

Broadcast & Data Center


Data Center & Broadcast IP Migration
Reliable, Scalable End-to-End Solution



**Be certain.
Belden.**

Our End-to-End Expertise.
Your End-to-End Solution.



The background of the advertisement is a photograph of a server room, bathed in a cool blue light. In the foreground, a large server cabinet stands with its double doors open, revealing a complex internal structure of vertical racks filled with electronic components and bundles of cables. To the left, another closed server cabinet is visible. In the background, a wall is covered with a grid of small, glowing monitors, each displaying different data or video feeds. Above the cabinets, several security cameras are mounted on the ceiling, pointing in various directions. The overall atmosphere is one of high-tech, secure infrastructure.

Belden – the most trusted brand for reliable signal transmission solutions – offers a complete selection of cabinets, power distribution units, monitoring and airflow management products to meet your infrastructure needs for optimizing system performance.

**Be certain.
Belden.**



Broadcast & Data Center

Understanding exactly how and when IP technology will impact a given business model depends on your individual situation, but developing an understanding of IP technology and how it fits different workflows is critical. Belden, thanks to its access to broadcasters worldwide and some of the most advanced innovators in our business, is well-positioned to provide detailed insights. How is IP technology changing broadcast television? How quickly will the technology progress? How will IP capabilities enhance various operational models?

Broadcasters are attempting to answer these questions now – and coming up with other questions along the way. What follows is a look at some of the answers our experts have developed.

Faster. Easier. Better.

Today's Data Center professionals must ensure that their infrastructure is highly available, scalable and flexible, while at the same time control operating expenses. These conflicting objectives have drawn attention to the performance of physical infrastructure elements, including heating and cooling, rack-level power, bandwidth and physical security management – all of which impact infrastructure availability, and therefore, mission critical applications.

Belden understands the issues you face daily – cooling, power, density and security – and can help you capitalize on these opportunities by implementing the right blend of technologies to maximize the efficiency of your enterprise in a manner that complements your system's performance requirements – today and into the future.



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Content providers, and
broadcasters, need a
coherent line of choices –
Belden’s broadcast and
data center solutions are
the right choice

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Data Center Customization

Section One

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How Belden Supports Data Center Customization

Belden Supports Data Center Customization



Don't settle for a product that doesn't meet your data center requirements. If you can't get exactly what you need, then speed, reliability, futureproofing or uptime may be compromised. There are ways to customize your data center so it serves your organization in the best way possible by incorporating new applications, increasing revenue and protecting against downtime.

Engineering Products that Work Together

"Customized solutions" don't have to mean "complex solutions." Belden systems are designed and created to work together:

- Product switch-outs and changes without compatibility or footprint issues
- Components that seamlessly integrate into reliable, high-performance networks
- Ample bandwidth and reliability to avoid downtime
- Support for hybrid systems as you move from legacy to IP, and from wired to wireless



Owning the Manufacturing Process

Our continual product innovation keeps you at the forefront of technology and ahead of the competition. We manufacture Belden products in-house, which translates to several benefits for you:

- Streamlined, competitive pricing
- High-quality products that exceed industry standards
- Fast creation and deployment
- Vast experience and expertise
- Rapid time to market with a wide selection to work from when modifying or customizing products



Strong Business Partners

Fully trained, professional Belden business partners understand the importance of customized data center components that solve your business challenges. These partners provide:

- Superior education and guidance
- Best-in-class warranties
- Advisory services, such as audits, design and project management





Make Use of Vertical Space

Customized solutions that let you expand vertically can accommodate growth, boost capacity and increase density without taking up valuable floor space or raising collocation leasing costs.

Rack-Mount Products

- Gain valuable vertical rack space where you need it
- Increase available space without increasing footprints or operating costs with 48U, 50U and 52U cabinets



ZeroU Solutions

- Place high-density connectivity along equipment mounting rails outside the rack
- Maximize rack potential for active equipment



Seamless Scaling and Migration

As you accommodate new technology and applications, your data center needs to change accordingly. Migration and scaling don't happen overnight; to minimize complexity during changes, you can customize data center growth and migration – without lots of reconfiguration work or compromised performance and reliability.

Base-8 Cassettes

- Optimize costs and achieve smooth migration
- Eliminate dark fiber associated with SR4 and PSM4 architectures
- Save 4% to 5% when deploying Base-8 in duplex architectures or 10GBASE-SR and 25GBASE-SR
- Save 5% to 8% in SR4-based architectures



Open Bridge Racks

- Flexible, cost-effective migration to an Open Compute environment at your own pace
- Convert quickly from TIA/EIA to Open Compute rails in the field



FiberExpress® Hydra Assemblies

- Easily upgrade from 10 Gbps to 40 Gbps or 100 Gbps according to your own timeline
- Eliminate replacement costs for switching out MPO-to-LC cassettes with MPO frames



Virtual Facility Software

- Virtually plan and reconfigure equipment to create a custom floorplan that saves space
- Conduct predictive modeling on upcoming moves, adds and changes
- Compare vendor solutions to see how a product impacts energy usage and floor space in your specific data center



Simple Product Design

When products are designed to solve a problem, they're intuitive to learn and easy to work with.



REVConnect

- One core termination is compatible with eight different connectors - you can choose what you need
- Complete all cable prep with one universal tool
- Convert from a jack to a plug in 5 seconds



Shuffle Cassettes

- Fit into any Belden housing to reclaim valuable floor space
- Eliminate cross-connect to separate 40 Gbps into 10 Gbps channels
- Allow for scaling in leaf-spine architecture
- Save roughly 72U of space as compared to traditional MPO-LC-MPO
- Significantly decrease required patch cords



Central Office White Pathways and Cabinets

- Eliminate glare and eye strain associated with stark white equipment
- Reduce lighting energy costs by 30% and lighting fixtures by 30% with high reflectance properties



Simple Installation and Maintenance

Just because a solution is customized doesn't mean it should take longer to install or be difficult to maintain. We offer solutions that can be customized without sacrificing installation and maintenance simplicity.

AngleFlex™ Patch Panels

- Patent-pending angles provide intuitive left, right or bidirectional patch cord routing to minimize mistakes
- Removable angled inserts provide front access for fast, easy termination and maintenance
- More labeling space for clearer identification



Small-Diameter 10GXS Cabling

- Tight bend radius allows for small, light cable trays and reduced installation and routing costs
- Reduce cooling loads by improving airflow
- Use 25% less space in cable pathways without compromising performance
- Easy-to-separate pairs and easy-to-remove barrier tape for fast installation



Pre-Terminated Fiber and Copper Cabling

- Reduce the chance for mistakes with clear labeling to indicate attachments
- Intuitive plug-and-play action with simple, reusable components
- Eliminate testing requirements with built-in reliability
- Less downtime and labor expense with fast moves, adds and changes





Color Coding and Labeling

Make it simple to locate and access data center components by creating your own color coding and labeling; this also makes your data center look organized and professional.

FiberExpress® UHD Patch Panels

- Accommodate 144 LC ports or 72 MPO ports for over 860 fiber potential in 1U of space
- Clear, visible labeling maintained and updated without special tools or software
- Accommodate copper and fiber media, as well as standard and high densities
- Identify circuits while maintaining port-color visibility with color-coded, slide-over icons



Erika Violet OM4 Fiber Cable and Connectivity

- Easily identify, recognize and classify OM4 fiber
- Differentiate between OM3 and OM4 fiber to prevent inadvertent splicing or connections



Prevent Potential Problems

Data center issues can emerge for a variety of reasons: poor system design, overheating, human error, product incompatibility or lack of security. Belden offers custom solutions to keep these problems at bay.

High-Performance Fiber and Copper Cabling



- Limit downtime risk with multi-level distribution
- Allow access to only one circuit at a time to prevent mistakes

Smart Cabinet Access System



- Establish zones to grant access to certain cabinets
- Verify access through biometrics, RFID card or coded locking handles
- Receive automated audit trails of access to track causes of downtime



Cable Management Solutions



- Use a combination of enclosure cable management and runways to customize a solution
- Properly manage cabling to prevent trips and disconnections
- Protect servers and other equipment from failure-causing dust, debris and damage
- Flexible swivel design makes it easy to route runways around plumbing and electrical

Passive and Active Rack Containment



- Prevent hot and cold air mixing to reduce hotspots that lead to downtime
- Remove high heat loads to reduce cooling costs
- Prevent equipment overheating with intelligent controllers
- Optimize airflow to deploy more IT equipment in the same footprint

Hot- or Cold-Aisle Containment



- Cap aisles to prevent waste heat from mixing with cool air, reducing failure-causing hotspots
- Keep hot and cold air in place with sliding doors that connect magnetically
- Transition between flat roof and vertical containment quickly and without costly up

Automation and Tracing



Manual monitoring and tracking can complicate processes. Create a custom solution that automatically monitors your data center environment; receive customized warnings about potential problems to prevent downtime and keep equipment running smoothly.

Remote Climate Monitoring

- Determine which environmental hazards (temperature, airflow, humidity and dew point problems) you want to track
- Customize your notifications to take quick action and stop potential failure



Power Distribution Units (PDUs)

- Prevent downtime due to power overload with customized alarms that alert when conditions exceed thresholds set by you
- View real-time power load assessments
- Receive alarms when conditions exceed thresholds



Traceable Bonded-Pair Patch Cords

- Accelerate troubleshooting and prevent disconnection errors with built-in LEDs and activation switches on both ends
- Quickly find correct patch cord connections within dense patching areas
- Bonded-pair cable with better stability and electrical performance, despite bending, coiling or pulling



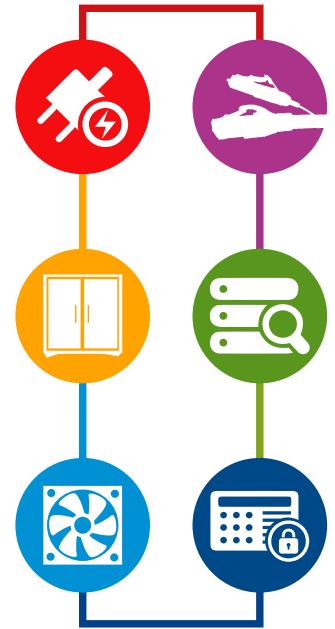


What Makes Belden Stand Out

Belden owns the manufacturing process, which means we can customize solutions beyond the capabilities of many of our competitors. We can easily adapt and leverage existing R&D to modify or create whole new designs quickly; as your project evolves, our scalable manufacturing can handle the transition from rapid prototypes to full-scale, high-volume, low-cost manufacturing.

Our expertise allows us to provide unique value-added services that set us apart. We can conduct cost analyses to compare data center solutions and help you make the best choice based on needs and budgets. A large, established team made up of copper, fiber and infrastructure specialists provide you with expertise, guidance and perspective on a broad range of technology so you can avoid hidden obstacles. You'll work directly with top engineers and thought leaders to develop a customized solution; nothing will be lost in translation between sales and engineers.

Our data center and LAN knowledge allows us to work closely with every data center team member: low-voltage contractors, electrical contractors, IT staff, infrastructure specialists and facilities managers.



Assessment Services

- Uncover costly performance concerns
- Identify data center pain points that impact availability and capacity
- Resolve issues that waste time, money, energy and floor space

Consignment Services

- Store Belden products onsite without paying for them until they're needed
- Decrease freight costs through large orders that are packaged and bundled together

Data Center Ready Solution Sets

- Customized enclosures designed for optimal performance, with a single part number for ease of ordering
- Reduce labor costs and improve deployment time with copper, fiber and accessories that ship pre-installed

Virtual Inventory Services

- Keep necessary products in stock at a Belden warehouse, ready to ship within 24 hours
- Eliminate space dedicated to storing extra equipment



Visit info.belden.com/data-center to learn more about how Belden supports customization with in-house manufacturing, streamlined costs, fast design and delivery times and no minimum-order quantity.





Networking Copper, Fiber and PatchPro

Section Two

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10GX Pre-Terminated Cabling System

Pre-Term Made Easy™

At the heart of Belden's 10GX Pre-Terminated Cabling System are two core components: 10GX Pre-Terminated Cable Assemblies and 10GX RJ45 Modular Couplers. Individually, these components offer superior reliability and performance. Together, they deliver the full potential of pre-terminated copper cabling solutions. The Belden solution is referred to as 'Pre-Term Made Easy' because it brings simplicity to the configuring and ordering process and it offers ease of installation through flexible 10GX Cable Assemblies and plug-and-play 10GX RJ45 Connectivity. Furthermore, with simple planning, fast delivery, up to 90% reduction in installation time and labor cost, bandwidth virtually no testing or troubleshooting required, Belden's 10GX Pre-Terminated Cabling System delivers the promise of pre-terminated cabling systems: dramatically reduced installation time, cost-savings, and the reliability and performance of factory terminations – all without compromises or trade-offs.

Ideal for Data Centers

Belden understands that the ultimate goal in Data Center networks is to have zero downtime or 'extreme' network availability. In a risk-averse environment with very strict schedule constraints and budgets, demanding reliability and performance without compromise is a must. Belden's 10GX Pre-Terminated Cabling System delivers fast-deployment, with built-in reliability combined with guaranteed performance and headroom. Moreover, the system is fully supported under Belden's IBDN 10GX Certification Program including guaranteed bandwidth of 625MHz, total support for 10 Gb/s Ethernet, and Belden's 25-Year IBDN Product Warranty.





Pre-Term Made Easy

- Easy to configure: only a few standard components to choose from to build an entire system
- Easy to order: simplified ordering process eliminates errors
- Easy to install: small and flexible cable assemblies combined with

Reliability and Performance - No Compromise

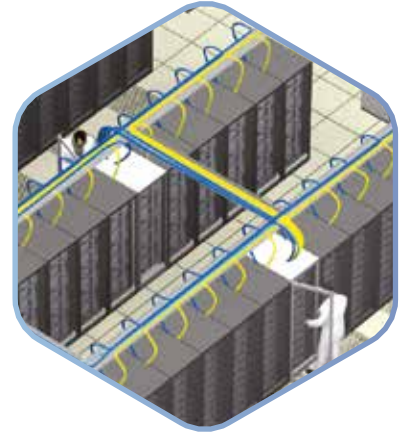
- Built-in reliability with ultra-robust assemblies and connectors
- Guaranteed Category 6A performance with test results supplied with each assembly
- Guaranteed headroom up to 625 MHz
- Guaranteed headroom in channels as short as 5 ft (1.6 m)
- Fully supported under Belden's IBDN 10GX Certification Program

Save Time and Money

- Reduced planning time with simplified selection of modular components
- Fast delivery to meet short project turn-around deadlines
- Up to 90% reduction in installation time and labor costs
- Virtually no testing or troubleshooting required

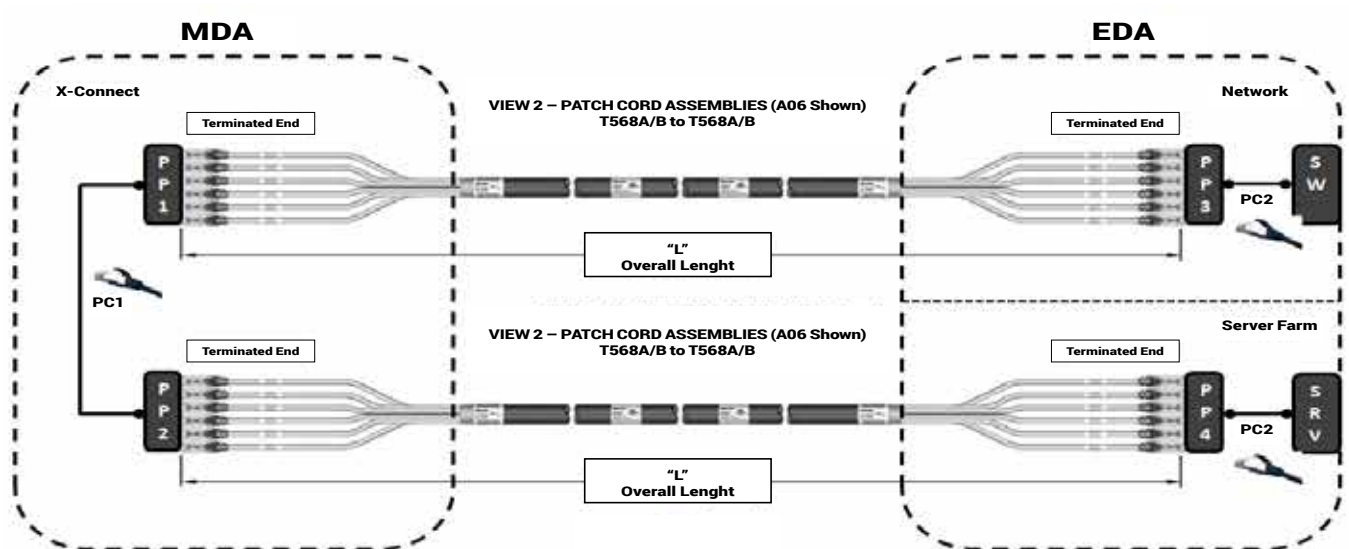
Make it "Green"

- Simplicity of the components means energy and waste savings throughout the manufacturing and supply chain process
- Small and flexible cable assembly design mean less cable to be deployed and no unnecessary slack
- Plug-and-play RJ45 connectivity components significantly reduce installation time and labor costs with almost no product waste during installation and operation
- Up to 50% material reduction in Data Center cabling topology
- All system components can be easily re-deployed and reused



10GX Pre-Terminated Cabling System (continued)

PatchPro® 10GX Pre-Term RFID Intelligent 'Ready' Patching Cabling System





Description	Part Number
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PatchPro® 10GX UTP iPLM Connectivity

10GX Copper Coupler Patch Panels

PatchPro 24-port UTP Cat6A iPLM Ready Panel	PPC6AUC
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Includes all Connectivity, without RFID & Hardware

10GX Pre-Terminated Cable Assembly, 4-Pair, 23 AWG Solid, T568A/B-T568A, 6-Bundle Cables

UTP LSZH, Black	CA241000xxA06
UTP LSZH, White	CA241090xxA06
UTP LSZH, Blue	CA241060xxA06
UTP LSZH, Grey	CA241080xxA06

Use xx to specify length in meter - 03-15 mt. in increments of mt. - 15-80 mt. in increments of 5 mt.

