will operate without restrictions.
- When powered by 802.3bt (class 5) PoE with the IPM feature disabled, the AP will disable the USB-C port.
- With IPM enabled, the AP will start up in unrestricted mode but may dynamically apply restrictions depending on the available power budget and actual consumption. The feature restrictions and order in which these get applied are configurable.
- Operating the AP with an 802.3at (class 4) PoE with the IPM feature disabled, the AP will disable the USB ports, the SFP port, and one of the two chains on the 2.4Ghz radio

- Operating the AP with an 802.3af (class 3 or lower) PoE source is not supported (except for AP staging)
- Maximum (worst-case) power consumption (without/with a USB device attached):
 - PoE powered: 29W/45.5W.
 - This assumes that up to 16.5W total is supplied the attached USB devices
- Maximum (worst-case) power consumption in idle mode: 11W/27.5W (both USB active at max).
- Maximum (worst-case) power consumption in deep-sleep mode: 3.2W (PoE).

PoE Source	Class 6 (802.3bt)	Class 5 (802.3bt)	Class 4 (802.3at)	Class 3 (802.3af)
Power Budget	45.5W	40W	25.5W	13.9W
Power Budget	Unrestricted	Restricted	Restricted	Restricted
USB Ports	Both Enabled	USB-A Only (USB-C disabled)	USB Disabled SFP Disabled 2.4GHz drops to 1x1	All Disabled
Ethernet	2.5G + SFP	2.5G + SFP	2.5G	(staging only)
MIMO	2x2	2x2	2x2 (1x1 on 2.4Ghz)	All Disabled
RF Power Reduction	0dB	0dB	0dB	Disabled

With IPM enabled, AP will start up in unrestricted mode and apply reductions per policy or defaults.

Mounting

A mounting bracket holder has been pre-installed on the AP. This bracket is used to secure the AP to any of the mount kits (sold separately); see the HPE Aruba Networking 670 Series Ordering Guide for details. The HPE Aruba Networking 670 Series Outdoor APs also share the same mounting hardware and accessories so upgrades from previous HPE Aruba Networking outdoor APs are quick and easy.

- AP-OUT-MNT-V1A: Outdoor Pole/Wall Long Mount Kit
- AP-270-MNT-V2: Outdoor Pole/Wall Short Mount Kit

- AP-270-MNT-H1: Outdoor AP Hanging or Tilt Install Mount Kit
- AP-270-MNT-H2: Outdoor Flush Wall or Ceiling Mount
- AP-270-MNT-H3: Outdoor AP Hanging or Dual-Tilt Install Mount Kit

Mechanical

Note: AP-670EX variants include HazLoc compliant Ethernet glands.

- AP-675/AP-675EX
 - Dimensions/weight (unit only):
 - 290mm (W) x 288mm (D) x 312mm (H)
 - 11.4 in (W) x 11.3 in (D) x 12.3in (H)
 - 4kg / 8.8lbs
- AP-677/AP-677EX
 - Dimensions/weight (unit only):
 - 290mm (W) x 288mm (D) x 171mm (H)
 - 11.4 in (W) x 11.3 in (D) x 6.7 in (H)
 - 3.6kg / 7.9lbs



- AP-679/AP-679EX
 - Dimensions/weight (unit only):
 - 290mm (W) x 288mm (D) x 171mm (H)
 - 11.4 in (W) x 11.3 in (D) x 6.7 in (H)
 - 3.8kg / 8.4lbs
- HazLoc variants include intrinsically certified Ethernet glands (CMP A2F), but other certified Explosive Atmosphere glands can be used, subject to approvals by the safety authority

Environmental specifications

- Operating conditions
 - Temperature: -40°C to +70°C / -40°F to 158°F (no solar loading), -40°C to +65°C / -40°F to 149°F (with solar loading)
 - Humidity: 5% to 100% non-condensing internal
 - Rated for operation in all weather conditions

- Storage and transportation conditions
 - Temperature: -40°C to +70°C / -40°F to +158°F
- Operating Altitude: 3000m
- Water and Dust
 - IP66/67
- Salt Tolerance
 - Test to ASTM B117-07A Salt Spray 200hrs
- Wind Survival: 150mph (GR-487)

Reliability

Mean Time Between Failure (MTBF): 500,562hrs (59.4 yrs.) at +25°C ambient operating temperature.

Regulatory compliance

- FCC/ISED
- CE Marked

- RED Directive 2014/53/EU
- IEC/EN/UL 62368-1
- IEC/EN60601-1, IEC/EN60601-1-2
- EMC directive 2014/30/EU
- Low Voltage Directive 2014/35/EU

For more country-specific regulatory information and approvals, please see your HPE Aruba Networking representative.

Regulatory model numbers

- AP-675: APEX0675
- AP-677: APEX0677
- AP-679: APEX0679

Certifications

- Wi-Fi Alliance:
- Bluetooth SIG
- Ethernet Alliance (EO, PoE PD device, class 6)

RF performance table

Band, rate	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
2.4GHz, 802.11b		
1Mbps	22	-95
11Mbps	22	-87
2.4GHz, 802.11g		
6Mbps	22	-92
54Mbps	20	-74
2.4GHz, 802.11n HT20		
MCS0	22	-92
MCS7	20	-74
2.4GHz, 802.11ax HE20		
MCS0	22	-92
MCS11	18	-62



Band, rate	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
5GHz, 802.11a		
6Mbps	22	-93
54Mbps	2	-75
5GHz, 802.11n HT20 / HT40		
MCS0	22 / 22	-93 / -90
MCS7	21 / 21	-73 / -70
5GHz, 802.11ac VHT20 / VHT40 / VHT80		
MCS0	22 / 22 / 22	-93 / -90 / -87
MCS9	20 / 20 / 20	-68 / -65 / -62
5GHz, 802.11ax HE20 / HE40 / HE80		
MCS0	22 / 22 / 22	-92 / -89 / -86
MCS11	18 / 18 / 18	-62 / -59 / -56
6GHz, 802.11ax HE20 / HE40 / HE80 / HE160		
MCS0	22 / 22 / 21 / 20	-92 / -89 / -86 / -83
MCS11	18 / 17 / 17 / 17	-63 / -66 / -57 / -54

Ordering information

Part number	Description
HPE Aruba Networking 670 Series Outdoor Access Points	
S0P50A	HPE Aruba Networking AP-675 (US) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional Outdoor AP
S0P51A	HPE Aruba Networking AP-675 (RW) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional Outdoor AP
S0P52A	HPE Aruba Networking AP-675 (JP) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional Outdoor AP
S0P53A	HPE Aruba Networking AP-675 (IL) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional Outdoor AP
S0P54A	HPE Aruba Networking AP-675 (EG) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional Outdoor AP
S0P55A	HPE Aruba Networking AP-677 (US) Tri Radio 2x2 Wi-Fi 6E Internal Directional Outdoor AP
S0P56A	HPE Aruba Networking AP-677 (RW) Tri Radio 2x2 Wi-Fi 6E Internal Directional Outdoor AP
S0P57A	HPE Aruba Networking AP-677 (JP) Tri Radio 2x2 Wi-Fi 6E Internal Directional Outdoor AP



Part number	Description
SOP58A	HPE Aruba Networking AP-677 (IL) Tri Radio 2x2 Wi-Fi 6E Internal Directional Outdoor AP
SOP59A	HPE Aruba Networking AP-677 (EG) Tri Radio 2x2 Wi-Fi 6E Internal Directional Outdoor AP
SOP60A	HPE Aruba Networking AP-679 (US) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional Outdoor AP
SOP61A	HPE Aruba Networking AP-679 (RW) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional Outdoor AP
SOP62A	HPE Aruba Networking AP-679 (JP) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional Outdoor AP
SOP63A	HPE Aruba Networking AP-679 (IL) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional Outdoor AP
SOP64A	HPE Aruba Networking AP-679 (EG) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional Outdoor AP

HPE Aruba Networking 670 Series Outdoor Access Points – TAA compliant

S0Q35A	HPE Aruba Networking AP-675 (USF1) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional TAA Outdoor AP
S0Q36A	HPE Aruba Networking AP-675 (ILF1) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional TAA Outdoor AP
S0Q37A	HPE Aruba Networking AP-675 (JPF1) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional TAA Outdoor AP
S0Q38A	HPE Aruba Networking AP-675 (RWF1) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional TAA Outdoor AP
S0Q39A	HPE Aruba Networking AP-675 (EGF1) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional TAA Outdoor AP
S0Q40A	HPE Aruba Networking AP-677 (EGF1) Tri Radio 2x2 Wi-Fi 6E Internal Directional TAA Outdoor AP
S0Q41A	HPE Aruba Networking AP-677 (ILF1) Tri Radio 2x2 Wi-Fi 6E Internal Directional TAA Outdoor AP
S0Q42A	HPE Aruba Networking AP-677 (JPF1) Tri Radio 2x2 Wi-Fi 6E Internal Directional TAA Outdoor AP
S0Q43A	HPE Aruba Networking AP-677 (RWF1) Tri Radio 2x2 Wi-Fi 6E Internal Directional TAA Outdoor AP
S0Q44A	HPE Aruba Networking AP-677 (USF1) Tri Radio 2x2 Wi-Fi 6E Internal Directional TAA Outdoor AP
S0Q45A	HPE Aruba Networking AP-679 (EGF1) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional TAA Outdoor AP
S0Q46A	HPE Aruba Networking AP-679 (ILF1) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional TAA Outdoor AP
S0Q47A	HPE Aruba Networking AP-679 (JPF1) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional TAA Outdoor AP
S0Q48A	HPE Aruba Networking AP-679 (RWF1) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional TAA Outdoor AP
S0Q49A	HPE Aruba Networking AP-679 (USF1) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional TAA Outdoor AP

HPE Aruba Networking 670 EX Series HazLoc Access Points

S0Q50A	HPE Aruba Networking AP-675EX (US) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional HazLoc AP
S0Q51A	HPE Aruba Networking AP-675EX (RW) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional HazLoc AP
S0Q52A	HPE Aruba Networking AP-675EX (JP) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional HazLoc AP
S0Q53A	HPE Aruba Networking AP-675EX (IL) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional HazLoc AP
S0Q54A	HPE Aruba Networking AP-675EX (EG) Tri Radio 2x2 Wi-Fi 6E Internal Omni-Directional HazLoc AP



Part number	Description
S0Q55A	HPE Aruba Networking AP-677EX (US) Tri Radio 2x2 Wi-Fi 6E Internal Directional HazLoc AP
S0Q56A	HPE Aruba Networking AP-677EX (RW) Tri Radio 2x2 Wi-Fi 6E Internal Directional HazLoc AP
S0Q57A	HPE Aruba Networking AP-677EX (JP) Tri Radio 2x2 Wi-Fi 6E Internal Directional HazLoc AP
S0Q58A	HPE Aruba Networking AP-677EX (IL) Tri Radio 2x2 Wi-Fi 6E Internal Directional HazLoc AP
S0Q59A	HPE Aruba Networking AP-677EX (EG) Tri Radio 2x2 Wi-Fi 6E Internal Directional HazLoc AP
S0Q60A	HPE Aruba Networking AP-679EX (US) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional HazLoc AP
S0Q61A	HPE Aruba Networking AP-679EX (RW) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional HazLoc AP
S0Q62A	HPE Aruba Networking AP-679EX (JP) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional HazLoc AP
S0Q63A	HPE Aruba Networking AP-679EX (IL) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional HazLoc AP
S0Q64A	HPE Aruba Networking AP-679EX (EG) Tri Radio 2x2 Wi-Fi 6E Internal Dyn Directional HazLoc AP

For compatible accessories and spares, see the 670 Series Ordering Guide

Warranty

HPE Aruba Networking hardware limited lifetime warranty <https://www.arubanetworks.com/support-services/product-warranties/>

Minimum operating system software versions

- HPE Aruba Networking Wireless Operating System AOS-10.7.0.0
- HPE Aruba Networking Wireless Operating System AOS-8.12.0.0
- HPE Aruba Networking Instant Operating System AOS-8.12.0.0 (no 6GHz support with Instant)

Support

HPE Aruba Networking network devices (APs, switches, and gateways) that have an active HPE Aruba Networking Central SaaS subscription are fully supported and include:

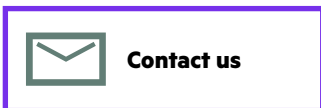
- 24x7 priority technical support for troubleshooting
- Software updates and upgrades for HPE Aruba Networking Central and hardware products managed by HPE Aruba Networking Central

Learn more about our support services: <https://www.arubanetworks.com/support-services/>

Learn more

HPE Aruba Networking access points boost IT, user, and IoT experiences with enterprise connectivity that's intelligent, fast, and secure. Find out [more](#).

**Make the right purchase decision.
Contact our presales specialists.**





Crystal UHD Signage

QBC series

Slim design. Stunning performance.

Introducing the QBC series, the slimmest display in the Samsung's UHD signage offerings. This products deliver an unparalleled slim design that fits into any business, while delivering the visual quality to make a big impact. The sleek form factor is easily installed to fit any room design and delivers stunning visual performance. Dynamic Crystal Color and Quantum Processor Lite 4K delivering consistent, lifelike colors to any content. This is not just a display for simple advertising. It's a display that brings the solutions, tools, and picture quality to grow to your business, no matter what industry you're in.

Key features



Ultra Slim Depth

The unparalleled ultra-slim thickness of 28.5mm makes it the thinnest option in Samsung's UHD Signage series. It comes with the Slim Fit Wall Mount, which allows you to install it neatly and easily in any environment.



Even Bezels and Centered VESA Holes

The bezels are even on all four sides of the display for a consistent look, while the central VESA mounting holes ensure secure mounting and easy adjustability to portrait mode.



Dynamic Crystal Color

One billion shades of color let you see every subtlety with lifelike color variations. Images are clear and consistent thanks to Samsung's industry leading video processing and upscaling technology.



Smart Calibration

Guarantee complete brand consistency across every location. Using the Samsung mobile app, calibrate displays to showcase brand logos and other collateral in the exact colors required.



Energy Star / EPEAT Bronze

Samsung is making diverse efforts to reduce our environmental impact in smart signage, and encouraging users to pursue a more sustainable life.

Specifications

Model			QB43C	QB50C	QB55C	QB65C	QB75C	QB85C	
Display Panel	Diagonal Size	Class	43	50	55	65	75	85	
		Measured	42.5	48.5	54.6	64.5	74.5	84.5	
	Resolution		3,840 x 2,160 (16:9)	3,840 x 2,160 (16:9)	3,840 x 2,160 (16:9)	3,840 x 2,160 (16:9)	3,840 x 2,160 (16:9)	3,840 x 2,160 (16:9)	
	Brightness (Typ.)		350 nit	350 nit	350 nit	350 nit	350 nit	350 nit	
	Orientation		Landscape/Portrait	Landscape/Portrait	Landscape/Portrait	Landscape/Portrait	Landscape/Portrait	Landscape/Portrait	
	Haze		2%	3%	2%	2%	2%	2%	
	Contrast Ratio (Typ.)		4,000:1	4,000:1	4,000:1	4,000:1	4,000:1	4,000:1	
	Type		VA	VA	VA	VA	VA	VA	
	Active Display Area		941.184 (H) x 529.416 (V)	1,095.84 (H) x 616.41 (V)	1,209.6 (H) x 680.4 (V)	1,428.48 (H) x 803.52 (V)	1,650.24 (H) x 928.26 (V)	1,872.0 (H) x 1053.01 (V)	
	Pixel Pitch (mm)		0.245 x 0.245	0.285 x 0.285	0.315 x 0.315	0.372 x 0.372	0.429 x 0.429	0.487 x 0.487	
Color Gamut		NTSC 72%	NTSC 72%	NTSC 72%	NTSC 72%	NTSC 72%	NTSC 72%		
Operation Hour		16/7	16/7	16/7	16/7	16/7	16/7		
Connectivity / Sound	Input	Video	HDMI 2.0 (3)	HDMI 2.0 (3)	HDMI 2.0 (3)	HDMI 2.0 (3)	HDMI 2.0 (3)	HDMI 2.0 (3)	
		Audio	N/A	N/A	N/A	N/A	N/A	N/A	
		USB	USB 2.0 x 2	USB 2.0 x 2	USB 2.0 x 2	USB 2.0 x 2	USB 2.0 x 2	USB 2.0 x 2	
	Output	Tuner	N/A	N/A	N/A	N/A	N/A	N/A	
		Video	N/A	N/A	N/A	N/A	N/A	N/A	
		Audio	Stereo mini Jack	Stereo mini Jack	Stereo mini Jack	Stereo mini Jack	Stereo mini Jack	Stereo mini Jack	
	USB		N/A	N/A	N/A	N/A	N/A	N/A	
	WiFi / BT		O/O	O/O	O/O	O/O	O/O	O / O	
	External Control		RS232C (In/Out), RJ45	RS232C (In/Out), RJ45	RS232C (In/Out), RJ45	RS232C (In/Out), RJ45	RS232C (In/Out), RJ45	RS232C (In/Out), RJ45	
	Speaker		10W 2ch	10W 2ch	10W 2ch	10W 2ch	10W 2ch	10W 2ch	
Mechanical Spec	Dimension (mm / in.)	Set	969.5 x 557.8 x 28.5 mm / 38.2 x 22 x 1.1 in.	1,124.1 x 644.8 x 28.5 mm / 44.3 x 25.4 x 1.1 in.	1,237.9 x 708.8 x 28.5 mm / 48.7 x 27.9 x 1.1 in.	1,456.8 x 831.9 x 28.5 mm / 57.4 x 32.8 x 1.1 in.	1,682.3 x 960.4 x 28.5 mm / 66.2 x 37.8 x 1.1 in.	1,904.3 x 1,085.3 x 28.5 mm / 75.4 x 42.7 x 1.1 in.	
		Package	1,093 x 667 x 126 mm / 43 x 26.3 x 5 in.	1,246 x 761 x 131 mm / 49 x 30 x 5.2 in.	1,403 x 835 x 148 mm / 55.2 x 32.9 x 5.8 in.	1,616 x 945 x 164 mm / 63.6 x 37.2 x 6.5 in.	1,839 x 1,113 x 180 mm / 72.4 x 43.8 x 7 in.	2,077 x 1,222 x 210 mm / 81.8 x 48.1 x 8.3 in.	
	Weight (kg / lbs.)	Set	8.8 kg / 19.4 lbs.	11.8 kg / 26 lbs.	15.7 kg / 34.6 lbs.	21.5 kg / 47.4 lbs.	33.4 kg / 73.6 lbs.	41.9 kg / 92.4 lbs.	
		Package	11.3 kg / 24.9 lbs.	14.9 kg / 32.8 lbs.	19.9 kg / 43.9 lbs.	28.6 kg / 63 lbs.	44.1 kg / 97.2 lbs.	53.9 kg / 118.8 lbs.	
	VESA Mount		200 x 200	200 x 200	200 x 200	400 x 300	400 x 400	400 x 400	
	VESA Mount Screw (Min-Max)		M8, 12-14mm	M8, 12-14mm	M8, 12-14mm	M8, 12-14mm	M8, 12-14mm	M8, 12-14mm	
Bezel Width (mm)		11.5 (Even)	11.5 (Even)	11.5 (Even)	11.5 (Even)	13.4 (Even)	13.9 (Even)		
Features	Key		UHD Signage with Built-in MagicInfoS10, SSSP10.0	UHD Signage with Built-in MagicInfoS10, SSSP10.0	UHD Signage with Built-in MagicInfoS10, SSSP10.0	UHD Signage with Built-in MagicInfoS10, SSSP10.0	UHD Signage with Built-in MagicInfoS10, SSSP10.0	UHD Signage with Built-in MagicInfoS10, SSSP10.0	
	Internal Player	Operating System	Tizen 7.0	Tizen 7.0	Tizen 7.0	Tizen 7.0	Tizen 7.0	Tizen 7.0	
		Processor	CA531.3GHz Quad-Core	CA531.3GHz Quad-Core	CA531.3GHz Quad-Core	CA531.3GHz Quad-Core	CA531.3GHz Quad-Core	CA531.3GHz Quad-Core	
		Storage (FDM)	8GB (3GB available)	8GB (3GB available)	8GB (3GB available)	8GB (3GB available)	8GB (3GB available)	8GB (3GB available)	
	H/W	2nd Gen. B2B Design Center IR		2nd Gen. B2B Design Center IR	2nd Gen. B2B Design Center IR	2nd Gen. B2B Design Center IR	2nd Gen. B2B Design Center IR	2nd Gen. B2B Design Center IR	
		Temperature Sensor Ambient Sensor Auto Level		Temperature Sensor Ambient Sensor Auto Level	Temperature Sensor Ambient Sensor Auto Level	Temperature Sensor Ambient Sensor Auto Level	Temperature Sensor Ambient Sensor Auto Level	Temperature Sensor Ambient Sensor Auto Level	
	Special	Wi-Fi (2.4/5.0GHz dual) and BT Signage New Home Workspace (Microsoft365/VMWare/RDP) Custom Home Auto Source		Wi-Fi (2.4/5.0GHz dual) and BT Signage New Home Workspace (Microsoft365/VMWare/RDP) Custom Home Auto Source	Wi-Fi (2.4/5.0GHz dual) and BT Signage New Home Workspace (Microsoft365/VMWare/RDP) Custom Home Auto Source	Wi-Fi (2.4/5.0GHz dual) and BT Signage New Home Workspace (Microsoft365/VMWare/RDP) Custom Home Auto Source	Wi-Fi (2.4/5.0GHz dual) and BT Signage New Home Workspace (Microsoft365/VMWare/RDP) Custom Home Auto Source	Wi-Fi (2.4/5.0GHz dual) and BT Signage New Home Workspace (Microsoft365/VMWare/RDP) Custom Home Auto Source	
		S/W Switching & Recovery Dicom Simulation Mode Director Mode Upgradable Web-Engine Tizen Enterprise Platform Video Conference Solution Smart Calibration (Basic)		Switching & Recovery Dicom Simulation Mode Director Mode Upgradable Web-Engine Tizen Enterprise Platform Video Conference Solution Smart Calibration (Basic)	Switching & Recovery Dicom Simulation Mode Director Mode Upgradable Web-Engine Tizen Enterprise Platform Video Conference Solution Smart Calibration (Basic)	Switching & Recovery Dicom Simulation Mode Director Mode Upgradable Web-Engine Tizen Enterprise Platform Video Conference Solution Smart Calibration (Basic)	Switching & Recovery Dicom Simulation Mode Director Mode Upgradable Web-Engine Tizen Enterprise Platform Video Conference Solution Smart Calibration (Basic)	Switching & Recovery Dicom Simulation Mode Director Mode Upgradable Web-Engine Tizen Enterprise Platform Video Conference Solution Smart Calibration (Basic)	
	Certification	Safety		60950-1/62368-1	60950-1/62368-1	60950-1/62368-1	60950-1/62368-1	60950-1/62368-1	60950-1/62368-1
		EMC		Class B	Class B	Class B	Class B	Class B	Class A
Environment		ENERGY STAR 8.0, EPEAT	ENERGY STAR 8.0, EPEAT	ENERGY STAR 8.0, EPEAT	ENERGY STAR 8.0, EPEAT	ENERGY STAR 8.0, EPEAT	ENERGY STAR 8.0, EPEAT		
IP Rating		IP5x	IP5x	IP5x	IP5x	IP5x	IP5x		
Security		802.1 x (WPA2 Enterprise): EAP-TLS, EAP-TTLS, EAP-PEAP	802.1 x (WPA2 Enterprise): EAP-TLS, EAP-TTLS, EAP-PEAP	802.1 x (WPA2 Enterprise): EAP-TLS, EAP-TTLS, EAP-PEAP	802.1 x (WPA2 Enterprise): EAP-TLS, EAP-TTLS, EAP-PEAP	802.1 x (WPA2 Enterprise): EAP-TLS, EAP-TTLS, EAP-PEAP	802.1 x (WPA2 Enterprise): EAP-TLS, EAP-TTLS, EAP-PEAP		
Power	Power Supply		AC 100 - 240 V, 50/60 Hz	AC 100 - 240 V, 50/60 Hz	AC 100 - 240 V, 50/60 Hz	AC 100 - 240 V, 50/60 Hz	AC 100 - 240 V, 50/60 Hz	AC 100 - 240 V, 50/60 Hz	
	Power Consumption	Max [W/h]	TBD	TBD	TBD	TBD	TBD	TBD	
		Typical [W/h]	TBD	TBD	TBD	TBD	TBD	TBD	
Sleep mode		less than 0.5W	less than 0.5W	less than 0.5W	less than 0.5W	less than 0.5W	less than 0.5W		
Operating Condition	Temperature		0°C - 40°C	0°C - 40°C	0°C - 40°C	0°C - 40°C	0°C - 40°C	0°C - 40°C	
	Relative Humidity		10-80%	10-80%	10-80%	10-80%	10-80%	10-80%	
Accessories	Included		Quick Setup Guide, Warranty Card, Power Cord RS232C (In) Gender Remote Controller and Batteries	Quick Setup Guide, Warranty Card, Power Cord RS232C (In) Gender Remote Controller and Batteries	Quick Setup Guide, Warranty Card, Power Cord RS232C (In) Gender Remote Controller and Batteries	Quick Setup Guide, Warranty Card, Power Cord RS232C (In) Gender Remote Controller and Batteries	Quick Setup Guide, Warranty Card, Power Cord RS232C (In) Gender Remote Controller and Batteries	Quick Setup Guide, Warranty Card, Power Cord RS232C (In) Gender Remote Controller and Batteries	
	Optional	Stand	STN-L4355C	STN-L4355C	STN-L4355C	STN-L6585C	STN-L6585C	STN-L6585C	
		Mount	WMN-B505C	WMN-B505C	WMN-B505C	WMN-B505C	WMN-B505C	N/A	
		Specialty	TBD	TBD	TBD	TBD	TBD	TBD	

*Specs are preliminary.

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SAMSUNG

SWING ARM MOUNTS

PNR WALL MOUNT 42" - 86"

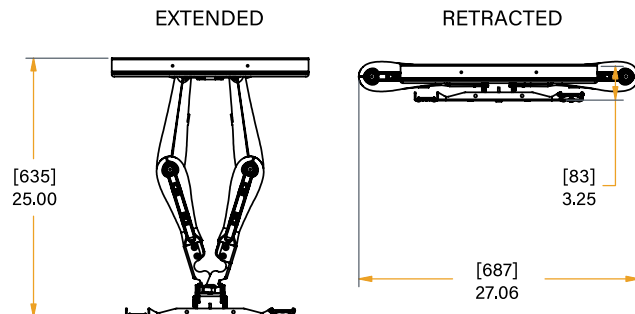
FEATURES

- 1** CENTRIS FINGERTIP TILT
Select the perfect tension for your screen's center of gravity to achieve smooth fingertip tilt. Screen/angle stays set until you decide to readjust.
- 2** POST-INSTALLATION HEIGHT ADJUSTMENT
Adjust height up to 1" (25 mm) after mount is installed for ultimate flexibility.
- 3** CLICKCONNECT LATCHING
Hear an audible click when the screen engages with the mount. Easy to connect/disconnect – no tools needed!
- 4** EXTENDS UP TO 256"
Extends up to 25" (635 mm) for viewing from any angle!
- 5** CABLETRAC™ SYSTEM
Channeled cable management provides quick and easy routing of cables.



SPECIFICATIONS	
Extension	25" (635 mm)
Tilt / Roll	-15°, +5° / ±2.5°
Height Adjustment	1" (25 mm)
Dimensions* (H x W x D)	22.04" x 27.06" x 3.5" (560 x 687 x 89 mm)
Color	Black, Silver
Weight Capacity	200 lbs (90.7 kg)

* Dimensions do not include interface bracket



RECOMMENDED ACCESSORIES



PACCC1
CENTER CHANNEL
SPEAKER ADAPTER



PACLR1
LEFT/RIGHT
SPEAKER ADAPTER



PAC715
VC CAMERA SHELF
(ABOVE)

LEGRAND | AV COMMERCIAL BRANDS

C2G | Chief | Da-Lite | Luxul | Middle Atlantic | Vaddio | Wiremold

INSTALLER INSPIRED | legrandav.com

USA 866.977.3901 av.chief.support@legrand.com CANADA 877.345.4329 av.chief.canada@legrand.com

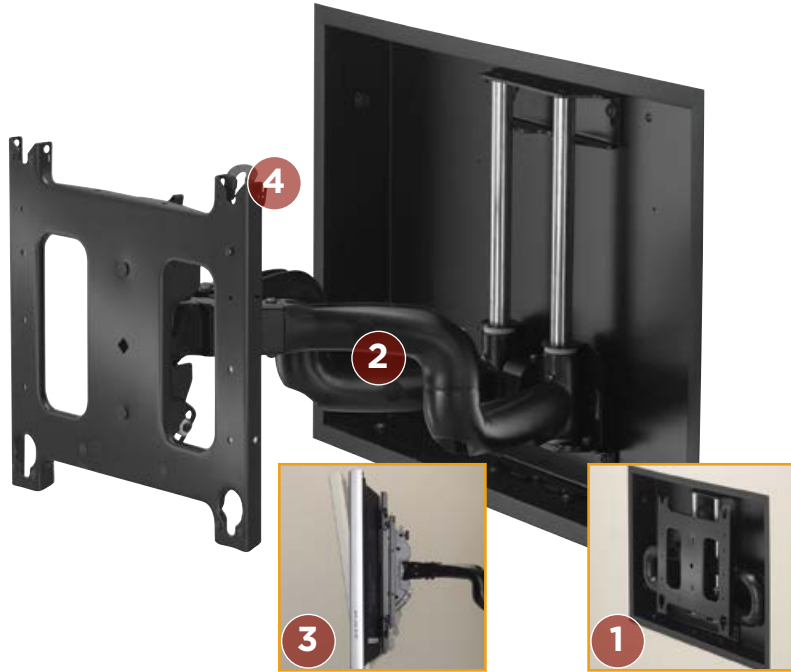
EMEA +31 495 580 840 av.emea.sales@legrand.com APAC +852 2145 4099 av.asia.sales@legrand.com

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IN-WALL MOUNTS PAC501 & PNRIW □ IN-WALL BOX & SWING ARM

42-71" Screens



FEATURES

- 1 LOW PROFILE**
Designed to ensure mount remains concealed behind the screen.
- 2 SMOOTH EXTENSION**
Contoured swing arms are designed for effortless extension up to 22.4" (569 mm).
- 3 CENTRIS® FINGERTIP TILT**
Select the perfect tension for your screen's center of gravity to achieve smooth fingertip tilt. Screen angle stays set until you decide to readjust.
- 4 CLICKCONNECT™ LATCHING**
Hear an audible click when the screen engages with the mount. Easy to connect/disconnect - no tools needed!

WHAT YOU NEED TO KNOW

ORDERING INFORMATION

PAC501 and PNRIW must be ordered separately. Available in universal or custom:

- **UNIVERSAL:** Order PAC501 and PNRIWUB
- **CUSTOM:** Order PAC501, PNRIW2000B + PSBxxxx
See MountFinder™ PRO on chiefmfg.com for custom PSB model numbers.

OTHER PRODUCT OPTION



PIWRF
In-Wall Box Accessory and Swing Arm Mount

SPECIFICATIONS

Roll	±2°
Tilt	-15°, +5°
Swivel*	76.5° Left/Right
Extension Range	0.62" - 22.4" (16 - 569 mm)
Box Dimensions (HxWxD)	20" x 30" x 3.63" (508 x 762 x 92 mm)
Color	Black
Weight Capacity	200 lbs (90.7 kg)

* With 42" screen. Swivel range varies with screen size.

RECOMMENDED ACCESSORIES



PACHFK1 ■ Header/Footer Kit

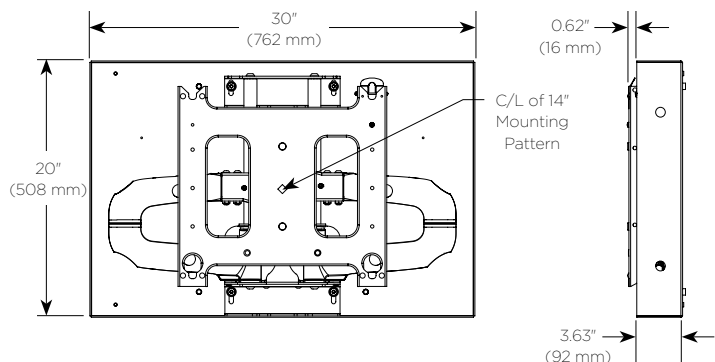


PACCC1 ■ Center Channel Speaker Adapter



PACPC1 ■ Power Filter

TECHNICAL DRAWINGS



For a complete list of TV mount accessories see page 86.

DIVISION 28
CUTSHEETS

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• Illustra – IFS16-M10-OIA4 16MP Flex Gen4 Dual Sensor Outdoor Camera	181
• Illustra – IPS32-M13-OIA4 32MP Gen4 Multisensor Outdoor Camera	187
• Illustra – IFS04-D12-ITA4 4MP Flex Gen4 Mini-Dome Indoor Camera	191
• Illustra – IFS08-DT13-OIA4 8MP Flex Gen4 Mini-Dome Outdoor Camera	191



Hotel Room Annunciator Kit

Audible and Visual Signals

7005-G5

FEATURES

- > High intensity strobe
- > Neutral white color
- > Fits single gang box

AGENCY APPROVALS

- > Transformer UL Listed and horn/strobe UL Listed
- > Horn/strobe UL 1638 Listed

SPECIFICATIONS

- > Transformer primary: 120V AC; secondary: 24V AC
- > Horn/strobe current draw: 175 mA at 24V 50/60 Hz; 125 mA at 24V DC
- > Strobe output: 50 cd on-axis

The Edwards 7005-G5 Hotel Room Annunciator is for use in hotel rooms and other areas designed to accommodate those with audible, visual, or physical impairments. The kit consists of a Cat. No. 6536-G5 horn/strobe for audible and visual signaling, a Cat. No. 620 push button, a Cat. No. 147-10 mounting plate, and a Cat. No. 592 transformer. Each component may also be ordered individually. See the applicable component catalog page for a detailed description of that component.

Use in public and private rest rooms.

6536-G5 Horn/Strobe

The Cat. No. 6536-G5 Horn/Strobe is designed for use in a single gang 2" (51mm) x 4" (102) box located over doors. Each unit contains an audible horn signal which generates an 82 dBA sound pressure level at 10 ft. and a high intensity candela strobe. See page 14-9.

592 Transformer

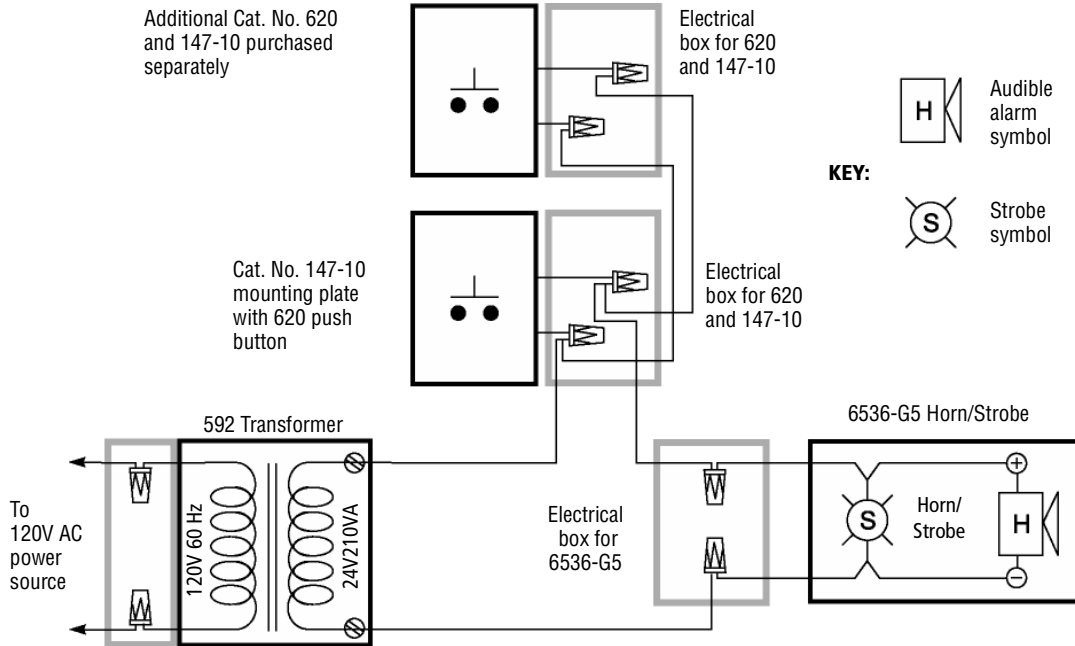
The Edwards Cat. No. 592 transformer is used to power the horn/strobe. It is equipped with a grounding wire and is suitable for installation in both plastic and metal boxes. See page 11-2.

620 Push Button

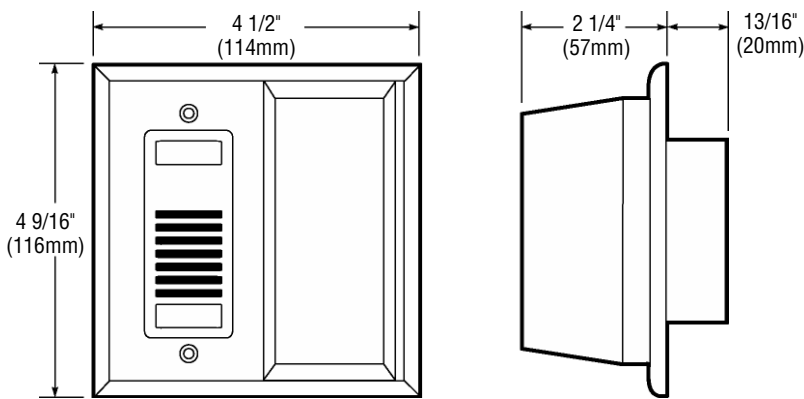
The Cat. No. 620 push button station provides call activation when installed in the 147-10 mounting plate (page 14-9). The plate has a stainless steel face. The switch is momentary. See page 10-9.



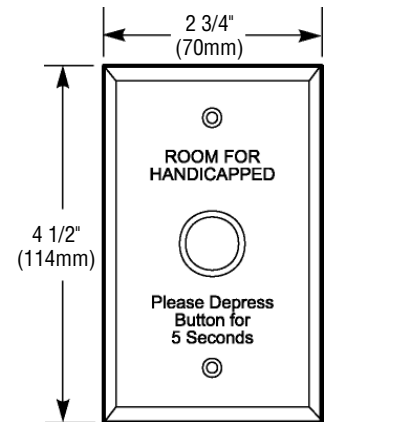
TECHNICAL INFORMATION



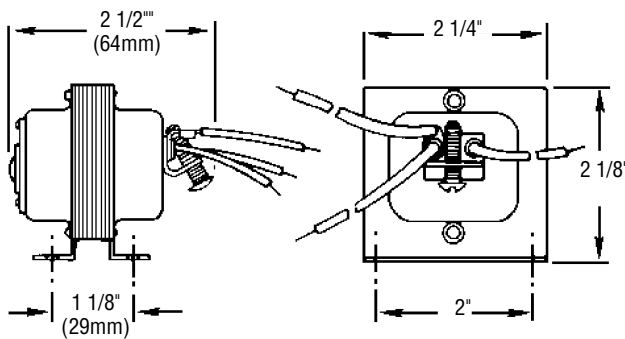
Connecting Cat. No. 7005-G5 Hotel Room Annunciator



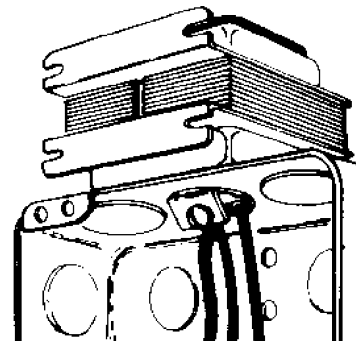
Cat. No. 6536-G5



Cat. No. 147-10 w/ 620 Pushbutton



Cat. No. 592 Transformer



IN Series

IN120 WiFi & ✓IN220 PoE

Intelligent IP-Enabled Access Control

Available through Authorized
Channel Partners only.

Contact your local ASSA ABLOY
Door Security Solutions sales
consultant for details.



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Overview

The SARGENT IN Series brings you the next generation of IP-enabled access control in a sleek, minimalist design. With both WiFi and Power over Ethernet options, you can leverage your IT infrastructure to deliver advanced access control to more locations, with the flexibility and security of HID® multiCLASS SE® technology.

About ASSA ABLOY's Authorized Channel Partner and Certified Integrator Programs

The SARGENT IN120 and IN220 are part of a stream of new ASSA ABLOY products that integrate with a facility's access control system. These exciting new technology-rich products require an increase in knowledge to ensure the correct selection and implementation in various environments.

To aid our customers in this area, ASSA ABLOY has created two programs that provide the necessary training to sell, order, install and service our technology products, including Aperio® wireless, Integrated Wiegand, IP-enabled and self-configurable intelligent components:



- The Authorized Channel Partner (ACP) program is open to resellers, who sell ASSA ABLOY's technology products to certified integrators and help with product selection based on the application.



- The Certified Integrator (CI) program provides hands-on training for security systems integrators and network administrators.

Not only does this training familiarize certified integrator candidates with product features and applications, it also gives them valuable experience installing, commissioning and troubleshooting the products in a real-world environment.

For more information on the qualifications for becoming an ACP or CI, contact your local ASSA ABLOY Door Security Solutions sales consultant.

IN Series

Intelligent IP-Enabled Access Control

FEATURES	BENEFITS	IN120 WiFi Lock	IN220 PoE Lock
Utilizes IEEE 802.3af PoE-enabled network infrastructure for both power and data	■ Streamlines the installation process, reducing costs		✓
	■ Eliminates the need for any proprietary equipment		
	■ Enables real-time communication		
Utilizes IEEE 802.11 WiFi infrastructure	■ Significantly reduces installation costs	✓	
	■ Eliminates the need for any proprietary equipment		
	■ Ideal for hard-to-wire locations		
802.11b/g/n radio	■ Interoperability with other WiFi equipment	✓	
multiCLASS SE® Technology from HID Global®	■ Provides heightened security	✓	✓
	■ Supports: - Multiple credential types - HID Mobile Access® powered by Seos®, for iOS® and Android™ devices"		
Field selectable communication frequency	■ Allows you to balance security requirements with battery life	✓	
Reduced energy consumption and product sustainability measures	■ Uses significantly less power consumption in standby mode than traditional access control	✓	✓
	■ Leverages existing network infrastructure		✓
	■ Streamlined system architecture provides improved reliability and reduces materials		✓
Intelligence built into lock for local decision making*	■ Lock operates regardless of network status	✓	✓*
	■ Supports up to 2,400/10,000 users**	✓	✓
	■ Provides a 10,000 event transaction history/audit trail	✓	✓
Privacy button	■ Enables shelter in place/local lockdown	✓	✓
	■ Offers privacy capabilities for applications such as restrooms		
Integrated ANSI/BHMA Grade 1 hardware, available in cylindrical lock, mortise lock, exit device, and multi-point lock configurations	■ Flexibility to support various openings	✓	✓
	■ Assurance of high quality SARGENT hardware		
Superior aesthetics	■ Blends into any environment seamlessly	✓	✓
	■ Designed to meet the requirements of designers and architects		
	■ Available with a wide range of finishes and decorative levers		
	■ Suites with other IN Series locks, regardless of technology		

* Requires backup power for IN220

** Contact your access control system manufacturer for more information

IN Series

Intelligent IP-Enabled Access Control

Credential Support:

Featuring HID® multiCLASS SE® technology, IN Series IP-enabled locks support the following credentials:

- Mobile Credentials:
 - HID Mobile Access® support, featuring Secure Identity Object™ (SIO) on mobile IDs (BLE and NFC)
 - LenelS2 BlueDiamond™
 - Apple Wallet Seos or DESFire® (NFC)
 - Google Pay DESFire® (NFC)
- High Frequency (13.56 MHz):
 - HID iCLASS®
 - HID iCLASS SE® (SIO-enabled)
 - HID iCLASS® Seos™
 - HID MIFARE® SE
 - HID DESfire® EV1 SE
 - MIFARE Classic
 - DESfire EV1
 - PIV/PIV-I (40-bit BCD, 64-bit, BCD, 75 bit, 128-bit or 200-bit outputs)
 - Felica
- Low Frequency (125 kHz):
 - HID Prox®
- Optional keypad
 - PIN only usage or dual authentication needs

For sites with more than one type of credential support, please contact please contact your local ASSA ABLOY Door Security Solutions sales representative or call 800-810-WIRE.

Technical Specifications

IN120

- Compatible with 802.11 b/g/n 2.4GHz wireless networks

IN220

- Conforms to IEEE 802.3af Class 1 standard, requiring less than 3.84 watts

Security:

- Optional, protocol level, 128-bit AES encryption (IN120, IN220)
- IN120 supports current WiFi network security standards, including:
 - WEP, WPA and WPA2
 - 802.1x
- For specific security information, please contact your local ASSA ABLOY Door Security Solutions sales representative or call 800-810-WIRE.

Software:

- Works with ASSA ABLOY IP-Enabled Access Control Partner software, allowing simple integration into existing or new systems
- Software Development Kits (SDK) and support available to integrate into other third party access control systems.
Email: OEMSupport_Group@assaabloy.com for assistance.

Environmental Specifications:

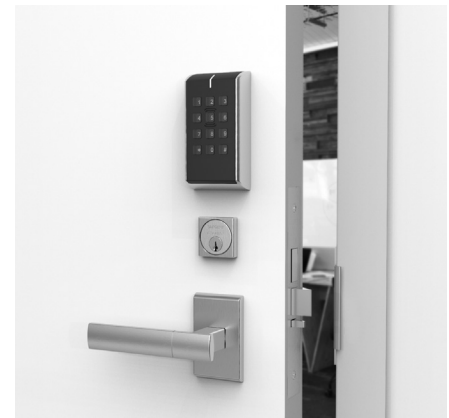
- Operating temperature: -13°F (-25°C) to 151°F (66°C)
- Humidity: operates in condensing environments*
- Storage temperature: -22°F (-30°C) to 176°F (80°C)

EAC Regulatory Compliance †:

- UL 294 Indoor Use
- ULC-60839-11-1, Grade 1
- BHMA A156.25

*Always refer to the installation instructions for correct procedure when installing in condensing environments

† Excludes EK series



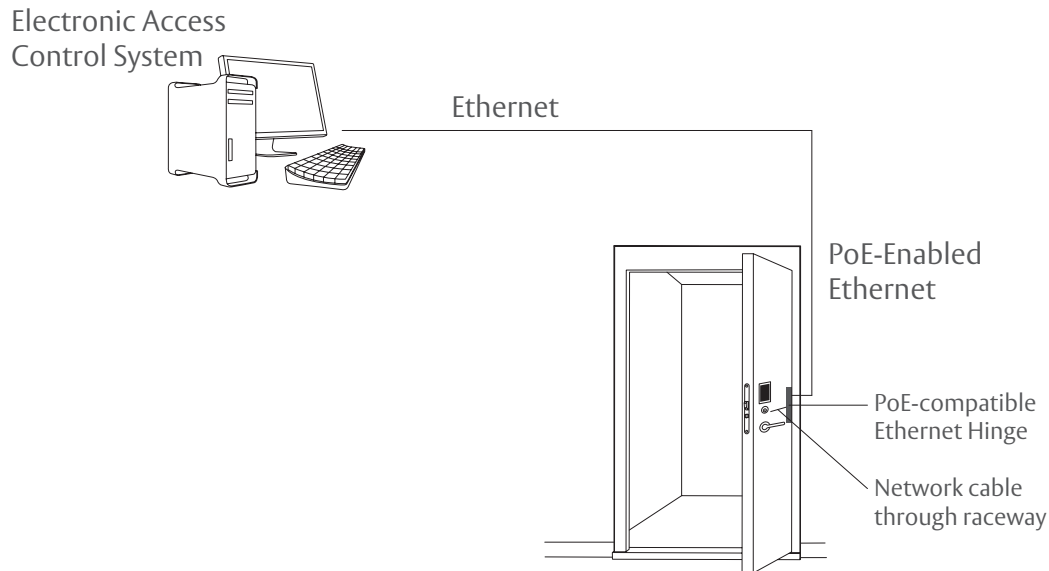
Optional Keypad
PIN only usage or dual authentication needs

IN Series

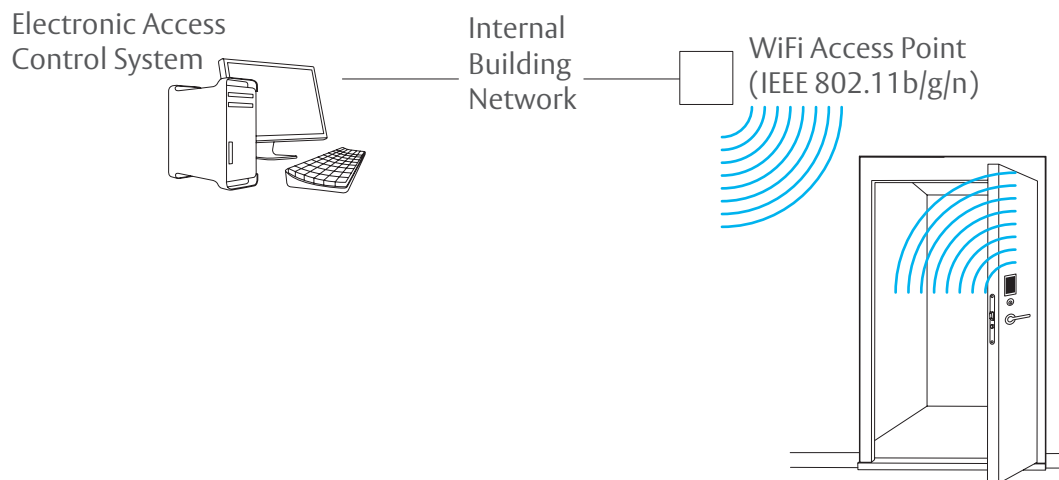
Intelligent IP-Enabled Access Control

SARGENT
ASSA ABLOY

PoE (Power Over Ethernet) System Configuration



WiFi System Configuration



7900 Series Mortise Locks



Mechanical Features

- Certified to ANSI/BHMA A156.13 Series 1000 Grade 1
- UL/ULC Listed for fire doors*
- Motor driven 7900 Series Mortise Lock
- 3/4" projection stainless steel latchbolt, one-piece construction
- For 1-3/4" (44mm) thick door standard. Consult factory for additional thicknesses
- Stainless steel non-handed deadlocking latch
- Not available with SC- or SE- options
- Handing easily field reversible without disassembling lock body
- Lever trim through-bolted for increased security and durability

Shipping Weight: Approx. 11 lbs.

IN Series Mortise Lock Functions

- Key outside always retracts latch
- Lever outside rigid except when valid credential presented
- Lever inside always retracts latch
- Guardbolt deadlocks latch
- Key override available with #41 cylinder supplied
- Low battery (for IN120), request-to-exit (REX), Door Position (DPS) and tamper signaling standard
- EcoFlex® technology offers improved battery life for IN120 mortise locks

52-5373 Door Position Switch (DPS)

Supplied with IN Series mortise locks

- SPST concealed switch (2-wire)
- 3/8" Diameter for wood door
- 3/4" Diameter for metal door
- - Metal door adapter included

Note: The DPS is installed right above the lock faceplate and connects directly into the lock's electronics

* Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and Sargent Manufacturing Company makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

Select from the following options to order IN Series mortise locks:

Technology

- 120 WiFi
- 220 PoE

Function

- 7978 Key override (no deadbolt)
- 7979 No Key override (no deadbolt)

IN Series

Intelligent IP-Enabled Access Control



Reader

B	Black reader, black trim
W	White reader, white trim
MB	Black reader, metal trim
MW	White reader, metal trim

Note:

Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

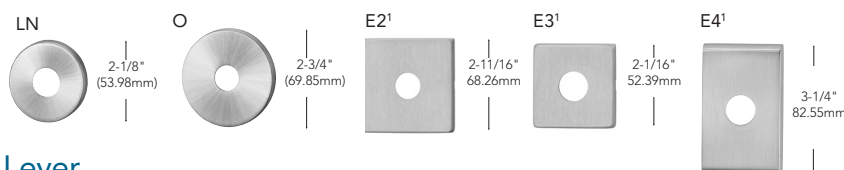
Credentials

BIPS	HID Prox®, iCLASS®, iCLASS SE®, iCLASS® Seos®, SIO on MIFARE® Classic, SIO on MIFARE DESFire® EV1 MIFARE Classic, MIFARE DESFire EV1, HID Mobile Access, Apple Wallet, Google Pay
BIKPS	All credentials supported by the BIPS option plus keypad.
IPV	Supports PIV/PIV-I (40-bit BCD, 64-bit BCD, 75 bit, 128-bit BCD or 200-bit outputs).
IKPV	All credentials supported by the IPV option plus keypad
BCP/BCKP	Options supporting FeliCa credentials. Contact Transact for more details.
DIPS/DIKPS*	Options supporting LenelS2 BlueDiamond™ mobile credentials.

*Orderable through LenelS2 only

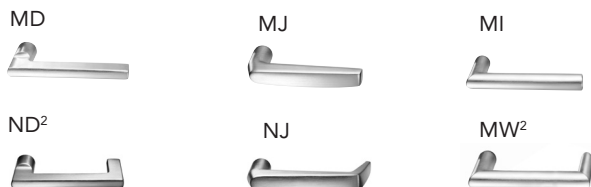
To order locks with site keys preloaded with HID Mobile Access, Seos Elite, Apple Wallet, or Google Pay mobile credential support, please refer to the site-specific credential ordering guide.

Rose

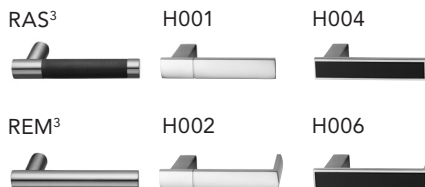


Lever

The levers shown here are some of our most popular styles from the Studio Collection. To see the complete range of available levers, please refer to pages 29-31.



Premium Levers



Finish

	Description	Specify
US3 (ANSI/BHMS 605)	Bright Brass	03
US4 (ANSI/BHMA 606)	Satin Brass	04
US9 (ANSI/BHMA 611)	Bright Bronze	09
US10 (ANSI/BHMA 612)	Satin Bronze, clear powder	10
US10B (ANSI/BHMA 613)	Dark Oxidized Satin Bronze, oil rubbed	10B
10BE (613E)	Dark Oxidized Satin Bronze - equivalent	10BE
10BL (613L)	Dark Oxidized Satin Bronze - clear coated	10BL
US14 (ANSI/BHMA 618)	Bright Nickel Plated, clear coated	14
US15 (ANSI/BHMA 619)	Satin Nickel Plated, clear coated	15
20D	Dark Statuary Bronze, clear coated	20D
US26 (ANSI/BHMA 625)	Bright Chromium Plated	26
US26D (ANSI/BHMA 626)	Satin Chromium Plated	26D
US32 (ANSI/BHMA 629)*	Bright Stainless Steel	32
US32D (ANSI/BHMA 630)*	Satin Stainless Steel	32D
BSP	Black Suede Powder Coat	BSP
WSP	White Suede Powder Coat	WSP

Lock Finish	Cylinder/Core**
03, 04, 09, 10, 10B, 10BL, 20D	04
14, 15, 26, 26D, 32, 32D, WSP	15
BSP	BSP

** Finish when cylinder provided with lock

Handing

LH	Left hand
LHR	Left hand reverse
RH	Right hand
RHR	Right hand reverse

*Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

¹KA square cylinder collar and 130KA square backplate automatically supplied with E2, E3 and E4 roses.

²Lever returns within 1/2" (13 mm) of door face.

³Gramercy levers are customized. See page 28 for ordering information.

IN Series

Intelligent IP-Enabled Access Control



Build Your Order String

Technology Function

Technology	Function	Credentials	Reader	Rose	Lever	Finish
IN	7 9 7					

For additional cylinder and/or mechanical options, please refer to pages 31-33. Add the desired options to the beginning of your order string.

8200 Series Mortise Locks



Mechanical Features

- Certified to ANSI/BHMA A156.13 Series 1000 Operational Grade 1 and Security Grade 1
- UL/ULC Listed for fire doors*
- FCC certified
- Windstorm and Florida Building Code information is listed on page 16
- Motor driven 8200 Series Mortise Lock
- 3/4" stainless steel, anti-friction reversible latch
- For 1-3/4" (44mm) thick door standard. Consult factory for additional thicknesses
- Stainless steel non-handed deadlocking latch
- Not available with SC- or SE- options
- Handed, easily field reversible without disassembling lockbody
- Lever trim through-bolted for increased security and durability

Shipping Weight: Approx. 11 lbs.

IN Series Mortise Lock Functions

- Key outside always retracts latch
- Lever outside rigid except when valid credential presented
- Lever inside always retracts latch and deadbolt (if present)
- Guardbolt deadlocks latch
- Key override available with #41 cylinder supplied
- Low battery (for IN120), request-to-exit (REX), Door Position (integrated DPS), and tamper signaling standard

* Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and Sargent Manufacturing Company makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

Select from the following options to order IN Series mortise locks:

Technology

- 120 WiFi
- 220 PoE

Function

- 82276 Key override and deadbolt*
- 82278 Key override and no deadbolt
- 82277 Deadbolt and no key override*
- 82279 No deadbolt and no key override

*This function supports Escape Return.

IN Series

Intelligent IP-Enabled Access Control



Reader

- B Black reader, black trim
- W White reader, white trim
- MB Black reader, metal trim
- MW White reader, metal trim

Note: Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

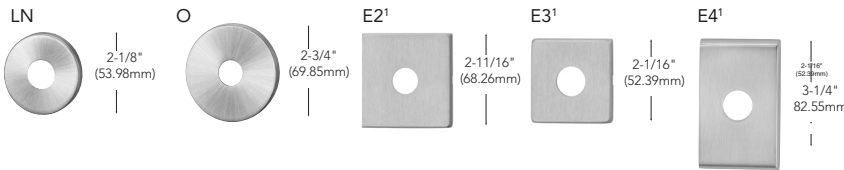
Credentials

- BIPS HID Prox®, iCLASS®, iCLASS SE®, iCLASS® Seos®, SIO on MIFARE® Classic, SIO on MIFARE DESFire® EV1 MIFARE Classic, MIFARE DESFire EV1, HID Mobile Access, Apple Wallet, Google Pay
All credentials supported by the BIPS option plus keypad.
Supports PIV/PIV-I (40-bit BCD, 64-bit BCD, 75 bit, 128-bit BCD or 200-bit outputs).
- BIKPS All credentials supported by the BIPS option plus keypad.
- IPV Supports PIV/PIV-I (40-bit BCD, 64-bit BCD, 75 bit, 128-bit BCD or 200-bit outputs).
All credentials supported by the IPV option plus keypad
Options supporting FeliCa credentials. Contact Transact for more details.
- IKPV All credentials supported by the IPV option plus keypad
- BCP/BCKP Options supporting FeliCa credentials. Contact Transact for more details.
- DIPS/DIKPS* Options supporting LenelS2 BlueDiamond™ mobile credentials.

*Orderable through LenelS2 only

To order locks with site keys preloaded with HID Mobile Access, Seos Elite, Apple Wallet, or Google Pay mobile credential support, please refer to the site-specific credential ordering guide.

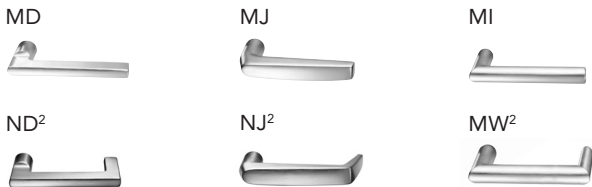
Rose



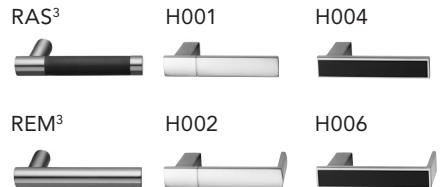
Suites with reader

Lever

The levers shown here are some of our most popular styles from the Studio Collection. To see the complete range of available levers, please refer to pages 29-31.



Premium Levers



Finish

	Description	Specify
US3 (ANSI/BHMS 605)	Bright Brass	03
US4 (ANSI/BHMA 606)	Satin Brass	04
US9 (ANSI/BHMA 611)	Bright Bronze	09
US10 (ANSI/BHMA 612)	Satin Bronze, clear powder	10
US10B (ANSI/BHMA 613)	Dark Oxidized Satin Bronze, oil rubbed	10B
10BE (613E)	Dark Oxidized Satin Bronze - equivalent	10BE
10BL (613L)	Dark Oxidized Satin Bronze - clear coated	10BL
US14 (ANSI/BHMA 618)	Bright Nickel Plated, clear coated	14
US15 (ANSI/BHMA 619)	Satin Nickel Plated, clear coated	15
20D	Dark Statuary Bronze, clear coated	20D
US26 (ANSI/BHMA 625)	Bright Chromium Plated	26
US26D (ANSI/BHMA 626)	Satin Chromium Plated	26D
US32 (ANSI/BHMA 629)*	Bright Stainless Steel	32
US32D (ANSI/BHMA 630)*	Satin Stainless Steel	32D
BSP	Black Suede Powder Coat	BSP
WSP	White Suede Powder Coat	WSP

Lock Finish	Cylinder/Core**
03, 04, 09, 10, 10B, 10BL, 20D	04
14, 15, 26, 26D, 32, 32D, WSP	15
BSP	BSP

** Finish when cylinder provided with lock

Handing

- LH Left hand
- LHR Left hand reverse
- RH Right hand
- RHR Right hand reverse

*Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

IN Series

Intelligent IP-Enabled Access Control

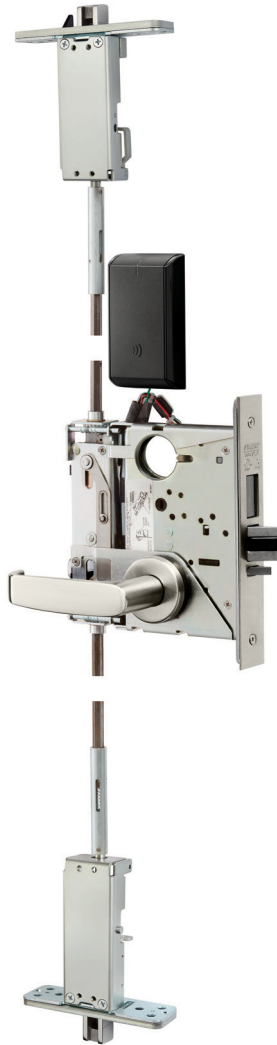


Build Your Order String

Technology Function		Credentials				Reader		Rose		Lever		Finish		Handing		Opening Height (Inches)
IN		8	2	2	7											

For additional cylinder and/or mechanical options, please refer to pages 31-33 Add the desired options to the beginning of your order string.

7300 Series Multi-Point Locks



Mechanical Features

- Certified to ANSI/BHMA A156.37 Series 1000 Operational Grade 1 and Security Grade 1
- Motor driven 8200 Series Mortise Lock
- 1-3/4" thick door only; fully integrated – 7300 is part of a complete ASSA ABLOY windstorm solution
- Stainless steel non-handed deadlocking latch
- Not available with SC- or SE- options
- Handed, easily field reversible without disassembling lockbody
- Lever trim through-bolted for increased security and durability
- Concealed vertical assembly (rods, latches and cassette) pre-installed in door
- UL/ULC Listed for fire doors*
- FCC certified
- Windstorm certification information is listed in the Sargent 7300 Series catalog
- Shipping Weight: Approx. 11 lbs.

IN Series Multi-Point Lock Functions

- Lever outside rigid except when valid credential presented
- Lever inside always retracts latch and deadbolt
- Guardbolt deadlocks latch
- Low battery (for IN120), request-to-exit (REX), Door Position (integrated), and tamper signaling standard

* Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and Sargent Manufacturing Company makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

MOUNTING	Supplied fasteners are for metal doors with through-bolts for trim
HAND	Handed; specify RHR, LHR, RH or LH
TOP BOLT	Adjustable stainless steel 3/4" square bolt with 11/16" engagement; 5/16" steel reinforcement plate
BOTTOM BOLT	Adjustable stainless steel 3/4" square bolt with 5/8" engagement; 1/4" steel reinforcement plate
CENTER BOLTS	Latchbolt is stainless steel with 3/4" projection. One piece, anti-friction reversible catch. Deadbolt is one piece hardened stainless steel with 1" projection
LOCK FRONT	1/8" steel mortise front reinforced with 13/64" thick lock edge stiffener
CENTER BOLT STRIKE	1/4" thick stainless steel
BACKSET	2-3/4" standard
DOOR THICKNESS	1-3/4" standard
DOOR HEIGHT	7'0" - 8'0"
MAXIMUM OPENING	Single door 4'0" x 8'0" and double doors 8'0" x 8'0"

Select from the following options to order IN Series multi-point locks:

Technology	Function	Reader	
120	WiFi	73277 Deadbolt, no key override	B Black reader, black trim
220	PoE	73276 Key override with deadbolt	W White reader, white trim
			MB Black reader, metal trim
			MW White reader, metal trim

Note: Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

IN Series

Intelligent IP-Enabled Access Control

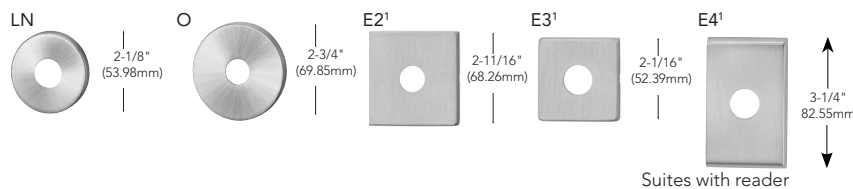
Credentials

BIPS	HID Prox®, iCLASS®, iCLASS SE®, iCLASS® Seos®, SIO on MIFARE® Classic, SIO on MIFARE DESFire® EV1 MIFARE Classic, MIFARE DESFire EV1, HID Mobile Access, Apple Wallet, Google Pay
BIKPS	All credentials supported by the BIPS option plus keypad.
IPV	Supports PIV/PIV-I (40-bit BCD, 64-bit BCD, 75 bit, 128-bit BCD or 200-bit outputs).
IKPV	All credentials supported by the IPV option plus keypad
BCP/BCKP	Options supporting FeliCa credentials. Contact Transact for more details.
DIPS/DIKPS*	Options supporting LenelS2 BlueDiamond™ mobile credentials.

*Orderable through LenelS2 only

To order locks with site keys preloaded with HID Mobile Access, Seos Elite, Apple Wallet, or Google Pay mobile credential support, please refer to the site-specific credential ordering guide.

Rose



Suites with reader

Lever

The levers shown here are some of our most popular styles from the Studio Collection. To see the complete range of available levers, please refer to pages 29-31.

Premium Levers



¹1KA square cylinder collar and 130KA square backplate automatically supplied with E2, E3 and E4 roses.

²Lever returns within ½" (13 mm) of door face.

³Gramercy levers are customized. See page 28 for ordering information.

Finish

	Description	Specify
US3 (ANSI/BHMS 605)	Bright Brass	03
US4 (ANSI/BHMA 606)	Satin Brass	04
US9 (ANSI/BHMA 611)	Bright Bronze	09
US10 (ANSI/BHMA 612)	Satin Bronze, clear powder	10
US10B (ANSI/BHMA 613)	Dark Oxidized Satin Bronze, oil rubbed	10B
10BE (613E)	Dark Oxidized Satin Bronze - equivalent	10BE
10BL (613L)	Dark Oxidized Satin Bronze - clear coated	10BL
US14 (ANSI/BHMA 618)	Bright Nickel Plated, clear coated	14
US15 (ANSI/BHMA 619)	Satin Nickel Plated, clear coated	15
20D	Dark Statuary Bronze, clear coated	20D
US26 (ANSI/BHMA 625)	Bright Chromium Plated	26
US26D (ANSI/BHMA 626)	Satin Chromium Plated	26D
US32 (ANSI/BHMA 629)*	Bright Stainless Steel	32
US32D (ANSI/BHMA 630)*	Satin Stainless Steel	32D
BSP	Black Suede Powder Coat	BSP
WSP	White Suede Powder Coat	WSP

Lock Finish	Cylinder/Core**
03, 04, 09, 10, 10B, 10BL, 20D	04
14, 15, 26, 26D, 32, 32D, WSP	15
BSP	BSP

**Finish when cylinder provided with lock

Handing

LH	Left hand
LHR	Left hand reverse
RH	Right hand
RHR	Right hand reverse

*Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

IN Series

Intelligent IP-Enabled Access Control



Build Your Order String

Technology	Function	Credentials	Reader	Rose	Lever	Finish	Handing
IN	FM 7 3 2 7 7						

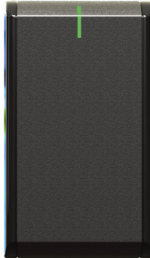
*If Windstorm or Blast is required, add the following before the function code:

- FM - Windstorm
- BL - Blast

Example: FM73277, BL73277

If neither is required, use the function code as listed above.
For additional cylinder and/or mechanical options, please refer to pages 31-33. Add the desired options to the beginning of your order string.

10 Line Bored Locks



Mechanical Features

- Certified ANSI/BHMA A156.2 Series 4000 Grade 1
- UL/ULC Listed for fire doors*
- Motor driven cylindrical lock
- Latch Stainless Steel, 1/2" (13mm) throw
- 2-3/4" (70mm) backset standard
- For 1-3/4" (44mm) thick door standard. Consult factory for other thicknesses
- Handing easily field reversible without disassembling lock body
- Heavy duty lever spring return
- Steel mounting studs
- Not available with 10-UL-, 82-, 83-, 84- options

Shipping Weight: Approx. 9 lbs.

IN Series Bored Lock Functions

- Key outside always retracts latch
- Lever outside rigid except when valid credential presented
- Lever inside always retracts latch
- Guardbolt deadlocks latch
- Key override standard with #C10-1 cylinder supplied
- Low battery (for IN120), request-to-exit (REX), Door Position (DPS), and tamper signaling standard
- Door Position Switch (DPS, P/N 52-5373) supplied

52-5373 Door Position Switch (DPS)

Supplied with IN220 bored locks

- SPST concealed switch (2-wire)
- 3/8" Diameter for wood door
- 3/4" Diameter for metal door
- - Metal door adapter included

Note: The DPS is installed right above the lock faceplate and connects directly into the lock's electronics

IN120/220 10 Line bored locks are UL Certified and Listed as part of an approved assembly¹ to the following certifications and standards:

- UL Listed per ANSI/SDI-BHMA A250.13
- ANSI/ASTM E330-2002
- ANSI/ASTM E1886-2005
- ASTM E1996-2009
- Testing Application Standard (TAS) 201-1994²
- Testing Application Standard (TAS) 202-1994²
- Testing Application Standard (TAS) 203-1994²
- UL Certification Directory ZHLL.R21744 Windstorm-rated Assemblies
- Listed on Florida Building Code Website: FL6728-R1
- Listed on Florida Building Code Website: FL4351-R1

¹To meet assembly requirements, use in conjunction with doors from ASSA ABLOY Group brands CECO DOOR and CURRIES.

²Published in the "Florida Building Code"

* Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and Sargent Manufacturing Company makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

IN Series

Intelligent IP-Enabled Access Control



Select from the following options to order IN Series cylindrical locks:

Technology

- 120 WiFi
- 220 PoE

Function

- 10G77 Key override

Reader

- B Black reader, black trim
- W White reader, white trim
- MB Black reader, metal trim
- MW White reader, metal trim

Credentials

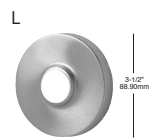
- BIPS HID Prox®, iCLASS®, iCLASS SE®, iCLASS® Seos®, SIO on MIFARE® Classic, SIO on MIFARE DESFire® EV1 MIFARE Classic, MIFARE DESFire EV1, HID Mobile Access, Apple Wallet, Google Pay
- BIKPS All credentials supported by the BIPS option plus keypad.
- IPV Supports PIV/PIV-I (40-bit BCD, 64-bit BCD, 75 bit, 128-bit BCD or 200-bit outputs).
- IKPV All credentials supported by the IPV option plus keypad
- BCP/BCKP Options supporting FeliCa credentials. Contact Transact for more details.
- DIPS/DIKPS* Options supporting LenelS2 BlueDiamond™ mobile credentials.

*Orderable through LenelS2 only

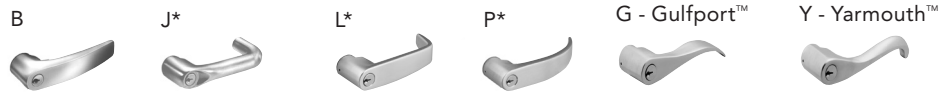
To order locks with site keys preloaded with HID Mobile Access, Seos Elite, Apple Wallet, or Google Pay mobile credential support, please refer to the site-specific credential ordering guide.

Note: Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

Rose



Lever



Finish

Description	Specify
US3 (ANSI/BHMS 605)	Bright Brass 03
US4 (ANSI/BHMA 606)	Satin Brass 04
US9 (ANSI/BHMA 611)	Bright Bronze 09
US10 (ANSI/BHMA 612)	Satin Bronze, clear powder 10
US10B (ANSI/BHMA 613)	Dark Oxidized Satin Bronze, oil rubbed 10B
10BE (613E)	Dark Oxidized Satin Bronze - equivalent 10BE
10BL (613L)	Dark Oxidized Satin Bronze - clear coated 10BL
US14 (ANSI/BHMA 618)	Bright Nickel Plated, clear coated 14
US15 (ANSI/BHMA 619)	Satin Nickel Plated, clear coated 15
20D	Dark Statuary Bronze, clear coated 20D
US26 (ANSI/BHMA 625)	Bright Chromium Plated 26
US26D (ANSI/BHMA 626)	Satin Chromium Plated 26D
BSP	Black Suede Powder Coat BSP
WSP	White Suede Powder Coat WSP

Lock Finish	Cylinder/Core**
03, 04, 09, 10, 10B, 10BL, 20D	04
14, 15, 26, 26D, WSP	15
BSP	BSP

**Finish when cylinder provided with lock

Handing

- LH Left hand
- LHR Left hand reverse
- RH Right hand
- RHR Right hand reverse

*Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

Build Your Order String

Technology	Function	Credentials	Reader	Rose	Lever	Finish	Handing	Opening Height (Inches)
IN	1	0	G	7	7			

For additional cylinder and/or mechanical options, please refer to pages 31-33. Add the desired options to the beginning of your order string.

* Lever returns within 1/2" (13 mm) of door face

IN Series

Intelligent IP-Enabled Access Control

80 Series Exit Devices



Mechanical Features

- Certified ANSI/BHMA A156.3 Grade 1
- Latch 3/4" (19mm) throw (8800: stainless steel, 8900: anti-friction brass)
- Cylinder requirements: 8800 Series uses a #34 Rim Cylinder; 8900 Series uses a #46 Mortise Cylinder (1-3/4")
- For 1-3/4" (44mm) door standard. Consult factory for other thicknesses
- Available with Studio Collection, Coastal Series and all standard levers
- UL/ULC Listed for fire doors*

Shipping Weight: Approx. 11 lbs.

IN Series Exit Device Functions

- Lever outside rigid except when in passage mode or valid user code entered
- Always allows free egress
- Request-to-Exit (REX): monitors rail position
- Low battery (for IN120), request-to-exit (REX), Door Position (DPS), and tamper signaling standard
- Door position switch (DPS, part #52-5373) supplied
- EcoFlex™ technology reduces energy consumption up to 95% as certified by GreenCircle

* Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and Sargent Manufacturing Company makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

Select from the following options to order IN Series exit devices:



Mortise Exit

Rim Exit

Technology

- 120 WiFi
- 220 PoE

Function

- 8977 Mortise lock exit device, key override
- 8978 Mortise lock exit device, no key override
- 8877 Rim exit device, key override
- 8878 Rim exit device, no key override

IN Series

Intelligent IP-Enabled Access Control



Reader

B	Black reader, black trim
W	White reader, white trim
MB	Black reader, metal trim
MW	White reader, metal trim

Rail Size

E:	24 - 32"
F:	33 - 36"
J:	37 - 42"
G:	43 - 48"

ET Trim

ET 700 Series ET Trim



Note: Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

Credentials

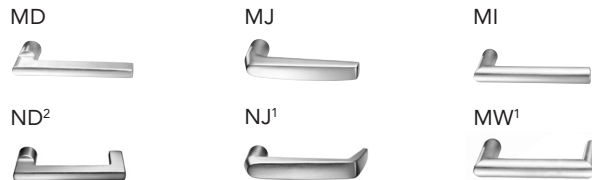
BIPS	HID Prox®, iCLASS®, iCLASS SE®, iCLASS® Seos®, SIO on MIFARE® Classic, SIO on MIFARE DESFire® EV1 MIFARE Classic, MIFARE DESFire EV1, HID Mobile Access, Apple Wallet, Google Pay
BIKPS	All credentials supported by the BIPS option plus keypad.
IPV	Supports PIV/PIV-I (40-bit BCD, 64-bit BCD, 75 bit, 128-bit BCD or 200-bit outputs).
IKPV	All credentials supported by the IPV option plus keypad
BPC/BCKP	Options supporting FeliCa credentials. Contact Transact for more details.
DIPS/DIKPS*	Options supporting LenelS2 BlueDiamond™ mobile credentials.

*Orderable through LenelS2 only

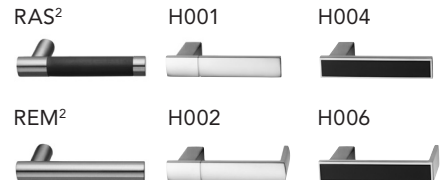
To order locks with site keys preloaded with HID Mobile Access, Seos Elite, Apple Wallet, or Google Pay mobile credential support, please refer to the site-specific credential ordering guide.

Lever

The levers shown here are some of our most popular styles from the Studio Collection. To see the complete range of available levers, please refer to pages 29-31.



Premium Levers



Finish

	Description	Specify
US3 (ANSI/BHMS 605)	Bright Brass	03
US4 (ANSI/BHMA 606)	Satin Brass	04
US9 (ANSI/BHMA 611)	Bright Bronze	09
US10 (ANSI/BHMA 612)	Satin Bronze, clear powder	10
US10B (ANSI/BHMA 613)	Dark Oxidized Satin Bronze, oil rubbed	10B
10BE (613E)	Dark Oxidized Satin Bronze - equivalent	10BE
10BL (613L)	Dark Oxidized Satin Bronze - clear coated	10BL
US14 (ANSI/BHMA 618)	Bright Nickel Plated, clear coated	14
US15 (ANSI/BHMA 619)	Satin Nickel Plated, clear coated	15
20D	Dark Statuary Bronze, clear coated	20D
US26 (ANSI/BHMA 625)	Bright Chromium Plated	26
US26D (ANSI/BHMA 626)	Satin Chromium Plated	26D
US32 (ANSI/BHMA 629)*	Bright Stainless Steel	32
US32D (ANSI/BHMA 630)*	Satin Stainless Steel	32D
BSP	Black Suede Powder Coat	BSP
WSP	White Suede Powder Coat	WSP

*Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

Lock Finish	Cylinder/Core**
03, 04, 09, 10, 10B, 10BL, 20D	04
14, 15, 26, 26D, 32, 32D, WSP	15
BSP	BSP

**Finish when cylinder provided with lock

*Exit Devices ordered in 32 or 32D will have the ET trim and lever supplied in 26 or 26D; for nickel finished ET trim, specify 14 or 15 finish and the exit will be supplied in 32 or 32D accordingly.

Handing

LHR Left hand reverse
RHR Right hand reverse

Door Width

Specify in inches

¹ Lever returns within ½" (13 mm) of door face.

² Gramercy levers are customized. See page 28 for ordering information.

IN Series

Intelligent IP-Enabled Access Control



Build Your Order String

Technology	Function	Credentials	Reader	Rail Size	ET Trim	Lever	Finish	Handing	Door Width (in inches)
IN	8				E T				

For additional cylinder and/or mechanical options, please refer to pages 31-33. Add the desired options to the beginning of your order string.