CAT6A Modular Patch Cords, 26 AWG Stranded, T568A/B

LSZH Blue, 1m	CA24106001M
LSZH Blue, 2m	CA24106002M
LSZH Blue, 3m	CA24106003M

RFID CAT6A Modular Patch Cords, 26 AWG Stranded, T568A/B

RFID LSZH Blue, 1m	PPCPAF.06001
RFID LSZH Blue, 2m	PPCPAF.06002
RFID LSZH Blue, 3m	PPCPAF.06003

PatchPro® 10GX STP iPLM Connectivity

10GX Copper Connectivity Coupler Patch Panels

PatchPro 24-port STP Cat6A iPLM Ready Panel	PPC6ASC
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Includes all Connectivity, without RFID & Hardware

10GX Pre-Terminated Cable Assembly, 4-Pair, 23 AWG Solid, T568A/B-T568A, 6-Bundle Cables

LSZH, Black	CAE41000xxA06
LSZH, White	CAE41090xxA06
LSZH, Blue	CAE41060xxA06
LSZH, Grey	CAE41080xxA06

Use xx to specify length in meter - 03-15 mt. in increments of mt. - 15-80 mt. in increments of 5 mt.

CAT6A Modular Patch Cords, 26 AWG Stranded, T568A/B

LSZH Blue, 1m	CAE4106001M
LSZH Blue, 2m	CAE4106002M
LSZH Blue, 3m	CAE4106003M

RFID CAT6A Modular Patch Cords, 26 AWG Stranded, T568A/B

RFID LSZH Blue, 1m	PPCPAF.06001
RFID LSZH Blue, 2m	PPCPAF.06002
RFID LSZH Blue, 3m	PPCPAF.06003

10GX CAT6A UTP System Connectivity



10GX
Modular Cord

CAT6A UTP Modular Patch Cords

The 10GX Modular Cords are 4-pair 24 AWG UTP modular cords designed to be used within the Belden 10GX System. Belden has designed the 10GX Modular Cord based on a patent-pending plug management bar design which allows for very good control of the internal plug NEXT. The Bonded-Pair patch cable design offers very good Alien crosstalk performance, while maintaining the important mechanical characteristics such as flexibility. The 10GX Modular Cords' design, with a very small footprint, makes them fully compatible with the highest density hubs that utilize RJ45 jack connections.

The 10GX Modular Cords are available in dark colors which match the horizontal cable colors and are also available in TIA/EIA-606 standard (pastel) colors. The unmatched performance exceeds all parameters specified in the Category 6A standard. All performance characteristics have been set to guarantee transmission performance up to 625 MHz.

- Exceeds TIA and ISO transmission and mechanical performance requirements
- Ordering code scheme to customize Bonded-Pair Patch Cord and Pigtail configurations



10GX CAT6A UTP Modular Patch Cords

Performance	Cable Type	Termination	Color	Length (meter)
10GX (CAT6A) = CA	LSZH patch cord = 24	T568A/B – T568A/B = 1	Red = 02	0.5 m = 0D5M
	PVC patch cord = 99	Crossover T568A/B = 4	Orange = 03	1.0 m = 001M
		Crossover IEEE = 5	Yellow = 04	2.0 m = 002M
			Green = 05	3.0 m = 003M
			Blue = 06	5.0 m = 005M
			Purple = 07	10.0 m = 010M
			Grey = 08	
			White = 09	
			Black = 00	
Pigtails				
	LSZH Pigtail = 34	T568A – Open = 2		
	PVC Pigtail = 39	T568B – Open = 3		

Example Partnumber: **CA24106003M**

CA = CAT6A/UTP
24 = LSZH
1 = T568A/B
06 = Blue
003M = 3 meter patch cord



10GX Shielded
Modular Cord

10GX CAT6A STP System Connectivity

CAT6A STP Modular Patch Cords

10GX Modular Cords are designed around a patent pending plug management bar design which allows for very good control of the internal plug NEXT. The cord design offers excellent alien crosstalk performance, while maintaining flexibility. The system's unmatched performance exceeds all parameters specified in the Category 6A standard with guaranteed transmission performance up to 625 MHz.



10GX CAT6A STP Modular Patch Cords

Performance	Cable Type	Termination	Color	Length (meter)
10GX (CAT6A) = CA	LSZH patch cord = E4	T568A/B – T568A/B = 1	Red = 02	0.5 m = 0D5M
		Crossover T568A/B = 4	Orange = 03	1.0 m = 001M
		Crossover IEEE = 5	Yellow = 04	2.0 m = 002M
	Pigtails		Green = 05	3.0 m = 003M
	LSZH Pigtail = G4	T568A – Open = 2	Blue = 06	5.0 m = 005M
		T568B – Open = 3	Purple = 07	10.0 m = 010M
			Grey = 08	
			White = 09	
			Black = 00	

Example Partnumber: **CAE4106003M**

CA = CAT6A/STP
 E4 = LSZH
 1 = T568A/B
 06 = Blue
 003M = 3 meter patch cord

Description	Part Number
PatchPro® 10GX iPLM Connectivity	
10GX Copper REVConnect Patch Panels	
PatchPro 24-port UTP Cat6A iPLM Ready Panel	PPC6AUR
PatchPro 24-port STP Cat6A iPLM Ready Panel	PPC6ASR

Includes all Connectivity, without RFID & Hardware



LSZH CPR and IEC rated cables

Type	Construction	P/N	EuroClass	IEC
CAT6A LSNH	U/UTP	10GX24	Eca	60332-1-2
		10GB24		
	F/UTP	10GXE00D	Dca-s2,d1,a1	Not applicable
	F/FTP	10GXE01D	Dca-s2,d1,a1	
	S/FTP	10GXE02D	Dca-s2,d1,a1	
	U/FTP	10GXE03D	Dca-s2,d1,a1	
	U/FTP	10GXE73	Dca-s2,d1,a1	
	F/UTP	10GXE00	Eca	60332-1-2
	F/FTP	10GXE01		
	S/FTP	10GXE02		
	U/FTP	10GXE03		
	F/FTP	10GXE91		60332-3-24
	S/FTP	10GXE92		

AngleFlex Universal Patch Panel System

The KeyConnect Patch Panel Series:

- Includes the unique AngleFlex Patch Panel available in 24-port/1U and 48-port/2U configurations. Patent-pending removable angled inserts provide intuitive left, right or bi-directional patch cord routing and more efficient switch connection. Angled inserts eliminate the need for horizontal cable management, for a 27% space savings per rack.
- The Flex Patch Panel series is available in 24-port/1U and 48-port/2U configurations, and is designed to be populated using Category Modular Jacks, Fiber Adapters or Multimedia Modules.

Physical and Mechanical Characteristics

- Multimode LC module: beige and aqua adapters with phosphor bronze sleeve
- Single-mode LC module: blue adapter with ceramic sleeve
- ST Compatible MM/SM: metal adapter with ceramic sleeve
- Materials: Fire-retardant plastic UL94V-0
- Colors: Almond, electrical white and black

Packaging

- KeyConnect Modular Jacks – Individually packaged
- KeyConnect Multimedia Modules – 10 units in a clear plastic bag



10GX AngleFlex
Patch Panel, 1U,
24-port, Black



10GX AngleFlex
Patch Panel, 2U,
48-port, Black



Description	Part Number
AngleFlex Patch Panel, 1U, 24-port, Black	AX103248
AngleFlex Patch Panel, 2U, 48-port, Black	AX103249

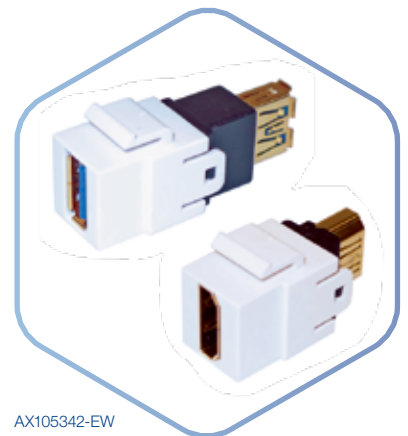
Description	Part Number		
	Almond	Electr. White	Black

KeyConnect Multimedia Modules

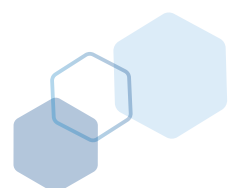
Multimedia Modules, Copper			
3.5 mm Audio Coupler, F/F, Gold	AX105334-AL	AX105334-EW	AX105334-BK
3.5 mm Audio Coupler, F/Solder, Gold	AX105335-AL	AX105335-EW	AX105335-BK
S-video Coupler, F/F	AX105336-AL	AX105336-EW	AX105336-BK
RCA Gold-plated Coupler, F/F, Red	AX105337-AL	AX105337-EW	AX105337-BK
RCA Gold-plated Coupler, F/F, White	AX105338-AL	AX105338-EW	AX105338-BK
RCA Gold-plated Coupler, F/F, Yellow	AX105339-AL	AX105339-EW	AX105339-BK
RCA Gold-plated Coupler, F/F, Green	AX105340-AL	AX105340-EW	AX105340-BK
RCA Gold-plated Coupler, F/F, Blue	AX105341-AL	AX105341-EW	AX105341-BK
Video F Coax 3GHz, Recess, Gold-Plated	AX105346-AL	AX105346-EW	AX105346-BK
Video F Coax, Recessed	AX102903	AX102904	AX102905
Video F Coax, Flush	AX102906	AX102907	AX102908
Video BNC Coax, Flush	AX104573	AX104575	AX104574
USB 3.0 Coupler, A to A	AX105342-AL	AX105342-EW	AX105342-BK
USB 2.0 Coupler, B to B	AX105344-AL	AX105344-EW	AX105344-BK
HDMI Coupler (Version 1.4)	AX105345-AL	AX105345-EW	AX105345-BK
Multimedia Modules, Fiber			
LC Duplex OM3 (Aqua Adapter)	AX104937	AX104938	AX104939
LC Duplex OM4 (Erika Violet Adapter)	AX105641-AL	AX105641-EW	AX105641-BK
LC Duplex SM (Blue Adapter)	AX102419	AX102420	AX102421
LC Duplex SM/APC (Green Adapter)	AX105642-AL	AX105642-EW	AX105642-BK
SC Duplex OM3 (Aqua Adapter)	AX105643-AL	AX105643-EW	AX105643-BK
SC Duplex SM (Blue Adapter)	AX102686	AX102687	AX102688
SC Duplex SM/APC (Green Adapter)	AX105374-AL	AX105374-EW	AX105374-BK



AX102417
LC Duplex module



AX105342-EW
USB 3.0 Coupler
and AX105345-EW HDMI Coupler



QSFP+/SFP+ Direct Attached Cables

To meet the most stringent signal transmission performance requirements, QSFP+/SFP+ Direct Attached Cables are manufactured with Belden Lightskew Series cable that offers intra-pair delay skew as low as 15 ps/m, silver-plated conductors, aluminum/Mylar foil and tinned copper braiding, and an FT4/CL2-rated PVC jacket.

Thoroughly third-party evaluated and tested, the zinc die-cast connectors with easy pull-to-release action are compatible with virtually all QSFP+/SFP+ Direct Attach compliant devices, cages and network interface cards.

Offered in a variety of lengths and manufactured using Belden's Lightskew™ Series twinax cables, Belden QSFP+/SFP+ Direct Attached Cables provide better cable management for high-density deployments and enhanced electrical characteristics for the most reliable signal transmission.

- Easy pull-to-release latching mechanism
- Compliant with the latest SFF-8431 specifications
- Connector cage designed for high-speed differential signaling
- Supports 8x/4x/2x/1x Fibre Channel data rates for SANs and NAS
- Supports Ethernet 10 Gb/s data rates with backwards compatibility to 1 Gb/s
- Available in a Generic or CISCO compatible EEPROM



SFP+ Cable
Assembly



Description	Part Number
-------------	-------------

QSFP+/SFP+ Direct Attached Cables

SFP+ Direct Attached Copper Cable Assemblies, 10 Gb/s, Passive	
SFP+ 2-pairs Belden Lightskew, 30 AWG, Generic EEPROM 0.5 m	SSFPP-P00M5-1
SFP+ 2-pairs Belden Lightskew, 30 AWG, Generic EEPROM 1 m	SSFPP-P01M0-1
SFP+ 2-pairs Belden Lightskew, 30 AWG, Cisco-compatible EEPROM 1 m	SSFPP-P01M0-2
SFP+ 2-pairs Belden Lightskew, 30 AWG, Generic EEPROM 2 m	SSFPP-P02M0-1
SFP+ 2-pairs Belden Lightskew, 30 AWG, Generic EEPROM 3 m	SSFPP-P03M0-1
SFP+ 2-pairs Belden Lightskew, 30 AWG, Cisco-compatible EEPROM 3 m	SSFPP-P03M0-2
SFP+ 2-pairs Belden Lightskew, 24 AWG, Generic EEPROM 5 m	SSFPP-P05M0-1
SFP+ 2-pairs Belden Lightskew, 24 AWG, Cisco-compatible EEPROM 5 m	SSFPP-P05M0-2
SFP+ 2-pairs Belden Lightskew, 24 AWG, Generic EEPROM 7 m	SSFPP-P07M0-1
QSFP+ Direct Attached Copper Cable Assemblies, 40 Gb/s, Passive	
SFP+ 8-pairs Belden Lightskew, 30 AWG, Generic EEPROM 0.5 m	QSSFP-P00M5-1
SFP+ 8-pairs Belden Lightskew, 30 AWG, Generic EEPROM 1 m	QSSFP-P01M0-1
SFP+ 8-pairs Belden Lightskew, 30 AWG, Cisco-compatible EEPROM 1 m	QSSFP-P01M0-2
SFP+ 8-pairs Belden Lightskew, 30 AWG, Generic EEPROM 2 m	QSSFP-P02M0-1
SFP+ 8-pairs Belden Lightskew, 30 AWG, Generic EEPROM 3 m	QSSFP-P03M0-1
SFP+ 8-pairs Belden Lightskew, 30 AWG, Cisco-compatible EEPROM 3 m	QSSFP-P03M0-2
SFP+ 8-pairs Belden Lightskew, 24 AWG, Generic EEPROM 5 m	QSSFP-P05M0-1
SFP+ 8-pairs Belden Lightskew, 24 AWG, Cisco-compatible EEPROM 5 m	QSSFP-P05M0-2
QSFP+ to 4/SFP+ Breakout Direct Attached Copper CA, 4 x 10 Gb/s, Passive	
4 x SFP+ 8-pairs Belden Lightskew, 30 AWG, Generic EEPROM 0.5 m	QSSFP-P00M5-1
4 x SFP+ 8-pairs Belden Lightskew, 30 AWG, Generic EEPROM 1 m	QSSFP-P01M0-1
4 x SFP+ 8-pairs Belden Lightskew, 30 AWG, Cisco-compatible EEPROM 1 m	QSSFP-P01M0-2
4 x SFP+ 8-pairs Belden Lightskew, 30 AWG, Generic EEPROM 2 m	QSSFP-P02M0-1
4 x SFP+ 8-pairs Belden Lightskew, 30 AWG, Generic EEPROM 3 m	QSSFP-P03M0-1
4 x SFP+ 8-pairs Belden Lightskew, 30 AWG, Cisco-compatible EEPROM 3 m	QSSFP-P03M0-2
QSFP+ 8-pairs "Octopus" Belden Lightskew, 26 AWG, Generic EEPROM	QSSFP-P05M0-1
QSFP+ 8-pairs "Octopus" Belden Lightskew, 26 AWG, Cisco-comp. EEPROM	QSSFP-P05M0-2

Belden 10GX System Certified Installations

Performance & Warranties Profile for Belden 10 Gigabit System 10GX Certified System Installations

Belden will provide its authorized PartnerAlliance installers, for the benefit of their end users, with both an extended Belden Component Warranty and a lifetime Application Assurance Program for all Belden Certified Systems installed by the certified PartnerAlliance installer.

The extended Belden Component Warranty and the lifetime Application Assurance Program are offered to the certified PartnerAlliance installer by Belden, Inc., in accordance with the following terms and conditions.

This Warranty and this Assurance Program apply only to Belden Certified Systems installed by the certified PartnerAlliance installer in compliance with the PartnerAlliance Agreement.