Retrofit Kits for Von Duprin® 98/99 Series Rim Exit Devices



Mechanical Features

- Certified ANSI/BHMA A156.3 Grade 1
- Key override compatible with a variety of rim cylinders. Trim prepped for cylinder (not included)
- Requires Von Duprin RX switch assembly #050251-00 (supplied by others)
- Provides complete coverage of door prep for Von Duprin 996 trim; call 800-810-WIRE for information on door prep coverage for other trims
- Available with Studio Collection, Coastal Series and all standard levers
- UL/ULC Listed for fire doors*
- Matching dummy trim available for double doors.

IN Series Exit Device Functions

- Lever outside rigid except when in passage mode or valid user code entered
- Always allows free egress
- Request-to-Exit (REX): monitors rail position
- Low battery, tamper signaling standard
- Door position switch (DPS, part #52-5373) supplied

* Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and Sargent Manufacturing Company makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.

Function

231 Rim exit device, key override

Escutcheon

EK1 Plate for Von Duprin Retrofit Fit

Reader

B Black reader, black trim
W White reader, white trim
MB Black reader, metal trim
MW White reader, metal trim

Note: Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

Credentials

BIPS	HID Prox®, iCLASS®, iCLASS SE®, iCLASS® Seos®, SIO on MIFARE® Classic, SIO on MIFARE DESFire® EV1 MIFARE Classic, MIFARE DESFire EV1, HID Mobile Access, Apple Wallet, Google Pay
BIKPS	All credentials supported by the BIPS option plus keypad.
IPV	Supports PIV/PIV-I (40-bit BCD, 64-bit BCD, 75 bit, 128-bit BCD or 200-bit outputs).
IKPV	All credentials supported by the IPV option plus keypad
BKP/BCKP	Options supporting FeliCa credentials. Contact Transact for more details.
DIPS/DIKPS*	Options supporting LenelS2 BlueDiamond™ mobile credentials.

*Orderable through LenelS2 only

To order locks with site keys preloaded with HID Mobile Access, Seos Elite, Apple Wallet, or Google Pay mobile credential support, please refer to the site-specific credential ordering guide.

IN Series

Intelligent IP-Enabled Access Control

Lever

The levers shown here are some of our most popular styles from the Studio Collection. To see the complete range of available levers, please refer to pages 21-23.

Premium Levers

MD



MJ



MI



RAS²



H001



H004



ND²



NJ¹



MW¹



REM²



H002



H006



Finish

	Description	Specify
US3 (ANSI/BHMS 605)	Bright Brass	03
US4 (ANSI/BHMA 606)	Satin Brass	04
US9 (ANSI/BHMA 611)	Bright Bronze	09
US10 (ANSI/BHMA 612)	Satin Bronze, clear powder	10
US10B (ANSI/BHMA 613)	Dark Oxidized Satin Bronze, oil rubbed	10B
10BE (613E)	Dark Oxidized Satin Bronze - equivalent	10BE
10BL (613L)	Dark Oxidized Satin Bronze - clear coated	10BL
US14 (ANSI/BHMA 618)	Bright Nickel Plated, clear coated	14
US15 (ANSI/BHMA 619)	Satin Nickel Plated, clear coated	15
20D	Dark Statuary Bronze, clear coated	20D
US26 (ANSI/BHMA 625)	Bright Chromium Plated	26
US26D (ANSI/BHMA 626)	Satin Chromium Plated	26D
US32 (ANSI/BHMA 629)*	Bright Stainless Steel	32
US32D (ANSI/BHMA 630)*	Satin Stainless Steel	32D
BSP	Black Suede Powder Coat	BSP
WSP	White Suede Powder Coat	WSP

Lock Finish	Cylinder/Core**
03, 04, 09, 10, 10B, 10BL, 20D	04
14, 15, 26, 26D, 32, 32D, WSP	15
BSP	BSP

**Finish when cylinder provided with lock

Handing

LHR Left hand reverse
RHR Right hand reverse

*Metal reader trim (MB and MW) are not available in stainless steel (32/32D). If stainless steel finish is ordered, the reader will be provided in satin nickel (15). Contact Customer Service if another finish is desired.

Build Your Order String

Technology	Function	Credentials	Reader	Escutcheon	Lever	Finish	Handing
IN	120	2 3 1	B I P S	E K 1			

The order string for the EK1 mechanical exit trim is: EK1 x 706-5 x Lever x Finish x Hand.

For additional cylinder and/or mechanical options, please refer to pages 31-33. Add the desired options to the beginning of your order string.

¹ Lever returns within 1/2" (13 mm) of door face.

² Gramercy levers are customized. See page 28 for ordering information.

Hard Power Option (91-) for IN120



The Hard Power option (91-) is recommended for high traffic doors or openings that require online behavior. Hard powering an IN120 allows the lock to operate in an always connected mode. The IN120 allows hard powering via an input of 12 to 24V DC and draws 200mA at 12V DC in always connected mode. SARGENT offers a range of power supplies suitable for this application.

12VDC & 24VDC Power Supplies

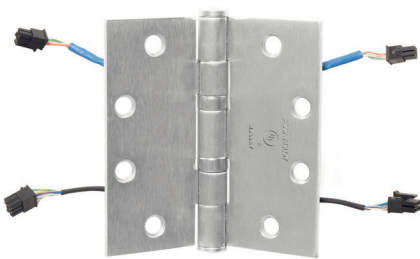
- UL Class 2 Listed filtered and regulated supply
- Four 12V models and four 24V models available
- Integral battery charging capability keeps sealed lead acid gel/cell at full charge in case of line voltage failure (737-battery sold separately)
- Fused line voltage input with one, four, or eight DC outputs (depending on model)
- Each circuit can be individually turned on and off via a slide switch; the power status of each is shown by an LED
- In the event of a DC short, the problem is confined to the zone of difficulty
- Fire alarm interface standard

McKinney ElectroLynx® hinges and harnesses are required for hard-powered IN120 applications.

52-4824 IN120 Adapter Cable

- Included with 91- prefix option IN120 units
- Compatible with ElectroLynx® system
- Allows for hard powering (91-) of IN120 (required for certain monitoring features)

PoE Hinges for IN220



Patented

The PoE door & frame harnesses can accommodate a variety of new (with raceway) and retrofit applications.

Please note that one electrified hinge, one door harness assembly and one frame harness assembly are required for each PoE opening.

McKinney ElectroLynx® PoE Hinges*

Description
4 1/2" x 4 1/2" TA2714 26D PoE (Standard Weight 5 knuckle)
4 1/2" x 4 1/2" T4A3786 26D PoE (Heavy Weight 5 knuckle)

McKinney ElectroLynx® PoE Frame Harness

Cable Length	Harness Description
180"	PoE-C1500P
Cat5e, 24 AWG, Shielded, Stranded, 100 Ohm	

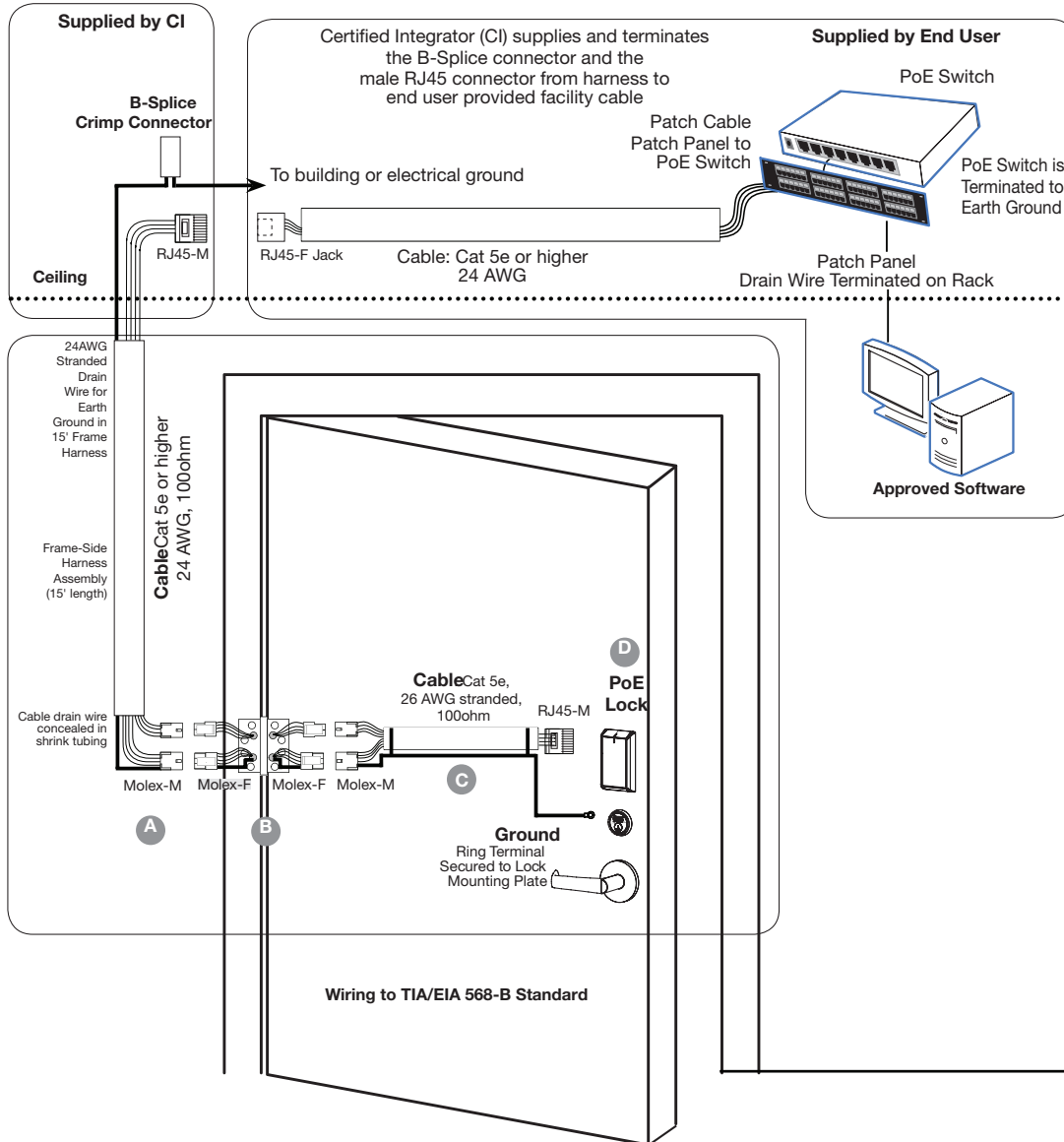
*See the McKinney catalog for additional finishes and hinge types

McKinney ElectroLynx® PoE Door Harnesses

Door Width	Cable Length	Wood Door	Hollow Metal Door
28" to 31"	36"	PoE-C300RJ	PoE-C300PRJ
32" to 36"	42"	PoE-C306RJ	PoE-C306PRJ
37" to 42"	48"	PoE-C400RJ	PoE-C400PRJ
43" to 48"	54"	PoE-C406RJ	PoE-C406PRJ

All are Cat5e, 26 AWG, Shielded, Stranded, 100 Ohm

IN220 PoE System Architecture



Accessories and Software

Cover Plate Kits

- 79-5000 32D Mortise lock, IN120/IN220-82276 (key override, with deadbolt), 32D finish
- 79-5001 32D Mortise lock, IN120/IN220-82277 (no key override, with deadbolt), 32D finish
- 79-5002 32D Mortise lock, IN120/IN220-7978/82278 (key override, no deadbolt), 32D finish
- 79-5003 32D Mortise lock, IN120/IN220-7979/82279 (no key override, no deadbolt), 32D finish
- 10-5008 32D Cylindrical lock, IN120/IN220-10XG77 (with key override), 32D finish

WFCD1 Network and Lock Configuration Tool Kit*

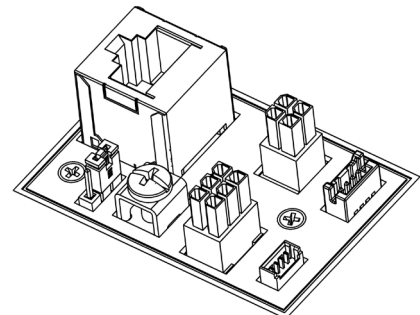
- Contains:
 - LCT software
 - Serial adapter cable (P/N 52-3956)
 - Users' manual (on CD)
 - Quick start guide
 - Configuration cards (to configure iCLASS Only Locks)
 - USB cable (P/N 52-1635)
- Required to configure network settings of IN220 locks

DHTA Power over Ethernet (PoE) Cable and Data Hinge Test Adapter for IN220

Developed for troubleshooting SARGENT PoE locks, the ASSA ABLOY PoE cable and data hinge test adapter verifies your PoE installation in the field. Sold as a kit containing two test adapters, it allows you to verify proper wiring from the door frame to the PoE data hinge and lock, or test the frame, hinge or door cables independently. This test tool helps answer the question "Is the problem in the lock or in the wiring to the lock?" and will save you troubleshooting time.

The DHTA works in conjunction with the following products or their equivalent, provided by others:

- BK Precision model 231A
- FLUKE DTX 1800 CableAnalyzer™
- Two (2) Category 5e patch cables, each (10) feet in length



* The Network and Lock Configuration CD Tool Kit (WFCD1) is required to set up IN120 and IN220 locks. Only one is required per system. Lock Management Tool or a compatible system is also required.

Lock Management Tool



Lock Management Tool™ (LMT) allows programming, interrogation and overall management of ASSA ABLOY PoE locks from a centralized location for up to 50 doors. The application facilitates communication from a computer to the locks via IEEE 802.11af PoE infrastructure. The LMT program allows an administrator to establish multiple user types, time zones, holidays, user groups, auto-unlock periods and to obtain transaction history from all locks connected to the system. LMT consists of a server based installation (a small workstation will be sufficient) with most of the daily administration and configuration being done through a web browser. A local client on the server can be used for more complex configuration tasks.

Features:

- Password protected database
- User database size based on local hardware configuration
- Allows for creation of user groups
- Easy to follow data entry
- Real-time clock with date and time
- Sixteen different time zones
- Holiday support
- Auto-unlock schedule with or without "first in" unlock
- Allows viewing of system wide events and history (total number of events based on local hardware configuration) – includes event type, date, time, user ID and name
- Configurable for all major HID® Prox 125 kHz or iCLASS® 13.56 MHz card formats
- Scheduler utility to establish lock communication at pre-defined intervals
- User manual included
- Browser-based user interface
- Simple drag-and-drop configurations
- Basic alarm monitoring

Requirements:

- Hardware:
 - Screen: 800 x 600 required; 1024 x 768 Recommended
 - Network Card required
 - CD-ROM required
 - Memory: 4 GB minimum, 8 GB+ recommended for servers
 - Storage: 50 GB available or more as needed
 - Processor: 2 GHz or faster Dual-core minimum
- Supported Operating Systems:
 - Windows 10 Pro & Enterprise (Home editions of Windows are not supported)*
 - Windows Server 2012, 2012R2, 2016 & 2019
- Supported Databases: Microsoft SQL Server 2012 to 2019
 - Installed with Mixed Mode authentication enabled as installer requires a SQL sysadmin account.

Note: IP address must be assigned by authorized network administrator and PC must utilize a static IP address.

IN Series

Intelligent IP-Enabled Access Control

SARGENT
ASSA ABLOY

WFCD2 Lock Management Tool (LMT) 25 Door License

- Lock Management Tool™ allows programming, interrogation and overall management from a centralized location of up to 25 doors
- License is included and is obtained at time of installation
- Download from IntelligentOpenings.com

WFCD3 Lock Management Tool (LMT) 50 Door License

- Lock Management Tool™ allows programming, interrogation and overall management from a centralized location of up to 50 doors
- License is included and is obtained at time of installation
- Download from IntelligentOpenings.com

Integration Tools for ASSA ABLOY Locks

ASSA ABLOY electronic access control locks integrate with a range of industry-leading access control systems. For more information on which systems support our IP-enabled locks, please contact your local ASSA ABLOY Door Security Solutions office, www.assaabloydss.com.

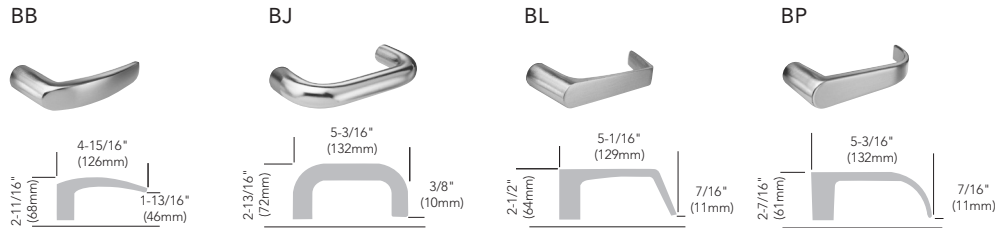
To learn more about how to integrate these and other ASSA ABLOY products with your system, please call 800-810-WIRE.

IN Series

Intelligent IP-Enabled Access Control

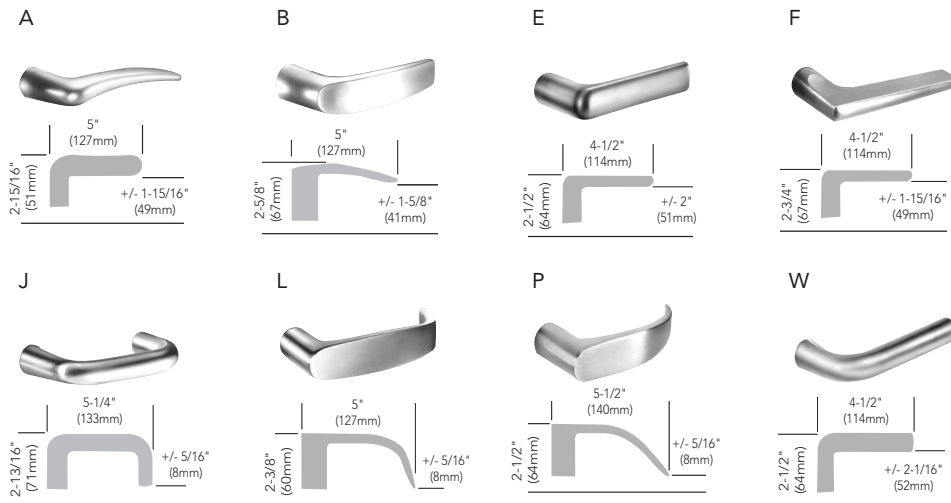
Standard Levers (7900 Series Mortise Locks)

- All levers meet ADA national code requirements
- Lever designs BJ, BL and BP have lever returns within 1/2" (13mm) of door face
- Levers BB, BL, BJ & BP are only available with the O rose



Standard Levers (8200 Series Mortise Locks, 80 Series Exit Devices, and 7300 Series Multi-Point Locks)

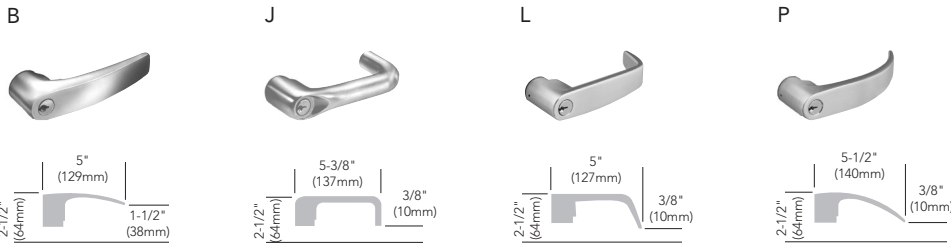
- All levers meet ADA compliance for national codes
- Solid forged or cast
- Lever designs J, L and P have lever returns within 1/2" (13mm) or less of door face and meet California State Reference Fire Code
- All lever height (+/- 1/16") measurements represent total distance from door face



Standard lever options are only available with O roses.

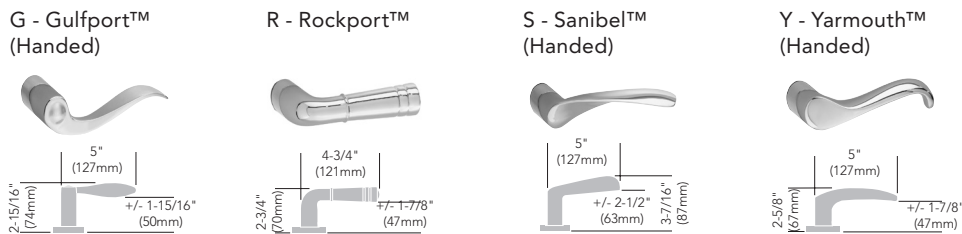
Standard Levers (10 Line Bored Locks)

- All levers meet ADA compliance for national codes
- Solid forged or cast
- Lever designs C, J, L and P have lever returns within 1/2" (13mm) or less of door face and meet California State Reference Fire Code
- All lever height (+/- 1/16") measurements represent total distance from door face



The Coastal Series™ (Mortise Locks, Bored Locks - Gulfport and Yarmouth only, or Exit Devices, and 7300 Series Multi-Point Locks)

- All levers meet ADA compliance for national codes
- Not available with CO and TO roses
- Levers are solid cast brass
- Finishes available — 3, 4, 9, 10, 10B, 10BE, 10BL, 14, 15, 20D, 26, 26D
- All lever height (+/- 1/16") measurements represent total distance from door face



IN Series

Intelligent IP-Enabled Access Control

SARGENT
ASSA ABLOY

Studio Collection trim is available in a broad array of designs and finishes. It allows for uniformity throughout a facility using the 8200, R8200 and 7900 Series Mortise Locks, Access Control Products, 80 Series Exits Devices, DL, RDL Series Tubular Locks, and 7300 Series Multi-Point Locks.

All levers meet ADA compliance for national codes. Visit the online Decorative Hardware Product Selector at selector.sargentlock.com to mix and match styles and finishes.

Wooster Square Series



Aventura Series



Gramercy Series³



Centro Series



Odéon Series¹ (Handed Levers)



Notting Hill Series (MA and MO are Non-Handed Levers)



Berlin Series



Grant Park Series (H008 is handed)



¹ Contact factory for current lead times. Not available in stainless steel finishes.

² Lever returns within 1/2" (13mm) of door face

³ Gramercy levers are customized.

See page 34 for ordering information

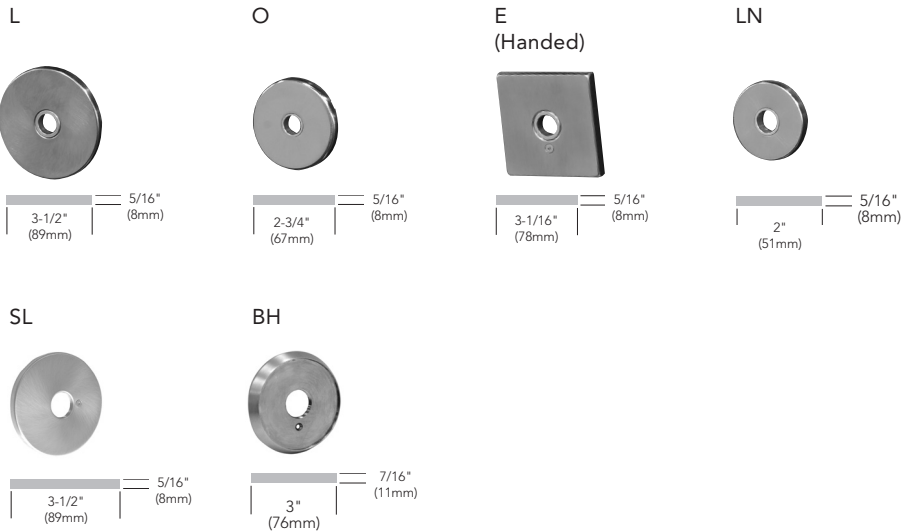
Note: H003 - H006 contains white or black polycarbonate insert

IN Series

Intelligent IP-Enabled Access Control

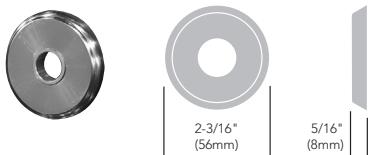
SARGENT
ASSA ABLOY

Standard Roses

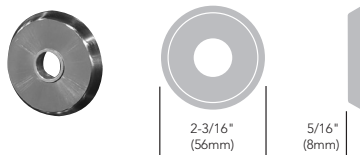


Coastal Series Roses

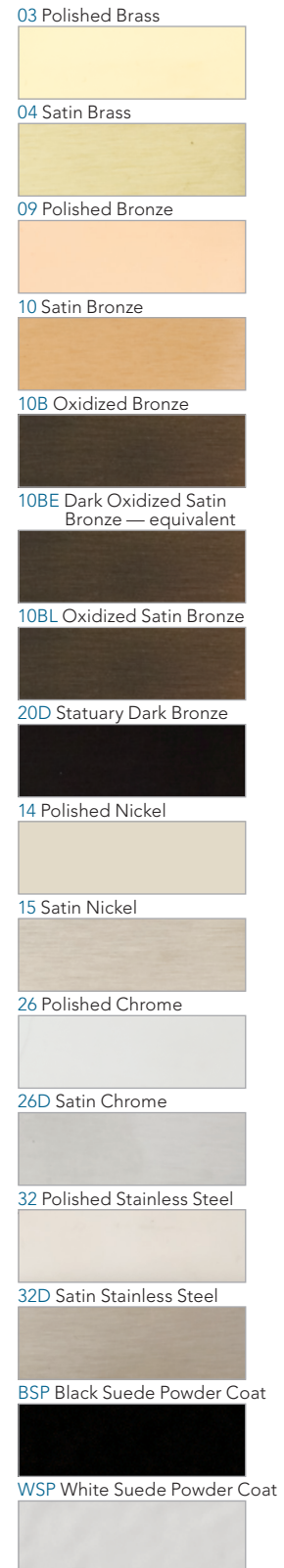
TR Traditional Rose
(Dual radii edge)



CR Contemporary Rose
(Beveled edge)



Available Finishes



Lock Finish	Cylinder/Core*
03, 04, 09, 10, 10B, 10BL, 20D	04
14, 15, 26, 26D, 32, 32D, WSP	15
BSP	BSP

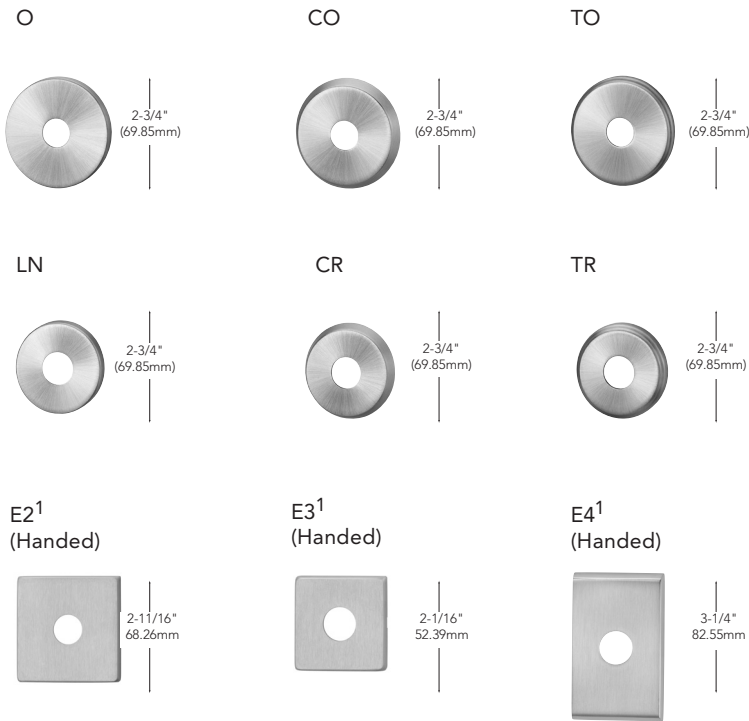
*Finish when cylinder provided with lock

IN Series

Intelligent IP-Enabled Access Control

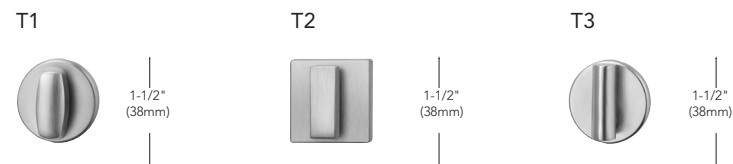
Studio Collection Trim

Roses (7900, 8200, and 7300 Series Multi-Point Locks)



Thumbturns (7900, 8200, and 7300 Series Multi-Point Locks)

Thumbturn backplate will match rose design chosen. Specify T1, T2 or T3 as a prefix option for decorative turns.

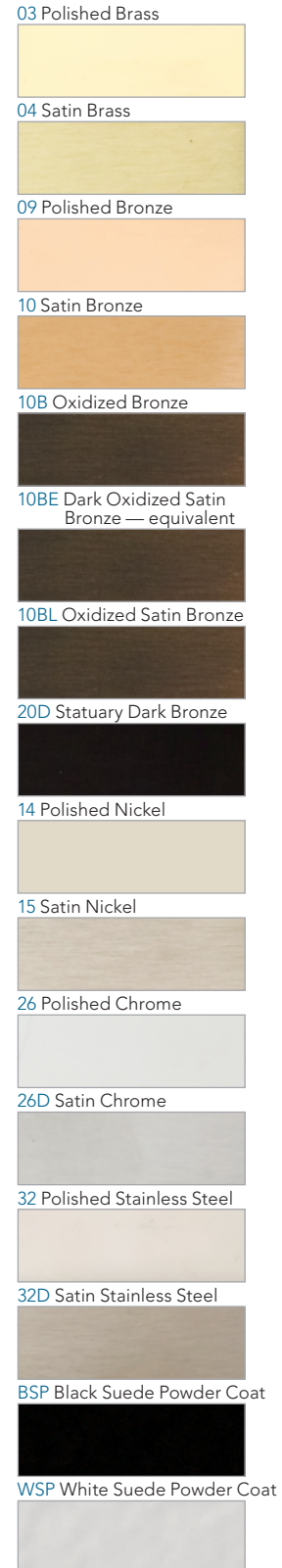


Lock Finish	Cylinder/Core*
03, 04, 09, 10, 10B, 10BL, 20D	04
14, 15, 26, 26D, 32, 32D, WSP	15
BSP	BSP

*Finish when cylinder provided with lock

¹ 1KA square cylinder collar and 130KA square backplate automatically supplied with E2, E3 and E4 roses.

Available Finishes



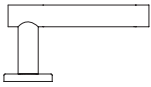
IN Series

Intelligent IP-Enabled Access Control

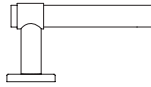
SARGENT
ASSA ABLOY

Ordering Gramercy Series Levers

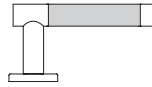
REM, RGM



RCM



RAG, RAL, RAM, RAS



Gramercy Finish Codes

BHMA FINISH	SARGENT FINISH	GRAMERCY CODE	DESCRIPTION
630	32D	30	Satin Stainless Steel
629	32	29	Bright Stainless Steel
613E	10BE	3E	Dark Oxidized Satin Bronze, Equivalent
N/A	BSP	BS	Black Suede Powder Coat
N/A	WSP	WS	White Suede Powder Coat
N/A	N/A	BK	Black (Santoprene™ or leather insert)
N/A	N/A	BN	Brown (leather insert)

*Code used to specify Gramercy Series finishes only. Use available finishes list to specify desired finish when ordering.

Gramercy Lever Descriptions and Available Finishes

LEVER DESIGNATION	LEVER DESCRIPTION	AVAILABLE FINISHES (AS ORDERED)
RAG	Grooved Insert	3030, 2929, 2930, 3029, 3E3E, BSBS or WSWs
RAL	Leather Insert	30BK, 30BN, 29BK, 29BN, 3EBK3E, BSBKBS, WSBKWS, 3EBN3E, BSNBNS or WSNBNS
RAM	Metallic Insert	2930 or 3030
RAS	Santoprene Insert	30BK, 29BK, 3E3E, BSBS or WSWs
RCM	Raised Band	2930, 2929, 3030, 3029, 3E3E, BSBS or WSWs
REM	Plain	2929, 3030, 3E3E, BSBS or WSWs
RGM	Two Grooves	2929, 3030, 3E3E, BSBS or WSWs

**Two-tone finish — grip of lever is 32D, balance of lever is 32. Rose/escutcheon and lock finish will be 32.

When specifying finish, use the last two digits of the BHMA standard finish code, i.e. use "29" for polished stainless, BHMA finish 629.

Replacement Parts

Reader Modules**1

PART NUMBER	DESCRIPTION
IN120-EM01-[credentials]-[reader]	See below for credentials and reader code

Credentials

BIPS	HID Prox®, iCLASS®, iCLASS SE®, iCLASS® Seos®, SIO on MIFARE® Classic, SIO on MIFARE DESFire® EV1 MIFARE Classic, MIFARE DESFire EV1, HID Mobile Access, Apple Wallet, Google Pay
BIKPS	All credentials supported by the BIPS option plus keypad.
IPV	Supports PIV/PIV-I (40-bit BCD, 64-bit BCD, 75 bit, 128-bit BCD or 200-bit outputs).
IKPV	All credentials supported by the IPV option plus keypad
BCP/BCKP	Options supporting FeliCa credentials. Contact Transact for more details.
DIPS/DIKPS*	Options supporting LenelS2 BlueDiamond™ mobile credentials.

*Orderable through LenelS2 only

To order locks with site keys preloaded with HID Mobile Access, Seos Elite, Apple Wallet, or Google Pay mobile credential support, please refer to the site-specific credential ordering guide.

Replacement Kits

PART NUMBER	DESCRIPTION
IN120-EM07-B	WiFi replacement kit (controller, plate, cover); black
IN120-EM07-W	WiFi replacement kit (controller, plate, cover); white
IN120-EM07-MB-[finish] ²	WiFi replacement kit (controller, plate, cover); black with metal trim
IN120-EM07-MW-[finish] ²	WiFi replacement kit (controller, plate, cover); white with metal trim
IN220-EM07-B	PoE replacement kit (controller, plate, cover); black
IN220-EM07-W	PoE replacement kit (controller, plate, cover); white
IN220-EM07-MB-[finish] ²	PoE replacement kit (controller, plate, cover); black with metal trim
IN220-EM07-MW-[finish] ²	PoE replacement kit (controller, plate, cover); white with metal trim

Inside Escutcheon¹

PART NUMBER	DESCRIPTION
IN120-EM02-B	Black
IN120-EM02-W	White
IN120-EM02-MB-[finish] ²	Black with metal trim
IN120-EM02-MW-[finish] ²	White with metal trim

52-5373 Door Position Switch (DPS)¹

DESCRIPTION
SPST concealed switch (2 wire)
Metal door adapter included
3/8" diameter for wood door
3/4" diameter for metal door
Supplied with IN120/IN220 (all locks except 8200 & FM7300)

Controllers & Controller Mounting Kit

PART NUMBER	DESCRIPTION
IN120-EM03	WiFi Controller
IN220-EM03	PoE Controller
IN120-EM04 ¹	Inside Mounting Kit (mounting plate and hardware)

Lockbodies¹

PART NUMBER	DESCRIPTION
IN120-7978-[finish] ² -[handing]	7900 mortise lockbody with cylinder (no deadbolt)
IN120-7979-[finish] ² -[handing]	7900 mortise lockbody only (no deadbolt, no cylinder)
IN120-82276-[finish] ² -[handing]	8200 mortise lockbody with deadbolt and cylinder
IN120-82277-[finish] ² -[handing]	8200 mortise lockbody with deadbolt (no cylinder)
IN120-82278-[finish] ² -[handing]	8200 mortise lockbody with cylinder (no deadbolt)
IN120-82279-[finish] ² -[handing]	8200 mortise lockbody only (no deadbolt, no cylinder)
10-3407-5400	Cylindrical lockbody, standard cylinder
10-3412-5400	Cylindrical lockbody, LFIC
10-3417-5400	Cylindrical lockbody, SFIC

¹ Reader modules, inside escutcheons, mounting kit, lockbodies, and door position switch can be used for both IN120 and IN220

² Specify finish

Mechanical Options

STRIKE OPTIONS	28-	4-7/8" Strike #808. Lip length 1-1/4 (10 Line only)
	WBS-	Wrought Box Strike
10 LINE BRACKET OPTIONS	20-	2-3/8" Backset Latch with 1" Front
	23-	3-3/4" Backset x 2-1/4" x 1-1/8" Front (10 Line only)
	25-	5" Backset x 2-1/4" x 1-1/8" Front (10 Line only)
SECURITY FASTENERS	36-	Six lobe security head screws
	37-	Spanner head screws
3/4" LATCH THROW	41-	3/4" (19mm) throw latch x 2-3/4" (70mm) backset (10 Line only)
TACTILE WARNING OPTIONS	75-	Tactile Warning — Milled Inside Lever (Not available with Studio and Coastal Levers and the A Lever)
	76-	Tactile Warning — Milled Outside Lever (Not available with Studio and Coastal Levers and the A Lever)
	77-	Tactile Warning — Milled Inside and Outside Lever (Not available with Studio and Coastal Levers and the A Lever)
	85-	Tactile Warning — Abrasive Coating on Inside Lever
	86-	Tactile Warning — Abrasive Coating on Outside Lever
	87-	Tactile Warning — Abrasive Coating on Outside Lever
FINISH PROTECTION	CPC-	Clear Powder Coat (Available for 26, 26D, 32 and 32D Finishes)
	SG-	MicroShield® antimicrobial clear powder coat (Not available with 10B Finish)
THUMBTURNS (SEE PAGE 17)	T1-	Decorative thumbturn; backplate matches rose design chosen
	T2-	Decorative square thumbturn; backplate matches rose design chosen
	T3-	Decorative cylinder thumbturn; backplate matches rose design chosen

Cylinder Options

CONVENTIONAL CYLINDER	—	SARGENT Conventional Cylinders supplied Standard (Nomenclature not required)
SIGNATURE KEY SYSTEM	10-	SARGENT Signature Key System (Not Available with other Key Systems)
	10-21-	SARGENT Signature Construction Key System (Lost Ball)
SIGNATURE: LARGE FORMAT INTERCHANGEABLE CORE (REMOVABLE CORE)	10-63-	SARGENT Signature LFIC (Removable Core) Cylinder
XC- KEY SYSTEM	11-	XC Key System (not available with 10-, 10UL, 22- options)
	11-21-	XC- Construction Key System (Lost Ball)
XC- LARGE FORMAT INTERCHANGEABLE CORE (REMOVABLE CORE)	11-60-	Hardware to accept XC- Permanent LFIC (Removable Core), Disposable plastic Core — provided
	11-63-	Hardware provided with XC- LFIC (Removable Core) Cylinder — (Includes masterkeying, grand masterkeying)
	11-64-	Hardware provided with Keyed construction core to accept XC- LFIC (Removable) Permanent Core (ordered separately)
XC- SMALL FORMAT INTERCHANGEABLE CORE	11-70-7P-	Hardware to accept XC- SFIC (7 Pin) XC- Permanent Cores, plastic disposable core provided (10 Line J lever not available)
	11-72-7P-	Hardware to accept XC- SFIC (7-Pin Keyed Construction Core provided) cylinder Permanent core ordered separately (10 Line J lever not available)
	11-73-7P-	Hardware supplied with XC- Small Format 7-Pin interchangeable core (Includes masterkeying, grand masterkeying) (10 Line J lever not available)
	11-65-73-7P-	Hardware provided to accept XC- Uncombined 7-Pin SFIC (Permanent) Core (Packed Loose) (10 Line J lever not available)
CONSTRUCTION KEY SYSTEMS	21-	SARGENT Lost Ball Construction Keying for Conventional, XC and Signature Series (N/A with 63-, 73-, 82-, SC- & SE-)
	22-	SARGENT Construction Split Key System for Conventional Cylinders (Existing Systems) (N/A with 10-, 11-, 63-, 73-, 82-, SC- & SE-)
OLD STYLE REMOVABLE CORE	51-	Removable Core Cylinder (Old Style) provided (Existing Systems Only)
	52-	Removable Construction Core (Old Style) Permanent core ordered separately (Existing Systems Only)
LARGE FORMAT INTERCHANGEABLE CORE (REMOVABLE CORE)	60-	Hardware to accept SARGENT Permanent LFIC (Removable Core), Disposable plastic Core provided (Permanent Cores Ordered Separately)
	63-	Hardware provided with LFIC (Removable Core) Cylinder — (Includes masterkeying, grand masterkeying)
	64-	Hardware provided with Keyed construction core to accept LFIC (Removable) Permanent Core (ordered separately)

Cylinder Options

SMALL FORMAT INTERCHANGEABLE CORES	70-	Hardware to accept 6 or 7-Pin SFIC Permanent Cores, plastic disposable core provided (10 Line J lever not available)
	72-	Hardware to accept 6 or 7-Pin SFIC (Keyed Construction Core provided) Cylinder (Permanent Core Ordered Separately) (10 Line J lever not available)
	73-	Hardware supplied with 6-Pin SFIC (Includes masterkeying, grand masterkeying) (10 Line J lever not available)
	65-73-	Hardware provided to accept Uncombined 6-Pin SFIC (Permanent) Core (Packed loose for field keying) (10 Line J lever not available)
	65-73-7P-	Hardware provided to accept Uncombined 7-Pin SFIC (Permanent) Core (Packed loose for field keying) (10 Line J lever not available)
	73-7P-	Hardware supplied with Small Format 7 Pin Interchangeable Core (Includes masterkeying, grand masterkeying) (10 Line J lever not available)
KESO & KESO F1	81-	Hardware provided with housings to accept Keso (83) and Keso F1 (F1-83-) removable cores (Not available with 10 Line) (Permanent Cores Ordered Separately)
	82-	Hardware provided with SARGENT Keso Security Cylinder
	F1-82-	Hardware provided with SARGENT Keso F1 Security Cylinder (Patented)
	83-	Hardware supplied with SARGENT Keso Security Removable Core cylinder (Not available with 10 Line)
	F1-83-	Hardware supplied with SARGENT Keso F1 Security Removable Core cylinder (Not available with 10 Line) (Patented)
84-	Hardware provided with SARGENT Keso Construction Cores (Not available with 10 Line) (Permanent Cores ordered separately)	
BUMP RESISTANT	BR-	Bump Resistant Cylinder (Available with Conventional and Conventional XC Cylinders Only)
LESS CYLINDER	LC-	Hardware supplied less cylinder
ACCEPTS SCHLAGE CYLINDERS	30-	10 Line Lever to accept Schlage Cylinder-Cylinder is not provided (10 Line only)
	SF-	L Lever to accept Medeco KeyMark Large Format Interchangeable and Schlage Full Size Interchangeable Core (10 Line only)
SCHLAGE KEYWAYS	SC-	Schlage C keyway cylinder, 0 bitted (10 Line only)
	SE-	Schlage E keyway cylinder, 0 bitted (10 Line only)

Cylinder Options

DEGREE CYLINDERS	DG1-	SARGENT Degree Key System Level 1 (Bump resistant with patented keys)
	DG1-21-	Degree Level 1 Construction Master Keying
	DG1-60-	Degree Level 1 Removable Disposable Construction Core
	DG1-63-	Degree Level 1 Removable Core
	DG1-64-	Degree Level 1 Removable Construction Keyed LFIC
	DG1-65-	Degree Level 1 Unassembled/Uncombined Core
	DG2-	SARGENT Degree Key System Level 2 (Geographically exclusive; bump and pick resistant)
	DG2-21-	Degree Level 2 Construction Master Keying
	DG2-60-	Degree Level 2 Removable Disposable Construction Core
	DG2-63-	Degree Level 2 Removable Core
	DG2-64-	Degree Level 2 Removable Construction Keyed LFIC
	DG2-65-	Degree Level 2 Unassembled/Uncombined Core
	DG3-	SARGENT Degree Key System Level 3 (Geographically exclusive; UL437 certified; bump and pick resistant)
	DG3-21-	Degree Level 3 Construction Master Keying
	DG3-60-	Degree Level 3 Removable Disposable Construction Core
	DG3-63-	Degree Level 3 Removable Core
	DG3-64-	Degree Level 3 Removable Construction Keyed LFIC
	DG3-65-	Degree Level 3 Unassembled/Uncombined Core

The ASSA ABLOY Group is the global leader in access solutions. Every day, we help billions of people experience a more open world.