A Belden Certified System is a structured cabling system that has been engineered, designed and installed by the certified Belden PartnerAlliance installer. The engineering, design and installation of the Belden System must be performed in accordance with all applicable Belden guidelines, practices, and other Belden documentation in effect at the time of installation. Belden structured cabling installations that meet these requirements will receive a Certification Registration Number and Certification Plaque or Certificate from Belden and will then be designated as a Belden Certified System, eligible for the extended Belden Component Warranty and lifetime Application Assurance Program described below.

In order to maintain the validity of the extended Belden Component Warranty and the lifetime Application Assurance Program, the Belden Certified System must be maintained in accordance with the Belden User Manual in effect at the time of installation.

Extended Belden Component Warranty:

Belden warrants that;

- 1) the Belden passive components installed in the Belden Certified System are covered by a manufacturer's warranty against defects in material and workmanship for a period of twenty-five (25) years from the date of installation, at the original installation location.
- 2) the Belden Certified System will meet or exceed the UTP channel transmission requirements specified by:
ANSI/TIA 568-C.2, Category 6A
ISO/IEC 11801 (edition 2.1) 2008, Class EA

Once an installed Belden passive component has been deemed defective by Belden, Belden shall repair or replace, at Belden's discretion, the defective component. Belden may use refurbished materials in either repair or replacement procedures, and the repaired or replaced component will be warranted for the balance of the original twentyfive year warranty period, or, ninety (90) days, whichever is longer.

The repair or replacement of a defective component under this warranty includes the reasonable costs of labor required to repair or replace the defective component. The decision of repair or

replacement of components, and the selection of labor services to perform the repair or replacement are at the sole discretion of Belden, Inc.

Application Assurance:

In addition to the extended Belden Component Warranty, Belden also provides a lifetime Application Assurance Program for all Belden Certified Systems.

Belden's lifetime Application Assurance Program warrants that the Belden Certified System will be capable of supporting all industry standard Applications during its entire installation life at its original installation location.

Industry standard Applications include;

- 1) all Category 5, Category 5e and Category 6 Applications identified in the current (at time of installation) Belden documentation, and;
- 2) any Category 5, Category 5e, Category 6 and Category 6A Applications introduced at a future date by recognized standards bodies and user forums that use ANSI/TIA 568-C.0, ANSI/TIA 568-C.1, ANSI/TIA 568-C.2 and ISO/IEC 11801 Class EA channel specifications for cabling.

In the event that the Belden Certified System is unable to support an existing or future industry standard Application as defined above, and such failure can be attributed to a deficiency in the Belden System, Belden will provide at, its expense, reasonable expertise, Belden materials and labor as required to remedy the problem and/or resolve the claim. The decision of repair or replacement of materials, and the selection of labor services to perform the remedial services are at the sole discretion of Belden, Inc.

Limitations

Belden, Inc. will not be liable for, nor pay for, any loss of use of the Belden System or products; costs of substitute goods, facilities or services; or for any other economic losses or incidental, consequential or exemplary damages.

This Extended Product Warranty and Application Assurance for the Belden Certified System does not cover any deficiencies in the System which result from failure to comply with Belden design guidelines and installation procedures as well as ANSI/NECA/BICSI 568-2006, Standard for Installing Commercial Building Telecommunications Cabling.

The following plugs are not covered by this warranty:

- | | |
|---------------|---------------|
| 1. C6PFCU-B24 | 3. C5PFCF-B25 |
| 2. CAPFCU-B25 | 4. CAPFCF-B25 |

Belden, Inc. shall not be liable for damages or defects resulting from circumstances beyond its control, including but not limited to, misuse, alteration, unauthorized repair, damages in transit, fire, floods and acts of God. Repair or replacement of the Belden Certified System by Belden, Inc. is your exclusive remedy.

This is the only warranty on the Belden Certified System. There are no other warranties, express or implied, made by Belden, Inc.



Belden 10GX System Cabling Solution

In addition to the extended Belden Component Warranty and lifetime Application Assurance Program described above, Belden 10GX Certified Systems that conform with the Belden 10GX System Channel Configuration are guaranteed to meet or exceed the following performance parameters for the duration of their installed lifetime at the original site of installation. All conditions regarding original design, installation and maintenance for Belden Certified Systems must be met in order to validate these performance parameter guarantees.

Notes:

Values proposed or statements represent guaranteed 10GX channel margin against ANSI/TIA-568-C.2-2009 Category 6A standard.

The margin is the additional headroom (in dB or %) compared to the minimum specified value for Category 6A at each frequency point over the specified frequency range.

The worst-case margin is determined at the frequency where the measured data point is closest to the limit line.

The Category 6A limit line equations are used to determine the worst case margin over the frequency range from 500 MHz to 625 MHz. This margin applies for worst-case short and long channel configurations as defined in ANSI/TIA-568-C.2 Annex J.

Belden 10GX System Performance						
10GX System	10GXS UTP		10GX UTP		10GX F/UTP	
Bandwidth	625 MHz					
Data Rate Capacity	10 Gb/s					
Frequency Range	1 to 500 MHz	500 to 625 MHz	1 to 500 MHz	500 to 625 MHz	1 to 500 MHz	500 to 625 MHz
Parameter	8% ¹	8%	3%	—	3%	—
Insertion Loss	2 dB	2 dB	2 dB	2 dB	2 dB	2 dB
Return Loss	5 dB	2 dB	2 dB	2 dB	2 dB	2 dB
NEXT	5 dB	2 dB	2.5 dB	—	2.5 dB ²	—
PSNEXT	6 dB	3 dB	3.5 dB	1.5 dB	3.5 dB ²	1.5 dB
PSACRF	12 dB	10 dB	10 dB	8 dB	10 dB	8 dB
PSANEXT	4 dB	4 dB	2 dB	—	10 dB	10 dB
PSAACRN	8 dB ³	8 dB	3.5 dB ³	—	11.5 dB ³	10 dB
PSAACRF	12 dB	12 dB	—	—	12 dB	12 dB

1. In the frequency range from 20 MHz to 500 MHz.

2. NEXT and PSNEXT margins can be lower for short channels with more than two connectors using 10GX Shielded Modular Jacks.

3. Specified at 500 MHz.

System 10GX						
Work Area		Consolidation Point		Horizontal Cable	Telecom Room	
Connectivity	Workstation Outlets	Connectivity	Workstation Outlets	Cable	Connectivity	Workstation Outlets
10GX KeyConnect Modular Jacks	KeyConnect Faceplates and Accessories	10GX Patch Panels	KeyConnect Modular Patch Panels	10GXS UTP System Cable	10GX Patch Panels	KeyConnect Modular Patch Panels
	KeyConnect Adapters and Boxes	10GX KeyConnect Modular Jacks	AngleFlex Patch Panels	10GX UTP System Cable	10GX KeyConnect Modular Jacks	AngleFlex Patch Panels
10GX KeyConnect Couplers	MediaFlex Outlet System	10GX KeyConnect Couplers	Multi-User Outlet Box	10GX Pre-Term Cable Assemblies	10GX KeyConnect Couplers	
	Multi-User Outlet Box					
10GX Modular Jacks (MDVO-Style)	Interface Plates	10GX Modular Jacks (MDVO-Style)	Flex Modular Patch Panels (MDVO-Style)		10GX Modular Jacks (MDVO-Style)	Flex Modular Patch Panels (MDVO-Style)
	MDVO Adapter and Boxes	10GX Pigtailed			10GX Pigtailed	
	Multimedia Outlet Box	10GX Patch Cords			10GX Patch Cords	
10GX Patch Cords		10GX IDC System			10GX IDC System	
System 10GX Shielded						
10GX Shielded KeyConnect Modular Jacks	KeyConnect Faceplates and Accessories	10GX Shielded KeyConnect Modular Jacks	KeyConnect Shielded Modular Patch Panels	10GX Shielded System Cable	10GX Shielded KeyConnect Modular Jacks	KeyConnect Shielded Modular Patch Panels
	KeyConnect Adapters and Boxes	10GX Shielded KeyConnect Couplers	Multi-User Outlet Box	10GX Shielded Pre-Term Cable Assemblies	10GX Shielded KeyConnect Couplers	Multi-User Outlet Box
10GX Shielded KeyConnect Couplers	MediaFlex Outlet System					
	Multi-User Outlet Box	10GX Shielded Pigtailed			10GX Shielded Pigtailed	
10GX Shielded Patch Cords		10GX Shielded Patch Cords			10GX Shielded Patch Cords	

Green = KeyConnect Connectivity components and compatible workstation outlets

Blue = MDVO Connectivity components and compatible workstation outlets

Red = Universal components

FX Pre-Terminated Cabling System

Pre-Term Made Easy™

At the heart of Belden's FX Pre-Terminated Cabling System are two core components: FX Pre-Terminated Cable Assemblies and MPO patch panels. Individually, these components offer superior reliability and performance. Together, they deliver the full potential of pre-terminated fiber cabling solutions. The Belden solution is referred to as 'Pre-Term Made Easy' because it brings simplicity to the configuring and ordering process and it offers ease of installation through flexible FX Cable Assemblies and Connectivity. Furthermore, with simple planning, fast delivery, up to 90% reduction in installation time and labor cost. Belden's FX Pre-Terminated Cabling System delivers the promise of pre-terminated cabling systems: dramatically reduced installation time, cost-savings, and the reliability and performance of factory terminations – all without compromises or trade-offs.

Ideal for Data Centers

Belden understands that the ultimate goal in Data Center networks is to have zero downtime or 'extreme' network availability. In a risk-averse environment with very strict schedule constraints and budgets, demanding reliability and performance without compromise is a must. Belden's FX Pre-Terminated Cabling System delivers fast-deployment, with built-in reliability combined with guaranteed performance. Moreover, the system is fully supported under Belden's IBDN FX Certification Program including Belden's 25-Year IBDN Product Warranty.



MPO Trunk
Assembly,
MPO-12(F-F), OM4, Type-B, 25m



Belden
PatchPro®
FO Modular Cord



FX Frames



Belden PatchPro® FO Panel



FX UHD Housing



Pre-Term Made Easy

- Easy to configure: only a few standard components to choose from to build an entire system
- Easy to order: simplified ordering process eliminates errors
- Easy to install: small and flexible cable assemblies combined with

Reliability and Performance - No Compromise

- Built-in reliable assemblies and connectivity
- Fully supported under Belden's IBDN FX Certification Program

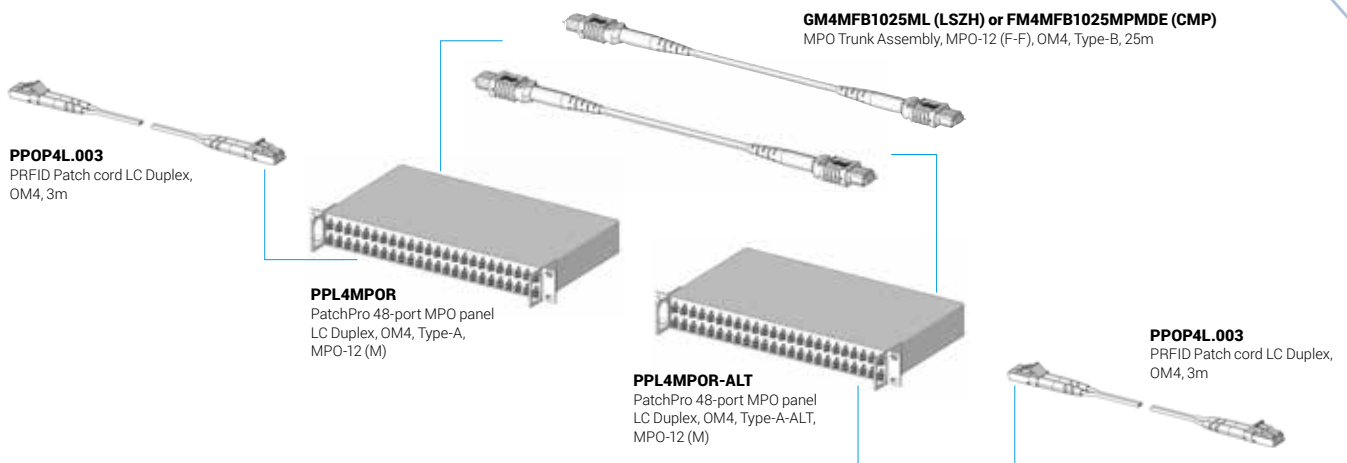
Save Time and Money

- Reduced planning time with simplified selection of modular components
- Fast delivery to meet short project turn-around deadlines
- Up to 90% reduction in installation time and labor costs

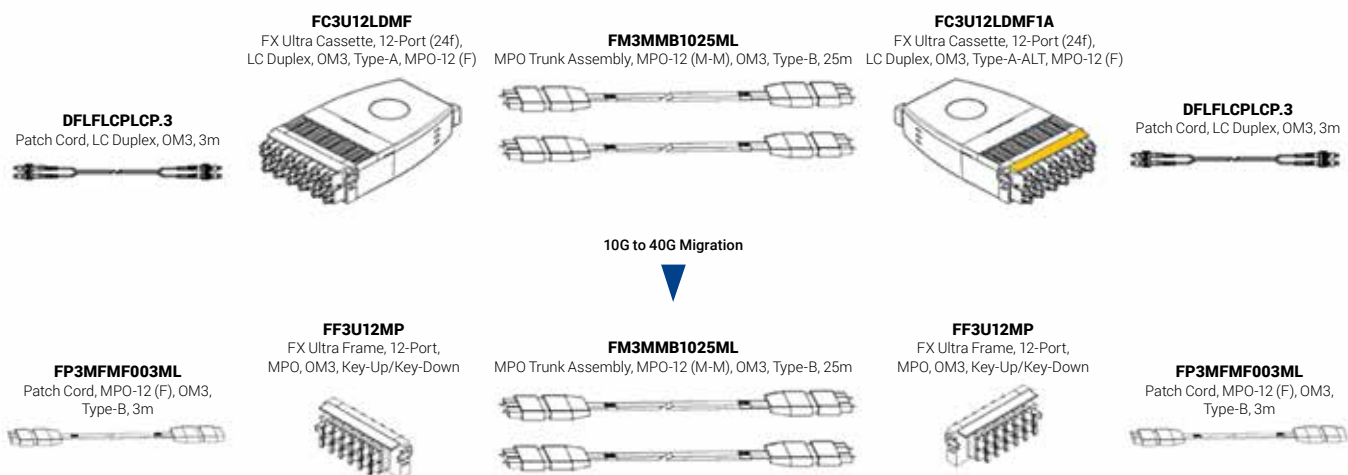
Make it "Green"

- Simplicity of the components means energy and waste savings throughout the manufacturing and supply chain process
- Small and flexible cable assembly design mean less cable to be deployed and no unnecessary slack
- The connectivity components significantly reduce installation time and labor costs with almost no product waste during installation and operation
- Up to 50% material reduction in Data Center cabling topology
- Pre-term Assembly Trunk cables can be easily and reused for next generation migration

Example:



FX Pre-Terminated Cabling System (continued)



Description	Part Number
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PatchPro® FX Pre-Term Connectivity

FX iPLM MPO Patch Panel System	
LC/PC-DX OM3 iPLM Ready MPO Panel	PPL3MPOR
LC/PC-DX OM4 iPLM Ready MPO Panel	PPL4MPOR
LC/PC-DX OM3 iPLM Ready MPO-Alternate Panel	PPL3MPOR-ALT
LC/PC-DX OM4 iPLM Ready MPO-Alternate Panel	PPL4MPOR-ALT
Includes all Connectivity, without RFID & Hardware	

FX Plug & Play UHD MPO Patch Panel System	
1U Housing with Front and Rear Cable Tray, loads up to 4 cassettes	AX104681
2U Housing with Front and Rear Cable Tray, loads up to 8 cassettes	AX104682
FX UHD Blank Plate	FFZH00BB
LC Duplex to MPO-24f (BASE-12) OM3 Angled Cassette, Left	FC3L12LDMF
LC Duplex to MPO-24f (BASE-12) OM3 Angled Cassette, Right	FC3R12LDMF
LC Duplex to MPO-24f (BASE-12) OM4 Angled Cassette, Left	FC4L12LDMF
LC Duplex to MPO-24f (BASE-12) OM4 Angled Cassette, Right	FC4R12LDMF
LC Duplex to MPO-24f (BASE-12) OM3 Angled Cassette-Alternate, Left	FC3L12LDMF1A
LC Duplex to MPO-24f (BASE-12) OM3 Angled Cassette-Alternate, Right	FC3R12LDMF1A
LC Duplex to MPO-24f (BASE-12) OM4 Angled Cassette-Alternate, Left	FC4L12LDMF1E
LC Duplex to MPO-24f (BASE-12) OM4 Angled Cassette-Alternate, Right	FC4R12LDMF1E
MPO Type-A (Key-Up/Key-Down)	FF4H18MP



Description	Part Number
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FX Pre-Terminated MPO BASE-12, B-Type Polarity Cable Assembly

OM3 Aqua Trunk Cable, MPO Male, 12-Fiber	G-3LMMMMxxxMB
OM4 Erika Violet Trunk Cable, MPO Male, 12-Fiber	G-4LMMMMxxxMB
OM3 Aqua Trunk Cable, MPO Male, 24-Fiber	G-3LMMMMxxxMBCD
OM4 Erika Violet Trunk Cable, MPO Male, 24-Fiber	G-4LMMMMxxxMBCD
OM3 Aqua Trunk Cable, MPO Male, 48-Fiber	G-3LMMMMxxxMBFD
OM4 Erika Violet Trunk Cable, MPO Male, 48-Fiber	G-4LMMMMxxxMBFD

Use xxx to specify length in meter - 005-400 mt. in increments of 5 mt.

FX Modular Patch Cords

OM3 Aqua BASE-8 MPO Female Patch Cord, 3m	GP-374F4F003M
OM4 Erika Violet BASE-8 MPO Female Patch Cord, 3m	GP-474F4F003M
OM3 Aqua LC/DX Patch Cord, 1m	GP-32LDLD001M
OM4 Erika Violet LC/DX Patch Cord, 1m	GP-42LDLD001M
OM3 Aqua LC/DX Patch Cord, 2m	GP-32LDLD002M
OM4 Erika Violet LC/DX Patch Cord, 2m	GP-42LDLD002M
OM3 Aqua LC/DX Patch Cord, 3m	GP-32LDLD003M
OM4 Erika Violet LC/DX Patch Cord, 3m	GP-42LDLD003M

FX Modular RFID Patch Cords

RFID OM4 LC/DX Patch Cord, 1m	PPOP4L.001
RFID OM4 LC/DX Patch Cord, 2m	PPOP4L.002
RFID OM4 LC/DX Patch Cord, 3m	PPOP4L.003

FX Modular Sensor Patch Cords

Sensor OM4 LC/DX Patch Cord, 1m	PPE0SE.001
Sensor OM4 LC/DX Patch Cord, 2m	PPE0SE.002
Sensor OM4 LC/DX Patch Cord, 3m	PPE0SE.003

PatchPro® FX Connectivity

FX Termination/Splice Connectivity iPLM Patch Panels

SC/APC-DX OS2 iPLM Ready Termination/Splice Panel	PPSATSR
SC/UPC-DX OS2 iPLM Ready Termination/Splice Panel	PPSSTSR

Includes all Connectivity, without RFID & Hardware

FX Splice Patch Panels

4U Housing with Front and Rear Cable Tray (see also above 1U and 2U versions)	AX104683
FX UHD Blank Plate	FFZH00BB
SC/APC Simplex Splice Cassettes	FCSH12SBFS
SC/UPC Duplex Splice Cassettes	FCSH06SDFS
LC/APC Duplex Splice Cassettes	FCSH12LAFS
LC/UPC Duplex Splice Cassettes	FCSH12LDfs
Standard Splice Only Cassettes	FCZ00BBFS

LSZH Patch Cords



FX MPO-12(f) Patch Cords, Assortment



FX LC Duplex Patch Cords, Assortment



FX SC Duplex Patch Cords, Assortment



FX ST Patch Cords, Assortment

FiberExpress Pre-Terminated Assemblies – FX Patch Cords

Uncomplicated, robust, versatile and conveniently available. Superior quality and performance FX patch cords deliver a robust design to withstand the rigours of daily use in both off-the-shelf standard configurations and rapid custom tailored installations.

Faster

- Faster delivery with off-the shelf availability of standard items
- Faster identification of fiber type with Erika Violet for OM4 cables

Easier

- Easier installation in dense cable trays with small diameter cord options
- Easier ordering with simple intelligent *SmartPart* Numbers
- Easier polarity management with industry leading easy-to-use duplex clips

Better

- Better architectural flexibility with low-loss OM4 0.2 dB MPO and 0.15 dB LC connectors
- Better ruggedization with larger diameter cord options
- Better flexibility with multiple connector options including LC, SC, ST and MPO

FX Patch Cords - Standard Performance

Description	FX OM1	FX OM3	FX OM4	FX SM	FX SM/APC
Cable Performance - LC/SC/ST					
IL Max. 850 nm/1300 nm (dB/Km)	3.5/1.2	3.25/1.2	3.0/1.2	—	
IL Max. 1310 nm/1550 nm (dB/Km)	—	—	—	0.5/0.5	
Fire Rating	LC/SC/ST: LSZH				
Cable Style	LC: Interconnect Duplex Zip 2 mm SC/ST/Hybrid: Interconnect Duplex Zip 3 mm				
Connector Performance - LC/SC/ST					
IL Max. (dB)	0.25	0.25	0.15	0.35	0.35
Polish - RL Typ. (dB)	PC - 30	PC - 30	PC - 30	UPC - 55	APC - 65
Polarity	A-T0-B / B-T0-A				
Cable Performance - MPO					
IL Max. 850 nm/1300 nm (dB/Km)	3.5/1.2	3.25/1.0	3.0/1.0	—	
IL Max. 1310 nm/1550 nm (dB/Km)	—	—	—	0.5/0.5	
Fire Rating	LSZH				
Cable Style	MPO-12: Interconnect Mini-Round 2 mm				
Connector Performance - MPO					
IL Max. (dB)	0.5	0.35	0.2	—	0.75
Polish - RL Typ. (dB)	PC - 30	PC - 30	PC - 30	—	APC - 60
Polarity	Type-B				



FX@E LSZH Patch Cords

Patch cords	Fiber	Cable Type	Connector 1	Connector 2	Length in M	Polarity
GP-	3	2	LD	LD	003M	X
1 OM1	2	2mm Duplex Zip Cord	L D LC Duplex	L D LC Duplex	005M to 100M *use M as decimal	X A/B (Cross)
3 OM3	3	3mm Duplex Zip Cord	L C LC Simplex	L C LC Simplex		S A/A (Straight)
4 OM4	4	2mm Simplex Cord	L A LC/APC Duplex	L A LC/APC Duplex		ONLY USED IF APPLICABLE FOR NON-STANDARD
S OS2	5	3mm Simplex Cord	L B LC/APC Simplex	L B LC/APC Simplex		
			S D SC Duplex	S D SC Duplex		
			S C SC Simplex	S C SC Simplex		
			S A SC/APC Duplex	S A SC/APC Duplex		
			S B SC/APC Simplex	S B SC/APC Simplex		
			F C FC	F C FC		
			F A FC/APC	F A FC/APC		
			S T ST	S T ST		

FX@E LSZH MPO Patch Cords

MPO Patch cords	Fiber	Cable Type	Connector 1	Connector 2	Length in M	Polarity
GP-	3	7	MF	MF	003M	A
3 OM3	7	3mm Round Cord	4 M MPO Base-8 (M)	4 M MPO Base-8 (M)	005M to 100M *use M as decimal	A Type-A
4 OM4			4 F MPO Base-8 (F)	4 F MPO Base-8 (F)		4 SR4/PSM4
S OS2			M M MPO Base-12 (M)	M M MPO Base-12 (M)		ONLY USED IF APPLICABLE FOR NON-STANDARD
			M F MPO Base-12 (F)	M F MPO Base-12 (F)		

FX@E LSZH Pigtails

Pigtails	Fiber	Cable Type	Connector	Length in M	Packaging
GT-	3	9	LC	001M	R12
1 OM1	9	900u	L D LC Duplex	005M to 009M *use M as decimal	S01 Single Pack (for 900u MPO only)
3 OM3	2	2mm Duplex Zip Cord	L C LC Simplex		B12 12 Pack 900u
4 OM4	4	2mm Simplex Cord	L A LC/APC Duplex		R12 Rainbow 12 Pack (900u)
S OS2			L B LC/APC Simplex		S1 Single Pack only for Jacketed pigtails
			S D SC Duplex		
			S C SC Simplex		
			S A SC/APC Duplex		
			S B SC/APC Simplex		
			F C FC		
			F A FC/APC		
			S T ST		
			4 M MPO Base-8 (M)		
			4 F MPO Base-8 (F)		
			M M MPO Base-12 (M)		
			M F MPO Base-12 (F)		
			N M MPO Base-24 (M)		
			N F MPO Base-24 (F)		





SFP+ Active Optical Cable/ Transceiver

Save money without compromising speed or system performance with Belden's Active Optical Cable (AOC) and Optical Transceiver. Achieve high coupling efficiency of ~60%, high yield and low power consumption with these reliable solutions. A customized connectivity solution using Belden's fiber optic products will provide what you need to drive higher speeds and improve data connectivity while reducing operating costs.



Benefits

- Lower-cost solution when compared to traditional fiber installation
- Works with most major brands of networking equipment
- Lower total cost of ownership



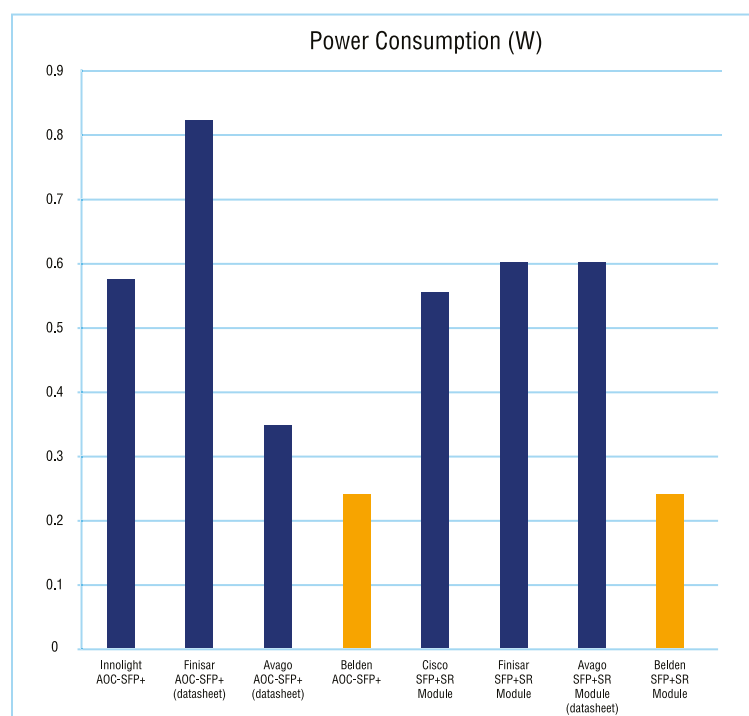
Features

- Low power consumption
< 0.3 W per Transceiver
< 0.6 W for AOC
- Low-cost proprietary light coupling and assembly
- Easy-release pull tabs



Key Applications

- InfiniBand (SDR, DDR, QDR, FDR-10)
- 10G Ethernet
- Fibre channel (10GFC)
- Top-of-rack switching
- Storage area networks





Ordering Information

To use the configuration matrices, make a selection from each category and combine to form a custom part number. See examples below.

Active Optical Cable

Part number example from configuration shown below:

AS+S+10G001MLSO

A	S+		S+		10		G		001M		L		S		O	
FX AOC	Inside End		Outside End		Performance/ Application		Compatibility		Length & Measure		Flammability		Temperature Range		Jacket Color	
	S+	SFP+	S+	SFP+	10	10G	G	Generic	001M	1 m	L	LSZH	S	Standard (0°C - 70°C)	0	Orange
							1	Cisco	003M	3 m	P	Plenum				
									005M	5 m						
									008M	8 m						
									010M	10 m						
									020M	20 m						
									100M	100 m						
									150M	150 m						

Optical Transceiver

Part number example from configuration shown below:

MS+10G300MS-S1

M		S+		10		G		300M		S		-S1	
FX Module		Inside End		Performance/ Application		Compatibility		Reach		Temperature Range		Unit per Pack	
M	Multimode Module	S+	SFP+	10	10G	G	Generic	300M	300 m	S	Standard (0°C-70°C)	-S1	1 unit pack
												-B10	10 unit pack
												-B20	20 unit pack





Universal Central Loose Tube Cable with Rodent Protection, Single Jacket

GUSN, GUSL, GURN, GUVN

A/I-DQ(ZN)BH



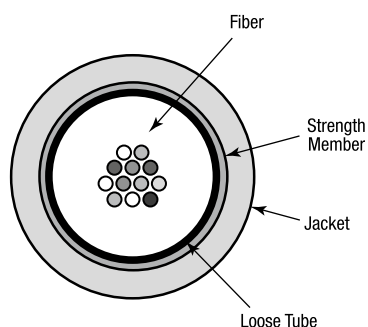
Applications

- For outdoor and indoor use in structured (data) wiring systems such as campus backbone
- Easy to install in ducts, tunnels and trenches by means of compressed air or pulling wire
- Suitable for direct burial

Features & Benefits

- Available in sizes from 2 to 24 fibers
- Jelly filled (non-dripping and silicon-free) loose tube with primary coated optical fibers ($\varnothing 250 \pm 15 \mu\text{m}$)
- Full dielectric construction, no grounding required
- Rodent protected by means of Glass Yarn Strength Elements
- Length marking in meters for easy determination of the cable length

Cross Section



Specifications

IEC 60794-1-2			
Crush Resistance (E3):	15 kN/m		
Min. Bend Radius dynamic (E6):	20 x Ø		
Min. Bend Radius static (E11):	10 x Ø		
Min. Bend Radius fibers:	25 mm		
Temperature Range (F1):			
– Transport/Storage	-30°C to +70°C		
– Installation	-5°C to +50°C		
– Operation	-30°C to +70°C		
Watertightness (F5):	Pass		
Other			
Reaction to fire:			
– GUSN, GUSL, GURN, GUVN	EN 50575	Dca-s2,d1,a1	
– GUSN, GUSL, GURN, GUVN	IEC 60331		
– GUSL	IEC 60332-3-25		
Halogen Free:	IEC 60754-1		
Non Corrosive:	IEC 60754-2		
Smoke Density:	IEC 61034-2		



Characteristics

Loose Tube	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
IEC 60794-1-2				E1	E1	
GUSN*xx	2 to 24	5.8	37	1250	420	550
GUSL*xx	2 to 24	6.5	47	1250	420	580
GURN*xx	2 to 24	7.1	55	3000	1000	755
GUVN*xx	2 to 24	7.8	67	4000	1300	928

Ordering Information

Fiber Type/Count	2	4	6	8	12	16	24
GUSN							
62.5/125-OM1	GUSN102	GUSN104	GUSN106	GUSN108	GUSN112	GUSN116	GUSN124
50/125-OM2	GUSN202	GUSN204	GUSN206	GUSN208	GUSN212	GUSN216	GUSN224
50/125-OM3	GUSND02	GUSND04	GUSND06	GUSND08	GUSND12	GUSND16	GUSND24
50/125-OM4	GUSNE02	GUSNE04	GUSNE06	GUSNE08	GUSNE12	GUSNE16	GUSNE24
9/125 ITU G.652D	GUSN802	GUSN804	GUSN806	GUSN808	GUSN812	GUSN816	GUSN824
9/125 ITU G.655 C & D	GUSN702	GUSN704	GUSN706	GUSN708	GUSN712	GUSN716	GUSN724
GUSL							
62.5/125-OM1	GUSL102	GUSL104	GUSL106	GUSL108	GUSL112	GUSL116	GUSL124
50/125-OM2	GUSL202	GUSL204	GUSL206	GUSL208	GUSL212	GUSL216	GUSL224
50/125-OM3	GUSLD02	GUSLD04	GUSLD06	GUSLD08	GUSLD12	GUSLD16	GUSLD24
50/125-OM4	GUSLE02	GUSLE04	GUSLE06	GUSLE08	GUSLE12	GUSLE16	GUSLE24
9/125 ITU G.652D	GUSL802	GUSL804	GUSL806	GUSL808	GUSL812	GUSL816	GUSL824
9/125 ITU G.655 C & D	GUSL702	GUSL704	GUSL706	GUSL708	GUSL712	GUSL716	GUSL724
GURN							
62.5/125-OM1	GURN102	GURN104	GURN106	GURN108	GURN112	GURN116	GURN124
50/125-OM2	GURN202	GURN204	GURN206	GURN208	GURN212	GURN216	GURN224
50/125-OM3	GURND02	GURND04	GURND06	GURND08	GURND12	GURND16	GURND24
50/125-OM4	GURNE02	GURNE04	GURNE06	GURNE08	GURNE12	GURNE16	GURNE24
9/125 ITU G.652D	GURN802	GURN804	GURN806	GURN808	GURN812	GURN816	GURN824
9/125 ITU G.655 C & D	GURN702	GURN704	GURN706	GURN708	GURN712	GURN716	GURN724
GUVN							
62.5/125-OM1	GUVN102	GUVN104	GUVN106	GUVN108	GUVN112	GUVN116	GUVN124
50/125-OM2	GUVN202	GUVN204	GUVN206	GUVN208	GUVN212	GUVN216	GUVN224
50/125-OM3	GUVND02	GUVND04	GUVND06	GUVND08	GUVND12	GUVND16	GUVND24
50/125-OM4	GUVNE02	GUVNE04	GUVNE06	GUVNE08	GUVNE12	GUVNE16	GUVNE24
9/125 ITU G.652D	GUVN802	GUVN804	GUVN806	GUVN808	GUVN812	GUVN816	GUVN824
9/125 ITU G.655 C & D	GUVN702	GUVN704	GUVN706	GUVN708	GUVN712	GUVN716	GUVN724
GUSN • GURN • GUVN							
Std. plywood reel (non-returnable)				Ø 800 x 475 mm, Weight 7.65 kg and Ø 1000 x 530 mm, Weight 18.0 kg			
Std. delivery length				2100 ± 100 m and 4100 ± 100 m			

Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	Red	5	Green	9	Orange	13	Red + ring	17	Green + ring	21	Orange + ring
2	Natural	6	Violet	10	Turquoise	14	Natural + ring	18	Violet + ring	22	Turquoise + ring
3	Yellow	7	Brown	11	Pink	15	Yellow + ring	19	Brown + ring	23	Pink + ring
4	Blue	8	Black	12	White	16	Blue + ring	20	Grey + ring	24	White + ring



Universal Mini-Breakout

GUMT
GUMS

A/I-V(ZN)H
A/I-K(ZN)H



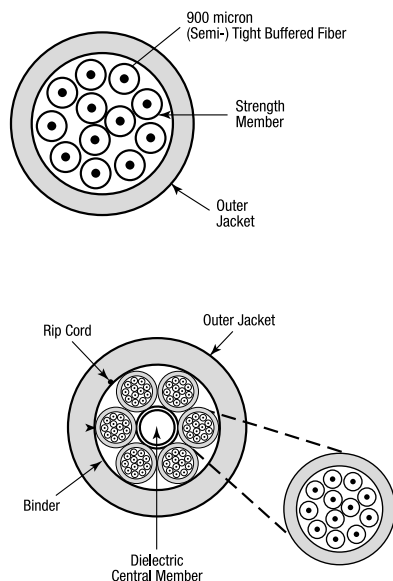
Applications

- Structured (premises) wiring systems: campus and/or building backbone (riser) and/or horizontal cabling
- Support all computer network applications such as FDDI, Gigabit Ethernet and ATM
- Easy to install in ducts, tunnels and trenches. Not recommended for direct burial

Features & Benefits

- Available in sizes from 2 to 72 fibers
- 900 µm buffered fiber allows for use of field-installable connectors
- Semi-tight buffered optical fibers are easily strippable
- Length marking in meters for easy determination of the cable length
- Full dielectric construction, no grounding required
- These cables are halogen-free (= FRNC and LSNH) and watertight and therefore suitable for internal and external use. Consequently splicing can be avoided and the installation gets more cost-effective.