ASSA ABLOY Opening Solutions leads the development within door openings and products for access solutions in homes, businesses and institutions. Our offering includes doors, frames, door and window hardware, locks, perimeter fencing, access control and service.



SARGENT Manufacturing Company
100 Sargent Drive
New Haven, CT 06511 USA
800-727-5477
www.sargentlock.com



multiCLASS SE[®] Readers



HIGHLY ADAPTABLE AND SECURE HIGH FREQUENCY ACCESS CONTROL SOLUTION

- **Powerfully Secure** – Provides layered security beyond the card media for added protection to identity data using SIOs.
- **Adaptable** – Interoperable with a growing range of technologies and form factors including mobile devices utilizing Seos™.
- **Interoperable** – Open Supervised Device Protocol (OSDP) for secure, bidirectional communication.
- **Streamlined Migration** – Simultaneous support for 125 kHz HID Prox®, AWID and EM4102 for seamless migration; field programmable for secure upgrades and extended lifecycle.

HID Global's iCLASS SE® platform goes beyond the traditional smart card model to offer a secure, standards-based and flexible platform that has become the new benchmark for highly adaptable, interoperable and secure access control solutions.

MIFARE DESFire EV1 with custom data models and other leading technologies.

Additionally, multiCLASS SE readers support mobile devices utilizing Seos, enabling a new class of portable identity credentials that can be securely provisioned and safely embedded into both fixed and mobile devices.

multiCLASS SE readers include Open Supervised Device Protocol (OSDP), a new Security Industry Association (SIA) standard that together with Secure Channel Protocol (SCP) provides secure communications and central management.

multiCLASS SE® readers simplify migration from legacy technologies with support 125 kHz for HID Prox, Indala, AWID and EM4102, and provide customers the assurance that their existing investments can be leveraged to enhance their system as business requirements change. The technology-independent readers also support iCLASS® Seos™ and iCLASS SE credential platforms, as well as standard iCLASS, MIFARE and

As part of HID Global's iCLASS SE platform that is based on the Secure Identity Object™ (SIO®) data model and Trusted Identity Platform® (TIP™), the powerfully secure multiCLASS SE readers offer advanced features such as layered security beyond the card media and tamper-proof protection of keys/cryptographic operations using EAL5+ secure element hardware.

POWERFULLY SECURE:

- Multi-Layered Security – Ensures data authenticity and privacy through the multi-layered security of HID's SIO.
- EAL5+ Certified Secure Element Hardware – Provides tamper-proof protection of keys/cryptographic operations.
- SIO Data Binding – Inhibits data cloning by binding an object to a specific credential.
- Secured communications using OSDP with Secure Channel Protocol.

HIGHLY ADAPTABLE:

- Mobile device support using card emulation - Enables HID access control.
- SIO Portability – Provides technology independence and portability to other smart card technologies.
- Upgradeable Hardware Connection – Allows all Wiegand-based communication readers to expand communication capabilities to OSDP, Hi-O and other bidirectional protocols.
- Field Programmable Readers – Provides secure upgrades for migration and extended lifecycle.

- Customization and management from a central location – Enables organization to make changes and manage all attached OSDP readers over RS485 wiring.
- Simultaneous support for 125kHz HID Prox, AWID and EM4102.
- Allows for support of future technologies.

SUSTAINABILITY AND MANAGEMENT:

- Intelligent Power Management (IPM) – Reduces reader power consumption by as much as 75% compared to standard operating mode.
- Recycled Content – Contributes toward building LEED credits.

INTEROPERABLE:

- SIO Media Mapping – Simplifies deployment of third-party objects to multiple types of credentials.
- Industry standard communications using OSDP.
- Custom programming support to read custom data models on MIFARE and MIFARE DESFire EV1 credentials.



SPECIFICATIONS

	RP10	RP15	RP40	RPK40
Base Part Number	900P 900L	910P 910L	920P 920L	921P 921L
Typical Read Range¹	13.56 MHz Single Technology ID-1 Cards - SIO Model Data			
	iCLASS Seos: 0.8" (2 cm) iCLASS: 3.1" (8 cm) MIFARE Classic: 2.8" (7 cm) MIFARE DESFire EV1/EV2: 1.2" (3 cm)	iCLASS Seos: 0.8" (2 cm) iCLASS: 3.1" (8 cm) MIFARE Classic: 2.8" (7 cm) MIFARE DESFire EV1/EV2 1.2" (3 cm)	iCLASS Seos: 1.2" (3 cm) iCLASS: 4.7" (12 cm) MIFARE Classic: 4.7" (12 cm) MIFARE DESFire EV1/EV2: 2.0" (5 cm)	iCLASS Seos: 0.8" (2 cm) iCLASS: 4.7" (12 cm) MIFARE Classic: 4.3" (11 cm) MIFARE DESFire EV1/EV2 1.6" (4 cm)
	13.56 MHz Single Technology Tags/Fobs² - SIO Data Model			
	iCLASS: 1.6" (4 cm) MIFARE Classic: 1.2" (3 cm)	iCLASS: 1.6" (4 cm) MIFARE Classic: 1.2" (3 cm)	iCLASS: 2.4" (6 cm) MIFARE Classic: 2.0" (5 cm)	iCLASS: 2.8" (7 cm) MIFARE Classic: 1.6" (4 cm)
	125 kHz Single Technology ID-1 Cards			
HID Prox: 2.8" (7 cm) Indala Prox: 1.6" (4 cm) EM4102 Prox: 4.3" (11 cm)	HID Prox: 2.8" (7 cm) Indala Prox: 1.6" (4 cm) EM4102 Prox: 4.3" (11 cm)	HID Prox: 2.8" (7 cm) Indala Prox: 2.0" (5 cm) EM4102 Prox: 4.3" (11 cm)	HID Prox: 2.8" (7 cm) Indala Prox: 2.0" (5 cm) EM4102 Prox: 3.1" (8 cm)	
125 kHz Single Technology Tags/Fobs				
HID Prox: 1.6" (4 cm) Indala Prox: 0.8" (2 cm) EM4102 Prox: 2.8" (7 cm)	HID Prox: 2.0" (5 cm) Indala Prox: 0.8" (2 cm) EM4102 Prox: 2.8" (7 cm)	HID Prox: 2.0" (5 cm) Indala Prox: 1.2" (3 cm) EM4102 Prox: 2.8" (7 cm)	HID Prox: 1.6" (4 cm) Indala Prox: 1.2" (3 cm) EM4102 Prox: 2.4" (6 cm)	
Mounting	Ideally suited for mullion-mounted door installations or any flat surface		Wall Switch Size; designed to mount and cover single gang switch boxes primarily used in the Americas and includes a slotted mounting plate for European and Asian back box spacing	
Mounting Spacer	To be used when mounting on metallic surfaces, refer to How To Order Guide for part numbers			
Color	Black			
Keypad	No			Yes (4x3)
Dimensions	1.9" x 4.1" x 0.9" 4.8 cm x 10.3 cm x 2.3 cm	1.9" x 6.0" x 0.9" 4.8 cm x 15.3 cm x 2.3 cm	3.3" x 4.8" x 1.0" 8.4 cm x 12.2 cm x 2.4 cm	3.3" x 4.8" x 1.1" 8.5 cm x 12.2 cm x 2.8 cm
Product Weight (Pigtail)	4.0oz (114g)	5.2oz (149g)	7.8oz (222g)	9.1oz (258g)
Product Weight (Terminal Strip)	3.0oz (85g)	4.3oz (124g)	7.6oz (216g)	8.0oz (228g)
Operating Voltage Range	5-16 VDC, Linear supply recommended			
Current Draw - Standard Power Mode³ (mA)	75	75	85	95
Current Draw - Intelligent Power Management (IPM) Mode³ (mA)	40	40	50	70
Peak Current Draw - Standard Power or IPM Mode³ (mA)	200	200	200	200
NSC³ Power Consumption - Standard Power Mode (W @ 16VDC)	1.2	1.2	1.4	1.5
NSC³ Power Consumption - w/ IPM (W @ 16VDC)	0.6	0.6	0.8	1.1
Operating Temperature	-31° to 150° F (-35° to 65° C)			
Storage Temperature	-67° to 185° F (-55° to 85° C)			
Operating Humidity	5% to 95% relative humidity non-condensing			
Environmental Rating	Indoor/Outdoor IP55; IP65 if installed with optional gasket (IP65GSKT)			
Transmit Frequency	13.56 MHz & 125 kHz			
13.56 MHz Card Compatibility	Secure Identity Object™ (SIO*) on iCLASS Seos, iCLASS SE/SR, MIFARE DESFire EV1 and MIFARE Classic (On by Default) - standard iCLASS Access Control Application (order with Standard interpreter) - ISO14443A (MIFARE) CSN, ISO14443B CSN, ISO15693 CSN - MIFARE Classic and MIFARE DESFire EV1 custom data models - FeliCa™ CSN, CEPAS ⁴ CSN or CAN - MIFARE DESFire EV2 via EV1 backward compatibility			
125 kHz Card Compatibility	HID Prox ⁴ , AWID ⁴ , Indala, EM4102 ⁴			
Communications	Optional OSDP with SCP over RS485 ⁴ Wiegand/Clock-and-Data Interface 500ft (150m) (22AWG) - Use Shielded cable for best results			
Panel Connection	Pigtail or Terminal Strip			
Certifications	UL294/cUL (US), FCC Certification (US), IC (Canada), CE (EU), C-tick (Australia, New Zealand), SRRC (China), MIC (Korea) ⁴ , NCC (Taiwan) ⁴ , iDA (Singapore) ⁴ , RoHS			
Crypto Processor Hardware Common Criteria Rating	EAL5+			
Patents	US7180403, US7439862, US7124943, US5952935, US6058481, US6337619			
Housing Material	UL94 Polycarbonate			
Manufactured with % of recycled content (Pigtail)	10.5%	11.0%	10.5%	10.9%
Manufactured with % of recycled content (Terminal Strip)	10.5%	11.0%	11.0%	12.3%
UL Ref Number	RP10E	RP15E	RP40E	RPK40E
Warranty	Limited Lifetime			



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¹ Read range listed is statistical mean rounded to nearest whole centimeter. HID Global testing occurs in open air. Some environmental conditions, including metallic mounting surface, can significantly degrade read range and performance; plastic or ferrite spacers are recommended to improve performance on metallic mounting surfaces.
² Measured in accordance with UL294 standards; See Installation Guide for Details.
³ NSC = Normal Standby Current; See Installation Guide for Details.
⁴ Not available on 9xxL part numbers.
⁵ Supported Tags/Fobs - iCLASS, and MIFARE Classic





multiCLASS SE[®] Readers



HIGHLY ADAPTABLE AND SECURE HIGH FREQUENCY ACCESS CONTROL SOLUTION

- **Powerfully Secure** – Provides layered security beyond the card media for added protection to identity data using SIOs.
- **Adaptable** – Interoperable with a growing range of technologies and form factors including mobile devices utilizing Seos™.
- **Interoperable** – Open Supervised Device Protocol (OSDP) for secure, bidirectional communication.
- **Streamlined Migration** – Simultaneous support for 125 kHz HID Prox®, AWID and EM4102 for seamless migration; field programmable for secure upgrades and extended lifecycle.

HID Global's iCLASS SE® platform goes beyond the traditional smart card model to offer a secure, standards-based and flexible platform that has become the new benchmark for highly adaptable, interoperable and secure access control solutions.

MIFARE DESFire EV1 with custom data models and other leading technologies.

Additionally, multiCLASS SE readers support mobile devices utilizing Seos, enabling a new class of portable identity credentials that can be securely provisioned and safely embedded into both fixed and mobile devices.

multiCLASS SE readers include Open Supervised Device Protocol (OSDP), a new Security Industry Association (SIA) standard that together with Secure Channel Protocol (SCP) provides secure communications and central management.

multiCLASS SE® readers simplify migration from legacy technologies with support 125 kHz for HID Prox, Indala, AWID and EM4102, and provide customers the assurance that their existing investments can be leveraged to enhance their system as business requirements change. The technology-independent readers also support iCLASS® Seos™ and iCLASS SE credential platforms, as well as standard iCLASS, MIFARE and

As part of HID Global's iCLASS SE platform that is based on the Secure Identity Object™ (SIO®) data model and Trusted Identity Platform® (TIP™), the powerfully secure multiCLASS SE readers offer advanced features such as layered security beyond the card media and tamper-proof protection of keys/cryptographic operations using EAL5+ secure element hardware.

POWERFULLY SECURE:

- Multi-Layered Security – Ensures data authenticity and privacy through the multi-layered security of HID's SIO.
- EAL5+ Certified Secure Element Hardware – Provides tamper-proof protection of keys/cryptographic operations.
- SIO Data Binding – Inhibits data cloning by binding an object to a specific credential.
- Secured communications using OSDP with Secure Channel Protocol.

HIGHLY ADAPTABLE:

- Mobile device support using card emulation - Enables HID access control.
- SIO Portability – Provides technology independence and portability to other smart card technologies.
- Upgradeable Hardware Connection – Allows all Wiegand-based communication readers to expand communication capabilities to OSDP, Hi-O and other bidirectional protocols.
- Field Programmable Readers – Provides secure upgrades for migration and extended lifecycle.

- Customization and management from a central location – Enables organization to make changes and manage all attached OSDP readers over RS485 wiring.
- Simultaneous support for 125kHz HID Prox, AWID and EM4102.
- Allows for support of future technologies.

SUSTAINABILITY AND MANAGEMENT:

- Intelligent Power Management (IPM) – Reduces reader power consumption by as much as 75% compared to standard operating mode.
- Recycled Content – Contributes toward building LEED credits.

INTEROPERABLE:

- SIO Media Mapping – Simplifies deployment of third-party objects to multiple types of credentials.
- Industry standard communications using OSDP.
- Custom programming support to read custom data models on MIFARE and MIFARE DESFire EV1 credentials.



SPECIFICATIONS

	RP10	RP15	RP40	RPK40
Base Part Number	900P 900L	910P 910L	920P 920L	921P 921L
Typical Read Range¹	13.56 MHz Single Technology ID-1 Cards - SIO Model Data			
	iCLASS Seos: 0.8" (2 cm) iCLASS: 3.1" (8 cm) MIFARE Classic: 2.8" (7 cm) MIFARE DESFire EV1/EV2: 1.2" (3 cm)	iCLASS Seos: 0.8" (2 cm) iCLASS: 3.1" (8 cm) MIFARE Classic: 2.8" (7 cm) MIFARE DESFire EV1/EV2 1.2" (3 cm)	iCLASS Seos: 1.2" (3 cm) iCLASS: 4.7" (12 cm) MIFARE Classic: 4.7" (12 cm) MIFARE DESFire EV1/EV2: 2.0" (5 cm)	iCLASS Seos: 0.8" (2 cm) iCLASS: 4.7" (12 cm) MIFARE Classic: 4.3" (11 cm) MIFARE DESFire EV1/EV2 1.6" (4 cm)
	13.56 MHz Single Technology Tags/Fobs² - SIO Data Model			
	iCLASS: 1.6" (4 cm) MIFARE Classic: 1.2" (3 cm)	iCLASS: 1.6" (4 cm) MIFARE Classic: 1.2" (3 cm)	iCLASS: 2.4" (6 cm) MIFARE Classic: 2.0" (5 cm)	iCLASS: 2.8" (7 cm) MIFARE Classic: 1.6" (4 cm)
	125 kHz Single Technology ID-1 Cards			
HID Prox: 2.8" (7 cm) Indala Prox: 1.6" (4 cm) EM4102 Prox: 4.3" (11 cm)	HID Prox: 2.8" (7 cm) Indala Prox: 1.6" (4 cm) EM4102 Prox: 4.3" (11 cm)	HID Prox: 2.8" (7 cm) Indala Prox: 2.0" (5 cm) EM4102 Prox: 4.3" (11 cm)	HID Prox: 2.8" (7 cm) Indala Prox: 2.0" (5 cm) EM4102 Prox: 3.1" (8 cm)	
125 kHz Single Technology Tags/Fobs				
HID Prox: 1.6" (4 cm) Indala Prox: 0.8" (2 cm) EM4102 Prox: 2.8" (7 cm)	HID Prox: 2.0" (5 cm) Indala Prox: 0.8" (2 cm) EM4102 Prox: 2.8" (7 cm)	HID Prox: 2.0" (5 cm) Indala Prox: 1.2" (3 cm) EM4102 Prox: 2.8" (7 cm)	HID Prox: 1.6" (4 cm) Indala Prox: 1.2" (3 cm) EM4102 Prox: 2.4" (6 cm)	
Mounting	Ideally suited for mullion-mounted door installations or any flat surface		Wall Switch Size; designed to mount and cover single gang switch boxes primarily used in the Americas and includes a slotted mounting plate for European and Asian back box spacing	
Mounting Spacer	To be used when mounting on metallic surfaces, refer to How To Order Guide for part numbers			
Color	Black			
Keypad	No			Yes (4x3)
Dimensions	1.9" x 4.1" x 0.9" 4.8 cm x 10.3 cm x 2.3 cm	1.9" x 6.0" x 0.9" 4.8 cm x 15.3 cm x 2.3 cm	3.3" x 4.8" x 1.0" 8.4 cm x 12.2 cm x 2.4 cm	3.3" x 4.8" x 1.1" 8.5 cm x 12.2 cm x 2.8 cm
Product Weight (Pigtail)	4.0oz (114g)	5.2oz (149g)	7.8oz (222g)	9.1oz (258g)
Product Weight (Terminal Strip)	3.0oz (85g)	4.3oz (124g)	7.6oz (216g)	8.0oz (228g)
Operating Voltage Range	5-16 VDC, Linear supply recommended			
Current Draw - Standard Power Mode³ (mA)	75	75	85	95
Current Draw - Intelligent Power Management (IPM) Mode³ (mA)	40	40	50	70
Peak Current Draw - Standard Power or IPM Mode³ (mA)	200	200	200	200
NSC³ Power Consumption - Standard Power Mode (W @ 16VDC)	1.2	1.2	1.4	1.5
NSC³ Power Consumption - w/ IPM (W @ 16VDC)	0.6	0.6	0.8	1.1
Operating Temperature	-31° to 150° F (-35° to 65° C)			
Storage Temperature	-67° to 185° F (-55° to 85° C)			
Operating Humidity	5% to 95% relative humidity non-condensing			
Environmental Rating	Indoor/Outdoor IP55; IP65 if installed with optional gasket (IP65GSKT)			
Transmit Frequency	13.56 MHz & 125 kHz			
13.56 MHz Card Compatibility	Secure Identity Object™ (SIO*) on iCLASS Seos, iCLASS SE/SR, MIFARE DESFire EV1 and MIFARE Classic (On by Default) - standard iCLASS Access Control Application (order with Standard interpreter) - ISO14443A (MIFARE) CSN, ISO14443B CSN, ISO15693 CSN - MIFARE Classic and MIFARE DESFire EV1 custom data models - FeliCa™ CSN, CEPAS ⁴ CSN or CAN - MIFARE DESFire EV2 via EV1 backward compatibility			
125 kHz Card Compatibility	HID Prox ⁴ , AWID ⁴ , Indala, EM4102 ⁴			
Communications	Optional OSDP with SCP over RS485 ⁴ Wiegand/Clock-and-Data Interface 500ft (150m) (22AWG) - Use Shielded cable for best results			
Panel Connection	Pigtail or Terminal Strip			
Certifications	UL294/cUL (US), FCC Certification (US), IC (Canada), CE (EU), C-tick (Australia, New Zealand), SRRC (China), MIC (Korea) ⁴ , NCC (Taiwan) ⁴ , iDA (Singapore) ⁴ , RoHS			
Crypto Processor Hardware Common Criteria Rating	EAL5+			
Patents	US7180403, US7439862, US7124943, US5952935, US6058481, US6337619			
Housing Material	UL94 Polycarbonate			
Manufactured with % of recycled content (Pigtail)	10.5%	11.0%	10.5%	10.9%
Manufactured with % of recycled content (Terminal Strip)	10.5%	11.0%	11.0%	12.3%
UL Ref Number	RP10E	RP15E	RP40E	RPK40E
Warranty	Limited Lifetime			



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² Measured in accordance with UL294 standards; See Installation Guide for Details.
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⁵ Supported Tags/Fobs - iCLASS, and MIFARE Classic



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 2019-12-17-hid-multi-class-se-readers-ds-en_PLT-00303

DC107

Steel door recessed mount contact

Contacts

The DC107/124/125/887/888 contacts are designed specifically for use in steel doors commonly found in commercial building applications. Many models including, wide gap, CO and biased for high security applications make the series the most widely used and comprehensive line available.

Easy installation

The unique housing design features a rugged unibody construction with flexible ribbed sides for quick, secure installation without gluing. The magnet housing isolates the magnet from the surrounding steel for maximum gap distances, both make and break.



Details

- Special design for steel mounting
- Self-lock mounting
- Comprehensive product range
- Standard 2 m wire length
- Tamper loop provided
- Built-in resistors available to special order

DC107

Steel door recessed mount contact

Technical specifications

General

Application type	Recessed Mount
Contact type	NC
Connectivity	4 wires, 2 m

Wired/wireless

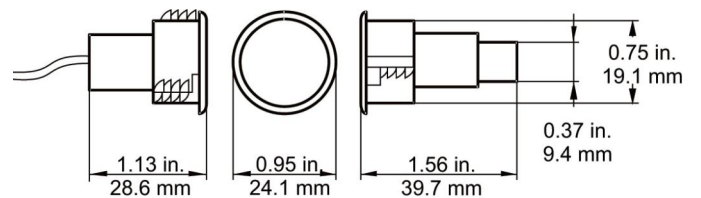
Wired-wireless	Wired
Operating gap	9 mm (max.)

Physical

Dimensions magnet	24 x 40 mm (Ø x H)
Dimensions contact / sensor	24 x 29 mm (Ø x H)
Diameter	19 mm
Borehole diameter	19.1 mm
Colour	White

Regulatory

EN50131 grade	Grade 2
Certification	UL/ULC



As a company of innovation, Carrier Fire & Security reserves the right to change product specifications without notice. For the latest product specifications, visit firesecurityproducts.com online or contact your sales representative.

DC108

Surface, overhead, floor mount contact

Overhead door magnetic contact

The DC108 series overhead door magnetic contact is for use in the rigorous environments of commercial and industrial installations. The floor mount units are constructed with a low profile heavy cast aluminium housing. The reed switch assembly is fully encased in an exclusive polyurethane potting material to prevent damage due to moisture or humidity.

Easy installation

A wide operating gap distance of up to 7.5 cm makes installation easy and helps prevent false alarms caused by door movement or damaged and loose fitting doors.



Details

- Miniature, low-profile design
- Stainless steel armoured cable for added security, reliability
- Wide working gap for overhead doors
- Small size less likely to be damaged by forklifts
- Tamper loop provided

DC108

Surface, overhead, floor mount contact

Technical specifications

General

Application type	Overhead
Contact type	NC
Connectivity	4 wires, 2 m

Wired/wireless

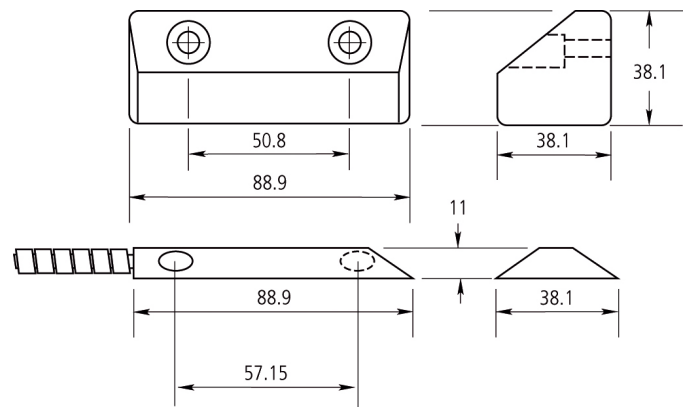
Wired-wireless	Wired
Operating gap	75 mm

Physical

Dimensions magnet	89 x 38 x 38 mm
Dimensions contact / sensor	89 x 38 x 38 mm
Colour	Metallic silver
Material	Aluminium

Regulatory

EN50131 grade	Grade 2
Certification	IMQ, ULC



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DC148

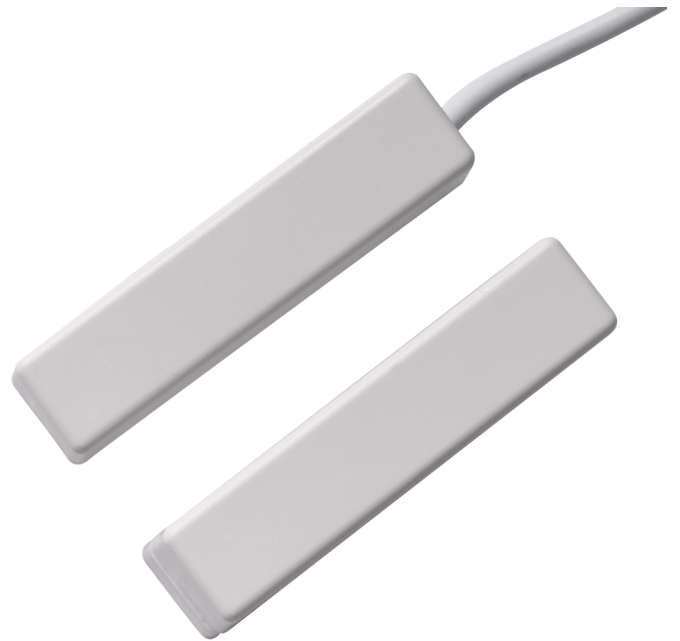
Industrial surface mount contact, high security grade 3, white

Requirements for grade 3 magnetic contacts

The grade 3 magnetic contacts are high security contacts which do meet the following requirements: preciseness of opening distance, magnet polarisation, strength of the magnet.

Model with built in EOL resistors available

Though built in EOL resistors are not mandatory according to EN50131-2.6 requirements, Interlogix offers a model with built in EOL resistors for a quick installation (see how to Order information).



Details

- EN 50131-2-6 Grade 3 and VDS certified
- 2m cable
- Covers to be clipped
- Tamper protected

DC148

Industrial surface mount contact, high security grade 3, white

Technical specifications

General

Application type	Surface mount
Contact type	1 pin NC contact
Connectivity	LIYY 4 x 0.14 mm Cu tin-plated ; Suitable for LSA IDC method of termination

Wired / wireless

Wired-wireless	Wired
Operating gap	non-steel door 19 mm, +/- 4 mm ; steel doors 12 mm, +/- 4 mm

Electrical

Operating voltage	max. 40 V
Voltage	max. 100 VDC
Contact power	max. 6 W or 6 VA
Switching current	max. 500 mA
Contact resistance	max. 0.15 Ohm

Physical

Dimensions magnet	8 x 8 x 40 mm
Dimensions contact / sensor	54 x 13 x 12.5 mm
Colour	White

Environmental

Operating temperature	-25 to 70°C
IP rating	IP67

Regulatory

EN50131 grade	Grade 3
Certification	VdS



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tyco | Software House

iSTAR Ultra G2

Cyber-hardened Access Controller for up to 32 Readers



Key features

- Powerful cyber-hardened network door controller for up to 32 readers
- Trusted Execution Environment (TEE) provides advanced hardware-based cybersecurity protection
- Hardened Linux embedded OS for improved security and scalability
- Power over Ethernet (PoE) module features PoE+ to power the GCM
- Up to 1M cardholders in local memory
- Dual GigE network ports with IPv6, DHCP and 802.1X support
- Embedded lock power management lowers installation costs
- Advanced controller-to-controller communications for cluster-based antipassback and I/O logic
- Onboard 256-bit AES network encryption
- Supports OSDP Secure Channel for encrypted reader communications
- Supports Embedded High Assurance FICAM operation without third-party hardware

iSTAR Ultra G2 is a powerful, cyber-hardened and network door controller that supports up to 32 readers. Built using a Trusted Execution Environment (TEE) with advanced network security features, iSTAR Ultra G2 answers the most demanding access control requirements of enterprise and government applications. Rack mount and wall-mount options provide installation flexibility, while iSTAR Ultra G2's unique lock power management eliminates the need for separate lock power interface boards. iSTAR Ultra G2 features a hardened Linux kernel for its operating system, improving the security and scalability of the system.

Supports up to 32 Readers

iSTAR Ultra G2 uniquely combines support for traditional hard-wired access control doors with support for wireless lock sets, all in the same controller. Up to 32 readers are supported by the iSTAR Ultra G2, which can be comprised of readers from Access Control Modules (ACMs), IP-ACM Ethernet door modules, and/or wireless locksets. iSTAR Ultra G2 is ideal for areas that require many readers in close proximity to the panel. For more distributed installations, iSTAR Ultra G2 includes up to 32 RS-485 ports, allowing the installer to run longer distances to each door. iSTAR Ultra G2 uses a General Controller Module (GCM) which includes standard 2GB RAM and 16GB memory and has two onboard gigabit network ports for reliable network communications. The GCM controls up to four ACMs, with each ACM supporting up to eight Wiegand, RM or OSDP readers, 24 supervised inputs, and 16 outputs which can be individually wet- or dry-configured.

iSTAR Ultra G2 also includes an alphanumeric LCD to provide status and troubleshooting information. Database backups and all buffered transactions are stored to non-volatile memory. A rechargeable clock battery keeps the clock powered during a power failure.

Advanced Cybersecurity using TEE

iSTAR Ultra G2 utilizes a hardware-based Trusted Execution Environment (TEE), a secure, isolated environment within its CPU that runs in parallel to the main Linux operating system. TEE guarantees confidentiality and integrity of code and data loaded by using hardware and software as protection mechanisms. TEE provides reliable storage of keys and other cryptographic materials and manages a secure boot process to guarantee authenticated sources for hardware and software.

Advanced Network Security

iSTAR Ultra G2 features dual GigE Ethernet LAN ports, providing primary and secondary communications to C-CURE 9000. iSTAR Ultra G2 supports static and dynamic IP addresses and IPv4 and IPv6 protocols, supporting DHCP, DNS, SNMP, and 802-1X port authentication protocol, for added security and to simplify network installation. Potential network threats are further reduced with embedded denial-of-service protection, 256-bit FIPS 197 AES network encryption, and unique controller-based TLS 1.3 certificates for network authentication.

In addition, an embedded web page features unique password management and TLS 1.3 authentication reducing startup time by allowing you to view online controllers, change configuration parameters, and download new firmware from a single interface. The web page feature is managed centrally by C-CURE 9000 and can be disabled if desired.

Features

Embedded Lock Power Management

The iSTAR Ultra G2's ACM offers a unique, straightforward approach to managing the complete lock power needs of an installation. The ACM is designed to distribute power directly to each lock circuit without needing a separate fused distribution board (and the associated interconnect wiring). Each ACM has two separate lock power feeds in addition to controller power. These feeds can be used for different voltages (12 V and 24 V for example) or for battery-backed and non-battery-backed

power sources to comply with certain local life safety codes. Each lock output can then be selected to use either a dry contact, lock power 1, or lock power 2, providing tremendous flexibility. In addition, each lock circuit is protected with a PTC resettable fuse and over-voltage surge protection through the extensive use of transzorb and includes a socketed relay for quick field replacement. Each lock circuit can be individually selected to unlock, or lock based on the dedicated fire alarm input setting, meeting life safety requirements.

Ensure Reliable Communication with Clusters

iSTAR Ultra G2 supports peer-to-peer communications across clusters, meaning that the controllers communicate with one another with limited host intervention. Clusters are user-defined groups of up to 16 controllers and can be created to enhance scalability for C-CURE 9000 and security by separating a widely dispersed facility into different controlled areas. For example, events linking inputs on one controller to outputs on another controller will still be active without the host, as will any anti-passback rules that are set up within the cluster.

Local and Global Anti-Passback Provides Effective System-Wide Security

Anti-passback prevents cardholders from passing their credentials back to others in order to gain access to secured areas. Global anti-passback is critical for ensuring uncompromised security on a large scale. Building upon cluster based anti-passback as described above, the controllers are able to send an anti-passback violation notice to the C-CURE server. Tailgating, or following another cardholder into a secured area without presenting a separate badge, can easily be flagged within the C-CURE monitoring station.

Rack-Mount Flexibility

iSTAR Ultra G2 is available in a modular rack-mount configuration, reducing the space requirements and costs associated with installing a panel on the wall. Separate GCM and ACM modules can be arranged in the rack to optimize your server room installation. For example, the GCM can be mounted in the front of a four-post rack, while the ACM and field wiring can be located in the rear of the rack. Field wiring on the ACM is easily routed through the top and/or bottom of the enclosure, with the ACM board mounted front and center for convenient servicing.

Keypad Commands Provide the Ultimate in Control

iSTAR Ultra G2 supports custom keypad commands which provide a powerful way to easily activate events in C•CURE 9000. These commands include anything from triggering a duress call and sounding an alarm, to locking and unlocking doors directly from a keypad reader or dedicated touchscreen keypad. Commands can be configured to require a card presentation and/or a card and PIN to validate the command. Keypad commands can also be used to arm and disarm intrusion zones.

Improves Life Safety

A dedicated input for a fire alarm tie-in automatically locks or unlocks selected door lock outputs in the event of a fire condition. The fire input may be unsupervised or supervised, and the release circuit does not require software programming for operation. In addition, a second input for a manual keyswitch is provided, such that the door lock outputs will not re-lock unless authorized safety personnel confirm the safety of the building via the keyswitch. The keyswitch functionality is enabled via an onboard DIP switch.

Extended Card Formats Enhance Security

iSTAR Ultra G2 supports extended card formats of up to 256 bits, providing the utmost in flexibility when configuring custom card formats. iSTAR Ultra G2 supports the full 200-bit FASC-N format for compliance with the U.S. Government's FIPS 201 initiative, as well as the 128-bit GUID format for PIV-I credentials. These extended cardholder formats are stored locally in iSTAR allowing the controller to make the access decision even when it is offline from the host. Each format supports multiple data fields such as card number, facility code, agency code, system code, plus up to four custom card integer fields. Longer card numbers and formats offer greater protection against card duplication and are especially valuable to customers who require card numbers that exceed 10 digits.

Cardholder Flexibility

Used with C•CURE 9000, iSTAR Ultra G2 allows administrators to assign up to five active cards per cardholder record rather than having to create a separate record for each card. This simplifies the management and maintenance of personnel records. For additional flexibility, iSTAR Ultra G2 can support up to 128 card formats system-wide and ten card formats per reader, including smart cards. This expanded ability to use multiple card types (such as 26-bit, 37-bit, or Corporate 1000) at a single reader frees customers from having to consolidate or re-issue new cards.