Cross Section



Specifications

IEC 60794-1-2		
Crush Resistance (E3):	5 kN/m	
Min. Bend Radius dynamic (E6):	20 x Ø	
Min. Bend Radius static (E11):	10 x Ø	
Min. Bend Radius fibers:	25 mm	
Temperature Range (F1):		
– Transport/Storage	-30°C to +70°C	
– Installation	-5°C to +50°C	
– Operation	-30°C to +70°C	
Watertightness (F5):	Pass	
Stripping (E5), Semi-Tight:		
– Secondary coating	> 30 cm	
– Primary and Secondary	> 10 mm	
Stripping (E5), Tight:		
– Secondary coating	> 10 cm	
– Primary and Secondary	> 10 mm	
Other		
Reaction to fire:		
– GUMT, GUMS	EN 50575	Dca-s1,d1,a1
– GUMT, GUMS	IEC 60331	
– GUMT, GUMS	IEC 60332-3-24	
Halogen Free:	IEC 60754-1	
Non Corrosive:	IEC 60754-2	
Smoke Density:	IEC 61034-2	



Characteristics

Tight Buffer	Semi-Tight Buffer	Fiber Count	Diameter (mm)	Weight (kg/km)	Tensile Strength (short term) N	Tensile Strength (permanent) N	Fire Load (kJ/m)
GUMT*02	GUMS*02	1 x 2	5.4	26	1200	400	296
GUMT*04	GUMS*04	1 x 4	5.4	26	1200	400	296
GUMT*06	GUMS*06	1 x 6	5.9	30	1200	400	347
GUMT*08	GUMS*08	1 x 8	5.9	32	1200	400	371
GUMT*12	GUMS*12	1 x 12	7.6	45	1350	450	622
GUMT*16	GUMS*16	1 x 16	8.6	53	1590	530	845
GUMT*24	GUMS*24	1 x 24	9.6	74	1950	650	1082
GUMT*36	GUMS*36	3 x 12	19.7	246	3000	1000	2345
GUMT*48	GUMS*48	4 x 12	19.7	286	3000	1000	2970
GUMT*72	GUMS*72	6 x 12	24.6	438	3000	1000	4290

Note: Buffer diameter 0.90 ± 0.05 mm

Ordering Information

Fiber Type/Count	2	4	6	8	12	16	24	36	48	72	Jacket Color
GUMT • Tight Buffer											
62.5/125-OM1	GUMT102	GUMT104	GUMT106	GUMT108	GUMT112	GUMT116	GUMT124	GUMT136	GUMT148	GUMT172	Orange
50/125-OM2	GUMT202	GUMT204	GUMT206	GUMT208	GUMT212	GUMT216	GUMT224	GUMT236	GUMT248	GUMT272	Orange
50/125-OM3 Flex	GUMTD02	GUMTD04	GUMTD06	GUMTD08	GUMTD12	GUMTD16	GUMTD24	GUMTD36	GUMTD48	GUMTD72	Aqua
50/125-OM4 Flex	GUMTE02	GUMTE04	GUMTE06	GUMTE08	GUMTE12	GUMTE16	GUMTE24	GUMTE36	GUMTE48	GUMTE72	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GUMTA02	GUMTA04	GUMTA06	GUMTA08	GUMTA12	GUMTA16	GUMTA24	GUMTA36	GUMTA48	GUMTA72	Yellow
9/125 ITU G.657A2	GUMTF02	GUMTF04	GUMTF06	GUMTF08	GUMTF12	GUMTF16	GUMTF24	GUMTF36	GUMTF48	GUMTF72	Yellow
9/125 ITU G.657B3	GUMTI02	GUMTI04	GUMTI06	GUMTI08	GUMTI12	GUMTI16	GUMTI24	GUMTI36	GUMTI48	GUMTI72	Yellow
GUMS • Semi-Tight Buffer											
62.5/125-OM1	GUMS102	GUMS104	GUMS106	GUMS108	GUMS112	GUMS116	GUMS124	GUMS136	GUMS148	GUMS172	Orange
50/125-OM2	GUMS202	GUMS204	GUMS206	GUMS208	GUMS212	GUMS216	GUMS224	GUMS236	GUMS248	GUMS272	Orange
50/125-OM3 Flex	GUMSD02	GUMSD04	GUMSD06	GUMSD08	GUMSD12	GUMSD16	GUMSD24	GUMSD36	GUMSD48	GUMSD72	Aqua
50/125-OM4 Flex	GUMSE02	GUMSE04	GUMSE06	GUMSE08	GUMSE12	GUMSE16	GUMSE24	GUMSE36	GUMSE48	GUMSE72	Erika-Violet (RAL 4003)
9/125 ITU G.657A1	GUMSA02	GUMSA04	GUMSA06	GUMSA08	GUMSA12	GUMSA16	GUMSA24	GUMSA36	GUMSA48	GUMSA72	Yellow
9/125 ITU G.657A2	GUMSF02	GUMSF04	GUMSF06	GUMSF08	GUMSF12	GUMSF16	GUMSF24	GUMSF36	GUMSF48	GUMSF72	Yellow
9/125 ITU G.657B3	GUMSI02	GUMSI04	GUMSI06	GUMSI08	GUMSI12	GUMSI16	GUMSI24	GUMSI36	GUMSI48	GUMSI72	Yellow
GUMT • GUMS											
Std. plywood reel (non-returnable)	Ø 560 x 336 mm, Weight 4.25 kg		Ø 800 x 475 mm, Weight 7.65 kg		Ø 1000 x 530 mm, Weight 18.0 kg		Ø 1000 x 530 mm, Weight 18.0 kg		Ø 1250 x 688mm, Weight 93.0 kg		–
Std. delivery length	2100 ± 100 m		2100 ± 100 m		2100 ± 100 m		650 ± 100 m		650 ± 100 m		–

Fiber Color Coding

No.		No.		No.		No.		No.		No.	
1	White	5	Green	9	Orange	13	White + ring	17	Green + ring	21	Orange + ring
2	Red	6	Violet	10	Turquoise	14	Red + ring	18	Violet + ring	22	Turquoise + ring
3	Blue	7	Brown	11	Pink	15	Blue + ring	19	Brown + ring	23	Pink + ring
4	Yellow	8	Black	12	Grey	16	Yellow + ring	20	Black + ring	24	Grey + ring

Performance & Warranties Profile *for* **Belden IBDN FiberExpress Certified System Installations**

Belden will provide its authorized Certified System Vendors (CSVs), for the benefit of their end users, with both an extended Belden IBDN Component Warranty and a lifetime Application Assurance Program for all Belden IBDN FiberExpress Certified Systems installed by the CSV.

The extended Belden IBDN Component Warranty and the lifetime Application Assurance Program are offered to the CSV by Belden, in accordance with the following terms and conditions.

This Warranty and this Assurance Program apply only to Belden IBDN FiberExpress Certified Systems installed by CSV acting as an authorized Certified System Vendor (CSV) and in compliance with the CSV Agreement.

A Belden IBDN FiberExpress Certified System is a structured cabling system that has been engineered, designed and installed by the CSV acting as an authorized Belden CSV. The engineering, design and installation of the Belden IBDN System must be performed in accordance with all applicable Belden IBDN guidelines, Belden IBDN practices, and other Belden IBDN documentation in effect at the time of installation. Belden IBDN FiberExpress System installations that meet these requirements will receive a Certification Registration Number and Certification Plaque or Certificate from Belden and will then be designated as a Belden IBDN FiberExpress Certified System, eligible for the extended Belden IBDN Component Warranty and lifetime Application Assurance Program described below.

In order to maintain the validity of the extended Belden IBDN Component Warranty and the lifetime Application Assurance Program, the Belden IBDN FiberExpress Certified System must be maintained in accordance with the Belden IBDN User Manual in effect at the time of installation.

Extended Belden IBDN Component Warranty:

Belden warrants that;

i) the Belden IBDN passive components installed in the Belden IBDN FiberExpress Certified System are covered by a manufacturer's warranty against defects in material and workmanship for a period of twenty-five (25) years from the date of installation, at the original installation location.

ii) the Belden IBDN FiberExpress Certified System will meet or exceed the requirements specified by:

ANSI/TIA/EIA-568-B.1: Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements

ANSI/TIA/EIA-568-B.3: Commercial Building Telecommunications Cabling Standard, Part 3: Optical Fiber Cabling

ANSI/TIA/EIA-568-B.3-1: Addendum 1 - Additional Transmission Performance Specifications for 50/125 µm Optical Fiber Cables

Once an installed Belden IBDN passive component has been deemed defective by Belden, Belden shall repair or replace, at Belden's discretion, the defective component. The repaired or replaced component will be warranted for the balance of the original twenty-five year warranty period, or, ninety (90) days, whichever is longer.

The repair or replacement of a defective component under this warranty includes the reasonable costs of labor required to repair or replace the defective component. The decision of repair or replacement of components, and the selection of labor services to perform the repair or replacement are at the sole discretion of Belden.

Application Assurance:

In addition to the extended Belden IBDN Component Warranty, Belden also provides a lifetime Application Assurance Program for all Belden IBDN FiberExpress Certified Systems.

Belden lifetime Application Assurance Program warrants that the Belden IBDN FiberExpress Certified System, maintained in accordance with the Belden IBDN User Guide in effect and provided at the time of installation, will be capable of supporting all industry standard Applications during its entire installation life at its original installation location.

Industry standard Applications include;

- i) all Applications identified in the current (at time of installation) Belden IBDN documentation, and;
- ii) any commercially available Applications introduced at a future date that are designed to operate over ANSI/TIA/EIA-568-B.3 and ANSI/TIA/EIA-568-B.3-1 compliant optical fiber transmission channels.

In the event that the Belden IBDN FiberExpress Certified System is unable to support an existing or future industry standard Application as defined above, and such failure can be attributed to a deficiency in the Belden IBDN System, Belden will provide at its expense, reasonable expertise, Belden IBDN materials and labor as required to remedy the problem and/or resolve the claim. The decision of repair or replacement of materials, and the selection of labor services to perform the remedial services are at the sole discretion of Belden.

Limitations

Belden will not be liable for, nor pay for, any loss of use of the Belden IBDN System or products; costs of substitute goods, facilities or services; or for any other economic losses or incidental, consequential or exemplary damages.

This Extended Product Warranty and Application Assurance for the Belden IBDN Certified System does not cover any deficiencies in the System which result from failure to comply with Belden design guidelines and installation procedures.

Belden shall not be liable for damages or defects resulting from circumstances beyond its control, including but not limited to, improper installation, misuse, alteration, unauthorized repair, damages in transit, fire, floods and acts of God.

Repair or replacement of the Belden IBDN Certified System by Belden is your exclusive remedy.

This is the only warranty on the Belden IBDN FiberExpress Certified System. There are no other warranties, express or implied, made by Belden.



Belden IBDN Structured Cabling Systems • Belden IBDN FiberExpress Certified System Installations

Belden IBDN FiberExpress Cabling Solution

In addition to the extended Belden IBDN Component Warranty, the lifetime Application Assurance Program and full compliance with ANSI/TIA/EIA-568-B Standards, Belden IBDN FiberExpress Certified Systems that conform with the Belden IBDN FiberExpress Certified System channel configuration shown below are guaranteed to provide the following optical performance

characteristics for the duration of their installed lifetime at the original site of installation. All conditions regarding original design, installation and maintenance for Belden IBDN FiberExpress Certified Systems must be met in order to validate these optical performance characteristics.

Belden IBDN FiberExpress System		Max. Channel Attenuation (2 mated pair connector topology)		Max. Supportable Distance	
		850 nm	1300 nm	850 nm	1300 nm
FiberExpress 300 ⁽¹⁾	62.5 µm multimode	3.2 dB	4.0 dB	300 m (985 ft)	550 m (1805 ft)
FiberExpress 600 ⁽¹⁾	50 µm multimode	3.9 dB	3.5 dB	600 m (1970 ft)	600 m (1970 ft)
FiberExpress 2000 ⁽²⁾	50 µm multimode	2.6 dB	—	300 m (985 ft)	—
Singlemode ⁽³⁾	Loose tube optical fiber cable	—	4.7 dB	—	5000 m (16,405 ft)

1) Budget and length limitations shown are for 1 Gb/s applications including 1000Base-SX and 1000Base-LX Gigabit Ethernet. Maximum channel attenuation and maximum channel length limitations for other applications are specified in the Belden IBDN Optical Fiber Design in effect at the time of installation.

2) Budget and length limitations shown are for 10 Gb/s applications including 10Base-S Ethernet. If 10GBase-LX4 is used, the maximum channel attenuation is 2.0 dB and the maximum channel length is 300 m (985 ft). Maximum channel attenuation and maximum channel length limitations for other applications are specified in the Belden IBDN Optical Fiber Design in effect at the time of installation.

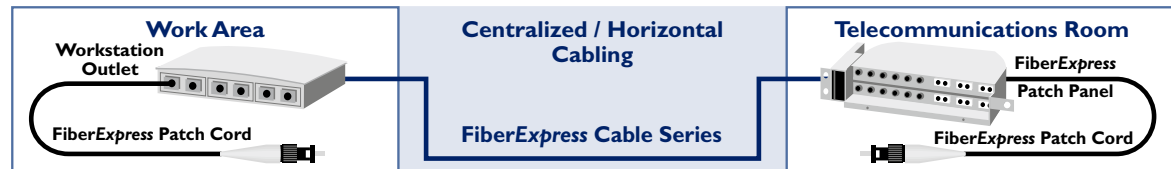
3) Singlemode tight buffer optical fiber cable is available; Budget and length limitations shown are for 1 Gb/s including 1000Base-LX Gigabit Ethernet. Maximum channel attenuation and maximum channel length limitations for other applications are specified in the Belden IBDN Optical Fiber Design Guide in effect at the time of installation.

Belden IBDN FiberExpress System Channel Backbone Configuration



* 2 mated pair connector channel topology

Belden IBDN FiberExpress System Channel Centralized / Horizontal Configuration



* 2 mated pair connector channel topology

Belden IBDN FiberExpress System Matrix	Fiber Channel Topology			
	Fiber-to-the-Desk (FTTD) & Centralized Fiber	Fiber Backbone (In-Building)	Fiber Backbone (Campus)	FiberExpress Pre-terminated Solutions*
FiberExpress Cables				
Breakout & Distribution Cable Series: MM & SM	✓	✓		
Interconnect Cable Series: MM & SM	✓			
Loose Tube (Campus) Cable Series: MM & SM, Composite MM/SM		✓	✓	
FiberExpress Ribbon Cable Series: MM & SM	✓	✓	✓	✓
Cross-Connect Hardware in the Telecommunications Room				
FiberExpress Manager with FiberExpress Manager Connector Modules: MM & SM	✓	✓	✓	✓
FiberExpress Rack Mount Patch Panel with Universal Adapter Strips: MM & SM	✓	✓	✓	
FiberExpress Wall Mount Patch Panel with Universal Adapter Strips: MM & SM	✓	✓	✓	
FiberExpress Bar: MM & SM	✓	✓	✓	✓
Patch Cords in the Telecommunications Room and at the Work Area				
FiberExpress Patch Cords: MM & SM	✓	✓	✓	✓
Outlets at the Work Area				
MDVO Multimedia Outlets with MDVO Multimedia Modules	✓			
MediaFlex Outlets with MediaFlex Inserts	✓			
FiberExpress Bar: MM & SM (as MUTOA)	✓			✓
Fiber Connectivity				
Optimax Connectors: MM & SM	✓	✓	✓	
Epoxy Field Mountable Connectors: MM & SM	✓	✓	✓	
Fiber Pigtailed: MM & SM	✓	✓	✓	

MM = Multimode SM = Singlemode

* FiberExpress Pre-terminated solutions provide simple-to-install, high performance fiber channels through custom length, high precision factory terminated cables and matching optical connectivity components.