Built-in Diagnostics to Easily Test and Troubleshoot

iSTAR Ultra G2 includes both built-in web diagnostics pages and a local LCD to test and troubleshoot inputs, outputs, reader ports, and last card read. In addition, via the network, you can retrieve real-time status and diagnostics of:

- controller diagnostics
- controller time/boot time
- total/available memory
- connection status
- firmware and OS versions
- hardware (MAC) and IP addresses
- downloaded clearances and cardholders

Fully Integrated and Managed Lock Solution

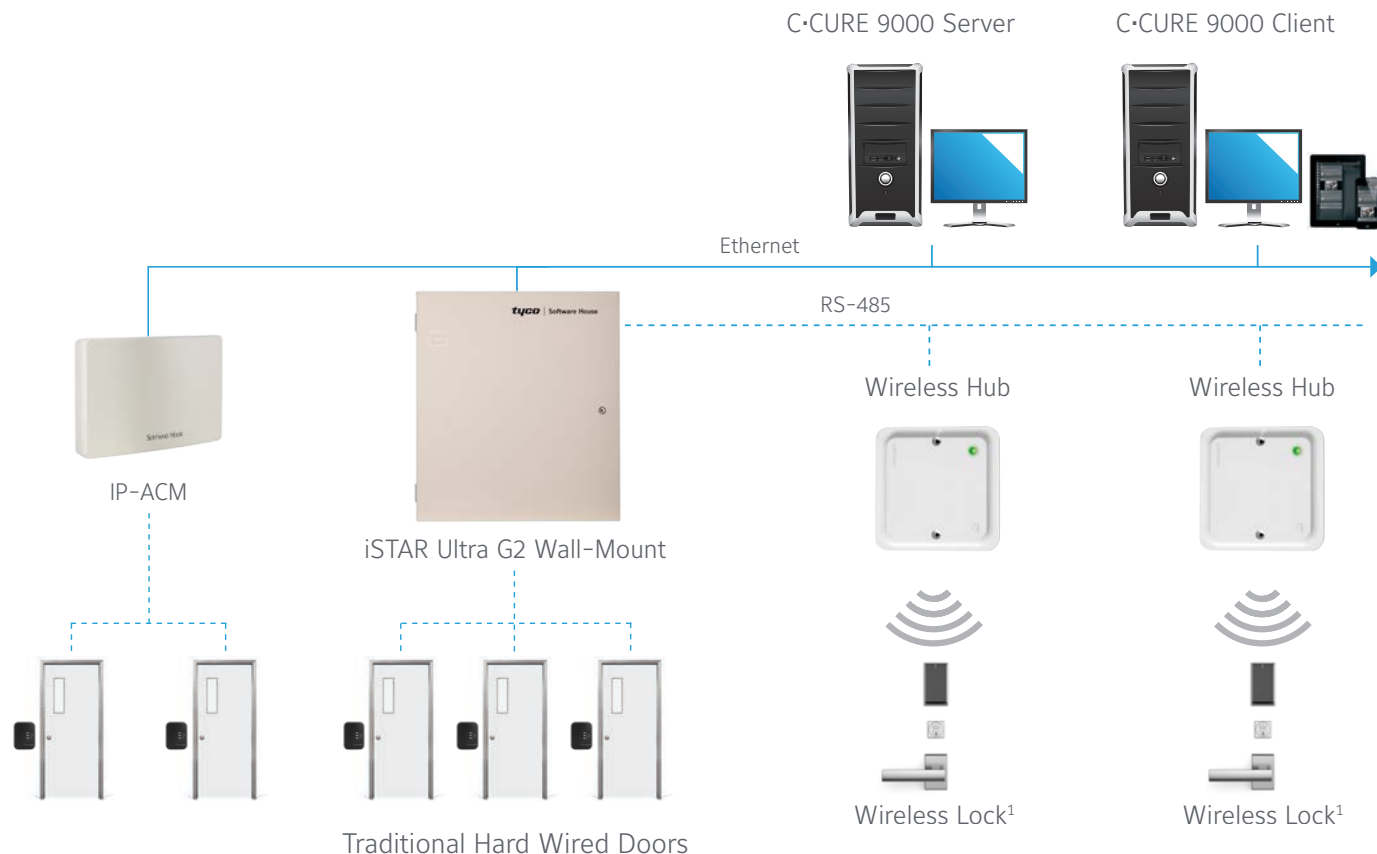
Utilizing iSTAR Ultra G2, wireless locks from ASSA ABLOY or Schlage communicate with C•CURE 9000, providing a fully integrated and managed lock solution. Up to 32 ASSA ABLOY Aperio or Schlage AD300, AD400, NDE and LE locksets can be managed by a single iSTAR Ultra G2. In addition to traditional locksets, the ASSA ABLOY Aperio line also includes cabinet and data center locks, allowing you to extend the breadth of your access control system to non-traditional openings. Each lockset communicates using AES 128-bit encrypted wireless technology to the wireless hub, which is then connected to the iSTAR Ultra G2 with a simple RS-485 communications bus. Each hub can accommodate up to eight Aperio wireless locks or 16 Schlage wireless locks. All activity and alarms from each wireless device are sent to the iSTAR Ultra G2 and then up to the C•CURE 9000 in real time, guaranteeing a high level of control and visibility of door actions. Besides standard card access transactions, each device also communicates low battery, tamper, and communications status to the system.

Embedded Support for FICAM High Assurance

Used with the Innometriks suite of High Assurance ID Management software, iSTAR Ultra G2 supports PKI-based authentication at the door, including CAK and PAK, card plus PIN, and biometric match in panel. Unique cardholder PKI information and biometric templates are stored and authenticated directly in the iSTAR Ultra G2, on the secure side of the door, for reliable stand-alone operation. High Assurance PKI-based authentication is required to comply with the U.S. Government's FICAM standards and is ideal for commercial and non-government customers as well.

System diagram

iSTAR Ultra G2 and Wireless Lock System Layout



¹ ASSA ABLOY Aperio or Schlage AD300/AD400/NDE/LE but not both. Schlage locks are sold in North America only. Up to 32 wireless locks max per iSTAR Ultra G2; 16 max on each of two RS485 ports.

Specifications

C-CURE 9000 Software Compatibility	
C-CURE 9000 v2.90 SP2 and above (full feature set)	
C-CURE 9000 v2.70 and v2.80 (reduced feature set)	
Physical	
Dimensions (H x W x D)	
Wall-Mount (supports a GCM and up to two ACMs)	635 x 560 x 127 mm (25.0 x 22.0 x 5.0 in)
Rack Mount GCM	86 x 445 x 269 mm (3.4 x 17.5 x 10.6 in) (2U rack height)
Rack-Mount ACM	175 x 445 x 125 mm (6.9 x 17.5 x 4.9 in) (4U rack height)
GCM Board	155 x 266 x 27 mm (6.1 x 10.5 x 1.06 in)
ACM Board	114 x 427 x 36 mm (4.5 x 16.8 x 1.4 in)
Weight	
Wall-Mount	12.3 kg (27 lbs)
Rack Mount GCM	4.3 kg (9.5 lbs)
Rack-Mount ACM	4.1 kg (9.0 lbs)
Enclosure Material	Wall Mount: 18-gauge galvanized steel, with tamper switch Rack Mounts: GCM: 16-gauge galvanized steel, with tamper switch ACM: 18-gauge galvanized steel, with tamper switch
Environmental	
Operating Temperature	0-50°C (32-122°F)
Operating Relative Humidity	5-95% RH non-condensing
Storage Temperature	-20-60°C (-4-140°F)
Electrical	
Power Requirements, GCM	12/24 VDC +/- 20%, 0.5 A plus up to 1.5 A per RS-485 port
Power Requirements, Each ACM	12V +/- 20%, 12A max or 24V +/- 20%, 3.5A If powering VREADER with 24V, the budget for 12V that powers readers and auxiliary devices is 5A max.
Heat Dissipation	GCM: 61 BTU/hr, each ACM: 20.5 BTU/hr

Electrical (Continued)	
Memory and RTC Backup	Rechargeable lithium battery provides RTC backup; database and buffered transactions stored in non-volatile memory
Electrical - Optional PoE+ and PoE++ Modules	
Standards Supported	PoE (802.3af), 12.95 W max; PoE+ (802.3at), 25.5 W max. PoE++ (802.3bt), 62 W max. ³
Power Available for Attached Devices	PoE: 24V @ 540mA PoE+: 24V @ 1.06A PoE++: 24V @ 2.58A ³
Network Port for PoE	Port 1
System and Network	
CPU	NXP i.MX7 1.2 GHz dual core ARM Cortex-A7+, Cortex-M4
Operating System	Hardened Linux kernel, Yocto project
System Memory	2 GB RAM
Non-volatile Storage	16 GB multi mode eMMC
Network	Dual GigE LAN ports
Network Encryption	AES 256-bit
Network Authentication	TLS 1.3 using AES256 symmetric encryption, unique certificates
Port Authentication	802.1X port authentication protocol
Indicators and Switches	LCD for diagnostics, LEDs for power, LAN activity, serial port activity, output status, encryption-enable switch
Memory Capacity ³	
Five clearances, one card/person, 20-digit card	1,000,000 cardholders
Inputs/Outputs, GCM	
Dedicated Inputs	Cabinet tamper, AC fail, low battery
Distance, GCM to ACM	Up to 1.83 m (6 ft)
Number of ACMs supported per GCM	4 (C-CURE 9000 v2.90 SP2 and higher)

² Memory allocation is dynamic and shared between cardholders, event storage, and configuration information.

³ PoE++ coming soon. Contact your local Area Sales Manager for details.

Specifications per ACM Board⁴

Readers	
Number of Readers Supported, per ACM Board	8
Types of Readers Supported	OSDP v2 encrypted (RS-485), Wiegand and RM (RS-485), TST-100 in Smart Mode
Reader Technologies Supported	Multi-Technology, Proximity, Smart Card (incl. PIV II & TWIC), Wiegand, and Magnetic Stripe (RM only)
Maximum Distance to Door	RM and OSDP: 1,219 m (4,000 ft) Wiegand: 150 m (500 ft)
Reader Power Available (dependent on power supply)	12 VDC, 1.5 A max per reader (including aux power and RM port power)
Reader Power Status Indication	On/off indication per port, through C-CURE 9000
OSDP and RM Bus Communications	Eight RS-485 ports, four full duplex and four half duplex
OSDP Support	Secure Channel encryption, AES128
Maximum Readers per RS-485 Port	8, either OSDP or RM. (You cannot mix OSDP and RM on the same port.)
Maximum Readers per RS-485 Port, in High Assurance Mode	2
Inputs	
Number of General Purpose Inputs per ACM	24, configurable supervision per input
Additional Dedicated Inputs	Cabinet tamper, fire alarm interlock, fire alarm keyswitch override (supervision supported)
Input Expansion	Up to 128 additional inputs using I8 modules on RM bus

⁴ iSTAR Ultra G2 supports up to 4 ACMs and up to 32 readers. Reader total is the combined count from ACMs, IP-ACMs and wireless locksets.

Outputs	
Number of Relay Outputs per ACM	16 (eight for locking devices, eight for local annunciation)
Output Power Feeds	Two per ACM (L1 and L2), 12V -20% to 24V +20%, 12A max. Voltage value of each feed displayed through C-CURE 9000
Output Power Selection	Individually configurable via jumper as power sourcing (wet, L1 or L2), or dry contact relay
Output Power (Wet)	Up to 0.75 A per lock. Voltage follows selection of power feed (L1 or L2)
Primary Lock Relay Rating, Dry Contact	30 VAC/DC, 5 A max
Secondary Lock Relay Rating, Dry Contact	30 VAC/DC, 1 A max
Output Protection	Individual PTC resettable fuse, snubber, transzorb, reverse polarity protection (primary lock outputs use socketed relays)
Output Expansion	Up to 128 additional relay outputs using R8 modules on RM bus
Regulatory	
Access Control	UL 294, CSA C22.2 No. 205 (Canada)
Burglar Alarm	UL 1076, ULc 1076 (Canada)
CE	EN 55022 (EMI), EN 55024 (EMC), EN 62368 (Safety)
Safety	IEC 62368
EMI	FCC Part 15 Class A, EN 55022, ICES-003 (Canada), VCCI Class A ITE (Japan), C-Tick (AS/NZS CISPR 22 - Australia/New Zealand)
EMC	EN 55024, EN 50130-4, IEC 62599-2, EN 61000-6-1
Encryption	AES256
Seismic Certification	OSHPD Certification File # OSP-0425-10

Wireless Lockset Support⁵

Wireless Lockset	
Technologies Supported	ASSA ABLOY Aperio, Schlage AD300 and AD400, WA Series, Schlage NDE/LE ⁶
GCM RS485 Ports Available to Connect Wireless Hubs	2
Max # of Locksets per RS485 Port	16
Max # of Locksets per Wireless Hub	8 (Aperio), 16 (Schlage)
Max # of Wireless Hubs per RS485 Port	15 (Aperio), 16 (Schlage)

⁵ iSTAR Ultra supports 32 readers (ACM and/or wireless); ASS ABLOY Aperio and Schlage locksets cannot be mixed on the same iSTAR Ultra G2 controller.

⁶ Up to four ACM boards per iSTAR Ultra. Note that ACMs are not required if only using wireless locks and/or IP-ACMs

Ordering information

Model number	Description
GSTAR008	iSTAR Ultra G2, 8 readers with enclosure, no PSU
GSTAR016	iSTAR Ultra G2, 16 readers with enclosure, no PSU
GSTAR-GCM-2U	iSTAR Ultra G2 GCM in 2U rack enclosure
GSTAR-ACM-4U	iSTAR Ultra G2 ACM in 4U rack enclosure
GSTAR-GCM	iSTAR Ultra G2 GCM board
GSTAR-ACM	iSTAR Ultra G2 ACM board, 8 readers

About Johnson Controls

Johnson Controls is a global diversified technology and multi-industrial leader serving a wide range of customers in more than 150 countries. Our 120,000 employees create intelligent buildings, efficient energy solutions, integrated infrastructure and next generation transportation systems that work seamlessly together to deliver on the promise of smart cities and communities. Our commitment to sustainability dates back to our roots in 1885, with the invention of the first electric room thermostat.

For additional information, please visit www.swhouse.com or follow **Software House** on LinkedIn, Twitter, and Facebook.

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SH1322-DS-202109-R01-HS-EN

C•CURE 9000 v3.0

Security and event management system



Key features

- OSDP support for reader to panel communications on iSTAR Ultra Series controllers
- Supports up to 5,000 readers per single server and 60 satellite application server scalability for Enterprise systems
- Enterprise system remains operational throughout upgrade process with multi-version software support
- Access to C•CURE 9000 from any internet browser with C•CURE Web-based Client
- Administer and monitor C•CURE 9000 from your mobile device with C•CURE Go
- Software House Connected Partner Program for standards-based integrations
- Part of the Cyber Protection Program to reduce the risk of vulnerabilities

*See back page for new features

Powerful and flexible security management

The Software House C•CURE 9000 is one of the industry's most powerful and flexible security management systems. Monitor events, manage personnel, create reports, display dynamic views, monitor system activity, view video, and manage visitors anywhere in the world directly from your PC using the full C•CURE client, the Web-based client or on the move with C•CURE Go mobile app.

Information and event management at its best

Describing C•CURE 9000 as an access control system is an enormous understatement. The way you are able to manage credentials and privileges is what sets C•CURE 9000 apart.

- Area Control and Occupancy Management allow you to enforce global anti-passback, define occupancy restrictions, and lock down procedures in sensitive or classified areas
- Intrusion Zones and Keypad Commands provide additional verification requirements and duress triggers
- Dynamic Views and Editable Maps serve up critical information in a customizable way, all while allowing you to find, manage, and acknowledge significant incidents on user-defined floor plans
- Visitor Management portal gives you control of creating and managing visitor appointments

- Access Management offers a 24/7 solution for managing cardholder access requests without requiring direct involvement from the security team
- Intuitive Badging and Smart Card Enrolment
- Unified Access Control and Video Experience

As an option, you can take a holistic video approach of managing access control, video, and intrusion with a deeply embedded victor unifying client. This flexibility, coupled with the system's powerful distributed architecture, makes C•CURE 9000 the leader in providing solutions to some of the most complex security challenges in mid to large enterprise applications.

Mastering scalability

C•CURE 9000 provides the ultimate in scalability from a single server supporting up to 5,000 readers and 500,000 credentials to an advanced distributed enterprise architecture that supports a master and up to 60 satellite application servers. Whether your organization consists of one facility with a few doors or many that span the globe, this solution scales as your company grows.

Industry's most robust integrations

C•CURE 9000 brings you a myriad of integrated solutions including video, intrusion, intercom, fire alarm management, PSIM, and more. The integrations are thoroughly tested and delivered to you through the intuitive C•CURE 9000 interface.

Enterprise architecture

The C•CURE 9000 Enterprise architecture supports one master application server (MAS) and up to 60 satellite application servers (SAS) for enterprise scalability up to 200,000 readers and 500,000 credentials operated under one system for management, monitoring, and reporting.

Corporate security personnel and IT managers receive central control over the entire system, while each local facility maintains control of its individual operation. Each SAS may be positioned close to its relevant field hardware – this reduces traffic to the MAS and optimizes performance. Each facility maintains a local SQL database which is synchronized with the MAS for global control and reporting. The MAS distributes these changes globally from each independent SAS, which ensures all servers are equipped and operating with up-to-date information.

By connecting an SAS to the LAN with local access control hardware, alarm monitoring, and badging workstations, local performance is optimized versus the latency you may experience from the WAN. Local performance is further optimized since the MAS performs all global reporting across all SASs, thus allowing each SAS to allocate its resources solely to important access control functions.

Independent control

Each SAS communicates directly with the MAS but is not dependent on the MAS for access control. Each satellite system administrator has total control over all access control field hardware and system information related to their respective location. This gives regional system administrators autonomous control over their individual regions independent of the MAS and corporate WAN.

Central alarm monitoring and management

C•CURE 9000 Enterprise allows you to simultaneously monitor alarms from multiple locations at one convenient workstation. Viewing all data across all SASs gives you a full view of your entire operation. Monitoring of alarms from multiple sites means operators may rotate the responsibility whether from different buildings at a campus to different locations across the globe.

Global reporting

With C•CURE 9000 Enterprise's global reporting functionality, you can retrieve personnel, configuration, hardware, journal, audit, and more data from all facilities within the organization. This saves valuable time searching for data and compiling critical reports since all global information is replicated on the MAS.

Open integration platform to 30+ video partner technologies

Real-time monitoring capability is a response to the growing importance of video in access control systems. C•CURE 9000 integrates with a robust portfolio of more than 30 third-party video management systems including Johnson Controls' very own Exacq video management systems and American Dynamics DVRs/NVRs (VideoEdge, HDVR, Intellex). The integration with these video platforms provides real-time video monitoring and video playback as well as powerful video analytics such as motion detection, abandoned/removed, object detection, crowd formation, dwell, linger, direction, enter/exit area, color, and more.

All Johnson Controls video platform integrations are, by default, available with C•CURE 9000. Supported third-party video integrations with C•CURE 9000 may require additional optional licenses.



C•CURE 9000 standalone and Enterprise system capacities

C•CURE 9000 MAS values (Default/Maximum) ¹							
	MAS1	MAS2	MAS3	MAS4	MAS5	MAS6	MAS7
Enabled Global Personnel Records ²	1k	10k	25k	100k	250k	500k	1000k
Simultaneous Clients ³	5/100	5/100	5/100	10/100	10/100	10/100	15/100
Badging Clients	1/100	1/100	1/100	2/100	2/100	2/100	3/100

C•CURE 9000 Standalone and SAS values (Default/Maximum) ¹										
	L ⁵	M ⁵	N ⁵	P ⁵	Q ⁶	R ⁶	R Plus ⁶	S ⁶	S Plus ⁶	T ⁶
Online Readers	16	32	64	128	256	512	1,000	2,500	3,500	5,000
C•CURE Go Reader (Mobile)	0/10	0/10	0/10	0/100	0/100	0/100	0/100	0/100	0/100	0/100
Online Inputs	1k	1k	1k	5k/10k	5k/10k	5k/10k	7.5k/10k	10k	15k	20k
Online Outputs	1k	1k	1k	5k/10k	5k/10k	5k/10k	7.5k/10k	10k	15k	20k
Enabled Local Personnel Records	7k	12k	40k	45k	250k	250k	500k	750k	750k	1000k
Concurrent Clients ³	10/30	10/30	10/30	20/256	30/256	40/256	80/256	100/256	100/256	100/256
Concurrent Badging Clients	1/30	1/30	1/30	2/256	2/256	3/256	5/256	10/256	10/256	10/256

¹Default is the value included with each license model. Maximum is the value that can be purchased and added to a system license up to that amount.

²Global personnel records at the MAS are synchronized to each SAS in an Enterprise system, but do not count against a SAS's local personnel record count.

³Simultaneous client or Concurrent client connections are tabulated by C•CURE 9000 Administration, Alarm Monitoring and Web-based Client connections. C•CURE 9000 is designed to be flexible and allow for expansion. The 256 is a design capability while the tested limit is 100. System performance will vary depending upon specific hardware configuration including number of communication lines/ports, download/upload frequency, etc.

⁵The baseline capabilities of the system are within the envelope of operation for utilization of SQL Express.

⁶(SQL and SQL Express): An SQL Express license is shipped with every system software DVD package. Series Q through T require a full SQL Server Standard or Enterprise (64-bit) license which may be purchased separately.

Specifications

C•CURE 9000 Client Workstation	
Recommended hardware and software	
Processor	Intel Core i5 Current Generation (3.2 GHz or greater)
Hard Disk Drive	500 GB or greater. SSD is recommended.
Drive Speed	7,200 RPM or greater
Memory	8GB or greater
Network Adapter Card	Integrated Gigabit Network Port
DVD Drive	Recommended
Client Video Card	2GB NVIDIA Quadro K620
Operating System Support	Windows 10 Professional & Enterprise (version 1809 or higher) (64-bit) Windows 11 Professional & Enterprise (minimum version 21H2) Windows Server 2016 SP1 and higher (64-bit) Windows Server 2019 (64-bit) Windows Server 2022 (minimum version 21H2)

C•CURE 9000 Standalone server series L, M, N, P

Recommended hardware and software

Processor	Intel Core i7 Current Generation (3.4 GHz or greater)
Hard Disk Drives	Dual drives: primary drive = 1TB or greater (9000 Runtime); secondary drive = 1TB or greater (data backups). SSD is recommended.
Drive Speed	7,200 RPM or greater
Memory	16GB or greater
Network Adapter Card	Integrated Gigabit Network Port
DVD Drive	Recommended
Video Card	Integrated Video Subsystem (dedicated video accelerator recommended when used as a client workstation)
Database Support (English Only)	SQL Server 2014 (SP3 or later) Express (64-bit) SQL Server 2016 Express/Standard/Enterprise SP1 and higher (64-bit) SQL Server 2017 Express (64-bit) SQL Server 2019 Express/Standard/Enterprise (64-bit)
Operating System Support	Windows 10 Professional & Enterprise (version 1809 or higher) (64-bit) Windows 11 Professional & Enterprise (minimum version 21H2) Windows Server 2016 SP1 and higher (64-bit) Windows Server 2019 (64-bit) Windows Server 2022 (minimum version 21H2)
Web Server	IIS v8.0 or higher for C•CURE Web, C•CURE Go and victor Web Service

Note: IIS v8.0 is required to install C•CURE Web on the same machine as C•CURE Go or victor Web Service.

C•CURE 9000 Standalone server series Q, R, R+, S, S+, T SAS server series L, M, N, P

Recommended hardware and software

Processor	Intel Xeon Quad-core E3 Current Generation (3.5 GHz or greater)
Hard Disk Drives	Dual drives: primary drive = 1TB or greater (9000 Runtime); secondary drive = 1TB or greater (data backups). SSD is recommended.
Drive Speed	15,000 RPM or greater
Memory	32GB or greater
Network Adapter Card	Intel Gigabit ET Quad Port Adapter, Gigabit Ethernet NIC, PCIe x4
DVD Drive	Recommended
Video Card	Integrated video subsystem (dedicated video accelerator recommended when used as a client workstation)
Database Support (English Only)	SQL Server 2016 Standard & Enterprise SP1 and higher (64-bit) SQL Server 2019 Standard & Enterprise (64-bit)
Operating System Support	Windows 10 Professional & Enterprise (version 1809 or higher) (64-bit) Windows 11 Professional & Enterprise (minimum version 21H2) Windows Server 2016 SP1 and higher (64-bit) Windows Server 2019 (64-bit) Windows Server 2022 (minimum version 21H2)
Web Server	IIS v8.0 or higher for C•CURE Web, C•CURE Go and victor Web Service

Note: IIS v8.0 is required to install C•CURE Web on the same machine as C•CURE Go or victor Web Service.

C•CURE 9000 SAS server series Q, R, R+, S, S+, T MAS server

Recommended hardware and software

Processor	Intel Xeon Gold Current Generation, 8 core (3.0 GHz or greater)
Hard Disk Drives	Dual drives: primary drive = 1TB or greater (9000 Runtime); secondary drive = 1TB or greater (data backups). SSD is recommended.
Drive Speed	15,000 RPM or greater
Memory	32GB Minimum
Network Adapter Card	Intel Gigabit ET Quad Port Adapter, Gigabit Ethernet NIC, PCIe x4
DVD Drive	Recommended
Video Card	Integrated Video Subsystem ⁷
Database Support (English Only)	SQL Server 2016 Standard/Enterprise SP1 and higher (64-bit) SQL Server 2019 Standard & Enterprise (64-bit)
Operating System Support	Windows Server 2016 SP1 and higher (64-bit) Windows Server 2019 (64-bit) Windows Server 2022 (minimum version 21H2)
Web Server	IIS v8.0 or higher for C•CURE Web, C•CURE Go and victor Web Service
Maximum Concurrent SAS per MAS	60
Authentication	Basic authentication with windows logon or enhanced authentication options OAuth2/SAML
Supported Languages ⁸	Arabic, Brazilian Portuguese, Czech, Danish, Dutch, English, French, German, Greek, Hungarian, Italian, Japanese, Korean, Polish, Russian, Simplified Chinese, Spanish, Swedish, Traditional Chinese, and Turkish
Regulatory	UL 1076, cUL 1076, UL 2610, cUL 2610, IEC 60839-11-1 Grade 4

⁷For multiple screen display or other display applications, additional video cards required.

⁸Languages supported with English OS with language pack, not native OS.

Note: C•CURE 9000 has limited performance and support on 32-bit OS platforms (with 4GB memory limitation) with a minimum requirement of 4GB memory. For latest supported Service Pack for OS/DB, please consult the C•CURE 9000 version specific release notes. SQL Server 2019 Express will be the default install for C•CURE 9000 v3.0. All SQL Server compatibility needs to be verified with TDE (Transparent Data Encryption) mode.

New features in C•CURE 9000 v3.0

Support for iSTAR Ultra G2 and iSTAR Ultra G2 SE door controllers with advanced embedded cybersecurity
C•CURE Web-based Client - Dynamic Access and Video Monitoring Views and Layouts, Swipe & Show, Health Dashboard, etc. (Phase III)
C•CURE ID HID SEOS and MIFARE DESFire EV1/EV2 support, for card encoding of multiple applications simultaneously (up to 5)
C•CURE Portal moved to the latest Angular web framework, meeting latest in cyber security
Email template customization for C•CURE Visitor Management and Access Management Workflow
As an option, C•CURE 9000 version 3.0 and later supports SQL database hosted by Amazon Relational Database Services (RDS) TM powered by Amazon Web Services (AWS) TM
CCURE 9000 v3.00.1
C•CURE IQ web enhancements including: Video Smart Streaming and Bandwidth Management, Video Scrub Bar, Advanced Video Analytic Search, Clip Export, Activity Viewer, Recorder Management and Video Tour Editor
OAuth2/SAML v2.0 to enable single-sign-on (SSO) and two-factor authentication (2FA)

About Johnson Controls

At Johnson Controls (NYSE:JCI) we transform the environments where people live, work, learn and play. As the global leader in smart, healthy and sustainable buildings, our mission is to reimagine the performance of buildings to serve people, places and the planet. With a history of more than 135 years of innovation, Johnson Controls delivers the blueprint of the future for industries such as healthcare, schools, data centers, airports, stadiums, manufacturing and beyond through its comprehensive digital offering OpenBlue. With a global team of 100,000 experts in more than 150 countries, Johnson Controls offers the world's largest portfolio of building technology, software as well as service solutions with some of the most trusted names in the industry.

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SH0241-DS-202301-R02-HS-EN

ASSA ABLOY IP-enabled Locks Integrated with C•CURE 9000

ASSA ABLOY IP Locks combine all of the familiar alarm components found on C•CURE 9000 including: forced door, door propped, door secure, invalid access, valid access, request exit held and low battery. Monitoring a door, deadbolt and lock synchronization status has never been easier.

ASSA ABLOY IP locks integrate with C•CURE 9000 V2.70 and higher, with a dedicated DSR (Door Service Router) V8.0 running on a server provided by others. The DSR server can either be a hardware server or virtual server. The Integration supports 10 DSRs with a max of 2,048 locks per DSR, with a maximum of 5,000 locks per C•CURE 9000 access control server. Also, PIV card support is now included in the ASSA ABLOY integration, for FASC-N reads.

Licensing

To enable the integration for your C•CURE 9000 V2.70 and higher system you must:

1. Purchase the ASSA ABLOY Integration option for C•CURE 9000 (part number CC9000-ASSAABLOY)
2. Purchase the required quantity of lock licenses, to apply to your C•CURE 9000 license. Lock licenses are free of charge if the lock hardware is purchased through Software House (if locks are purchased elsewhere, a fee applies)

Note that the "old" method of registering ASSA locksets is not required anymore—simply apply a new C•CURE license with the correct Wireless/IP Locks count to your system. **Also note that systems upgrading from DSR 5 will need to request a new C•CURE license with the correct amount of Wireless/IP Locks included.** Contact ccurelicense@tycoint.com and include the system serial number and number of Wireless/IP locks required.

Features That Make A Difference

- Save time with automatic discovery of locks and automatic configuration of door objects
- Captures – lock type, serial number, firmware version, access point type, and last contact date and time
- Automatically import and customize reader names through C•CURE
- Monitor battery level and status via C•CURE battery icon
- Configure audible and visible lock indications through C•CURE
- Quickly use C•CURE's dynamic view to modify lock parameters on the fly
- Provides journaling of lock activity and history
- Locksets read iCLASS Access Data instead of card serial number
- Access control decisions are made by the lockset

ASSA ABLOY brands supported

i-Fi

- SARGENT Profile Series v.S2
- SARGENT Passport 1000 P2
- Corbin Russwin Access 700® PW11
- Corbin Russwin Access 800® WI1
- SARGENT, Corbin Russwin IN120

Po

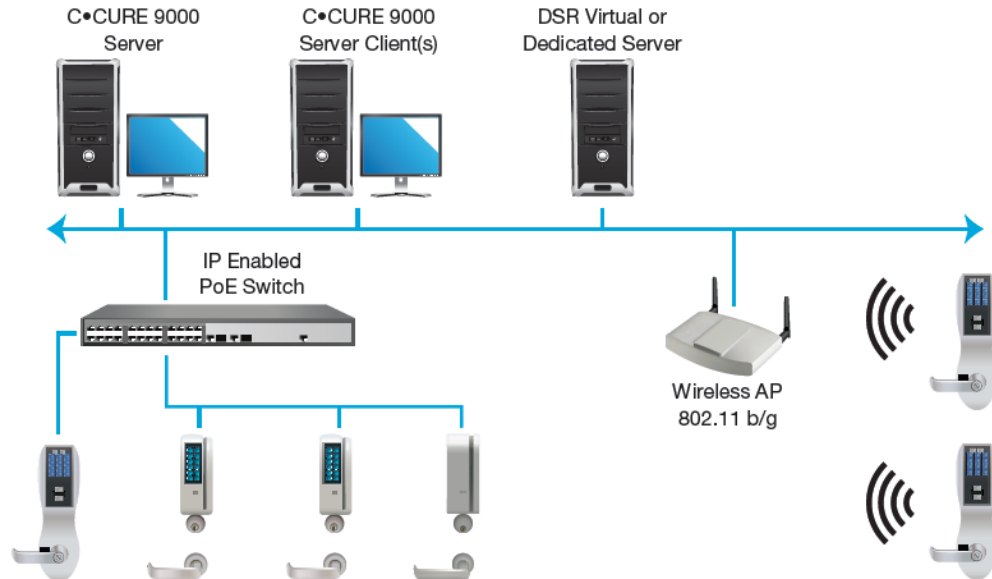
- SARGENT Profile Series v.S1
- SARGENT Passport 1000 P1
- Corbin Russwin Access 700 PIP1
- SARGENT, Corbin Russwin IN220

Note that Assa Abloy IP locks are only sold to integrators that have completed the Assa Abloy Certified Integrator (CI) training. The CI number must be provided on each order.

Integrated Locksets

ASSA ABLOY IP Locksets

ASSA ABLOY System Layout



	Wireless Locks	PoE Locks
Wi-Fi	802.11b/g/n	IEEE 802.3af requiring 7 watts
Encryption	AES 128-bit with support for WEP, WPA and WPA2 as well as 802.1x support	AES 128-bit
Cardholders per reader	10,000	10,000
Transaction History	10,000 event transactions	10,000 event transactions
Power Supply	Six AA batteries or external power operation	PoE 7 watts
Memory	Flash memory (memory retained if power is lost)	Flash memory (memory retained if power is lost)
Keypad ID codes	4 digits with card and 6 digits PIN only	4 digits with card and 6 digits PIN only
Card Technologies	Magnetic stripe (Track 2) and HID proximity 125 KHz cards, iCLASS 13.56 MHz, 26 – 37 bit formats	Magnetic stripe (Track 2) and HID proximity 125 KHz cards, iCLASS 13.56 MHz, 26 – 37 bit formats
Compliance	UL, FCC and ADA	UL, FCC and ADA
Lock Types	Mortise, Bored or Exit	Mortise, Bored or Exit
Battery Life	14 months, Access per door 120/day and 2 Communication Sessions per day	

Integrated Locksets

ASSA ABLO IP Locksets

Software and Licensing

Model Number	Description	MSRP (USD)	Category
Software and Licensing			
CC000-ASSAA0LO	Assa Abloy Integration option for C•CURE 9000	\$2,900.00	B
CC000-RDR-LIC	Assa Abloy Reader License – one needed for each Assa Abloy lock on the system	\$342.00	B
ASSA-RDR-LIC-C	ASSA ABLO IP Reader License – no charge when lock purchased through Software House	No Charge	N/A
FCDD	Network And Lock Configuration CD Tool Kit, NCT/LCT software, Serial Adapter, Cable (P/N 52-3956), Users Manual (on CD), Prox Card	\$137.00	B

Note – ASSA ABLO IP locksets do NOT count towards the overall C•CURE 9000 reader count (with DSR 8 integration)

Note that the “old” method of registering ASSA locksets is not required anymore; simply apply a new C•CURE license with the correct Wireless/IP Locks count to your system. **Also note that systems upgrading from DSR 5 will need to request a new C•C•R license with the correct amount of Wireless IP Locks included.**

IP20 i-Fi Locks

Model Number	Description	MSRP (USD)	Category
IP20 i-Fi Locks			
ASA-20-0000-0	ASSA IN120-7978-IPV STD OPTIONS	\$2,110.00	B
ASA-20-2200-IPS	IN120 WIFI Mortise lock, IN120-82278-BIPS standard options	\$2,313.00	B
ASA-20-0000-0	LC-IP20-0000-IPS STD OPT	\$1,998.00	B
ASA-20-0G00-0	LC-IP20-0G00-IPS STD OPTIO S	\$1,977.00	B
ASA-20-CL0000-0	LC-IP20-CL0000-IPS-STD OPTS	\$1,983.00	B
ASA-20-2200-P	IP20-2200-IP STD OPTIO S	\$2,513.00	B
ASA-20-0G00-2	ASA-20-0G00-2	\$2,087.00	B
ASA-20-2000-0	ASA-20-2000-0	\$2,110.00	B
ASA-20-2206-0	ASA-20-2206-0	\$2,238.00	B
ASA-20-2206-IP	ASA-20-2206-IP	\$2,350.00	B
ASA-20-M000-0	ASA-20-M000-0	\$865.00	B
IP20-M02-0	IP20 ATTR COOR	\$82.00	B

All ASSA ALO locksets have a minimum four week lead time plan accordingly

Integrated Locksets

ASSA ABLO IP Locksets

IN220 IP i-Fi Locks

Model Number	Description	MSRP (USD)	Category
IN220 IP i-Fi Locks			
ASA-220-10G	IN-220-10G77-BIPS Standard Option	\$2,212.00	B
ASA-220-20	ASSA IN220 ML20134 STD OPT	\$2,235.00	B
ASA-220-20-LC	IN220-ML20134- BIPS-LC Standard Option	\$2,123.00	B
ASA-220-20236	ASSAIN220-ML20236-BIPS STDOPT	\$2,475.00	B
ASA-220-82278-I	IN220-82278-BIPS Standard option	\$2,438.00	B
ASA-220-82278-BIKPS	IN220-82278-BIKPS Standard option	\$2,750.00	B
ASA-220-8877-I	IN220-8877-BIPS Standard option	\$3,922.00	B
ASA-220-8877-BIKPS	IN220-8877-BIKPS Standard option	\$4,234.00	B
ASA-220-8977-I	ASSA IN220-8977-BIPS Standard option	\$4,654.00	B
ASA-220-7978-BIKPS	ASSA IN-220-7978-BIKPS STD OPT	\$2,547.00	B
ASA-220-7978-BIPS	ASSA IN220-7978-BIPS Standard Options	\$2,235.00	B
ASA-220-8977-BIKPS	IN220-8977-BIKPS Standard option	\$4,966.00	B
ASA-220-D5200	IN220-ED5200N X 9134ET-BIPS-MB Standard Options	\$3,628.00	B
ASA-220-D5200S	IN220-ED5200SNX9134ET-BIPS-MB	\$4,040.00	B
ASA-CL33134	IN120-CL33134-BIPS-STD OPTIONS	\$2,087.00	B

All ASSA ABLO locksets have a minimum four week lead time plan accordingly

SPEC ANY TECH. *Configure your fit.*

Cabinets

PRO Cabinets™ are stunning, architectural pedestals that integrate any tech combination for flush and surface mount devices into a single, beautiful presentation that brings tremendous curb appeal to any entryway. With their easy-to-customize form factor, full access back panel, heavy duty construction, and superior anchor plate, they are the preferred choice for security consultants and integrators around the world.

PRODUCT FEATURES

- Specify any access control device(s)
- Attractive, modern architectural design
- Heavy duty 304 stainless steel construction
- Standard 4" depth, Multiple widths available
- Removable "full access" back panel
- Internal .25" base plate, "no wobble" superior anchoring
- No visible fasteners after installation
- Easily customizable
- Free custom CAD designs in 24 hours
- Fast installation for installers
- Made in the USA



Areas of Use

- Multi-Tenant Units
- Premier Office & Lobby
- Gate Ingress/Egress

QUICK FEATURE COMPARISON

	Made from	Removable back panel	Top	Widths	Customization
CABINETS	Sheet metal	Full access	Flat	Unlimited 8"+	Unlimited & profile dimensions
BOLLARDS	Metal tubes	Small hand access	Flat or tapered	Limited 8" or less	Limited, dependent on tube mill dimensions

Models

Imagine your device cutout options



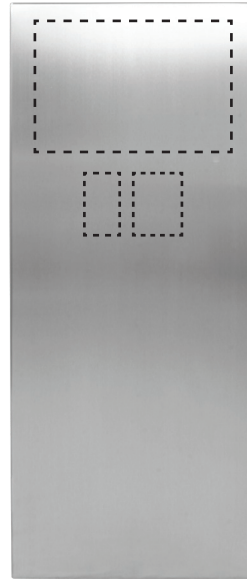
✓ 84TOW-PRO-001-304



124TOW-PRO-001-304



164TOW-PRO-001-304



204TOW-PRO-001-304



244TOW-PRO-001-304

PRO TECH ACCESSORIES

FAN



HEATER



LED



L BOLT



ANCHORS



SHIMS



MATERIAL OPTIONS

- Carbon Steel
- #304 Stainless Steel
- #316 Stainless Steel
- Aluminum

STAINLESS FINISH

- #4 Brushed

POWDERCOAT FINISHES

STANDARD COLORS

- Black Wrinkle
- White
- Safety Yellow

READILY AVAILABLE METALLIC COLORS

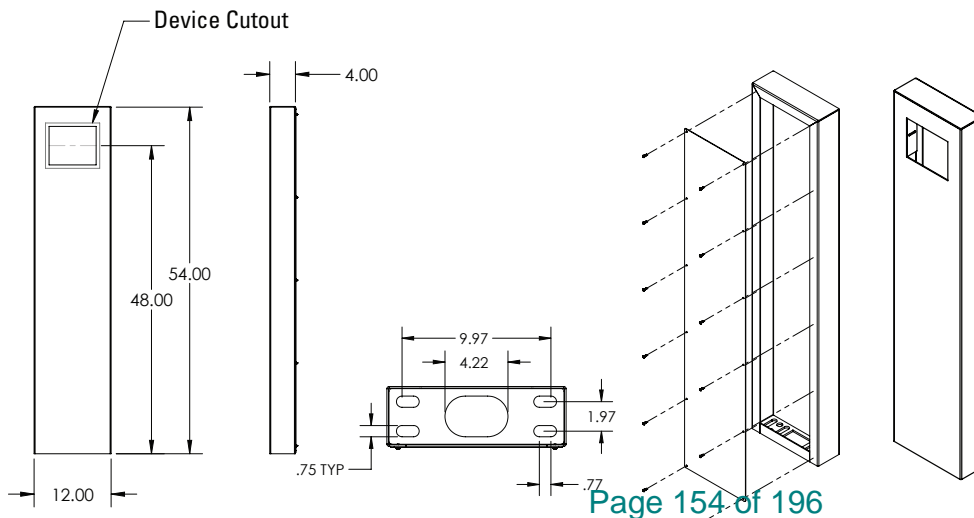
- Silver Sky Metallic*
- Oil-Rubbed Bronze*
- Anodized Aluminum*
- Nickel*

CUSTOM "RAL" COLORS AVAILABLE**



*short lead times and additional costs may apply
**additional costs and lead times apply

Technical Specs

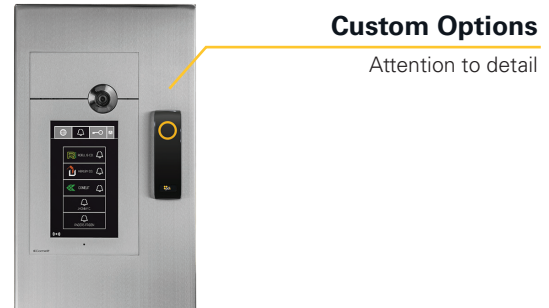
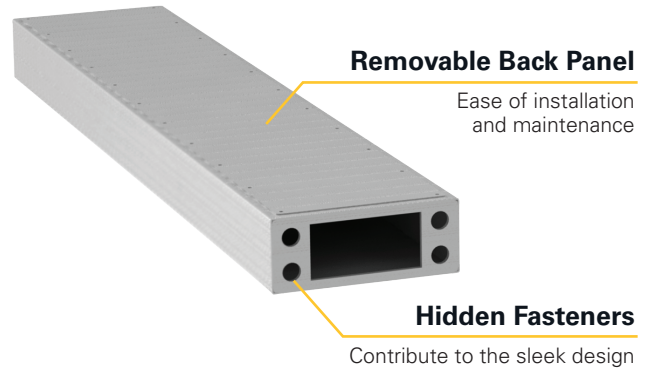


NEED MORE?