BELDEN
SENDING ALL THE RIGHT SIGNALS®



Belden Solutions:
Faster, Easier, Better.

PatchPro®

Real-Time Network Security and Transparency

Communication – the exchange of data and information – is one of today's most powerful economic factors, and can make or break an organization. Demand for bandwidth and reliable service is continuing to increase, along with requirements for better IT security.

According to analyst Gartner, nearly one-third of data center service outages are due to cabling or connectivity errors. To maintain guaranteed business continuity, accurate documentation of all IT assets – from the planning phase to day-to-day operations – is essential.

To meet growing data center requirements, Belden introduces a hardware and software portfolio for networks that call for high security, maximum reliability and constant uptime: the Belden PatchPro® Intelligent Patching Solution.

Building on state-of-the-art technology, PatchPro® patching products can be combined to provide a complete, cost-effective intelligent patching solution that ensures increased network security, reliability and uptime.

How PatchPro® Works

Belden PatchPro® offers a complete intelligent ready physical layer management system that uses RFID (radio frequency identification) technology for wireless identification of individual patch cords and real-time monitoring of unintended physical changes in network infrastructure.

Smart patch cords are equipped with an RFID chip containing idiosyncratic identification information (name, standard, manufacturer, etc.), which is recognized by the panel and automatically fed into the software for seamless real-time database documentation. The RFID technology does not alter data center density or affect patch cord flexibility or reliability.

Network infrastructure changes are automatically detected and transmitted to the software platform, facilitating immediate action. Network managers also receive email and/or text alerts about unwanted changes.

At the rack level, unwanted changes are signaled in three ways:

1. By a red light on top of the rack
2. As clear text in the Belden PatchPro® Network Manager display
3. With LED signaling at the patch-panel level

Where PatchPro® Works

PatchPro® is a key component of full-distribution network management systems in organizations that require reliability and operational uptime:

- Airports
- Data centers
- Educational campuses
- Financial institutions
- Government agencies
- Healthcare organizations



PatchPro® System

Description	Part Number
PatchPro® Hardware	
Active Hardware	
1U Network Manager with display	PPIRRC
0U Network Manager without display	PPIRRS
Rack Identification Lamp (Red)	PPRIL
Upgrade Hardware	
Copper Panel Upgrade Kit	PPCUUK
Fiber Panel LC/DX Upgrade Kit	PPFOUK
Fiber Panel SC/DX Upgrade Kit	PPFSUK
Hardware Accessories	
Bus cable 25m	PPACAB
Bus connector 1	PPACON
Bus connector 2	PPACOS
Bus termination	PPATER
Crimping tool	PPACRI





Description	Part Number
-------------	-------------

PatchPro® Infrastructure DCIM/AIM Software

Add-on Modules non-concurrent license

RVM RackView Manager	PP-RV-SF
RCM RackCenter Manager (license for 2 years and named user!)	PP-RC-SF
IGS Internet Graphic Server (Incl. 5 client license)	PP-IGS-SF

PatchPro®I - Connectivity and Facility Manager (Concurrent License Model)

PatchPro®I - Enterprise Manager CADVANCE	PP-ENT-CM-CV-ZZ
PatchPro®I - Professional Manager CADVANCE	PP-PRO-CM-CV-ZZ
PatchPro®I - Small Business Manager CADVANCE	PP-SB-CM-CV-ZZ
PatchPro®I - Enterprise Manager AutoCAD	PP-ENT-CM-AC-ZZ
PatchPro®I - Professional Manager AutoCAD	PP-PRO-CM-AC-ZZ
PatchPro®I - Small Business Manager AutoCAD	PP-SB-CM-AC-ZZ

replace ZZ with amount of licenses, example: PP-SB-CM-AC-01

Tools

SNMP-Interface	SNMP-INT
API Programming-Interface	PRGM-INT
WMI-Interface	WMI-INT
LDAP-Interface	LDAP-INT

Other tools are available on request

Services

Software-Service / Maintenance / Updates / Hotline (CV) - Year	PP-SMUH-CV
Software-Service / Maintenance / Updates / Hotline (AC) - Year	PP-SMUH-AC

Not including software updates of CAD-Systems & other 3rd Party Software

Training on site (Other Training available on request)

Entering customer data Floorplan - Day	PP-FP-TR
Entering customer data IT - Day	PP-IT-TR
Entering customer data Facility Management - Day	PP-FM-TR
Installation of Software on customer server - Day	PP-INS-TR
Create userdefined Project structures DB / Consulting - Day	PP-CPBD

Excluding travel & accommodation expenses



Infrastructure Data Center Solutions



Section Three

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E-Series DC Cabinets



ESN – Networking and Switch Cabinets – 1500 kg

For the ESN cabinets with a width of 800 mm and a height of 37RU and above an upgrade kit is available to extend the maximum permissible load from 1200 kg to 1500 kg. The stability frame is a recommended reinforcement for extra stability when the 800 mm Cabinet is standing alone (not bayed) and is loaded multiple sliding servers.

Features

- 4 Sliding vertical rails for mounting (6 rails for cabinets deeper than 800 mm)
- All components interconnect with ground wire and Main grounding point on bottom (M8 stud)
- Top cover has knockout cut-outs for fan-unit and various cable entries
- The frame is connected to the removable parts with grounding wires
- Optional cable routing sides for between cabinets
- IP20 protection

Construction

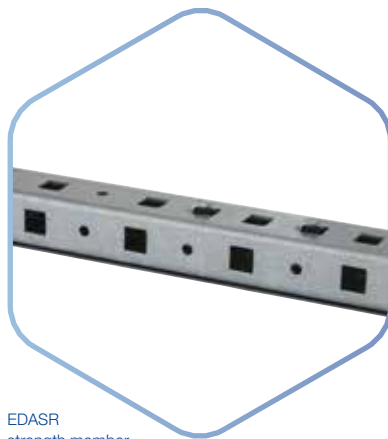
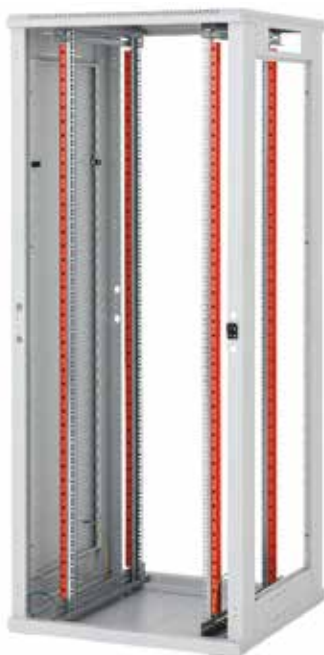
- The maximum load capacity is 1200 kg
- Strengthened frame: Cold-rolled steel 1.3 mm
- Sliding rail (fixed at four points): Cold-rolled steel 2.5 mm
- Side panels and doors: 1.0 mm

Door and Sides

- Solid Steel door with rigid design
- Glass door with safety tempered glass of 4 mm
- Perforated door with 80% airflow with mesh pattern
- Maximum load 20 kg on the doors
- Side panels with optional extra cable entries
- Side mounted with security screws options

Vertical Lacing Panel / PDU Holder

- Lacing panel available for easy in corner cable management
- Lacing for cable bundles
- Tool less PDU mounting



EDASR
strength member

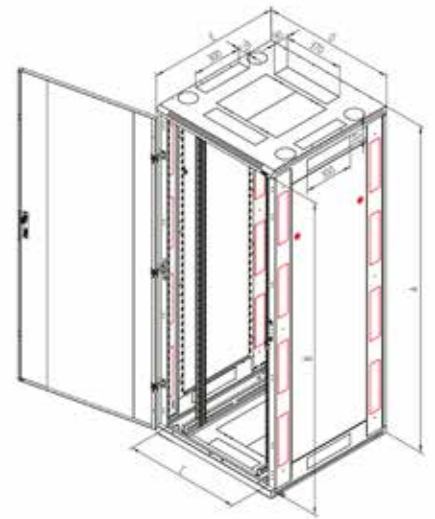


Dimensions

Width (mm)	600				800									
Height (RU)	37	42	45	47	15	18	22	27	32	37	42	45	47	
A - Height Outer Dimension (mm)	1750	1970	2105	2194	770	900	1080	1300	1525	1750	1970	2105	2194	
B - Height Inner Door Opening (mm)	1648	1868	2003	2092	668	798	978	1198	1423	1648	1868	2003	2092	
C - Width Inner Door Opening (mm)	487				687									
Maximum recommended load (kg)	1500 kg													
E - Depth (mm)	600 800 900 1000 1100 1200													

Ordering Information Reinforcement Kit

EPN	Full description BPCS and Label
EDASR037	ESN Reinforcement kit 37U Upgrade 1500 kg
EDASR042	ESN Reinforcement kit 42U Upgrade 1500 kg
EDASR045	ESN Reinforcement kit 45U Upgrade 1500 kg
EDASR047	ESN Reinforcement kit 47U Upgrade 1500 kg



Ordering Information Cabinet

Cabinet Type		Width		Depth		Bottom Cover*		Side Panels		Variant
ESN	Server Networking 1200 kg	6	600 mm	6	600 mm	C 0	Cable Entry and Fanunit knockout	No Sides		LAN
	*ESN 800W 37U+ Upgradable to 1500 kg	8	800 mm	8	800 mm	C 1	Cable Entry and Fanunit knockout	1 Side (locks)		LAN
				9	900 mm	C 2	Cable Entry and Fanunit knockout	2 Sides (locks)		LAN
				1	1000 mm	C 3	Cable Entry and Fanunit knockout	2 Sides and Cable entries (locks)		LAN
				0	1100 mm	A 0	Large air inlet and cable Entry	No Sides		Data Centre
				2	1200 mm	A 4	Large air inlet and cable Entry	2 Sides (screws)		Data Centre
						A 5	Large air inlet and cable Entry	2 Sides and Cable entries (screws)		Data Centre

ESN	42	8	8	G	V	C	C	2	G
-----	----	---	---	---	---	---	---	---	---

Height *		Front Door		Rear Door		Top Cover		Color	
15	15RU - 770 mm *	S	Solid left	S	Solid left	C	Cable Entry and Fanunit knockout	B	Black
18	18RU - 900 mm *	G	Glass left	G	Glass left			G	Light Gray
22	22RU - 1080 mm *	P	Perforated left	P	Perforated left				
27	27RU - 1300 mm *	D	Double Solid	D	Double Solid				
32	32RU - 1525 mm *	L	Double Glass	L	Double Glass				
37	37RU - 1750 mm	V	Double Perforated	V	Double Perforated				
42	42RU - 1970 mm	A	Solid right	A	Solid right				
45	45RU - 2105 mm	B	Glass right	B	Glass right				
47	47RU - 2194 mm	C	Perforated right	C	Perforated right				
		N	No door	R	Removable panel				
				N	No door				

Notes:

- ESN 800 mm wide version with 37RU and above can be upgraded to 1500 kg by ordering reinforcement kit EDASR
- ESN 600 mm wide version **only** available in 37RU and above
- Perforated doors have 80% openings by Mesh pattern
- Bottom Cover "C" for LAN variant, "A" for Data Centre variant

Part number example:

ESN4288GVCC2G Cabinet Server and Networking (1200 kg) 42U 800x800 mm, Glass left door Front and Double perforated door Rear, Cable and fanunit cover, Cable and fanunit cover, 2 Sides (locks), Light Gray
EDASR042 ESN Reinforcement kit 42U Upgrade 1500 kg



E-Series DC Cabinets *(continued)*

ESH – Server Cabinet 1800 kg

Belden Cabinets for use in 19" Data, Telecommunications and Server applications. Varying depths are available for various applications.

Features

- 4 Sliding vertical rails for mounting (6 rails for cabinets deeper than 800 mm)
- Main grounding point is on the bottom of the cabinet by one M8 screw
- Top cover has knockout cut-outs for fan-unit and various cable entries
- The frame is connected to the removable parts with grounding wires
- The maximum permissible load is 1800 kg
- Optional cable routing sides for between cabinets
- Optional lacing panel and PDU holder
- IP20 protection

Construction

- The maximum load capacity is 1800 kg
- Reinforced construction made of thicker material
- 19" vertical rails are designed for a higher loading capacity
- Cabinets with depth over 800 mm has a central pair of vertical rails as a standard solution

Door and Sides

- Solid Steel door with rigid design
- Glass door with safety tempered glass of 4 mm
- Perforated door with 80% airflow with mesh pattern
- Maximum load 20 kg on the doors
- Side panels with optional extra cable entries
- Side mounted with security screws options

Vertical Lacing Panel / PDU Holder

- Lacing panel available for easy in corner cable management
- Lacing for cable bundles
- Tool less PDU mounting



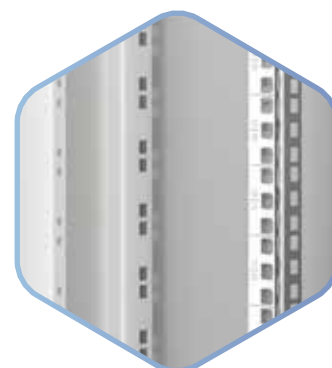
Lacing panel
accessory installed



Flex frame for
installation of 19", 21" or 23"



Perforated
frame for additional accessories

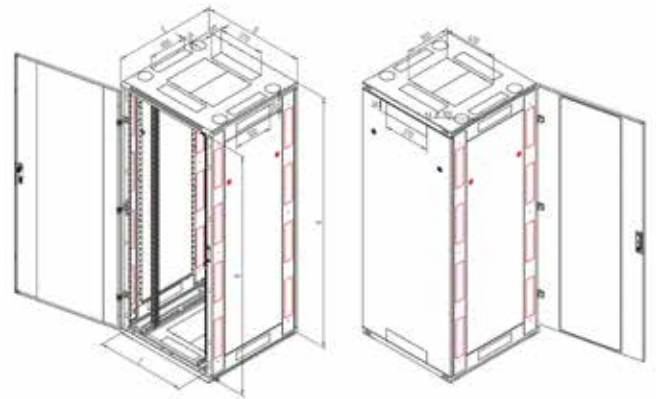


Lacing panel
accessory installed



Dimensions

Width (mm)	600				800			
Height (RU)	37	42	45	47	37	42	45	47
A - Height Outer Dimension (mm)	1750	1970	2105	2194	1750	1970	2105	2194
B - Height Inner Door Opening (mm)	1648	1868	2003	2092	1648	1868	2003	2092
C - Width Inner Door Opening (mm)	487				687			
Maximum recommended load (kg)	1800							
E - Depth (mm)	800 1000 1100 1200							



Ordering Information

Cabinet Type		Width		Depth		Top Cover		Bottom Cover		Side Panel	
ESH	Data Center Server High load (1800 kg)	6	600 mm	8	800 mm	C	Cable Entry and Fanunit knockout	A	Large air inlet and cable entry	0	No Sides
		8	800 mm	1	1000 mm					4	2 Sides (screws)
				0	1100 mm					5	2 Sides and Cable entries (screws)
				2	1200 mm						
ESH		47	8	2	P	V	C	A	4	B	
Height		Front Door		Rear Door		Color					
37	37RU - 1750 mm	S	Solid left	S	Solid left	B	Black				
42	42RU - 1970 mm	G	Glass left	G	Glass left	G	Light Gray				
45	45RU - 2105 mm	P	Perforated left	P	Perforated left						
47	47RU - 2194 mm	D	Double Solid	D	Double Solid						
		L	Double Glass	L	Double Glass						
		V	Double Perforated	V	Double Perforated						
		A	Solid right	A	Solid right						
		B	Glass right	B	Glass right						
		C	Perforated right	C	Perforated right						
		N	No door	R	Removable panel						
				N	No door						

19" Accessories

Horizontal Cable Managers

Application

Horizontal managers allow routing of copper and fiber cables/patch cords in racks and cabinets while helping to maintain proper bend radius and organize array for ease of moves, adds and changes.

Features include:

- 1RU to 4RU height
- 19" mount includes mounting hardware
- Compatible with racks and cabinets
- Selection of ring, finger and cable tie bar style horizontal managers
- Standard color is black (other colors available on volume orders)



Horizontal
Cable Managers
Top: EDAH1202 (1U plastic)
Middle: EDAH1102 (1U plastic)
Bottom: EDAH2102 (1U metal)



BHH192UC
Horizontal Manager
1U finger style including cover

Description	RU	Manager Cross Section H x D	Part Number
Horizontal Cable Managers			
Horizontal Cable Manager, Plastic, with Fingers and Cover	1RU	42 x 50 mm	EDAH1102
Horizontal Cable Manager, Plastic, with Fingers and Cover	2RU	75 x 50 mm	EDAH1202
Horizontal Cable Manager, Metal, with Rings and Cable Guiding, Black	1RU	42 x 50 mm	EDAH2102
Horizontal Cable Manager, Metal, with Rings and Cable Guiding, Light Gray	1RU	42 x 50mm	EDAH2101
Horizontal Manager with Molded Fingers and Hinging Cover	1RU	45 x 145 mm	BHH191UC
Horizontal Manager with Molded Fingers and Hinging Cover	2RU	90 x 145 mm	BHH192UC
Horizontal Manager with Molded Fingers and Hinging Cover	3RU	135 x 145 mm	BHH193UC
Horizontal Manager with Molded Fingers and Hinging Cover	4RU	180 x 145 mm	BHH194UC

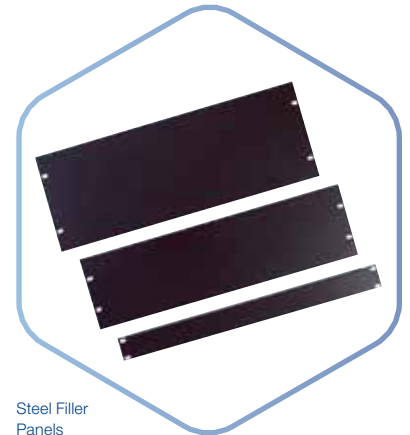


Filler Panels

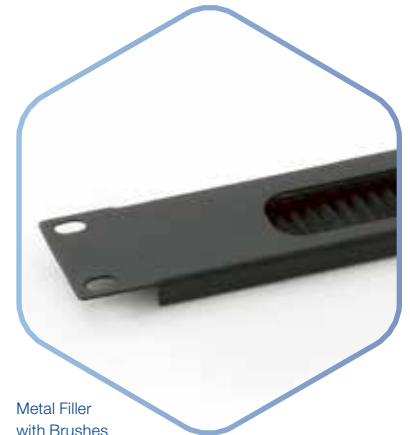
Application

- Filler Panels allow blocking of unused rack units (RU) for optimized airflow and separation between cold supply air and hot return air
- Best practices in Data Centers includes blanking of all unused rack units (RU)
- Filler Panels are compatible with 19" mount racks and cabinets

Description	Color	Part Number
Filler Panels		
Metal		
1RU Metal Filler Solid incl. cage nut	Light Gray / Black	EDAP1011/2
2RU Metal Filler Solid incl. cage nut	Light Gray / Black	EDAP1021/2
3RU Metal Filler Solid incl. cage nut	Light Gray / Black	EDAP1031/2
4RU Metal Filler Solid incl. cage nut	Light Gray / Black	EDAP1041/2
1RU Metal Filler With Brush incl. cage nuts	Light Gray / Black	EDAP3311/2
Plastic Tool-Less		
1RU Solid Filler Panel (fits 10-32, 12-24 and square holes rails)	Black/CO White	9910-0100PL-01/-02
2RU Solid Filler Panel (fits 10-32, 12-24 and square holes rails)	Black/CO White	9911-0200PL-01/-02



Steel Filler Panels

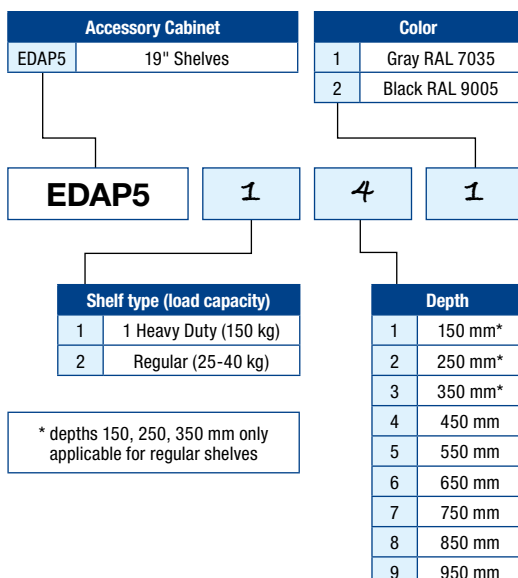


Metal Filler with Brushes
EDAP3312

Shelves

Regular Shelves and Heavy Duty 19" Shelf for supporting equipment up to 150 kg load. Available in several depths and is mounted on each corner to the frame for maximum stability. The depth of mounting is adjustable.

Ordering Information



Top:
Heavy duty shelf
Bottom:
Regular shelf

E-Series Accessories

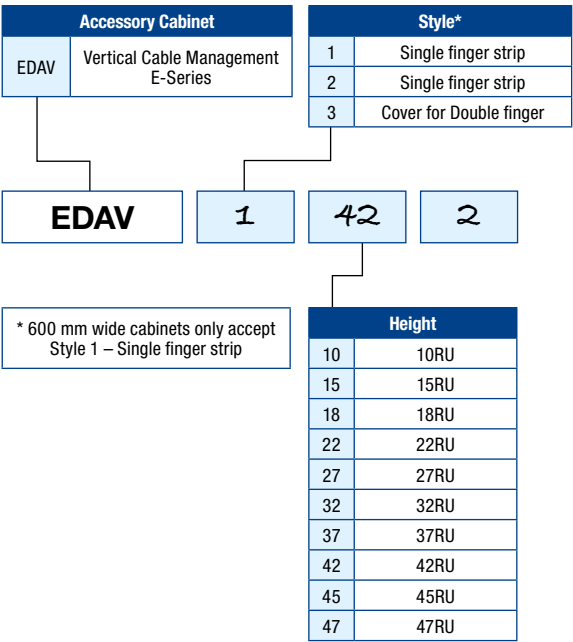
E-Series Cabinet specific Accessories

Dependent on the Cabinet series, or type of cabinet, there are cabinet specific accessories, especially designed for the frame or application.

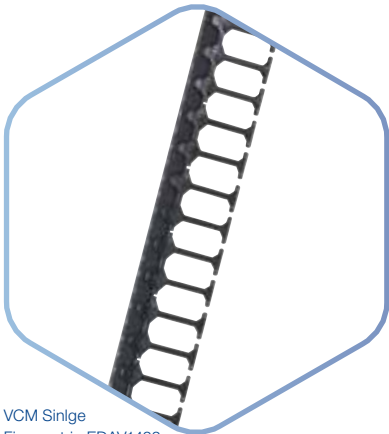
Vertical Cable Manager Finger Style

Vertical Cable Management (VCM) available for 600 and 800 mm wide E-Series Free Standing Cabinets. Full length (e.g. 42U) to accommodate entire cabinet. The Installation is realized to the vertical rail by screws (included in standard package). An optional cover (EDAV3*) secures cables when the EDAV2* Double Finger style VCM is chosen.

Ordering Information



Finger style
Vertical Cable
Manager



VCM Single
Finger strip EDAV1422



VCM Double
Finger strip EDAV2102



EDAV3* Cover
for VCM



VCM Lacing panel and Toolless PDU holder

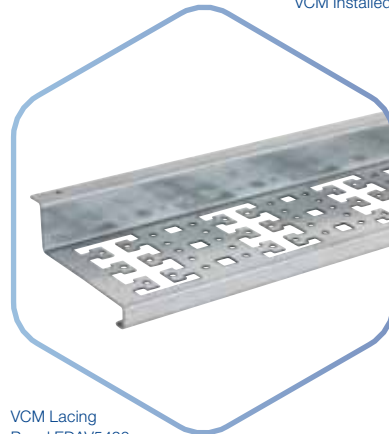
Vertical Cable Management (VCM) Lacing panel can be installed in the corner of the frame for EDC, ESN and ESH cabinet types.

Ordering Information

Accessory Cabinet		Style	
EDAV	Vertical Cable Management E-Series	5	Lacing Panel*
EDAV	5	42	0
* Applicable for EDC, ESN and ESH Cabinets		Height	
		22	22RU
		27	27RU
		32	32RU
		37	37RU
		42	42RU
		45	45RU
		47	47RU



VCM Installed



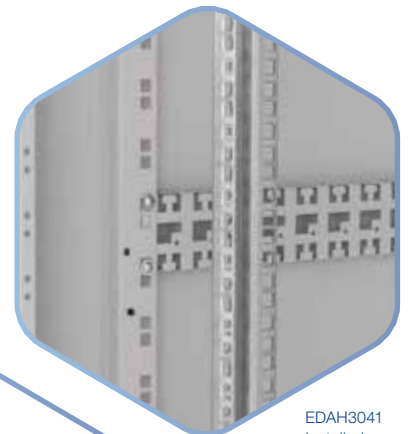
VCM Lacing Panel EDAV5420

HCM Front to Rear

Horizontal Cable Management (HCM) Rail from Front to Rear of the cabinet is available for EDC, ESN and ESH cabinets in various depths and standard colors.

Ordering Information

Accessory Cabinet		Color	
EDAH	Horizontal Cable Management E-Series	1	Gray RAL 7035
		2	Black RAL 9005
EDAH	30	4	1
* Applicable for EDC, ESN and ESH Cabinets		Type	
		30	Front to Rear
		Depth	
		6	600 mm
		8	800 mm
		9	900 mm
		1	1000 mm
		0	1100 mm
		2	1200 mm



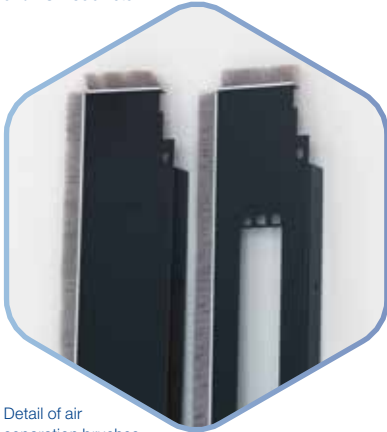
EDAH3041 Installed



Horizontal Cable Manager front to rear



Separation frame available for ESN and ESH Cabinets



Detail of air separation brushes



EDASC* stability frame and cable management

E-Series Accessories *(continued)*

Separation frame

Especially designed for air controlled environments such as Datacenters, the separation frame for E-Series ensures efficient air management. Mounted between the rails and the frame of the cabinet and sealed off by brushes, it separated the hot from the cold air. The Zero U Mounting version provides up to six additional 19" Rack unit positions in the cabinet installation and allows routing of cabling through the separation frame to the rear of the cabinet.

Ordering Information

Accessory Cabinet		Separation Frame*		Color	
EDA	Accessory for E-Series Cabinets	0	Separation Frame with 19" openings – Zero U Mounting	1	Gray RAL 7035
		1	Separation Frame Closed without openings	2	Black RAL 9005

EDA	S	1	8	42	1
------------	----------	----------	----------	-----------	----------

Applicable Cabinets		Width*		Height	
S	ESN Series 1200 kg	6	600 mm	42	42RU - 1970 mm
U	ESN Series 1500 kg	8	800 mm	45	45RU - 2105 mm
G	ESH Series			47	47RU - 2194 mm

* Zero U mounting only possible with 800 mm wide cabinets

Stability Frame incl. Cable Management

This kit is for 800 mm wide ESN cabinets to provide extra stability when standing alone and provides cable management. The stability frame is not required when the cabinet is bayed together with one or more other cabinets. The frame also provides cable management.

Ordering Information

Accessory Cabinet		Type		Depth	
EDA	Accessory for EMEA Cabinets	C	Stability frame and cable manager	6	600 mm
				8	800 mm
				9	900 mm
				1	1000 mm
				0	1100 mm
				2	1200 mm

EDA	S	C	8	42
------------	----------	----------	----------	-----------

Cabinet Range		Height	
S	ESN	37	37RU - 1750 mm
		42	42RU - 1970 mm
		45	45RU - 2105 mm
		47	47RU - 2194 mm



Fan units with Thermostat

Fan units especially made to fit all Belden E-Series Free standing cabinets, where they can be installed in the top cover from outside of the enclosure. The fan is kept in place using four latches and by gluing tape for sealing.

- Temperature adjustment by bimetallic thermostat
- Three units available with 2, 4 or 6 fans
- Airflow of one fan is 160 m3/hr
- Option to order without power cord when the electrical power grid requires different plug type

Ordering Information

Accessory Cabinet		Color	
EDAF1	Fan units E-Series	1	Gray RAL 7035
		2	Black RAL 9005

EDAF1	0	4	1
--------------	----------	----------	----------

Power cord for C13		# fans	
0	CEE 7/7 power cord	2	2 fans
1	Without power cord	4	4 fans
		6	6 fans



Fanunit with 4 fans and thermostat

Bases

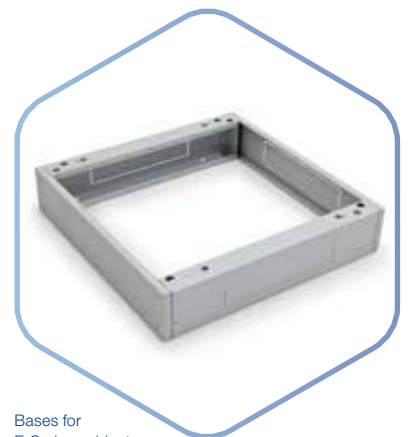
The base is constructed out of two side profiles which correspond to the depth and width of all E-Series cabinet. Height of the bases is 120 mm and can support maximum capacity of 1500 kg.

Ordering Information

Accessory Cabinet		Color	
EDAB2	Bases 1500 kg E-Series	1	Gray RAL 7035
		2	Black RAL 9005

EDAB2	8	1	1
--------------	----------	----------	----------

Width		Depth	
6	600 mm	6	600 mm
8	800 mm	8	800 mm
		1	1000 mm
		2	1200 mm



Bases for E-Series cabinets



Bases package detail

E-Series Accessories *(continued)*



Grounding clamp

Grounding Bar

Solid copper rod and clamps for Grounding equipment. Available for 42, 45 and 47U vertical mounting and 19" horizontal mounting (installation screws included).

Ordering Information

Accessory Cabinet	
EDAC4	Grounding Component

EDAC4

11

0

Depth	
11	Grounding rail 19" x 5 x 20 mm
12	Grounding rail 42RU x 5 x 20 mm
15	Grounding rail 45RU x 5 x 20 mm
17	Grounding rail 47RU x 5 x 20 mm
20	Grounding clamp



Copper rod 5 x 20 mm



Other Accessories for E-Series

Baying kit

Baying kits are used for connecting Enclosures together in a row.



Baying kit for E-Series

PDU mounting bracket

Set of 2 brackets made to mount Belden PDU's in free standing cabinets (EDC, ESN and ESH series). The brackets are being delivered with bolts to install them in the cabinet. The PDU can be mounted to the brackets with bolts and cage nuts.



PDU Holder 1U



PDU Holder 2U

Casters

Casters are installed on the bottom plate of the Cabinets. Maximum load capacity is 800 kg. By installing the casters, the height of the cabinet increases by 108 mm.



EDAB4120 – Casters for E-Series Cabinets

Description	Part Number
Other Cabinet specific Accessories	
PDU Holder	
PDU holder 1U for Cabinet ESN ESH in frame Pair	EDAC8510
PDU holder 2U for Cabinet ESN ESH in frame Pair	EDAC8520
Baying Kits	
Baying kit with sealing tape	EDAC2270
Baying kit with/o sealing tape	EDAC2280
Casters	
Casters max load 800 kg (4pcs)	EDAB4120
Cage Nut set (4pcs)	EDAC3100
Cage Nut set (20pcs)	EDAC3200
Cage Nut set (50pcs)	EDAC3300
Cable Ties	
Velcro Cable Ties, 25 per Roll, 200 mm long	AX100783
Velcro Cable Ties, 25 per Roll, 300 mm long	AX100784
12" Fiber Optic Cable Manager 1	AX102516
24" Fiber Optic Cable Manager 1	AX102517
Fiber Slack Management Spools 150 mm deep (includes 2 spools)	BHSP020
Fiber Slack Management Spools 50 mm deep for lacing panels (includes 2 spools)	BHSP030



AX102516
Cable Slack
Management Ring – 12" diameter

Aisle Containment

E-Series Aisle Containment Sliding Doors and Roof System

EAC Series

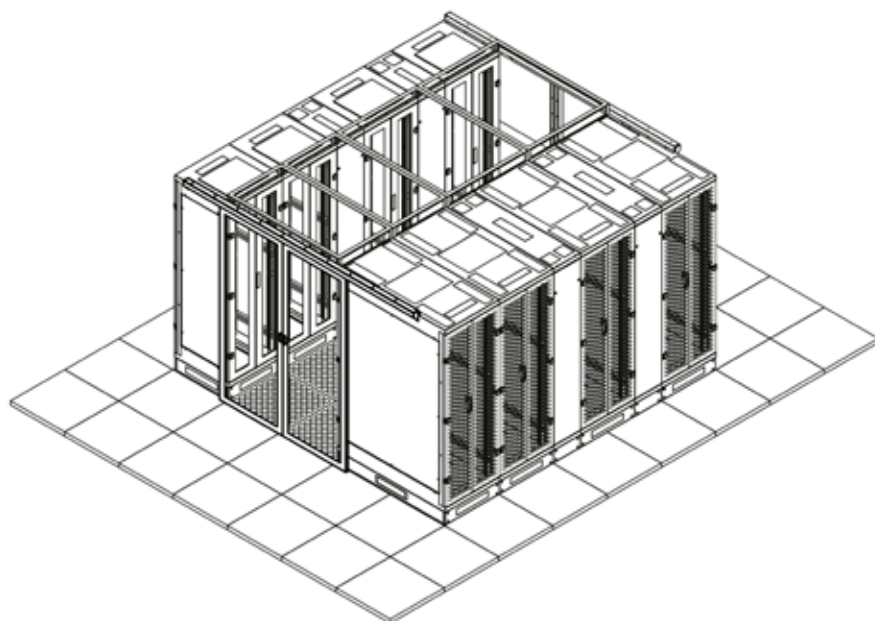
Application

It is critical to optimize the cooling system of installed equipment in a datacenter. Uncontrolled air flow is inefficient and influences the performance of the data center. By separating cold air supply from dissipated hot air from the equipment, this can be prevented. A very effective way is to use aisle containment by to prevent hot and cold air from mixing together. The aisles are sealed off by a roofing system and sliding doors.