Scan the QR code to access downloadable PDF and DWG drawings available to registered architects and engineers at pedestalpro.com.

Key Features



Part Numbers

FAST Foundations	Hgt	Wdth	Dpth	Wgt	Material	Description	Conduit Attachments	Pour/Application
66TOW-EMER-01-304	32"	32"	32"	108 lbs	304 SS	Prefabricated anchor	(2) 1/2-13 Tapped Holes	In-ground, gravel/dirt fill
66TOW-EMER-02-304	16"	15"	6"	22 lbs	304 SS	Prefabricated anchor	—	Wet concrete
L-Bolt-625	10"	—	—	12 lbs	Galvanized	L-Bolt Kit (.625" diam)	—	Wet concrete
Stud-Anchor-625	7"	—	—	12 lbs	Galvanized	Stud-Anchor Kit (.625" diam)	—	Existing concrete, retrofit

Wall Stations	Hgt	Wdth	Dpth	Wgt	Material	Description	Intercom Cutout Included	Application
156STA-EMER-01-ALU	36"	15"	6"	19 lbs	Alum	Wall Station - Generic	None (cutouts can be added)	Wall mount
156STA-AXIS-01-ALU	36"	15"	6"	19 lbs	Alum	Wall Station - Axis	(1) 2N IP Safety*	Wall mount
156STA-ZENI-01-ALU	36"	15"	6"	19 lbs	Alum	Wall Station - Zenitel	(1) TCIS 2**	Wall mount

*2N IP Safety requires plaster board mount P/N 9151002

**TCIS 2 or equivalent requires flush mount box P/N 107216008140

Cabinet Options

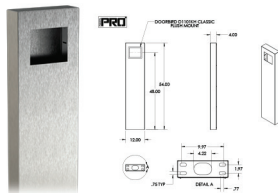
TECH INTEGRATION

Integrate intercoms, keypads, card readers, cameras and more from our vast device library representing over 35 OEM brands and 400+ devices. Our engineers are ready to incorporate your tech into our cabinets. We also offer in-house cooling fans, heaters, LED lighting, and weather shrouds solutions to meet all your tech integration needs.



FREE CUSTOM CAD

CAD engineers are free to use and on-call to create drawings specific to your project requirements. CAD designs are created within 24 hours.



EXPEDITED FABRICATION

12 – 15 days	Standard, no additional charge
10 – 11 days	15% fee
8 – 9 days	25% fee
6 – 7 days	45% fee
4 – 5 days	65% fee
2 – 3 days	100% fee

Business days exclude weekends and holidays, does not include shipping costs or timelines.

Product Categories



EV Charging Stands



Emergency Call Towers



Custom Camera Mounts



Bollards



Cabinets



Goosenecks



Housings



Hoods



Accessories

Why Pedestal PRO

CUSTOMIZATION ■ QUICKEST TURNAROUND ■ HIGHEST QUALITY

With more than 500,000 installations worldwide, including projects for Fortune 100 companies, Pedestal PRO manufactures unique mounting solutions to support consultants, integrators, and installers in the security industry.

Using the most precise device integration methods available, Pedestal PRO custom designs premium pedestals, housings, and mounts to accommodate any physical security device or technology specified by its customers.

Recommended readily-available materials, expedited production timelines, and on-time delivery ensures total satisfaction for every project, every time.



IX-DV, IX-DVF IP Video Door Stations for the IX Series



DESCRIPTION

The IX-DV (surface mount) and IX-DVF (flush mount) are weather resistant, IP video door stations. They connect to a network using Cat-5e/6 cable and are both SIP compliant. Each station is equipped with a 1.23 megapixel fixed camera. The camera angle can be vertically adjusted using a lever on the back of the station. The video can be streamed to 3rd party devices using ONVIF® Profile S or RTSP. Audio and video can be captured on a microSD™ card. The IX-DV and IX-DVF can be programmed to call up to 20 different stations. There are three different call level selections. The stations have a 600Ω output that can be used for paging or communication. There are two contact outputs that can be programmed to trigger during door release, when the 600Ω output is used or based on the status of the station. There are six inputs that can be used to trigger an outgoing call or answer a call/page. Sound files can be uploaded for custom messages to be played during certain functions (door release, call placed, communication start, error message, and more). The stations have audible and visual indications for calling, communication, and door release.

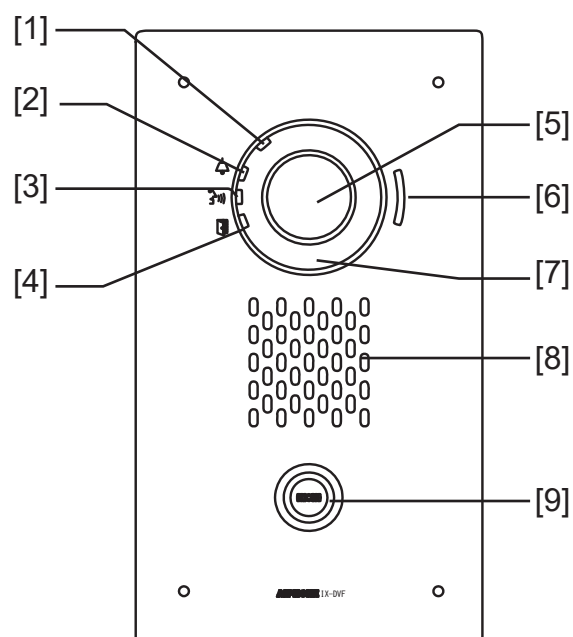
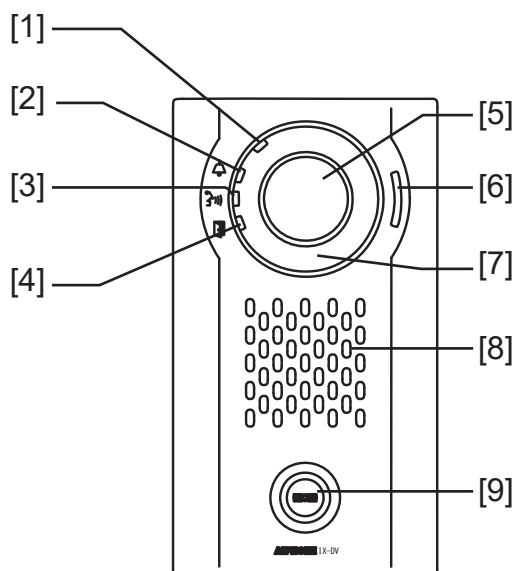
FEATURES

- SIP compliant
- 1.23 megapixel fixed video camera
- White LED for low light illumination
- ONVIF® Profile S compliant
- Camera vertical adjustment +15°, 0°, or -8° (manual)
- Slot for microSD™ card
- Weather and vandal resistant
- Two contact outputs
- Six trigger inputs
- Anodized aluminum (IX-DV), stainless steel (IX-DVF)
- 802.3af PoE
- PoE pass through (requires 802.3at Type 2 PoE+)

IX-DV, IX-DVF

IP Video Door Stations for the IX Series

FEATURE CALL-OUT:



FEATURE CALL-OUT DEFINITIONS

- [1] Status indicator (orange/blue)
- [2] Call indicator (green)
- [3] Communication indicator (orange)
- [4] Door release indicator (green)
- [5] Camera
- [6] Microphone
- [7] Low light LED
- [8] Speaker
- [9] Call button

SPECIFICATIONS

- Power Source:** PoE (IEEE 802.3af class 0) or 24V DC (PS-2420UL)
- Power Draw:** 5.28W
- Camera:** 1/3" CMOS 1.23 megapixel
- Min. illumination:** 5 lux
- Audio Codec:** G.711 (μ -law, A law), G.722
- Video Codec:** H.264/AVC, motion JPEG
- Protocols:** IPv4, IPv6, TCP, UDP, SIP, HTTP, HTTPS, RTSP, RTP, RTCP, IGMP, MLD, SMTP, SFTP, DHCP, NTP, DNS
- Port Security:** IEEE 802.1X
- UL Listed:** UL 62368-1
cUL 62368-1
- Operating Temp:** -40° ~ 140°F (-40° ~ 60°C)
- Protection:** IX-DV - IP54, IK08
IX-DVF - IP65, IK08
- Dimensions:** IX-DV - 8-1/16" H x 4-1/2" W x 2-1/16" D
IX-DVF - 10-7/16" H x 5-7/8" W



DESCRIPTION

The IX-MV7-HB is an IP handset master station with a 7" touchscreen. It can be wall or desk mounted (desk stand included). It connects to a network using Cat-5e/6 cable and is SIP compliant. Audio and video of active conversations can be captured and stored on a microSD™ card. Each master station has an address book of 500 stations and can monitor a single station or scan monitor several stations with-in the address book. The master station offers line supervision and a scheduled device check of stations in its address book. It has the ability to page all units or groups of units and offers bell scheduling with 50 events per day. The master station has eight speed dial buttons that can be used to call, page, monitor, or control a contact closure. It has a built-in camera with privacy shutter. The master station can view a selected intercom's camera as well as an associated ONVIF® Profile S camera by using the picture-in-picture function. It has the ability to release the door that is associated with the station that it is communicating with. Stations can be called by using the directory or by direct dialing the station's number.

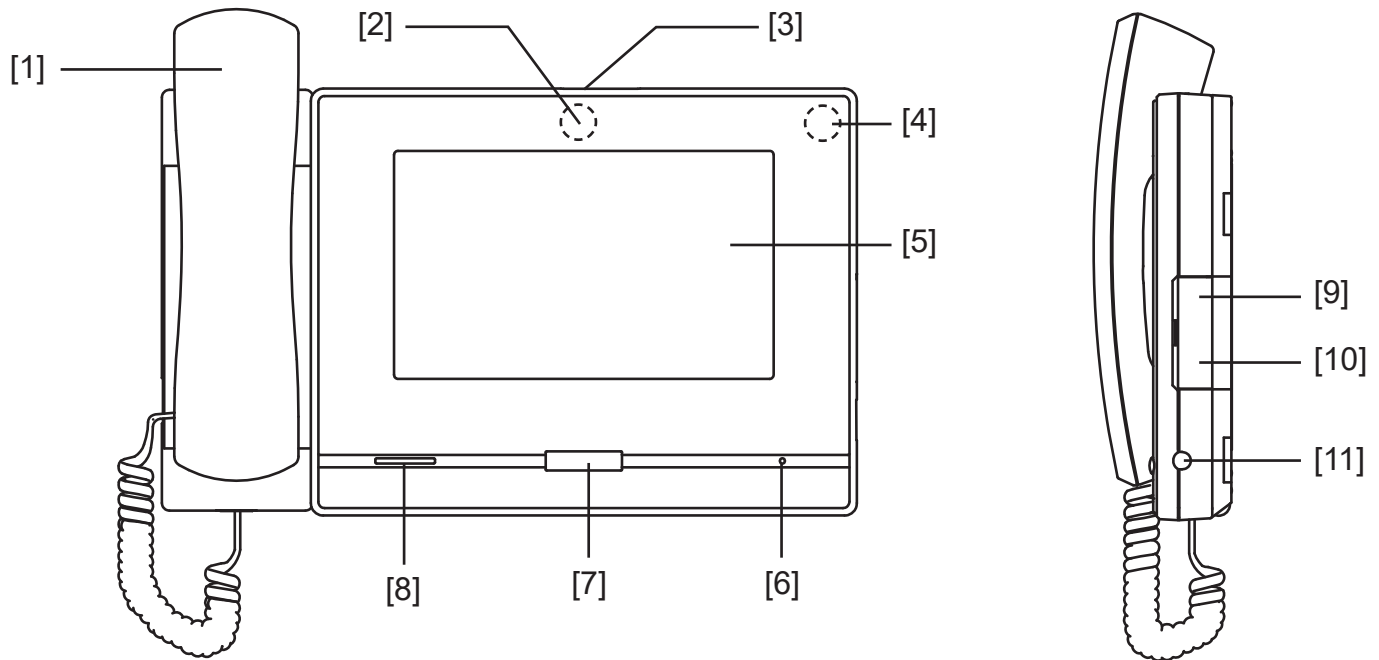
FEATURES

- 7" TFT touchscreen
- Fixed video camera with privacy shutter
- SIP compliant
- 500 station address book
- ONVIF® Profile S compliant
- Multi-angled desk stand (30°, 45°, 60°)
- Slot for microSD™ card
- 802.3af PoE
- Two contact outputs, Four trigger inputs
- 8Ω 0.5W speaker output
- 600Ω audio input

IX-MV7-HB

Touchscreen Master Station with Handset for the IX Series

FEATURE CALL-OUT:



FEATURE CALL-OUT DEFINITIONS

- [1] Handset
- [2] Camera
- [3] Privacy mask cover (on top)
- [4] Status indicator light (orange/blue)
- [5] 7" Touchscreen (LCD)
- [6] Microphone
- [7] Home button
- [8] Speaker
- [9] Reset button (under door)
- [10] Slot for microSD card (under door)
- [11] 3.5mm stereo mini jack

SPECIFICATIONS

- Power Source:** PoE (IEEE 802.3af class 0)
- Power Draw:** 4.32W
- Camera:** 1/3" CMOS 480p
- Min. illumination:** 5 Lux
- Audio Codec:** G.711 (μ -law, A law), G.722
- Video Codec:** H.264/AVC, Motion JPEG
- Protocols:** IPv4, IPv6, TCP, UDP, SIP, HTTP, HTTPS, RTSP, RTP, RTCP, IGMP, MLD, SMTP, SFTP, DHCP, NTP, DNS
- Port Security:** IEEE 802.1X
- UL Listed:** UL 62368-1
cUL 62368-1
- Operating Temp:** 32° ~ 104°F (0° ~ 40°C)
- Dimensions:** 8-1/16" H x 11" W x 2-3/16" D



XR150 Control Panel



FEATURES

- ▶ Onboard 10/100 network communication
- ▶ Plug-in LTE cellular communicators allow for Virtual Keypad™ app and monitoring center connection
- ▶ Flash updatable — locally or remotely over cell or network
- ▶ Adaptive Technology™ — Cost-effective supervised cellular backup
- ▶ Up to 100 DMP 1100 Series™ wireless or wired LX-Bus™
- ▶ Up to 99 schedules for areas, doors, outputs, holidays, Z-Wave® Favorites and profiles

- ▶ Select Area, All/Perimeter or Home/Sleep/Away operation
- ▶ Eight individual reporting areas with common areas
- ▶ Up to eight supervised door access points and/or keypads, seven of which can be wireless
- ▶ 32-character names available for user, zone, area, profiles and group names
- ▶ Up to four profiles per user
- ▶ Fully supervised 10/100 network and LTE cellular communication
- ▶ Communications diagnostics check network and cellular communication status from the keypad
- ▶ Eight communication paths between the panel and monitoring center
- ▶ Flexible system arming features with Instant Arming option
- ▶ Lockdown operation from keypad or app
- ▶ Up to 130 two-wire smoke detector or fire-initiating zones
- ▶ 10,000 user codes with 99 profiles
- ▶ Mobile platform support via Virtual Keypad app
- ▶ 12,000 event buffer
- ▶ Multi-lingual menus available by user
- ▶ 1.5 amp 12 VDC smoke and auxiliary output with OVC protection
- ▶ EASYconnect™ connection for the Virtual Keypad app when used with a network connection
- ▶ Add access control capabilities with DMP's 1134 wireless device or any 734 Series™ module



FLEXIBLE COMMUNICATION

The XR150 has transitioned from dialer-focused communications to a true network, cellular and Wi-Fi communications approach by providing stronger, multilayered panel communications that ensure a constant link between the panel and monitoring center.

The unique DMP Serial 3 format supports 32-character user, zone and area names to decrease the time and limit dependence on automation literal tables for message interpretation. Contact ID dialer format is also supported.

NETWORK OR CELLULAR COMMUNICATION

Built-in 10/100 auto-sensing Ethernet connection enhances both standard and encrypted line security options. Both UDP and TCP are supported. The network option can be used as the primary or backup path to the digital dialer or cellular option.

The 263 Series™ cellular communicators can be used as the primary path, providing installation flexibility where no landlines are available. They can be used as a stand-alone communicator without the need for a backup. When used as the backup path, the 263 Series provides the security of a communication link that continues to function, even when landlines are cut or compromised. This interface works over a variety of carriers in the USA and Canada.

ADAPTIVE TECHNOLOGY

If a current primary communication path becomes unavailable, Adaptive Technology directs the panel to make a seamless transition from one communication path to another, ensuring that no check-in or supervision messages are missed. This allows a system to be fully supervised when the primary communication path is unavailable, while minimizing expensive cell traffic when all paths are good. The panel is constantly checking the failed path to enable the panel to revert back to the primary path when communication is restored.

EASYconnect TECHNOLOGY

EASYconnect™ enables the control panel to establish an outbound connection to SecureCom Wireless™ over the network. This allows for an effortless installation of network panels, without any customer router programming, providing extremely quick app connection times.

EIGHT COMMUNICATIONS PATHS

Create, configure and manage up to eight communication paths between the panel and monitoring center. Each path has its own panel communication programming parameters and can be identified as either primary or backup. This enables installers to configure a reliable communication link, offering greater confidence that the panel will always be connected.

ACCESS CONTROL BURGLARY INTEGRATION

The XR150 is an integrated burglary, fire and access control system that can be configured for users to gain access and disarm the area with a single card read.

AREAS

Program up to eight areas with a variety of options, including independent arming. Each area has a unique name and may have its own account number.

Common areas automatically arm when the last independent area is armed and disarm when the first independent area is disarmed. This is ideal for lobbies or areas where users need common access to specific areas only.

COMMUNICATION FUNCTION DIAGNOSTICS

The enhanced diagnostic menu enables technicians to check network and cellular communication status and cell signal strength from the keypad.

WIRELESS ONE-BUTTON KEYFOB WITH PROX

The 1144-1P is a wearable and portable panic button fob, programmable to function in multiple locations with alerts for lost fobs, late to test and low battery power.

MOBILE PLATFORMS

DMP mobile platforms provide you with the tools you need to build strong connections with your customers. The Virtual Keypad app puts a keypad on users' smartphones and other Android and iOS devices.

FALSE ALARM FEATURES

Providing a way to reduce false alarms, both Cancel/Verify™ and the False Alarm Question prompt users to validate whether an alarm has occurred after entering their code. In a Home/Sleep/Away or All/Perimeter system, the user can either press Cancel/Verify or Yes/No to confirm alarm status and send it to the monitoring center.

DMP WIRELESS

DMP 1100 Series wireless communication employs 900 MHz frequency-hopping spread-spectrum to ensure clear and accurate signal transmissions without interference in practically any environment. Receivers are alerted of transmitters that go missing with two-way communication. Each wireless transmitter communicates with the receiver using supervision messages.

WIRELESS ENCRYPTION

DMP's 1100 Series encryption is for customers who want to add the hardest layer of security. In addition to 900 MHz frequency-hopping spread-spectrum supervised communication, these models also offer full support for 128-bit AES (Advanced Encryption Standard) over the air. For added security, DMP 1100 Series encrypted devices also allow you to enter your own passphrase for unique key generation, providing full encryption end to end.

For the highest level of encryption, it is recommended that all devices on the system be encrypted. Each of the products are fully backward compatible with systems that do not support encryption, so they can be added to existing systems or operate as a stand-alone system.

1100 SERIES ENCRYPTED

- ▶ 1100XE Wireless Receiver
- ▶ 1100XHE Wireless High Power Receiver
- ▶ 1100RE Wireless Repeater
- ▶ 1101 Universal Transmitter
- ▶ 1102 Universal Transmitter
- ▶ 1103 Commercial Universal Transmitter
- ▶ 1106 Universal Transmitter
- ▶ 1135E Wireless Siren
- ▶ 1142 Wireless Two-Button Hold Up Transmitter
- ▶ 1144 Wireless Key Fobs

LOCKDOWN

For emergency situations, a Lockdown command can be issued from the keypad menu or via remote command to lock all doors designated as public.

TEMPORARY CODES

Temporary codes are user codes that can be entered with a finite date and specific time to expire.

ZONE EXPANSION

The XR150 provides up to 142 zones, programmable for burglary, fire and access applications.

- ▶ 10 Onboard Zones
- ▶ Eight Keypads = 32 Zones
- ▶ One Built-In LX-Bus (100 zones)

SIMPLE ZONE EXPANSION WITH THE 1154/1158 WIRELESS INPUT MODULES

When a DMP panel is installed in the same location as a non-DMP panel, the 1154 can easily and quickly convert up to four existing hardwired zones from the old panel into wireless zones, and the 1158 can convert up to eight. Existing wiring does not have to be re-run, and existing contacts can be reused with the new system.

ONE-MAN WALK TEST

A special code is also available for installers to test the system. The One-Man Walk Test allows a single technician to check the panel response to burglary, fire, panic and supervisory zones.

OUTPUTS

The XR150 provides up to 106 outputs that can be activated by zone or system events, by schedule, through the User Menu or when a card is presented. Output Groups allow multiple outputs to activate with a single event and/or can be assigned to a particular user profile.

REAL-TIME STATUS ENHANCES THIRD-PARTY INTEGRATION

Alarm systems are increasingly being integrated with environmental control and home automation systems. With real-time status information from zones, doors and other outputs, XR150 Series panels are readily integrated with these third-party control and automation systems. See DMP.com/Integration_Partners.

MULTIPLE LANGUAGE DISPLAY OPTION

XR150 Series systems may be programmed to display the User Menu and Status Display text in multiple languages.

FLEXIBILITY IN SCHEDULES

Enhanced scheduling for areas, doors, outputs and holiday schedules offer flexibility for your customers. Ninety-nine programmable schedules are available and can be assigned to an area, door or output. The same schedule may be assigned to more than one area, door or output, making them reusable. A List key facilitates browsing through the list of stored names on the keypad.

- ▶ Up to 8 schedules per profile
- ▶ Up to 8 schedules per door
- ▶ Up to 8 schedules per area
- ▶ Up to 8 schedules per output
- ▶ Up to 40 holiday dates

Z-WAVE® SUPPORT

Add up to 140 Z-Wave devices with the 738Zplus module for mobile control of lights, locks and thermostats. Up to 20 Favorites allow users to program multiple devices to respond to a single command or panel event like arming and disarming. Z-Wave devices can be controlled with the 7800/9800 Series™ Graphic Touchscreen Keypad and Virtual Keypad.

CUSTOM ACTIONS

In addition to controlling lights, locks and thermostats, users can also take advantage of several customizable actions that can be programmed into the panel. Users can select a combined sequence of actions, all based on specific Favorites, lights and locks to activate or deactivate Z-Wave devices, Favorites or outputs during specific times and days or specific zone trips.

EIGHT INDEPENDENT ACCESS CONTROL DOORS

Any access control reader with an OSDP or Wiegand output can be connected to the XR150 Series panel. Attached card reader controls up to eight different doors.

The XR150 system can restrict access by schedule, arming level or other criteria. The specific reason for access denial can be displayed on the keypad, stored in events, sent to the monitoring center and DMP Advanced Reporting. Anti-passback feature is also available.

COMMERCIAL FIRE

The DMP XR150 is also approved for commercial fire applications. Integrate intrusion, access and fire into a single application or use the XR150FC as a stand-alone commercial fire alarm control panel. See LT-1317 for more information.

ZONE AUDIT DAYS

This is a valuable auditing tool to determine whether a zone or device has not been tripped within a certain number of days. Whether the system is armed or disarmed, up to 365 days can elapse without the zone being tripped. Each time the zone is tripped, the counter restarts. After the countdown expires, a fault message is sent, and the timer begins the countdown again as per the programmed days.

SUPPORT FOR WIRELESS DOOR CONTROL

The 1134 Wireless Access Control Module allows customers to take advantage of access control capabilities in hard-to-wire locations, such as a gate or warehouse entrance. This eliminates the need for costly wire runs or trenching and provides the ease and flexibility to add access control in nearly any environment.

PROGRAMMABLE EOL OPTIONS

You have the flexibility to change the EOL Value from 1k to 2.2k for panel zones 1 - 9. This is easily configured in System Options and allows you to use an XR panel to take over systems with 2.2k without having to pull contacts and change the EOL resistors. While saving you time, it also reduces the cost of takeovers.

1100T WIRELESS TRANSLATOR

The 1100T is the industry's only wireless translator listed and approved for life safety. Plus, it makes it easy to take over DSC, Interlogix, Honeywell 5800 and 2 GIG Series systems, all without replacing existing transmitters and sensors. To accommodate the maximum number of supported sensors on the XR150, one 1100T can learn in 99 zones. It communicates to a DMP panel using the panel's built-in wireless receiver. This eliminates wiring and allows you to place the translator anywhere regardless of where the control panel is. With this one device, you can upgrade customers' systems to DMP quality, with software management tools, as well as online and app convenience and functionality without increasing installation costs.

COMPATIBILITY REFERENCE SHEET

Keypads

- 630F LCD Remote Fire Command
- 7000 Series Thinline Keypads
- 7000A Series Aqualite Keypads
- 7100 Thinline Series Keypad
- 7463 Network Thinline Keypad
- 7800 5-inch Touchscreen Keypads
- 8860 7-inch Touchscreen Keypads
- 9060 Wireless Keypad
- 9063 Wireless Keypad w/ Prox Reader
- 9862 Wireless Touchscreen Keypads

Expansion Modules

- 708 Bus Extender
- 710 Bus Splitter/Repeater
- 711 Single Zone Expansion
- 711S Zone Expansion Module
- 712-8 Eight-Zone Expansion
- 714 Four-Zone Class B Expansion
- 714-8 Eight-Zone Class B Expansion
- 714-16 16-Zone Class B Expansion
- 715 Four-Zone Two-Wire Smoke Expansion
- 715-8 Eight-Zone Two-Wire Smoke Expansion
- 715-16 16-Zone Two-Wire Smoke Expansion
- 716 Output Expansion, four Form C relays, four open collector outputs
- 736P Radionics Interface
- 738A Ademco Interface Module
- 7381 ITI Interface Module

Cellular Communicators

- 263LTE-V/381-2 LTE Communicator, Verizon
- 263LTE-A/381-2 LTE Communicator, AT&T
- 263LTE-FN LTE Communicator, FirstNet

Auxiliary Modules

- 860 Relay Output Module
- 865 Style W/X Notification Circuit Module
- 866 Style W Notification Circuit Module
- 867 LX-Bus Notification Circuit Module
- 869 Style D Initiating Circuit Module
- 893A Dual Phone Line Module

Power Supplies

- 505-12/LX 5 Amps @ 12 VDC
- 505-12L 5 Amps @ 12 VDC
- 505-12A 5 Amps @ 12 VDC

Smoke/Heat Detectors

- 2W-BLX Conventional Smoke
- 2WT-BLX Conventional Smoke/Heat

Intrusion Devices

Virtually any other standard intrusion detectors

Access Control

- 352M Access Control Enclosure, Eight modules
- 352PM Access Control Enclosure, Eight modules
- 734 Access Control Module
- 734N Network Access Control Module

- 734N-POE Network Access Control Module
- 1134 Wireless Access Control Module
- OP-08CB REX Motion Detector
- Proximity Readers and Credentials
- DMP ProxPatch

Monitoring Center Receivers

- SCS-IR Security Control Receiver
- SCS-VR (Virtual Receiver)
- Software-only solution that runs on a server for network IP and cellular communications

DMP Wireless

- 1100X Receiver
- 1100XH High Power Receiver
- 1100R Repeater
- 1100T Translator
- 1101 Universal Transmitter, Internal and External Contacts
- 1102 Universal Transmitter, External Contact
- 1103 Universal Transmitter, External Contact
- 1106 Universal Transmitter, Internal and External Contact
- 1107 Micro Window Transmitter
- 1108 Wireless Doorbell Module
- 1114 Four-Zone Expander
- 1115 Temperature Sensor and Flood Detector
- 1116 Relay Output
- 1117 LED Annunciator
- 1118 Remote Indicator Light
- 1119 Door Sounder
- 1122 PIR
- 1126R 360 Ceiling Mount PIR
- 1127C Wall Mount Curtain PIR
- 1127W Wall Mount Wide Angle PIR
- 1128 Glassbreak Detector
- 1132 Recessed Contact
- 1134 Access Control Module
- 1135 Siren, 100 dB
- 1136 Remote Chime
- 1139 Bill Trap
- 1141 Wall Button
- 1142 Two-Button Hold-up Transmitter
- 1142BC Two-Button Belt Clip Hold-up Transmitter
- 1144-4 Four-Button Key Fob
- 1144-2 Two-Button Key Fob
- 1144-1 One-Button Key Fob
- 1144-1P One-Button Key Fob with Prox Patch
- 1144-D Dual-Button Key Fob
- 1148 Personal Pendant
- 1154 Four-Zone Input Module
- 1158 Eight-Zone Input Module
- 1164 Smoke Detector with Synchronized Sounder

- 1164NS Smoke Detector with No Sounder
- 1166 Smoke Detector Ring
- 1168 Smoke/CO/Low Temp Detector
- 1183-135F Heat Detector (Fixed)
- 1183-135R Heat Detector (Rate of Rise)
- 1184 Carbon Monoxide Detector

Encrypted Wireless Models

- 1100XE Receiver
- 1100XHE High Power Receiver
- 1100RE Repeater
- 1101 Universal Transmitter
- 1102 Universal Transmitter
- 1103 Commercial Universal Transmitter
- 1106 Universal Transmitter
- 1135E Siren
- 1142 Two-Button Hold Up Transmitter
- 1144 Key Fobs

Accessories

- 270 Network Transient Suppressor
- 271 Ground Fault Detection Module
- 277 Commercial Fire Buzzer Module
- 300 Four-Wire Harness
- 303 Silence/Reset Push-Button
- 305 Plug-In Output Relay
- 306 Tamper Harness
- 307-S Screw-On Tamper Switch
- 3012 Clip-On Tamper Switch
- 335 Intrusion Siren
- 370 Lightning Suppressor
- 374 Surge Voltage Suppressor
- 431 Output Harness
- 738Z+ Z-Wave Interface Module
- 861 Power Distribution Module

Enclosures

- Materials Cold-rolled steel
- Model 350 (Gray or Red) 17.5" W x 13.5" H x 3.5" D
- Model 350A (Gray) 17.5" W x 13.5" H x 3.75" D
- Model 352X (Gray) 14.5" W x 32" H x 4" D
- Model 352P (Gray) 14.5" W x 32" H x 4" D
- Model 341 (Gray) 12.75" W x 6.55" H x 3.15" D

Dealer Management

- Dealer Admin
- Remote Link™ Programming Software

End User Management

- Virtual Keypad
- VirtualKeypad.com
- System Link™ End-User Management Software
- Entré™ Access Control Software

System Specifications

Primary Power (included):

16.5 VAC 50 VA transformer

Secondary Power:

12 VDC Battery
Models: 365, 366, 368 or 369

Output Rating:

Bell 1.5 Amps at 12 VDC
Smoke and Auxiliary 1.5 Amps at 12 VDC

Current Draw:

174 mA

Ordering Information

- XR150DL-G Dialer Panel
- XR150DL-R Dialer Panel
- XR150DPCB Dialer Panel, PCB only
- XR150DNL-G Dialer Panel, with network
- XR150DNL-GCAN Dialer Panel, with network, Canada
- XR150DNL-GZ Dialer Panel, No transformer, with network
- XR150DNL-R Dialer Panel, with network
- XR150DNPCB Dialer Panel, PCB only, with network
- XR150DNPCBZ Dialer Panel, PCB only, with network, no transformer
- XR150DNPCBZ-CAN Dialer Panel, with network, PCB only, no transformer, Canada
- XR150NL-G Network Panel
- XR150NL-GZ Network Panel, no transformer
- XR150NPCB Network Panel, PCB only
- XR150L-G Panel in large gray enclosure, no communication
- XR150DNL-GCAN Dialer Panel, with network, Canada

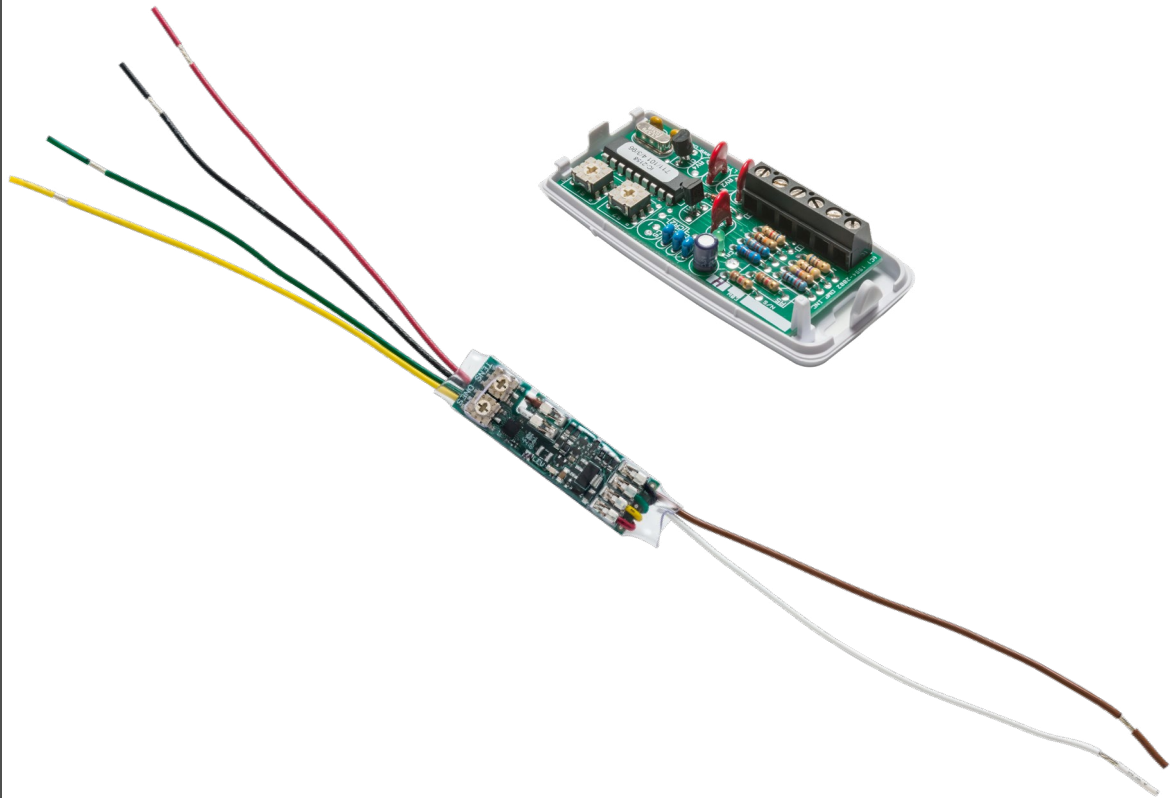
Certifications

California State Fire Marshal (CSFM)
New York FDNY
FCC Part 68
FCC Part 15
Underwriters Laboratories (UL) Listed
UL Bank, Safe, and Vault
UL Commercial Fire
UL Standard Line Security
UL Encrypted Line Security
NIST Validated Certificate #2350 and #2595
Underwriters Laboratories Canada (ULC) Listed
For additional information, go to DMP.com/Compliance.

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2500 N. Partnership Blvd, Springfield, MO 65803
Designed, engineered & manufactured in Springfield, MO using U.S. & global components

LIMITED WARRANTY: DMP warrants that the products manufactured by DMP and described herein shall be free from defects of manufacture, labeling, and packaging for a period of three (3) years from the invoice date to the original Buyer, provided that representative samples of the defective products are returned to DMP for inspection...To read the full DMP Limited Warranty, go to DMP.com/Warranty or check the DMP Price List or Catalog.

Zone Expansion Modules



FEATURES

- ▶ Expand your DMP panel options with a wide array of expansion modules.
- ▶ Add supervised Class B burglary zones.
- ▶ Connect non-powered burglary or fire type devices for intrusion, glassbreak and motion detection.
- ▶ Add 12 VDC zones for addressable two-wire smoke detectors with 715 modules.

- ▶ Provides Class B zones for burglary and fire
- ▶ Compatible with DMP panels that allow zone expansion
- ▶ Suitable for mounting near protection devices
- ▶ Connect devices using four-wire bus
- ▶ Easily mount attractive cases on wall or three-gang box
- ▶ Compatible with all panel zone types
- ▶ Easy connection to four-wire keypad or LX-Bus™
- ▶ Proven design ensures stability and performance
- ▶ Data LED on zone expander indicates good panel communication
- ▶ Durable and attractive plastic or metal housing
- ▶ Low current draw
- ▶ Can be powered from panel or auxiliary power supply
- ▶ Expansion using network communicators



USE ON THE DMP LX-BUS

The modules can be used on the LX-Bus of DMP panels. The modules connect to the four-wire bus and use only one zone address. To assign an additional zone expander, use the next available zone address.

CONNECT TO KEYPAD BUS

You can also use the modules as an addressed device on the keypad data bus of DMP control panels.

Simply set the module to an available keypad address and connect the wiring to the appropriate screw terminals.

SIMPLE ADDRESSING

Address the 711S, 714, 714-8, 714-16, 715, 715-8 and 715-16 modules by setting two onboard rotary switches with a small screwdriver. The 712-8 uses slide dip switches.

EASY INSTALLATION

Zone expansion modules are mounted in a decorative plastic housing suitable for installing outside the panel enclosure, such as on walls or single-gang boxes. After all wiring connections are made, the covers go on to form tight-fitting protection against incidental contact or tampering.

714-8, 714-16, 715-8 and 715-16 Zone Expanders are housed in a rugged, 20-gauge, cold-rolled steel enclosure.

You may also mount the 708 and 710 modules inside a DMP enclosure using the three-hole configuration and the provided standoffs. The 712-8 only mounts using the three-hole configuration and provided standoffs.

ZONE PROGRAMMING

Program the zone on the modules with any of the panel's available zone types for use in burglary applications including arming type zones when used with keyswitches.

The expansion zones are programmable for annunciation on DMP keypads connected to the panel. Each zone can also be individually programmed to report alarms, troubles and restorals to remote DMP SCS-1R or SCS-VR Receivers.

708 BUS EXTENDER MODULES

The 708 Bus Extender Modules allow you to increase the length of wire used to run an LX-Bus or keypad bus by a maximum of 4,000 feet, while providing immunity to noise on the wires. This model comes as a pair of modules that connect between the panel and LX-Bus or keypad bus devices.

Use the 708 modules for applications that include running wire over long distances, through noisy environments or where the bus is bundled with other wires, such as telephone company wire. The 708 extender can be used on all DMP panels.



708 FEATURES

- ▶ Extends keypad bus or LX-Bus by 4,000 feet with one pair of modules
- ▶ Connects to an auxiliary power supply for added power
- ▶ Uses existing wire: No need to run additional wire
- ▶ Allows twisted pair and/or shielded wire between the 708 modules

710 BUS SPLITTER/REPEATER MODULE

The 710 Bus Splitter/Repeater Module allows you to expand the typical LX-Bus or keypad bus installation both in the number of devices and the length of the wire used. Each 710 module provides three bus connections up to 2,500 feet. When using multiple modules, the total distance of all circuits can be an incredible 15,000 feet!



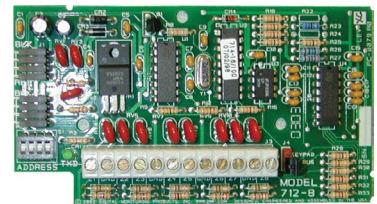
710

As a splitter, the 710 provides superior mechanical wire connecting capability for up to three additional 12 VDC LX-Bus or keypad bus circuits. This makes the 710 module an excellent junction box when terminating multiple LX-Bus/keypad bus runs at one location.

As a repeater, the 710 module can be installed at the end of an LX-Bus or keypad bus circuit to allow an additional circuit to be added, thus increasing the total wire length.

712-8 ZONE EXPANSION MODULE

Expand your system at an affordable price! You can connect non-powered burglary devices to DMP panels using the 712-8 module. It is compatible with many intrusion contacts, glassbreak detectors, motion detectors and intrusion detectors.



712-8 FEATURES

- ▶ Eight grounded, addressable burglary zones
- ▶ Set jumper for LX-Bus or keypad bus operation
- ▶ Compatible with all DMP panels
- ▶ Expand systems by connecting a second 712-8
- ▶ Easily address using dip switches
- ▶ Snaps into panel enclosure using three-hole pattern
- ▶ Separate zone 1 k End-of-Line resistors included

BUILD A SYSTEM

714/715 ZONE EXPANDERS

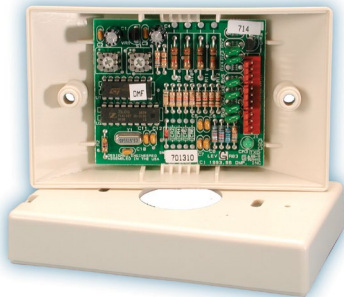
The 714 contains four Class B burglary zones and is suitable for use with burglary and fire devices that are normally opened or normally closed. Individual zones are supervised with 1 k ohm End-of-Line (EOL) resistors and can be programmed with any burglary or fire zone type.

The 715 contains four Class B powered zones and is suitable for use with 12 VDC, two-wire smoke detectors and non-powered fire or burglary devices. Individual zones on the 715 are supervised with a 3.3 k ohm EOL resistor and can be programmed with any burglary or fire zone type.

OPTIONAL ACCESSORIES

The standard wiring harness can be replaced with the optional 718T Plug-in Screw Terminal.

The enclosure can also accommodate the 719T Terminal Boards for the 714 or the 720T Terminal Boards for the 715, which pass through the wiring of the panel's LX-Bus. 1 k EOL resistors are included with the 719T, and 3.3 k resistors are included with the 720T.

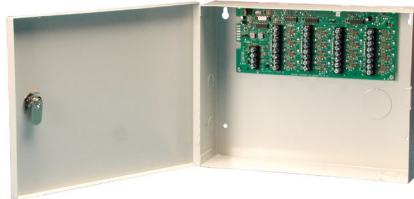


714/715 FEATURES

- ▶ Four protection zones on each module
- ▶ Comes with 12-conductor wire harness
- ▶ Optional 12-position screw terminal

714-8, 714-16, 715-8 AND 715-16

The expanders are housed in a model 340 locking metal enclosure suitable for mounting in a remote location. Each expander provides screw terminal strips for zone inputs and data bus connections, a two position jumper to designate connection to the keypad bus or the LX-Bus and an LED to indicate communication with the panel. Separate zone EOL resistors are included with each expander.



714-8/714-16 EXPANDERS

The 714-8 Expander contains eight Class B zones. The 714-16 Expander contains 16 Class B zones. Both are suitable for use with normally open or normally closed burglary and fire devices. Individual zones are supervised with a 1 k ohm EOL resistor and can be programmed as any zone type. The 714-8 hardware level E is compatible with 1k - 4.7k end of line resistors, making takeovers easy.

715-8/715-16 EXPANDERS

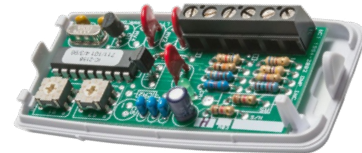
The 715-8 Expander contains eight Class B powered zones. The 715-16 Expander contains 16 Class B powered zones. Both are suitable for use with 12 VDC two-wire devices, such as smoke detectors or with non-powered fire or burglary devices. Individual zones are supervised with a 3.3 k ohm EOL resistor and can be programmed as any zone type.

714-8, 714-16, 715-8 AND 715-16 FEATURES

- ▶ 8 or 16 protection zones per expander
- ▶ Durable metal enclosure housing with lock and key
- ▶ Individual screw terminals accommodate 14-22-gauge wire for easy connection
- ▶ Suitable for mounting in a remote location

711 DESCRIPTION

The 711 Zone Expansion Module connects to the panel's four-wire keypad bus or LX-Bus and is set to an address that determines the reporting zone number. The 711 provides one Class B zone for the connection of detection devices.



711 FEATURES

- ▶ Single-zone expander
- ▶ Rugged screw terminals accommodate 14-22-AWG wire
- ▶ Board fits in Radionics POPIT housing
- ▶ Easy rotary switch addressing

711S DESCRIPTION

The 711S Zone Expansion Module is a flying lead style, single-zone, addressable expansion module that allows you to increase the number of reporting zones available on XT30/XT50 and XR150/XR550 Series panels. It's ideal for smaller applications, such as installing in a pull station back-box or even in a recessed contact hole behind the contact. The modules connect to the panel's four-wire keypad bus or LX-Bus and are set to an address that determines the reporting zone number. The 711S provides one Type A Class B zone.



714N-POE

The 714N-POE Network Zone Expander allows you to add four zones to the XR150/XR550 Series panels using IP network capability. Individual zones are compatible with 1 k-10 k resistors, giving a wide variety for takeovers. POE compatibility provides power for the expander and provides 12 V output for powered zones such as PIRs or glassbreaks. Using AES encryption to talk to the panel provides the next level of protection to the expander.

SPECIFICATIONS

ZONE EXPANSION MODULE COMPARISON CHART

Refer to the chart below for a comparison of the features for each DMP zone expansion module.

Module	Address	Number of Zones	3-Hole	Plastic Case	Operating Voltage	Compatible Panels
708	N/A	N/A	Yes	Yes	12 VDC	All DMP
710	N/A	N/A	Yes	Yes	12 VDC	
712-8	Dip Switch	8	Yes	No	12 VDC	XT Series and XR Series
711	Rotary	1	No	Yes	12 VDC	
711S	Rotary	1	No	No	12 VDC	
714	Rotary	4 Class B	No	Yes	12 VDC	
714-8	Rotary	8 Class B	No	Metal Enclosure	12 VDC	
714-16	Rotary	16 Class B	No	Metal Enclosure	12 VDC	
715	Rotary	4 Class B	No	Yes	12 VDC	
715-8	Rotary	8 Class B	No	Metal Enclosure	12 VDC	
715-16	Rotary	16 Class B	No	Metal Enclosure	12 VDC	
714N-POE		4	No	Yes	12 VDC or POE	

708 (Non-UL) Bus Extender Module

Operating Voltage	8.8 to 15.0 VDC
Operating Current	20 mA per pair
Dimensions	4.5" W × 2.75" H × 1.75" D
Maximum Distance	4,000 feet between the two 708 modules

710 Bus Splitter/Repeater Module

Operating Voltage	8.8 to 15.0 VDC
Operating Current	30 mA
Dimensions	4.5" W × 2.75" H × 1.75" D
Distance	2,500 feet (one module), 15,000 feet maximum

711 Zone Expansion Module

Operating Voltage	8.8 to 15.0 VDC
Operating Current	
Average	11 mA + 1.6 mA per active zone
Alarm	11 mA + 2 mA per zone in alarm
Zone Voltage	5 VDC (1.6 mA across EOL)
Dimensions	4.5" W × 2.75" H × 1.75" D

711S Zone Expansion Module

Operating Voltage	8.8 to 15.0 VDC
Operating Current	
Standby	4.2 mA
Alarm	4.7 mA
Zone Voltage	5 VDC, max 2 mA
Dimensions	1.25" W × 2.75" H

712-8 Zone Expansion Module

Operating Voltage	8.8 to 15.0 VDC
Current Draw	17 mA + 1.6 mA per active zone 17 mA + 2 mA per zone in alarm
Dimensions	4.5" H × 2.5" W

714/715 Zone Expansion Module

Operating Voltage	8.8 to 15.0 VDC
Operating Current	
714 Average	7 mA + 1.6 mA per zone
Alarm	7 mA + 2 mA per zone
715 Average	7 mA + 4 mA per zone + 0.1 per 2-wire smoke
Alarm	7 mA + 58 mA per shorted zone + 0.1 per 2-wire smoke + 30 mA per smoke in alarm
Dimensions	4.5" W × 2.75" H × 1.75" D

714-8, 714-16, 715-8 and 715-16 Zone Expansion

Operating Voltage	8.8 to 15.0 VDC
Operating Current	
714-8/16	
Average	20 mA + 1.6 mA per zone
Alarm	20 mA + 2 mA per zone
715-8/16	
Average	20 mA + 4 mA per zone + 0.1 per 2-wire smoke
Alarm	20 mA + 58 mA per shorted zone + 0.1 per 2-wire smoke 30 mA per smoke in alarm
Enclosure	20-gauge cold-rolled steel
Dimensions	12.5" W × 11.5" H × 3.5" D
714-8/-16 Color	Gray
715-8/-16 Color	Red

714N-POE Network Zone Expansion Module

Primary Power	8.5 VDC to 28.5 VDC
Current Draw	
Standby	7.5 mA at 12 VDC
Alarm	7.5 mA at 12 VDC
Output Voltage(POE)	12 VDC
Max. Power Draw	12.95W
Available Output Current	750 mA
Zone Voltage	5 VDC, max 2 mA
Dimensions	4.5" W × 2.75" H × 1.75" D

Certifications

Refer to the appropriate panel programming and installation guides for specific compliance listings for installation and programming requirements necessary to meet a particular approval. California State Fire Marshall (CSFM) New York City (FDNY COA #6167) (711, 714, 715 only) Underwriters Laboratories (UL) Listed

For additional information go to DMPCom/Compliance.

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Thinline™ LCD Keypads

7060/7063/7070/7073/7463



FEATURES

- ▶ Visual and audible alarm notification
- ▶ Silence alarm while system remains armed
- ▶ Optional integrated proximity reader
- ▶ Four optional onboard fully programmable zones
- ▶ Retrofit to any DMP panel

ENHANCED OPTIONS

- ▶ 7063, 7073 and 7463 keypad proximity readers accept up to eight different card formats

- ▶ Attractive Thinline keypad housing available in several colors
- ▶ Large, 32-character, Liquid Crystal Display (LCD)
- ▶ Custom 16-character home or business name
- ▶ Keypad and logo backlighting turns Red in alarm conditions
- ▶ User-adjustable brightness, tone and volume controls
- ▶ Supports “Is this a false alarm?” and Cancel/Verify™ features
- ▶ Built-in diagnostics for ease of service
- ▶ Simple harness connection to four-wire keypad bus or Local Area Network
- ▶ Connect devices directly to keypad zones
- ▶ View system events/user activity through keypad display
- ▶ AC power and Armed LED
- ▶ Suitable for access, burglary and fire applications
- ▶ Distinct fire, burglary, zone monitor and prewarn tones
- ▶ Displays time of day, armed zones and armed areas
- ▶ Optional backboxes for conduit or wall-mount applications
- ▶ Unique silence feature allows the user to silence alarm bells and still keep the system armed
- ▶ The 7463 Network Keypads are compatible with XT Series™ and XR Series™ panels



VERSATILE SUPERVISED AND UNSUPERVISED OPERATION

When programmed for supervised operation, the keypad occupies its own unique device address on the keypad data bus. Network keypads must be supervised.

Unsupervised operation allows you to install an unlimited number of keypads set to the same device address. Increasing the number of keypads allows maximum system operating flexibility.

USER-FRIENDLY MENU FUNCTIONS

The User Menu allows you to quickly browse through menu options. Disarming and arming functions are fast and easy. Any function allowed by the user authority level is simply accessed through the keypad, such as silencing alarms, resetting sensors or displaying events.

TWO-BUTTON PANIC KEYS

The top row of keys can be used as two-button panic keys. The user simply presses and holds two of the keys simultaneously to send either a panic, non-medical emergency or fire report to the monitoring center.

“IS THIS A FALSE ALARM?” AND CANCEL/VERIFY

In a Home/Sleep/Away or All/Perimeter system, you can CANCEL a burglary alarm or VERIFY that a valid burglar alarm has occurred or similarly answer whether it is a false alarm with YES or NO. Selecting VERIFY or YES manually verifies that an alarm occurred and sends an alarm verification message to the monitoring center.

KEYPAD SHORTCUT KEYS

Keypad shortcut keys are provided to simplify operation and allow the user to more quickly arm, check in, monitor, exit or reset the system. One-button arming creates the simplest keypad available. Use the one-button shortcut keys for common functions, or use the ATM style menu for advanced functions, whichever method meets the user’s needs or level of expertise with the system.

END-USER CONTROL

Each of the Thinline Series™ keypads provides a simple User Options menu for adjusting brightness, speaker tone and volume.

VALUABLE VISUAL ALARM INDICATOR

In a normal state, both the keypad and logo backlighting remain Green. However, during an alarm state, the keypad and logo turn Red. The change in color allows individuals on-site to instantly recognize an alarm condition.



Red Backlighting



Green Backlighting

DISTINCT SOUND PATTERNS

The keypads also provide distinct sound patterns for fire, burglary, zone monitor and prewarn that can help users identify the event occurring on their systems.

RETROFIT ANY EXISTING DMP SYSTEM

Retrofitting is quick and easy. Thinline keypads have the same footprint as existing DMP keypads and mount in currently installed backboxes. Thinline Series keypads require no special modules or panel upgrades. You can provide a new look and greater functionality to an existing system at just a fraction of the cost of all new equipment.

MULTIPLE-KEYPAD SAVINGS

Install multiple keypads on the same wire run. Compatibility and cost savings make the Thinline Series an asset in every installation.

OPTIONS

The Thinline Series keypads also provide Keypad Options and Keypad Diagnostics menus available only to system installers and service technicians. Enter Keypad Options to set the keypad address and change the default keypad message.

Test the keypad operation at any time without disabling the system. The diagnostics program tests the LCD segments and backlighting, each of the 16 keyboard keys and the four zones on the 7070 and 7073 keypads.

WEATHER INFORMATION

Up-to-date weather information for today and tomorrow will be displayed in the status list for cell or network connected panels. If the panel is not capable of supporting weather, the space will be blank. Eight statuses are available to indicate the weather: SUNNY, CLEAR, P-CLOUDY, CLOUDY, RAINY, SNOWY, STORMY and FOGGY.



7463 NETWORK THINLINE LCD KEYPAD

When you’re installing an alarm panel in a building that’s already wired for IP network, DMP’s 7463 Network Keypad gives you the advantage of saving time by plugging into the existing network. Power the keypad from the included 12 VDC plug-in transformer. Also included is a backup battery for four hours of standby power. Network keypads are compatible with all XT and XR Series panels.



UNIVERSAL PROGRAMMING TOOL

System installation and programming can be achieved without carrying around or purchasing expensive external programmers since panel and add-on module programming is integrated into DMP keypads.

Individually program panels, Com Series universal communicators and other programmable add-on modules directly from the keypad.

7070/7073 FOUR EXPANSION ZONES

Zone expansion is available right on the keypad where you need it the most. The four expansion zones on the 7070 and 7073 models are fully programmable Class B protection zones that can be used for a variety of fire, burglary and access control applications.

ZONE TYPE SELECTION

Keypad zones can be programmed using the same zone types available on the panel. Select supervised, unsupervised, night, fire, panic, exit and emergency operation depending on the user requirements.

ZONE DEVICE CHOICES

Connect PIRs, door and window contacts, pull stations, sprinkler tamper switches and silent panic buttons. Plan the installation to afford the best coverage while eliminating potential problems associated with multiple wire runs.

7063/7073/7463 CODELESS ARMING AND DISARMING

The innovative 7063, 7073 and 7463 Thinline keypads contain an onboard DMP proximity reader that allows users to simply present their proximity credentials to the keypad to gain access to a protected area. You can program up to eight different card formats for compatibility with what your customers are using.

7073 MOMENTARY BYPASS

To provide an entry and exit window on systems with 24-hour perimeter protection, DMP offers the momentary bypass feature. Momentary bypass allows the user enough time to enter or exit the area. If the door remains open when the timer expires, a zone open/short is sent to the panel for the keypad Zone 2.

7073 EXTERNAL READER

Add an external Wiegand-compatible reader to the 7073. This makes indoor/outdoor applications easy — or anywhere you need to add an external proximity or other technology reader.

REQUEST-TO-EXIT (REX)

To enable easy user exit from an area, connect a motion sensing or mechanical device to Zone 3 on the keypad. As the user trips the zone, the keypad activates the door strike allowing the user to exit the area without presenting a card or entering a user code.

PRIVATE LABELING

DMP offers dealers the option to present their company logos on the 7000 Series™ keypads. The logo displays on the rubber logo insert and replaces the DMP logo. The backlit logo glows Green during normal operation and turns Red in an alarm state.

Logo Location



KEYPAD MODEL FEATURES

Model	Two-Button Panic	Red in Alarm	4-Zones	Internal Prox Reader	Wiegand Input	Internal Form C Door Strike Relay
7060	•	•				
7063	•	•		•		
7070	•	•	•			
7073	•	•	•	•		•
7463	•	•		•		

COMPATIBILITY REFERENCE SHEET

KEYPAD ACCESSORIES

Alternate Housings

THIN-LCD-B	Black Housing
THIN-LCD-I	Ivory Housing
THIN-LCD-P	Platinum Housing
THIN-LCD-W	White Housing

Backboxes

695	Keypad Conduit Backbox
696	Keypad Backbox

Keypad Wiring Harness

300	4-wire harness
300-5	5-wire harness
300-12	12-wire harness
300-512	12-wire harness, 5' long
300-7400-6	6-wire 7400 harness

Proximity Credentials

1306	Prox Patch™
1306PW	Prox Patch
1326	ProxCard II® Card
1346	ProxKey III® Access Device
1351	ProxPass®
1386	ISOProx II® Card

External Proximity Readers (7073 Only)

PP-6005B	ProxPoint® Plus Proximity Reader
MP-5365	MiniProx Proximity Reader
PR-5455	ProxPro® II Proximity Reader
MX-5375	MaxiProx® Proximity Reader
TL-5395	ThinLine II® Proximity Reader

Farpointe Proximity Credentials

CSR-35P	Conekt Bluetooth Reader
Delta 3	Contactless Mullion-Mount Smartcard Reader
Delta 5	Contactless Mullion-Mount Smartcard Reader
Delta 6.4	Contactless Smartcard Reader and Keypad
P-300-H-A	Cascade Proximity Reader
P-500-H-A	Alps Proximity Reader
P-620-H-A	Denali Proximity Reader with Keypad
P-640-H-A	Patagonia Proximity Reader with Keypad

KEYPAD ORDERING INFORMATION

7060-W	Thinline LCD Keypad
7060N-W	Thinline LCD Keypad with Numeric Keys
7063-W	Thinline LCD Keypad with Prox Reader
7063N-W	Thinline LCD Keypad with Prox Reader and Numeric Keys
7070-W	Thinline LCD Keypad with 4 Zones
7070N-W	Thinline LCD Keypad with 4 Zones and Numeric Keys
7073-W	Thinline LCD Keypad with 4 Zones, Prox Reader and Door Access Relay
7073N-W	Thinline LCD Keypad with 4 Zones, Prox Reader, Numeric Keys and Door Access Relay
7463-W	Thinline LCD Network Keypad with Prox Reader



Specifications

Operating Voltage	12 VDC
Dimensions	7" W × 5.25" H × 0.5" D
Display Type	LCD
Color	White

Compatibility

Compatible with all DMP panels. Not available in a Fire Keypad Variation. 7463 — XR Series only.

Current Draw

7060	Standby	72 mA
	Alarm	87 mA
7063	Standby	85 mA
	Alarm	100 mA
7070	Standby	72 mA + 1.6 mA per active zone
	Alarm	87 mA + 2 mA per active zone
7073	Standby	85 mA + 1.6 mA per active zone
	Alarm	100 mA + 2 mA per active zone
7463	Standby	100 mA
	Alarm	100 mA
	Max Battery Charging	285 mA

Certifications

For additional information, access DMP.com/Certifications

800-641-4282 | DMP.com
 2500 N. Partnership Blvd, Springfield, MO 65803
 Designed, engineered & manufactured in Springfield, MO using U.S. & global components

LIMITED WARRANTY: DMP warrants that the products manufactured by DMP and described herein shall be free from defects of manufacture, labeling, and packaging for a period of three (3) years from the invoice date to the original Buyer, provided that representative samples of the defective products are returned to DMP for inspection...To read the full DMP Limited Warranty, go to DMP.com/Warranty or check the DMP Price List or Catalog.

Professional Series PIR Motion Detectors with Anti-mask

www.boschsecurity.com



BOSCH
Invented for life



- ▶ 16 m x 21 m (50 ft x 70 ft) standard coverage; 8 m x 10 m (25 ft x 33 ft) selectable short range coverage
- ▶ Sensor data fusion technology
- ▶ Tri-focus optics technology
- ▶ MANTIS anti-mask
- ▶ Active white light suppression

The ISC-PPR1-WA16x Professional Series PIR Detectors with Anti-mask are exceptionally suited for commercial indoor applications. MANTIS anti-mask technology makes obscuring the detector view nearly impossible for intruders. Sensor data fusion technology ensures that the detector sends alarm conditions based on precise information. Tri-focus optics eliminate coverage gaps and respond efficiently to intruders. The powerful combination of unique features in the Professional Series delivers superior catch performance and virtually eliminates false alarms.

The self-locking two-piece enclosure, built-in bubble level, flexible mounting height, and three optional mounting brackets simplify installation and reduce service time.

Functions

Sensor Data Fusion Technology

Sensor data fusion technology is a unique feature that uses a sophisticated software algorithm to gather signals from multiple sensors: two pyroelectric sensors, a microwave assist sensor, a room

temperature sensor, and a white light level sensor. The microcontroller analyzes and compares the sensor data to make the most intelligent alarm decisions in the security industry.

Microwave Assist Technology

Microwave assist technology provides additional input into the sensor data fusion signal processing algorithm to improve alarm decisions when PIR signals are similar to false alarm sources.

Tri-focus Optics Technology

Tri-focus optics technology uses optics with three specific focal lengths: long-range coverage, middle-range coverage, and short-range coverage. The detector applies the three focal lengths to 86 detection zones, which combine to make 11 solid curtains of detection. Tri-focus optics technology also includes two pyroelectric sensors, which deliver twice the standard optical gain. The sensors process multiple signals to deliver precise performance virtually free of false alarms.

MANTIS Anti-mask Technology

MANTIS (Multi-point Anti-mask with Integrated Spray detection) uses patented prism lenses and active infrared detection to provide industry-leading protection against all known forms of attack. MANTIS complies with the latest worldwide regulatory standards for detecting objects covering or placed in front of the detector. MANTIS is sensitive to materials regardless of texture or color, including fabric, paper, metal, plastic, tape, and spray. When MANTIS identifies a masking material, the detector sends a supervision anti-mask signal to the control panel.

Active White Light Suppression

An internal light sensor measures the level of light intensity directed at the face of the detector. Sensor data fusion technology uses this information to eliminate false alarms from bright light sources.

Available Coverage

The standard coverage is 16 m x 21 m (50 ft x 70 ft). Installers can set a DIP switch at the detector to select short range coverage of 8 m x 10 m (25 ft x 33 ft).

Dynamic Temperature Compensation

The detector automatically adjusts PIR sensitivity to identify human intruders at critical temperatures. Dynamic temperature compensation detects human body heat accurately, avoids false alarms, and delivers consistent catch performance at all operating temperatures.

Cover and Wall Tamper Switch

When an intruder removes the cover or attempts to separate the detector from the wall, a normally-closed contact opens to alert the control panel.

Self-adjusting LED

The LED brightness adjusts automatically to the surrounding light level. A blue light-emitting diode (LED) indicates an alarm condition and activates during a walk test.

Remote Walk Test LED

Users can enter a command through a keypad, a control center, or programming software to remotely enable or disable the walk test LED.

Alarm Memory

Alarm memory flashes the alarm LED to indicate stored alarms for use in multiple unit applications. A switched voltage from the control panel controls the alarm memory.

Solid State Relays

Solid state relays send silent alarm output signals to provide a higher level of security and reliability. An external magnet does not activate the relay. The solid state relay uses less current than a mechanical relay, providing longer standby capacity during a power loss.

Draft, Insect, and Small Animal Immunity

The sealed optic chamber provides immunity to drafts and insects, reducing false alarms. Small animal immunity reduces false alarms caused by animals less than 4.5 kg (10 lb), such as rodents.

Remote Self Test

A remote self test initiates when the walk test input switches to its true state. The alarm relay and alarm LED activate for four seconds following a successful test. The trouble relay activates, and the alarm LED flashes following a failed test.

Input Power Supervision

When the power is lower than 8 V, a low input power trouble condition activates the trouble relay and causes the LED to flash. The trouble condition clears automatically when power reaches or exceeds 8 V.

Trouble Memory

When the walk test input switches to its true state for less than two seconds, the LED flashes to indicate the most recent trouble condition. If there is no trouble in memory, the LED does not flash. After twelve hours, or after the detector receives a second walk test pulse for two seconds or less, the LED stops flashing and the trouble memory clears.

DIP Switch Programming

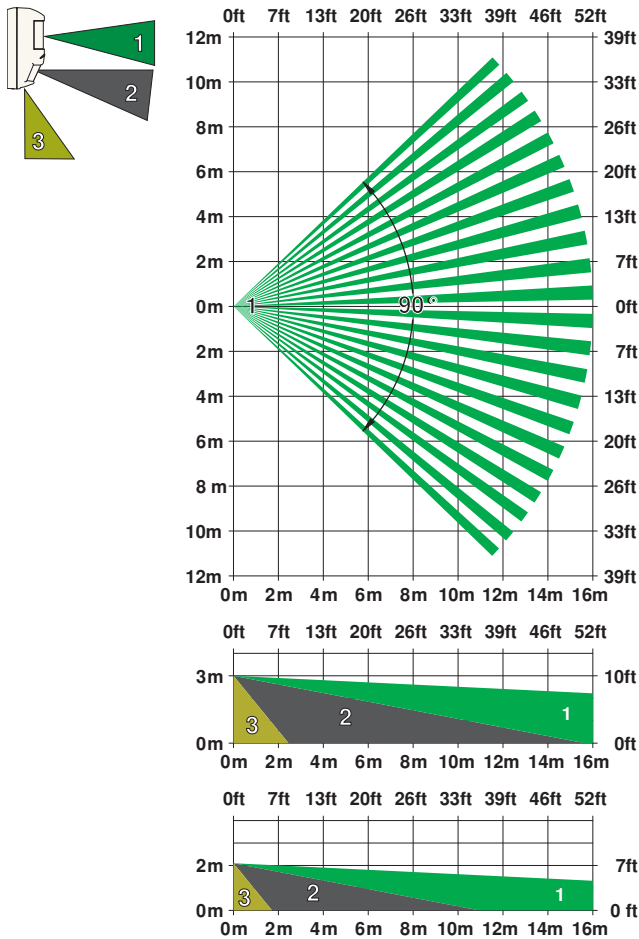
The following functions are all programmed using DIP switch settings:

- Local Walk Test LED
- Remote Walk Test Input Polarity
- Alarm Memory Polarity
- Long and Short Range Select
- MANTIS Anti-mask On and Off

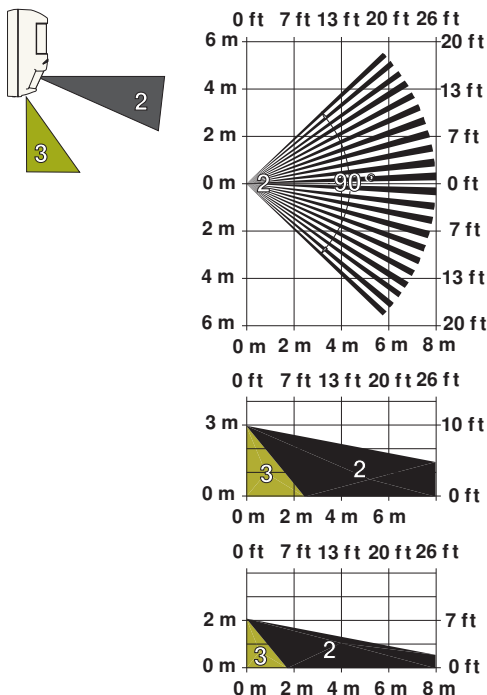
Certifications and approvals

Europe	WEEE	Waste Electrical and Electronic Equipment Directive
The detectors are designed to also comply with the requirements of:		
USA	FCC	Complies with Part 15
Region	Regulatory compliance/quality marks	
Belgium	INCERT	B-509-0051
Russia	GOST	TC N RU Д-НЛ.МН09.В.00334 EAC
USA	UL	[ISC-PPR1-WA16G]
	UL	20190115; UL639 – Standard for Intrusion-Detection Units
France	AFNOR	2630000480B0 2017-ISC-PPR1-WA16G-BOSCH
	AFNOR	2630000480A1 2017-ISC-PPR1-WA16H-BOSCH

Installation/configuration notes



Long-range Coverage 16 m x 21 m (50 ft x 70 ft)



Selectable Short-range Coverage 8 m x 10 m (25 ft x 33 ft)

Mounting

The recommended mounting height is 2 m to 3 m (7 ft to 10 ft) with no adjustments required. Mount the motion detector level, both horizontally and vertically.

Mounting options:

- On a flat wall (surface, semi-flush), with the optional B335-3 Swiveling low-profile mount, or with the optional B328 Gimbal-mount Bracket
- In a corner (the junction of two perpendicular walls)
- On the ceiling with the optional B338 Universal Ceiling-mount Bracket

Wiring Considerations

Recommended wire size is 0.2 mm² to 1 mm² (26 AWG to 16 AWG).

Technical specifications

Electrical

Power Requirements

Voltage (Operating):	9 VDC to 15 VDC
Current (Maximum):	< 26 mA with alarm, trouble, and LEDs active.
Current (Standby):	18 mA at 12 VDC
Relay:	Solid state relay, normally-closed (NC) contacts, power supervised. 3 W, 125 mA, 25 VDC, resistance < 10 Ω.
Tamper:	Normally-closed (NC) contacts (with cover on) rated at 25 VDC, 125 mA maximum. Connect tamper circuit to 24-hour protection circuit.
Trouble:	Solid state relay normally-closed (NC) contacts.

Mechanical

Enclosure Design

Color:	White
Dimensions:	127 mm x 69 mm x 58 mm (5 in. x 2.75 in. x 2.25 in.)
Material:	High-impact ABS plastic

Indicators

Alarm Indicator:	Blue alarm LED
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Zones

Zones:	86
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Environmental

Relative Humidity:	0 to 95%, non-condensing
Temperature (Operating and Storage):	-30°C to +55°C (-22°F to +130°F) <i>For UL Certificated installations, 0°C to +49°C (+32°F to +120°F)</i>
Protection Rating (EN 60529, EN 50102):	IP 41, IK04

Ordering information

✓ **ISC-PPR1-WA16G Motion detector anti-mask, 50ft (16m)**

10.525 GHz frequency.

Order number **ISC-PPR1-WA16G**

ISC-PPR1-WA16H Motion detector anti-mask 16m 10.588GHz

Provides PIR, 16 m x 21 m (50 ft x 70 ft) coverage with anti-mask.

Order number **ISC-PPR1-WA16H**

Accessories**B328 Mounting bracket, gimbal**

Mounts on a single-gang box and allows rotation of a detector. Wires are hidden inside.

Order number **B328**

B335-3 Mounting bracket, swivel, low profile

Swiveling, low-profile, universal bracket for wall mounting. The vertical swivel range is +10° to -20°, while the horizontal swivel range is ±25°.

Order number **B335-3**

B338 Mounting bracket, ceiling, universal

Swiveling universal bracket for ceiling mounting. The vertical swivel range is +7° to -16°, while the horizontal swivel range is ±45°.

Order number **B338**

Represented by:

Europe, Middle East, Africa:
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5600 JB Eindhoven, The Netherlands
Phone: + 31 40 2577 284
emea.securitysystems@bosch.com
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DS9370/DS9371 Series Panoramic TriTech Ceiling Mount Detectors

www.boschsecurity.com



BOSCH
Invented for life



- ▶ Up to 6.1 m (20 ft) mounting height
- ▶ Fully adjustable optics for coverage integrity and customization
- ▶ Hinged chassis and base plate for easy installation
- ▶ High efficiency LED and light pipe system for easy walk testing
- ▶ First Step processing, or FSP

Each DS9370 Series TriTech PIR/Microwave Doppler radar Motion Detector model is panoramic and uses several patented processing techniques to provide excellent catch performance with freedom from false alarms. Each model can be mounted on ceilings as high as 6.1 m (20 ft). With three separate PIR sections that are fully adjustable, the DS9370 Series provides coverage integrity at all mounting heights, plus the ability to customize the coverage for specific areas.

Functions

Signal Processing

Uses passive infrared and microwave Doppler radar technologies to provide an alarm condition when both fields of protection are simultaneously activated. Alarm signals must meet the signaling requirements of both technologies to activate an alarm.

First Step Processing

FSP allows virtually instant response to human targets without sacrificing false alarm immunity to other sources. By adjusting its sensitivity based upon signal amplitude, polarity, slope and timing, FSP eliminates the need for the installer to select the sensitivity level

for the application. Each sensor is processed individually and both must agree there is an alarm before the alarm relay is activated.

Microwave Noise Adaptive Processing

Adaptive processing adjusts to background disturbances. This helps to reduce false alarms while maintaining catch performance.

Microwave Supervision

Patented fully supervised microwave Doppler radar provides single technology coverage in the event the microwave subsystem fails.

Test Features

- High efficiency LED and light-pipe system provide walk test indication that is easily viewable from any angle and at any mounting height.
- Alarm memory feature allows detector to latch the alarm LED to aid in response.
- Remote LED walk-test control allows the LED to be enabled or disabled using a switched input without accessing the detector.

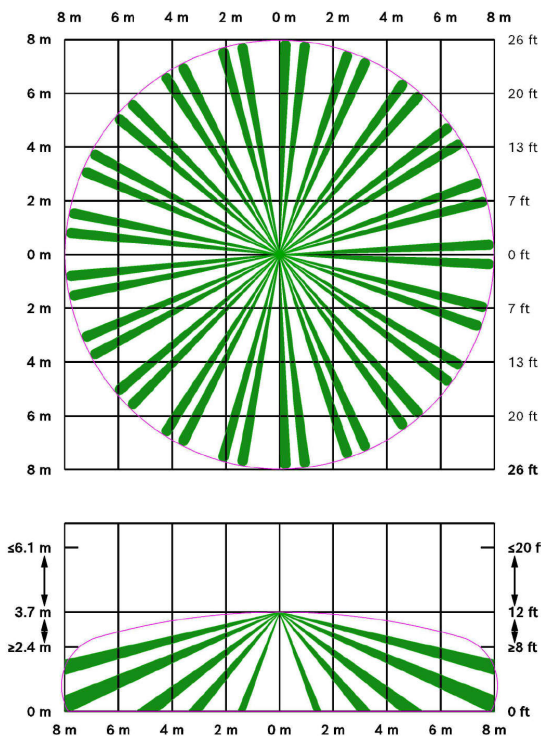
Certifications and approvals

Australia

DS9370: AUS C-tick

Region	Regulatory compliance/quality marks	
Australia	RCM	[DS9370]
Europe	EN50131	2820200009A1 [DS9370E-C]
	EN50131	2800200010A1 [DS9370E]
Belgium	INCERT	B-B09-1006 DS9370E
Sweden	SBSC	470 3 008 20 0008 [DS9370E]
Russia	GOST	TC N RU Д-НЛ.МН09.В.00334 EAC
USA	UL	20190115; UL639 – Standard for Intrusion-Detection Units
	UL	Intrusion Detection Units Certified for Canada (cULus) [DS9370]
	FCC	ESV9370
Canada	IC	1249A-12073
France	AFNOR	2800200010A1 2021-DS9370E-BOSCH
	AFNOR	2820200009A1 [DS9370E-C]
China	CCC	2015031901000325 [DS9370-CHI]
Brazil	ANATEL	Certificado Anatel 0871-03-1855 [DS9370 & DS9371]
Singapore	iDA	LPREQ-S0154-2004 [DS9370]

Installation/configuration notes



Mounting Considerations

The mounting height range is from 2.4 m to 6.1 m (8 ft to 20 ft).

These detectors can be mounted directly on the ceiling or on a standard 9 cm (3.5 in.) rectangular electrical box.

The maximum range of the detector depends on the mounting height and the vertical adjustment of the PIR coverage pattern as well as the presence or lack of microwave Doppler radar reflective materials within the coverage area. In areas where part of the area needs a targeted coverage, the optical modules can be adjusted for the correct coverage.

A masking kit containing two 120° and two 90° masks is included to allow masking unwanted areas. Apply the masks to the outside of the detector. With the supplied masks, you can mask 90°, 120°, 180°, 210°, 240°, or 330°.

Coverage Information

For UL, ULC applications, provides up to 7.0 m (23 ft) radius, 14.0 m (46 ft) diameter 360° coverage when mounted up to 6.1 m (20 ft).

For EN50131 applications, provides up to 7.0 m (23 ft) radius, 14.0 m (46 ft) diameter 360° coverage when mounted up to 5.2 m (17 ft).

For CCC applications, provides up to 8.2 m (27 ft) radius, 16.4 m (54 ft) diameter 360° coverage when mounted up to 4.9 m (16 ft).

Pattern consists of 69 zones in 21 barriers. The barriers are grouped into three groups of seven barriers each. Each group has vertical adjustment for customized coverage.

Copyright

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Technical specifications

Enclosure Design

Design	Modular chassis and hinged mounting base design provide easy access to field setup switches and wiring.
Dimensions	8.9 cm x 17.8 cm (3.5 in. X 7 in.)
Material	High impact ABS plastic enclosure

Environmental Considerations

Operating Temperature	FCC: +5 °C to +50 °C (41 °F to 122°F) CCC / CE (excluding France, UK): - 10 °C to +55 °C (14 °F to 131 °F) CE France: 5 °C to + 40 °C (41 °F to 104 °F)
Radio Frequency Interference (RFI) Immunity	No alarm or setup on critical frequencies in the range from 26 MHz to 950 MHz at 50 V/m.

Mounting

Height Range	2.4 m to 6.1 m (8 ft to 20 ft) recommended
Location	Mounts directly to ceiling or to standard 10.2 cm (3.5 in.) octagonal electrical box.

Outputs

Alarm	Form C Solid State relay rated at 2.8 W, 100 mA at 28 VDC for DC-resistive loads.
Tamper	Cover and ceiling tamper. Normally Closed (with cover in place) tamper switch. Contacts rated at 28 VDC, 100 mA, 3 W maximum.

Power Requirements

Current	12 mA standby, 20mA in alarm. Max 24mA
Voltage	9 VDC to 15 VDC

Ordering information



DS9370 Motion detector 360° ceiling mount

Classic Line TriTech CM Motion detector, 360° ceiling mount. 10.52 to 10.55 GHz <20mW. White.
Order number **DS9370**

DS9370E Motion detector 360° ceiling mount, EU

Classic Line TriTech CM Motion detector, 360° ceiling mount. For use in Europe. 10.52 to 10.55 GHz. <20mW. White.
Order number **DS9370E**

DS9370E-C Motion detector 360° ceiling mount, FR
Classic Line TriTech CM Motion detector, 360° ceiling mount. 10.57 - 10.60 GHz. <20mW. White. For use in France only.
Order number **DS9370E-C**

DS9370-CHI Motion detector 360° ceiling mount, CN
Classic Line TriTech CM Motion detector, 360° ceiling mount. For use in China. 10.525 GHz. White.
Order number **DS9370-CHI**

DS9371 Motion detector 360° ceiling black
Classic Line TriTech CM Motion detector, 360° ceiling mount. 10.52 to 10.55 GHz <20mW. Black enclosure and lenses.
Order number **DS9371**

DS9371E Motion detector 360° ceiling black, EU
Classic Line TriTech CM Motion detector, 360° ceiling mount. For use in Europe. 10.52 to 10.55 GHz. <20mW. Black enclosure and lenses.
Order number **DS9371E**

Represented by:

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Flex Gen4 Dual Sensor Camera

Enhanced security with AI-powered multi-directional camera



Improved Situational Awareness

Available in 10MP and 16MP resolution plus superior WDR, defog and individually controllable IR per sensor



Edge Intelligence

Dedicated AI analytics built into each sensor enable independent object classification, rules and alerts with no restriction on captured data types



Cost-Effective

Wider field of view and lower cost of ownership with dual-head sensors, one power cable, and one VMS license



Corridor Mode

Optimized aspect ratio to get less wall and more hall regardless of deployment



Designed for Easy Install

Camera simply clicks onto mounting plate featuring clips for internal connections and a single driver for all screws



Cyber Secure

NDAA compliant, encrypted data, and conforms to rigorous JCI cyber security regime

Specifications



Camera	10MP (2x 5MP)	16MP (2x 8MP)
Image Sensor	Sony 1/2.8" Progressive Scan CMOS imager	Sony 1/1.8" Progressive Scan CMOS imager
Lens	3.42 mm – 6.85 mm, motorized focus and zoom, P-Iris F/1.85(W) – F/2.4(T) One Touch auto focus, manual and automatic focus with zoom	
Field of View (FoV)	H: 99.7° – 45.5° V: 68.1° – 32.7°	H: 104.4° – 47.2° V: 53.9° – 26.3°
Day/Night	True Day/Night CF removal	
Minimum Illumination	Color: 0.13 lux B/W: 0.04 lux IR on: 0 lux	Color: 0.1 lux B/W: 0.03 lux IR on: 0 lux
Sensor Module Control	Each sensor manually repositionable	
Camera Angle Adjustment	Pan 355°, Tilt 60°, Rotation 355°	
Electronic Shutter Control	Automatic, Manual (1/4 to 1/32000 sec)	
IR Illumination* <small>*Non-IR model: NA</small>	Dedicated IR per sensor 850 nm LEDs, 35 m (114.83 ft) Individually controllable	Dedicated IR per sensor 850 nm LEDs, 30 m (98.43 ft) Individually controllable
Memory	2048 MB RAM, 8192 MB Flash	

Video

Bandwidth Management	IntelliZip® Smart Codec	
Video Compression	H.264/H.265/MJPEG H.264 IntelliZip® / H.265 IntelliZip®	
Bitrate Control	CBR/VBR/CVBR (configurable)	
Resolution (HxV) & Aspect Ratio	4:3: 2x 2560x1920 (2x 5MP) to 480x272	16:9: 2x 3840x2160 (2x 8MP) to 480x272
Max Frame Rate (60 Hz/50 Hz)	2MP: 60/50 fps 5MP: 30/25 fps	2MP: 60/50 fps 8MP: 15/12.5 fps
Video Streams	Triple Streaming with a maximum of 5 concurrent shared streams (per sensor)	
Dynamic Range	True multi shutter WDR up to 120dB SmartWDR, TWDR 2x, TWDR 3x	
SmartDefog	Supported	
Image Orientation	None, Mirror, Flip, Flip and Mirror Corridor Mode (rotate 90° right or left)	
Picture Settings	Auto Exposure: Multiple Profiles (incl Auto, Gaming, LPR), Multiple ROI (incl AI ROI: Object, Person), Gain Control (Auto, Max, Manual), Flickerless, White Balance (Auto Normal, Auto Wide, Manual), text overlay	
Privacy Zones	20 user definable rectangular zones (10 per sensor)	
Image Stabilization	Electronic Image Stabilization (available in future firmware release)	

Analytics

AI Object Classification	Classes: Person, Bicycle, Bus, Car, Motorbike, Train, Truck, Any Class Rules: Object Detected, Perimeter, Linger, Dwell, Abandoned/Removed, Enter, Exit, Crowd, Queue Sub-Classes: Person Clothing Color (Upper, Lower), Vehicle Color
AI Tamper Detection	Blackout, Whiteout, Scene Change (FoV tamper)
AI Blur Detection	Supported
AI Metadata	Supported
Motion Detection Zones	6 zones supported (3 zones per sensor)

Network

Network	IEEE 802.3, 10/100Base-T Ethernet, RJ45, auto sensing
Cyber security	ISASecure ISA/IEC 62443-4-1 certified secure development Secure boot Signed and encrypted firmware
Authentication and Security	TLS, HTTPS (HTTP over TLS), WS-Security, Certificate Management, Multi-level password protection, IP address filtering, HTTPS encryption, Enhanced Security (One-Click Security Hardening), User Access Log, Validate Complex Credentials, Disabling Unused Protocols, IEEE 802.1x (PEAP, EAP-TLS, EAPoL)
Protocols	TCP/IP, IPv4, IPv6, TCP, UDP, HTTP, FTP, DHCP, WS-Discovery, DNS, DDNS, RTP, RTCP, RTSP, TLS, Unicast, Multicast, NTP, ICMP, IGMP, SMTP, WS-Security, IEEE 802.1x, PEAP, EAP-TLS, EAPoL, SSH, HTTPS, SOAP, WS-Addressing, CIFS, UPNP, LLDP, QoS, SIP, ARP, EAP-LEAP, QoS
Network management	SNMPv1/v2c/v3(MIB-2)
Simultaneous users	10 users

System Integrations

Application Programming Interface	ONVIF conformance with future firmware release Illustra iAPI via Connected partner program
Event Triggers	Motion Detection, Tamper & Blur Detection, AI Object classification, Alarm Input, Network Loss, Periodic Event, Temperature
Event Actions	Record to SD card, Snapshot, SMTP e-mail file transfer, FTP file transfer, CIFS, Auxiliary output, Audio clip playback, SIP Call
Audio compression	G.711 μ -law
Audio Input/Output	Bi-directional, 1x Line input and 1x Line output
External I/O Terminals	1x Alarm In and 1x Alarm Out

Peripherals

Onboard Storage	2 x microSDXC slots, Class 10 or better, upto 2TB supported (1TB per slot), Card not included. Pre event / Post event 1- 10 sec Encrypted storage and streaming TrickleStor offline recording and backfilling via VideoEdge and ExacqVision NVR
Wireless configuration	Micro USB via optional USB Wi-Fi Dongle IA-KIT-WD-UUA

Electrical

Power	Power over Ethernet (PoE+) IEEE 802.3at Type 2 Class 4 24VAC IR model: 23.1W; 1.75A Non-IR model 16.5W; 1.3A:	23.3W; 1.75A
Dual Power Redundancy	Supported	

Physical

Operating Condition	Operating temperature: -40°C (-40°F) to +60° C (140°F) Start-up temperature: -40°C (-40°F) Humidity: up to 95% RH, Non-Condensing
Casing	IP66, IP67, NEMA 4x and IK10 rated Housing: Aluminum alloy Dome: Polycarbonate Color: Signal White Pantone RAL 9003
Dimensions (LxWxH)	220mm x 123mm x 93.8mm (8.66in x 4.84in x 3.69in)
Weight	Net 1.2 kg (2.65 lbs), Gross 2 kg (4.41 lbs)

Regulatory

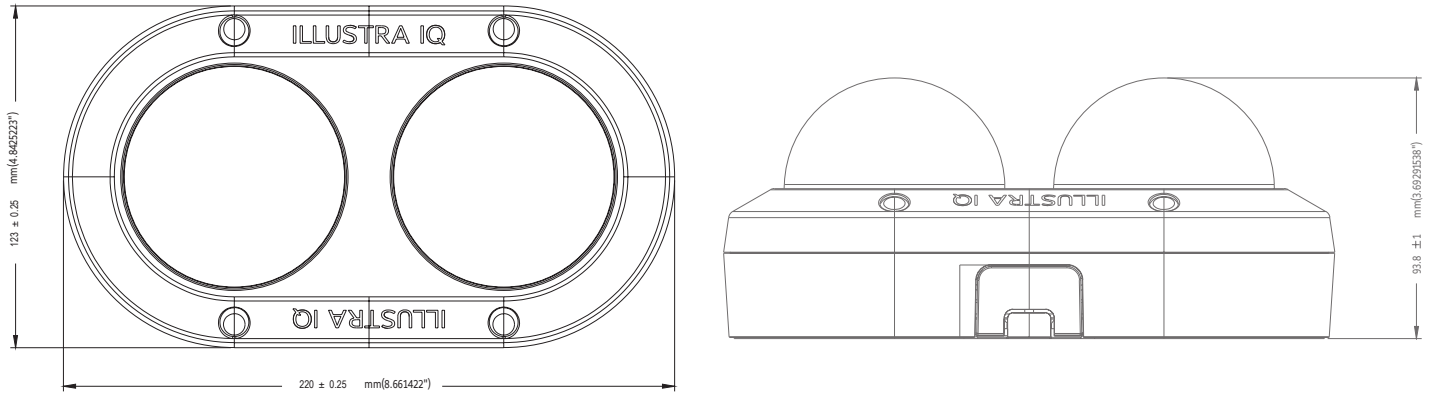
EMC	BS/EN 55032 Class A, FCC Part 15 Class A; EN55032 Class A; AS/NZS CISPR 32 Class A; ICES-003/NMB-003 Class A, IEC/BS/EN 61000-3-2, BS/EN 61000-3-3, BS/EN 50130-4, IEC 61000-4-2/3/4/5/6/11
Safety	CAN/CSA C22.2, BS/EN 62368-1, UL 62368-1, AS/NZS 62368-1, J62368-1, CEI EN 62368-1 EN50121-4, EN60950-1, UL60950-1, IEC 60950-1, CSA 22.2 No. 60950
Environment	NEMA 250 Type 4X, IEC 62262 (IK10), IEC 60529 (IP66/67), RoHS, WEEE, REACH

General

Web Browsers	Microsoft Edge, Firefox, Safari, Chrome
Language	Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, English (default), French, German, Hungarian, Italian, Japanese, Korean, Netherlands, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
NDAA Compliant	Yes
TAA Compliant	Yes
Warranty	5 Years

Camera Dimensions

Unit: mm(in)



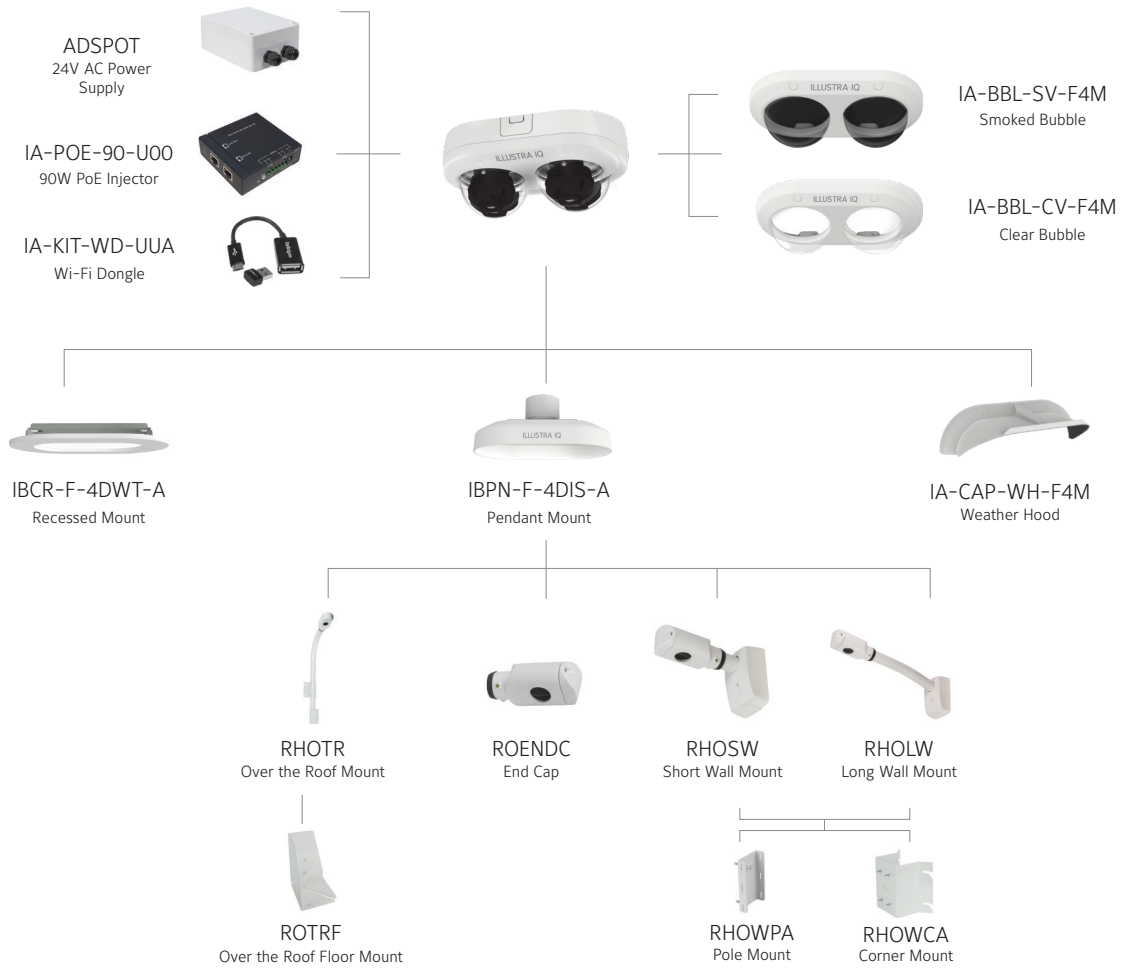
Ordering Information

Model Number	Description
IFS10-M10-OIA4	Illustra Flex Gen4 10MP Dual Sensor, MFZ 3.42-6.85mm, Edge AI, TWDR, TDN w/IR, IP66/67, IK10
IFS10-M10-OTA4	Illustra Flex Gen4 10MP Dual Sensor, MFZ 3.42-6.85mm, Edge AI, TWDR, TDN, IP66/67, IK10
IFS16-M10-OIA4	Illustra Flex Gen4 16MP Dual Sensor, MFZ 3.42-6.85mm, Edge AI, TWDR, TDN w/IR, IP66/67, IK10

Optional Accessories

Model Number	Description
IBPN-F-4DIS-A	Illustra Flex Gen4 Dual Sensor Pendant Mount
IA-CAP-WH-F4M	Illustra Flex Gen4 Dual Sensor Weather Hood
IA-BBL-CV-F4M	Illustra Flex Gen4 Dual Sensor Clear Bubble
IA-BBL-SV-F4M	Illustra Flex Gen4 Dual Sensor Smoked Bubble
IBCR-F-4DWT-A	Illustra Flex Gen4 Dual Sensor Recessed Mount
RHOLW	Wall Mount, 1 1/2" NPT, long (23") (use with IBPN-F-4D15-A), white
RHOSW	Wall Mount, 1 1/2" NPT, short (11") (use with IBPN-F-4D15-A), white
ROENDC	End cap for RHOxW mounts
RHOTR	Over roof mount, 1 1/2" NPT, white
ROTRF	Over the Roof Floor Mount (use with RHOTR)
RHOWCA	Corner Mount (use with RHOxW and IBPN-F-4D15-A)
RHOWPA	Pole Mount (use with RHOxW and IBPN-F-4D15-A)
ADSPOT	60w 24V AC Power Supply
IA-POE-90-U00-EU	90w PoE Injector, EU and UK power plug
IA-KIT-WD-UUA	Illustra Wi-Fi Dongle Kit

Accessory Chart



IL1443-DS-202308-R01-HS-EN

Illustra

Pro Gen4 Multisensor Camera

Change Your View of Camera Surveillance

4 Repositionable lenses cover you from every angle



4 Cameras in One

4 individually repositionable sensors with motorized varifocal lenses in a single housing



Edge Analytics

Deep learning AI built into each camera with object classification, rules and alerts



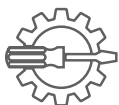
High-Quality Images

Available in 20MP and 32MP resolution plus superior WDR, defog and integrated 30m infrared vision



Cost Effective

1 camera license and 1 network cable for connectivity to the video management system (VMS)



Designed for Easy Install

Built-in hinge holds camera during install process



Cyber Secure

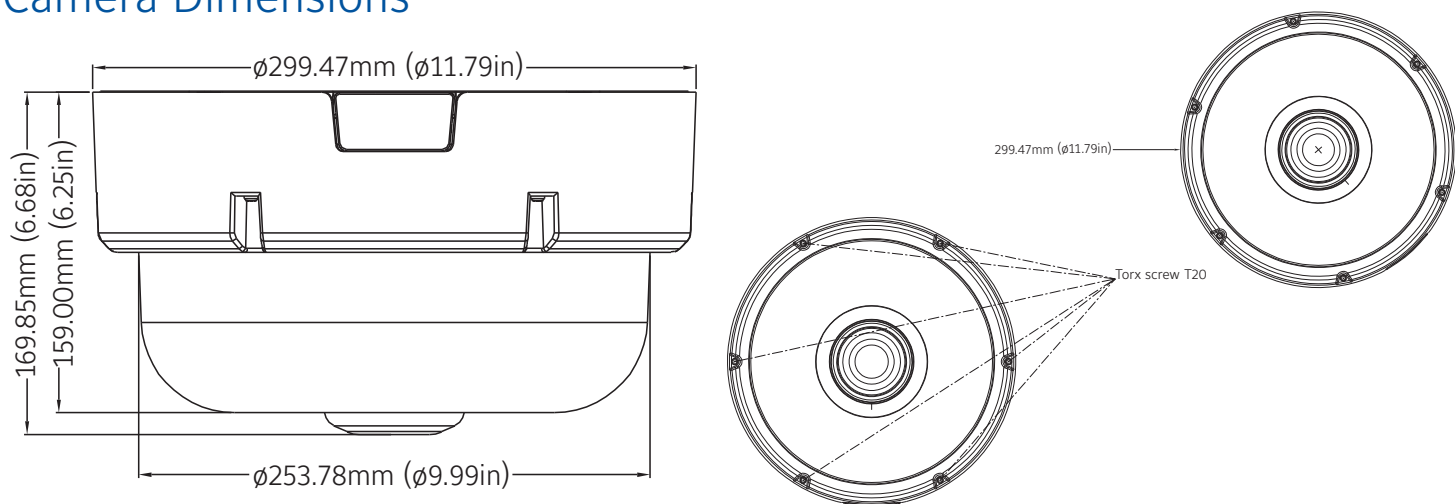
NDAA compliant, exceeds JCI security requirements

Specifications

Operational	20MP (4x 5MP)	32MP (4x 8MP)
Video Compression	H.264 / H.265 / MJPEG / IntelliZip	
Max Frame Rate	5MP @ 30fps, 2MP @ 60fps	8MP @ 30fps, 2MP @ 60fps
Resolution & Aspect Ratio	2560x1920 (5MP) 4:3 2560x1444 (4MP) 16:9 1920x1080 (1080p) 16:9 1664x936 (HD+) 16:9 1280x720 (720p) 16:9 1024x576 (PAL+) 16:9 800x600 (SVGA) 4:3 816x464 156:9 640x360 (nHD) 16:9 480x360 4:3 480x272 16:9	3840x2160 (4K) 16:9 3264x1840 (6MP) 16:9 2688x1520 (4MP) 16:9 1920x1080 (1080p) 16:9 1664x936 (HD+) 16:9 1280x720 (720p) 16:9 1024x576 (PAL+) 16:9 960x544 (qHD) 16:9 816x464 16:9 640x360 (nHD) 16:9 480x272 16:9
Imager	Sony IMX335 1/2.8" CMOS image sensor	Sony IMX334 1/1.8" CMOS image sensor
Image Orientation Settings	None, Mirror, Flip, Flip and Mirror, Corridor (rotate 90° right or left)	
Video Streams	Quad Streaming (per sensor)	
Lens Type	Motorized Varifocal and Focus, P-Iris	
Focus Control	One-Touch Auto Focus or Remote Adjustment	
Focal Length	2.7-13.5mm	3.6 -11mm
Sensor Module Control	Pan, Tilt & Rotate per sensor module	
Field of View Wide (H/V)	103°/74°	95°/53°
Field of View Telephoto (H/V)	33°/25°	49°/28°
Aperture	f/1.4 (W)	f/1.5 (W)
	f/2.8 (T)	f/2.8 (T)
Minimum Illumination		
Color, 1/4s, 30 IRE, AGC	0.11 Lux	0.2 Lux
B/W, 1/4s, 30 IRE, AGC	0.06 Lux	0.11 Lux
W/IR	0.0 Lux	0.0 Lux
IR Distance	30m (98ft); Not applicable in non-IR model)	
Dynamic Range	True WDR 120 dB Technologies	
SmartWDR	Supported	
Day/Night	True Day/Night CF Removal	
Shutter Speed	≥ 1/10,000 to 1/4 s	
ONVIF-Compliant	Profile S (Future release)	
Object Classification	Classes: Person, Bicycle, Bus, Car, Motorbike, Train, Truck, Any Class	
	Rules: Object Detected, Perimeter, Linger, Dwell, Abandoned / Removed, Enter, Exit, Crowd, Queue	
Tamper AI Detection	Blackout, whiteout, scene change (FOV tamper)	
Motion Detection Zones	3 per Sensor	
Face Detection	Yes	
Blur Detection	Yes	
Privacy Zones	8 Per Sensor	
Alarm Input/Output	2 input, 2 output	
Audio	Bi-directional; 1 input, 1 output	
Simultaneous Users	10	
Supported Languages	Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, English (default), French, German, Hungarian, Italian, Japanese, Korean, Netherlands, Polish, Portuguese, Russian, Spanish, Swedish, Turkish	

Network	
Ethernet Interface	10/100/1000 BaseT, RJ-45, Auto-Negotiation
Supported Protocols	TCP/IP, IPv4, IPv6, TCP, UDP, HTTP, FTP, DHCP, WS-Discovery, DNS, DDNS, RTP, TLS, RTSP, ICMP, Unicast, Multicast, NTP, SMTP, WS-Security, SNMP, CIDS, FSTP, UPnP™, SIP
Configuration Management	
Web Browsers	Microsoft Edge, Firefox, Safari, Chrome
Security	Secure Boot, Enhanced Security Mode (forces complex passwords, HTTPS and disables discovery); TLS, 1.2 (256 bit cipher minimum); Security Overview Page (status and configuration); RTSP Authentication; IEEE 802.1X Client; Remote Accessible Audit logs; Role-Based Access Control, Video Encryption for local storage and streaming.
Onboard Storage	
Card Support	Built-in Quad Micro SDXC slot up to 2TB per slot; Card not included
Pre-Alarm Recording	Yes
Recording Format	MP4 File Format
Recording Trigger	Dry Contact Alarms, Motion Detection, Face Detection, AI Object Classification, Periodic Events
TrickleStor	Yes, encrypted storage
Electrical	
Power	Power over Ethernet (PoE++) IEEE 802.3bt Type 4 Class 8; 24 VAC, Max Draw: PoE 71.3W, 24 VAC 71.3W
Dual Power	Yes
Physical	
Dimensions (RxH)	ø299mm x 169mm (ø11.8in x 6.7in)
Weight	Manual non-IR: 5.03 kg (11.08 lbs): Manual IR: 5.07 kg (11.17 lbs)
Housing Color	Signal White - RAL 9003
Operating Temperature	-40°C (-40°F) to +55° C (131°F)
Humidity	Up to 90% Non-Condensing
Vandal Resistant	IK10
Outdoor Rating	IP66
Regulatory	
Safety	EN60950-1; UL60950-1; IEC 60950-1; CSA 22.2 No. 60950
Emissions	FCC Part 15 Class A; EN55032 Class A; AS/NZS CISPR 32 Class A; ICES-003/NMB-003 Class A
Immunity	EN55024; EN50130-3
Environment	RoHS; WEEE

Camera Dimensions



IL1371-DS-202207-R01-HS-EN I Pro Gen4 Multisensor Camera

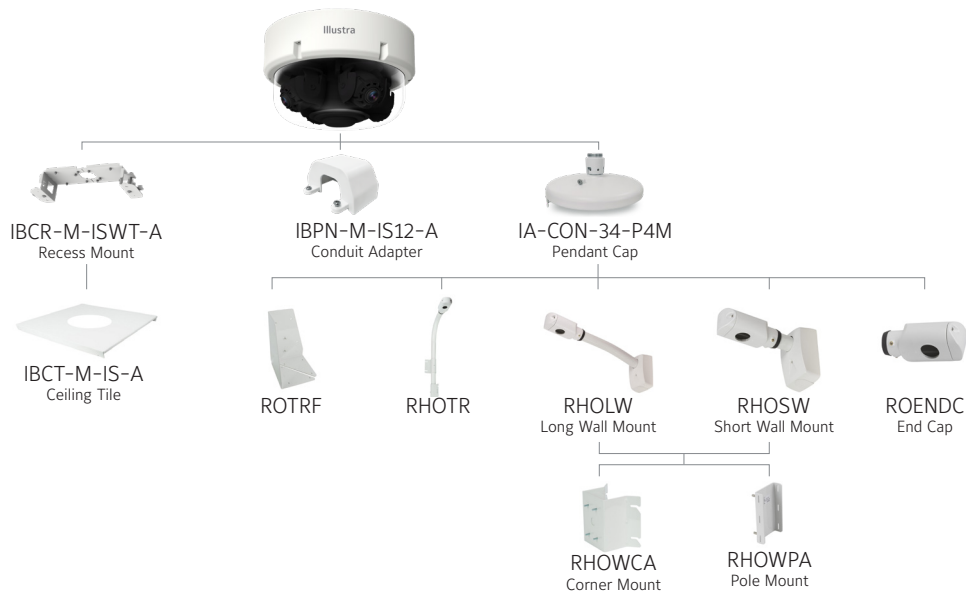
Ordering Information

Model Number	Description
IPS20-M12-OIA4	Illustra Pro Gen4 (5MP x4) 20MP Multisensor, 2.7-13.5mm, AI, TDN w/IR, TWDR, IP66, IK10, Quad SDXC
IPS32-M13-OIA4	Illustra Pro Gen4 (8MP x4) 32MP Multisensor, 3.6-11mm, AI, TDN w/IR, TWDR, IP66, IK10, Quad SDXC
IPS20-M12-OTA4	Illustra Pro Gen4 (5MP x4) 20MP Multisensor, 2.7-13.5mm, AI, TDN, TWDR, IP66, IK10, Quad SDXC
IPS32-M13-OTA4	Illustra Pro Gen4 (8MP x4) 32MP Multisensor, 3.6-11mm, AI, TDN, TWDR, IP66, IK10, Quad SDXC

Accessories

Model Number	Description
IBPN-M-IS12-A	Illustra Pro Gen4 Multisensor Pendant Cap
IBCR-M-ISWT-A	Illustra Pro Gen4 Multisensor Recessed Ceiling Mount (future release)
IA-CON-34-P4M	Illustra Pro Gen4 Multisensor Conduit Adapter
IBCT-M-IS-A	Illustra Pro Gen4 Multisensor Ceiling Tile
RHOLW	Wall Mount, 1 1/2" NPT, long (23") (use with IBPN-M-IS12-A), white
RHOSW	Wall Mount, 1 1/2" NPT, short (11") (use with IBPN-M-IS12-A), white
ROENDC	End cap for RHOxW mounts
RHOTR	Over roof mount, 1 1/2" NPT, white
ROTRF	Floor Adapter (use with RHOTR)
RHOWCA	Corner Adapter (use with RHOxW and IBPN-M-IS12-A)
RHOWPA	Pole Adapter (use with RHOxW and IBPN-M-IS12-A)
IA-POE-90-U00	90w PoE Injector
IA-POE-90-U00-EU	90w PoE Injector, EU and UK power plug
IA-KIT-WD-UUA	Illustra WiFi Dongle Kit

Accessory Chart



IL1371-DS-202207-R01-HS-EN | Pro Gen4 Multisensor Camera

Illustra Flex Gen4

2MP, 4MP, 8MP Mini-Domes



Key Features

- 2MP, 4MP & 8MP resolution provides true HD quality images with video analytics along with improved WDR
- Built in AI delivers accurate object classification, powerful situational awareness and security automation
- Increased IR Distance
- VideoEdge® TrickleStor technology for edge-based failover redundancy
- Easy to install with user friendly accessories and Wi-Fi configuration

High-Quality, Versatile Video Capabilities

The powerful Illustra Flex Mini-Domes are designed to offer a superior image quality, feature rich surveillance option for a wide range of applications. The outdoor mini-domes feature built-in long range IR illuminators to produce clear images at an effective distance of 40 meters in a variety of low light conditions. Fourth-generation Illustra Flex models offer high resolution and high performance while simplifying installation and configuration.

Edge Intelligence Driven by Deep Learning AI

Illustra Flex Mini-Domes are powered by the rise of intelligence at the edge. With built-in AI based object classification, events can be narrowed to classes such as person, car, bus, motorcycle and more. Forensic searches becomes more accurate and situational awareness more automated with fewer missed incidences and false alarms. Choose from a variety of analytic rules to customize the solution that will be most beneficial to your business and begin gathering transformative data instantly.

Powerful Technology to Increase Confidence and Savings

The Flex product family cameras feature built-in technology that ensure efficient recording and smart bandwidth management. When paired with VideoEdge, exacqVision NVR or Cloudvue, edge-based failover redundancy allows video recording to continue on the camera when a network disruption occurs or the NVR / cloud is offline. When the connection is restored, video transfers back to the media database for a seamless video timeline experience. Illustra® IntelliZip continuously monitors and optimizes system streaming parameters to match the level of activity within the camera's field of view.

Safeguard Against Cyber Attacks Across Devices

Illustra Flex cameras have been designed to be resilient against cyber threats. Our products are gated, analyzed, tested and required to meet and exceed the rigorous standards of the Johnson Controls Cyber Solutions Product Security Program for every release. This holistic approach is aimed at providing peace of mind to our customers. Our security mindset begins at initial design concept and is supported through deployment, including a rapid incident response to meet the comprehensive and evolving cybersecurity environments.

Specifications

Operational	2 MP	4 MP	8 MP
Video Compression	H.264 / H.265 / MJPEG / IntelliZip		
Max Frame Rate	2MP @ 60fps	4MP @ 30fps	8MP @15fps
Resolution & Aspect Ratio	1920 x 1080 (1080p) 16:9 1664 x 936 (HD+) 16:9 1280 x 720 (720p) 16:9 1024 x 576 (PAL+) 16:9 960 x 544 (qHD) 16:9 816 x 464 16:9 640 x 360 (nHD) 16:9 480 x 272 16:9	2560 x 1920 (5MP) 4:3 2560 x 1440 (4MP)*1 16:9 1920 x 1080 (1080p) 16:9 1664 x 936 (HD+) 16:9 1280 x 720 (720p) 16:9 1024 x 576 (PAL+) 16:9 816 x 464 16:9 800 x 600 (SVGA) 4:3 800 x 448 16:9 640 x 360 (nHD) 16:9 480 x 272 16:9 *default resolution	3840 x 2160 (4K) 16:9 3264 x 1840 (6MP)16:9 2688 x 1520 (4MP)16:9 1920 x 1080 (1080p) 16:9 1664 x 936 (HD+) 16:9 1280 x 720 (720p) 16:9 1024 x 576 (PAL+) 16:9 960 x 544 (qHD) 16:9 816 x 464 16:9 640 x 360 (nHD) 16:9 480 x 272 16:9
Imager	1/2.8" Sony IMX327 CMOS	1/2.8" Sony IMX335 CMOS	1/1.8" Sony IMX334 CMOS
Image Orientation Settings	None, Mirror, Flip, Flip and Mirror, Corridor (rotate 90° right or left)		
Video Streams	Triple Streaming		
Lens Type	Motorized Varifocal and Focus, P-Iris		
Focus Control	One Touch Auto-Focus or Remote Adjustment		
Focal Length	2.7-13.5mm	2.7-13.5mm	3.6-11mm
Field of View Wide (H/V)	112°/58°	103°/74°	95°/53°
Field of View Telephoto (H/V)	35°/20°	33°/25°	49°/28°
Aperture	f/1.4 (W) f/2.8 (T)	f/1.4 (W) f/2.8 (T)	f/1.5 (W) f/2.8 (T)
Minimum Illumination			
Color, 1/4s, 30 IRE, AGC	0.04 Lux	0.11 Lux	0.2 Lux
B/W, 1/4s, 30 IRE, AGC	0.02 Lux	0.06 Lux	0.11 Lux
W/IR	0.0 Lux	0.0 Lux	0.0 Lux
IR Distance	Indoor: N/A; Outdoor: 40m		
Dynamic Range	True WDR 120 dB Technologies		
Day/Night	True Day/Night CF Removal		
Shutter Speed	≥ 1/10,000 to 1/4 s		
ONVIF-Compliant	Profiles S		
Object Classification	Yes		

Object Class	Person, Bicycle, Bus, Car, Motorbike, Train, Truck, Any Class
Rules	Object Detected, Perimeter, Linger, Dwell, Abandoned / Removed, Enter, Exit, Crowd, Queue
Motion Detection Zones	3
Face Detection	No
Blur Detection	Yes
Privacy Zones	8
Alarm Input/Output	1 input, 1 output
Video Output	HDMI (requires accessory)
Audio	Bi-directional; 1 input, 1 output
Simultaneous Users	10
Supported Languages	Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, English (default), French, German, Hungarian, Italian, Japanese, Korean, Netherlands, Polish, Portuguese, Russian, Spanish, Swedish, Turkish
Network	
Ethernet Interface	10/100 BaseT, RJ-45, Auto-Negotiation
Supported Protocols	TCP/IP, IPv4, IPv6, TCP, UDP, HTTP, FTP, DHCP, WS-Discovery, DNS, DDNS, RTP, TLS, RTSP, ICMP, Unicast, Multicast, NTP, SMTP, WS-Security, SNMP, CIDS, FSTP, UPnP™, SIP
Configuration Management	
Web Browsers	MS Edge, Firefox, Safari, Chrome
Security	Secure Boot, Enhanced Security Mode (forces complex passwords, HTTPS and disables discovery); TLS 1.2 (256 bit cipher minimum); Security Overview Page (status and configuration); RTSP Authentication; IEEE 802.1X Client; Remote Accessible Audit logs; Role-Based Access Control, Video Encryption for local storage and streaming.
Onboard Storage	
Card Support	micro SDXC up to 1TB
Pre-Alarm Recording	Yes
Recording Format	MP4 File Format
Recording Trigger	Dry Contact Alarms, Motion Detection, AI Object Classification, Periodic Events
TrickleStor	Yes, encrypted storage
Electrical	
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3; 24 VAC or 24 VDC Indoor: PoE 4K=6.72W, 2MP/4MP= 6.24W; 24 VAC 4K=7.9W, 2MP/4MP= 7.6W Outdoor: PoE 4K=12.72W, 2MP/4MP= 11.8W; 24 VAC 4K=13.2W, 2MP/4MP= 12.9W
Physical	
Dimensions (RxH)	Ø123mm x 107mm (4.85 in x 4.21 in)
Weight	0.97KG (2.14 lbs)
Housing Color	Signal White - RAL 9003
Operating Temperature	Indoor: -10°C to +60°C; Outdoor: -50°C to +60°C
Humidity	Up to 90% Non-Condensing
Vandal Resistant	IK10
Outdoor Rating	IP66/IP67
Regulatory	
Safety	UL 62368-1; CAN/CSA C22.2 No. 62368-1-14; IEC 62368-1; EN 62368-1
Emissions: (Class A)	FCC Part 15; ICES-003 - 7; EN55032; BS EN 55032; CISPR 32; AS/NZS CISPR 32
Immunity	EN 50130-4; BS EN 50130-4
Environment	RoHS; WEEE














Flex Indoor Mini-Dome



Flex Outdoor Mini-Dome

Accessories

Accessory Type	Image	Model Number	Description	Dimensions	Color
Wall Mount		IPSMDWALL3	Wall Mount Kit: Indoor/Outdoor, White	6.3 x 3.3 x 9.1 in (160.5 x 83 x 230.5 mm)	RAL 9003
Pendant Cap		ADCi6DPCAPIW	Pendant Cap: Outdoor, White	Ø5.16 x 2.17 in (Ø141 x 55 mm)	RAL 9003
Gooseneck Arm		ADLOMARM	For use with Pendant Cap	4.4 x 8.78 x 4.4 in (112.5 x 222.9 x 112.5 mm)	RAL 9003
Pole Mount Adapter		ADCDMPOLE	For use with Pendant Cap and Gooseneck Arm, or directly to the camera back plate	Wraps around pole	RAL 9003
Outside Corner Mount Adapter		ADCDMCRNRO	For use with Pendant Cap and Gooseneck Arm, or directly to the camera back plate	5.18 x 7.58 in (131.5 x 192.5 mm)	RAL 9003
Illustra Mini-Dome Recessed Mount		IFDRECMNT	Recessed mount with white bezel, allowing for flush ceiling installation	Ø7.76 x 1.61 in (Ø197 x 41 mm)	RAL 9003
Bubble Assembly		IA-BBL-CV-F4D	Vandal Clear Bubble Assembly	Ø123 x107mm	RAL 9003
Bubble Assembly		IA-BBL-SV-F4D	Vandal Smoked Bubble Assembly	Ø123 x107mm	RAL 9003

Mounting Plate		IPSMDEBPLATE	Mini-dome mounting plate Universal electrical box mounting plate, White	Ø5.6 x 0.13 in (Ø143 x 3.3 mm)	RAL 9003
Adaptor Cable		IA-KIT-WD-UUA	Micro USB On-The-Go (OTG) with USB wireless network adapter, Black		
HDMI Adaptor Cable		IA-HDM-OD-F4D	HDMI adaptor cable, 0.25m		Black

Ordering Information

Model Number	Description
IFS02-D12-ITA4	Illustra Flex Gen4 2MP Mini-Dome, 2.7-13.5mm, Indoor, IP67, IK10, TDN, SMK, TWDR
✓ IFS04-D12-ITA4	Illustra Flex Gen4 4MP Mini-Dome, 2.7-13.5mm, Indoor, IP67, IK10, TDN, SMK, TWDR
IFS08-D13-ITA4	Illustra Flex Gen4 8MP Mini-Dome, 3.6-11mm, Indoor, IP67, IK10, TDN, SMK, TWDR
IFS02-D12-OIA4	Illustra Flex Gen4 2MP Mini-Dome, 2.7-13.5mm, Outdoor, IP67, IK10, TDN w/IR, TWDR
IFS04-D12-OIA4	Illustra Flex Gen4 4MP Mini-Dome, 2.7-13.5mm, Outdoor, IP67, IK10, TDN w/IR, TWDR
✓ IFS08-D13-OIA4	Illustra Flex Gen4 8MP Mini-Dome, 3.6-11mm, Outdoor, IP67, IK10, TDN w/IR, TWDR

About Johnson Controls

At Johnson Controls (NYSE:JCI) we transform the environments where people live, work, learn and play. As the global leader in smart, healthy and sustainable buildings, our mission is to reimagine the performance of buildings to serve people, places and the planet.

With a history of more than 135 years of innovation, Johnson Controls delivers the blueprint of the future for industries such as healthcare, schools, data centers, airports, stadiums, manufacturing and beyond through its comprehensive digital offering OpenBlue. With a global team of 100,000 experts in more than 150 countries, Johnson Controls offers the world's largest portfolio of building technology, software as well as service solutions with some of the most trusted names in the industry. For more information, visit www.johnsoncontrols.com or follow us [@johnsoncontrols](https://twitter.com/johnsoncontrols) on Twitter.

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