This EAC Aisle containment package is compatible with the E-Series cabinet series ESH (1800 kg version) and ESN (1200 kg version). For the ESN series, the aisle must be installed on the rear side of the cabinet.



Installed
Sliding doors
and Roofs



Features

- Aisle containment for hot and cold air separation
- Seal off by sliding doors and roofing system
- Various widths depths and heights
- Supporting ETSI Footprint
- Customization possible





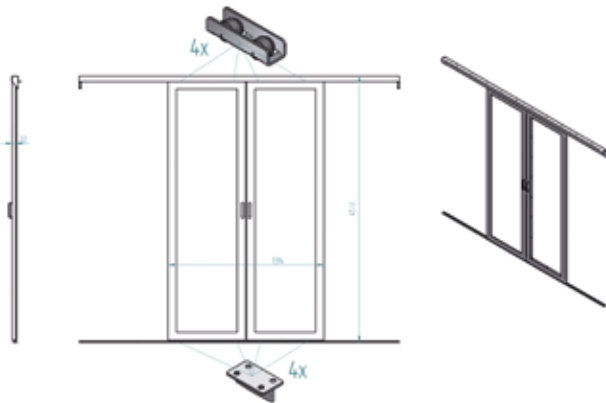
Sliding Doors

The doors are self-supporting and need the cabinets for stability.

To seal off the aisle, the sliding double sided doors have clear safety glass.

The standard span width is 1200 mm for practical reasons, and provides enough space for maintenance, opening doors on both sides. The doors are for heights of 42, 45 and 47 Units.

The sliding door is available as manual closing or automatic closing (based on Gas-spring mechanism).



Ordering Information

Accessory Cabinet		Span		Height	
EAC	Aisle Containment	S	1200 mm	42	42U
				45	45U
				47	47U
EAC		M		S	
				42	
				1	
Section		Color			
M	Manual Sliding Door	1	Gray RAL 7035		
G	Self-Closing Door	2	Black RAL 9005		

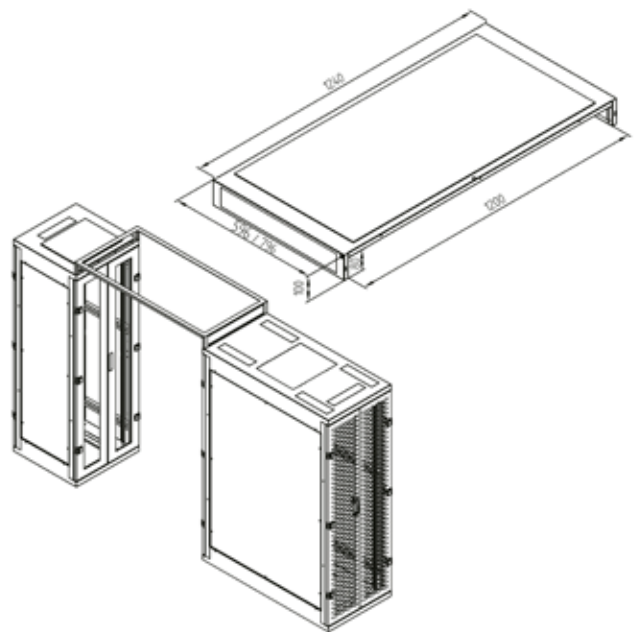
Roofing

The aisle roof is made of clear safety glass in a metallic frame. A ceiling shape allows an air to flow easily.

The standard span is 1200mm for the aisle to a width from 300 mm to 800 mm to cover the ETSI footprint.

The roofs weigh completely on the cabinets.

Installation instructions are provided for a proper handling.



Ordering Information

Accessory Cabinet		Span		Width	
EAC	Aisle Containment	S	1200 mm	3	300 mm
				4	400 mm
				6	600 mm
				8	800 mm
EAC		R		S	
				6	
				1	
Section		Color			
R	Roof Cover	1	Gray RAL 7035		
		2	Black RAL 9005		

Power Distribution and Climate Monitoring

Power Availability, Distribution, Allocation and Monitoring are Critical Data Center and Broadcast Studio Requirements

Belden in-cabinet mounted Power Distribution Units (PDUs) and Environment Monitors and Sensors are designed from high-quality components to support all your mission critical applications.

Precisely distribute, monitor, analyze and manage power distribution in your facility to maximize processing capacity and promote power efficiency.

A key component of our Data Center Solution Belden PDUs allow configuration of integrated and optimized hosting systems, including fiber/copper connectivity and cabling, cabinets, cable management and air flow management. They are designed to facilitate seamless integration into Belden cabinets and accessories, and include multiple mounting options for maximized air flow and cable management in high-density servers or switch hosting applications.

Paired with our extensive line of environmental monitors and sensors, which include alarm thresholds, reporting functionality, and a built-in intuitive web interface for remote access, Belden has everything you need to precisely monitor, analyze and log key parameters, enabling you to identify current fluctuations and quickly troubleshoot potential problems.





Cabinet Power Distribution Units (PDUs)

The extensive selection of data center PDU power products includes solutions such as upgradeable power distribution units, monitoring sensors and low profile breakers. Whether in need of basic products, or monitored power to help prevent circuits from overloading, a comprehensive range enables a suited solution for every situation.

Basic PDUs

Basic PDUs offer reliable power distribution to the cabinet to help manage power capacity and increase functionality. Get instant power usage feedback by adding a local display to avoid overloads and costly downtime.

Monitored PDUs

Power monitoring provides a comprehensive view of power usage in a data center. The local display, combined with remote power monitoring, offer quick access to the PDU's current, volts, real power, apparent power, power factor, and kilowatt hours.

Optional Remote Sensing enables amongst others temperature, air flow and other environmental condition monitoring.

Metered PDUs

Improve reliability, energy efficiency, and prevent crippling downtime caused by overloads using Metered PDUs. Equipped with local digital displays, our Metered PDUs provide power consumption metrics instantly.

Switched PDUs

Switched PDUs offer the ability to monitor data locally and remotely and disable individual power outlets, as necessary. Disable problem equipment by cutting power to specific outlets and reboot equipment remotely by cycling power.

Optional Remote Sensing enables amongst others temperature, air flow and other environmental condition monitoring.

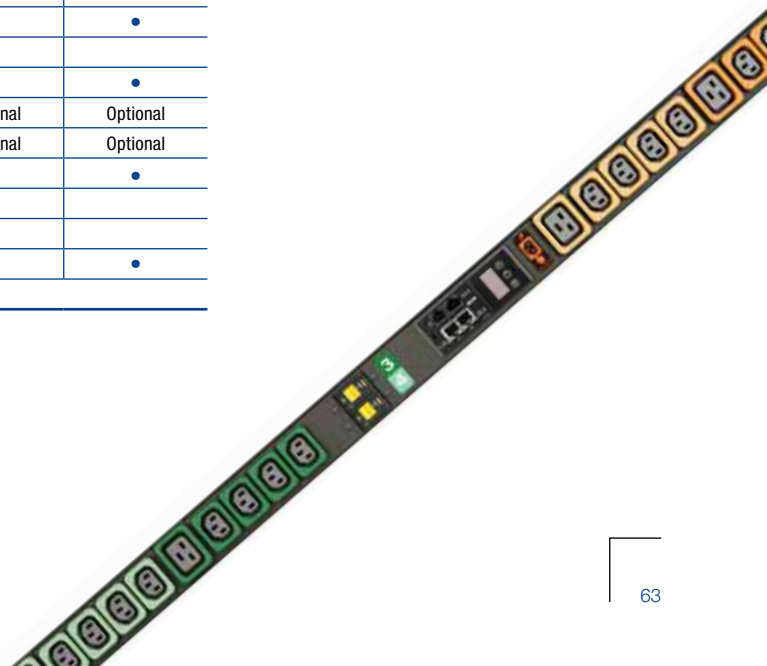


Detailed of Monitored PDU with remote sensing option

Functionality Matrix

Feature	Basic	Metered	Monitored	Switched
Power Distribution	•	•	•	•
Current Meter(s)		•	•	•
VLC Enabled		•	•	
Network Interface			•	•
Environmental Monitoring			Optional	Optional
Outlet-Level Monitoring			Optional	Optional
Outlet-Level Switching				•
Upgradeable	•	•	•	
U-Lock Outlets	•	•	•	
1U and Zero U Configurations	•	•	•	•
Color Coded PDUs	■ ■ ■ ■ ■ ■ ■			

* Standard color is Black.



Power Distribution and Climate Monitoring *(continued)*



Hot Swapable
Monitoring Device
close up

Upgradable Technology

Belden Upgradeable PDUs give data center managers the flexibility to install the intelligence they require today with the option to upgrade technology as needs evolve. From basic power to sophisticated power monitoring with remote sensors, the Belden Upgradeable product line adapts to your business well into the future.

Upgradeable Monitoring

Begin with the level of technology you need today and upgrade as your needs evolve, without replacing the entire PDU.

Input Power Monitoring 1% Accuracy (ANSI and IEC)

Allows data center managers to accurately reconcile power usage.

Hot-Swappable

Add, remove or switch Hot Swapable Monitoring Device (HSMD) without interrupting power to critical equipment.

Fault-Tolerant Daisy Chaining

Simplifies intelligent PDU connectivity and ensures data is reported, even with a break in the chain.

High Temperature Grade

60°C working ambient variants for high temperature environments.

Lockable Receptacles

Securely lock cords in place using the Lockable technology. Each receptacle is color injected to assure load balancing is easily achieved.

Remote Sensor Port

Monitor environmental conditions such as airflow, temperature, humidity and dew point with the use of a Belden remote sensor.

Red LED Rotatable Display

Read power data easily in dimly lit areas and rotate the display to match the mounting configuration.

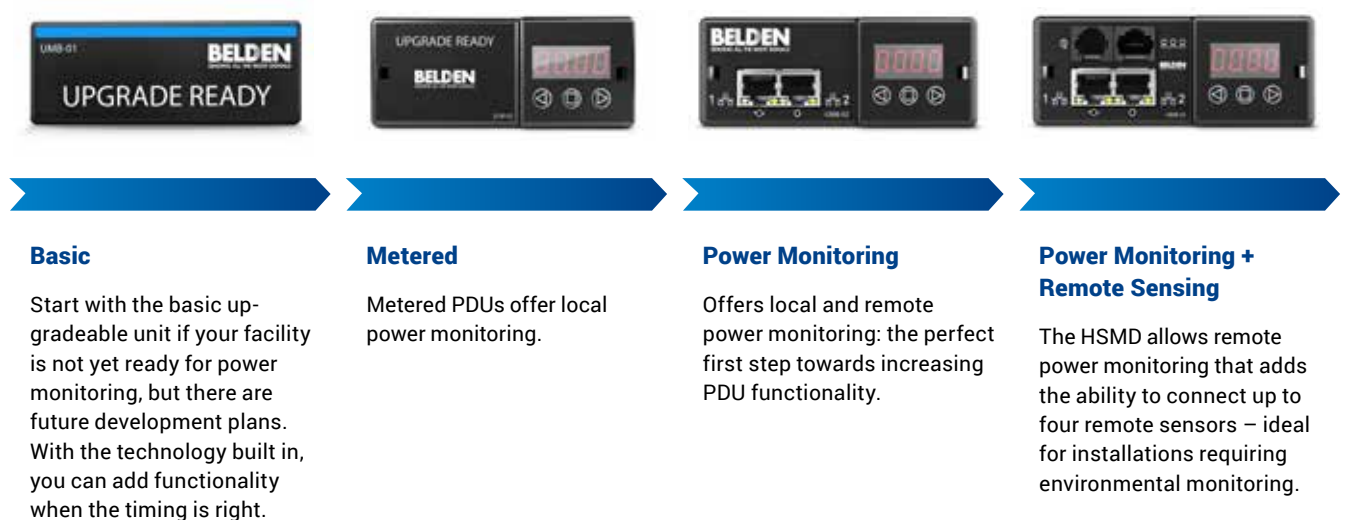
Low-Profile Breakers

Compact profile to install in tight spaces for units requiring breakers.



Upgradeable Path

There is a clear route to upgraded functionality of your Belden PDUs. Simply choose the functionality that suits today's requirements and the future proof solutions allow to upgrade to the next, most sophisticated level at a later date. To establish this extraordinary upgrade path, Belden incorporated an Hot Swappable Monitoring Device (HSMD) into its robust PDU design. Belden's rugged power strips last for years and with the new HSMD users can install the latest technology without replacing the power strip. The hot-swappable HSMD can be changed in a few simple steps without interrupting power to critical servers.



NOTE: This image above shows which families will be available for upgradable technology.

Ordering Information Hot Swappable Monitoring Device (HSMD)

Part Number	Category
Metered	
PDU-12365	Metered Hot Swappable Monitoring Device for Horizontal Units
PDU-12364	Metered Hot Swappable Monitoring Device for Vertical Units
Monitored	
PDU-11213	Power Unit Level Monitoring Hot Swappable Monitoring Device for Horizontal Units
PDU-11150	Power Unit Level Monitoring Hot Swappable Monitoring Device for Vertical Units
Monitored plus Remote Sensing	
PDU-11540	Power Monitoring Plus Remote Sensing Hot Swappable Monitoring Device for Horizontal Units
PDU-11541	Power Monitoring Plus Remote Sensing Hot Swappable Monitoring Device for Vertical Units

Power Distribution and Climate Monitoring *(continued)*

Basic PDU

Belden Basic PDUs offers reliable power distribution to the cabinet to help manage power capacity and increase functionality. Get instant power usage feedback by adding a local display to avoid overloads and costly downtime when moving critical equipment.

Basic Upgradeable PDU

The Belden Upgradeable power strips give data center managers the flexibility to install the intelligence they require today with the option to upgrade technology as needs evolve.



Ordering Information

Part Number	Category	Sub Category	Volts	Amps	Plug Form	Configuration	Receptacle Qty 1	Receptacle Type 1	Receptacle Qty 2	Receptacle Type 2	Breaker	Color
Basic												
Standard												
PDU-3044	Basic	Standard	230V	16A	2P+E (IP44)	Horizontal/Vertical	8	IEC C13	0	0	No	Black
PDU-10402	Basic	Standard	230V	13A	BS1363	Horizontal	8	BS1363	0	0	No	Black
PDU-10515	Basic	Standard	230V	32A	2P+E (IP44)	Vertical	20	IEC C13	4	IEC C19	Yes	Black
PDU-10813	Basic	Standard	230V	16A	Schuko	Horizontal	6	German Schuko	0	0	No	Black
Upgradable												
PDU-11875	Basic	Upgradeable	230V	32A	2P+E (IP44)	Horizontal	12	Locking IEC C13	4	Locking IEC C19	Yes	Black
PDU-12225	Basic	Upgradeable	230/400V WYE	32A	3P+N+E (IP44)	Vertical	36	Locking IEC C13	6	Locking IEC C19	No	Black



Metered PDU

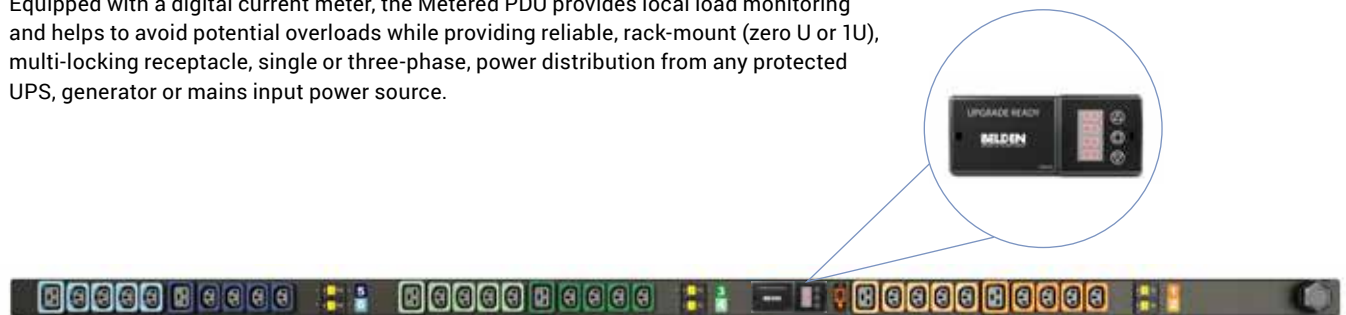
Improve reliability, energy efficiency, and prevent crippling downtime caused by overloads using Belden's Metered PDUs. Equipped with local digital displays, our Metered PDUs provide power consumption metrics instantly, ideal for when deploying or moving critical server equipment.

Like all Belden PDUs, our Metered PDUs cater to a wide range of power input and output requirements to distribute 100-240V to multiple outlets. The Metered PDUs are available in various horizontal and vertical configurations to meet your accessibility needs.

Metered Upgradeable PDU

The Belden Upgradeable power strips give data center managers the flexibility to install the intelligence they require today with the option to upgrade technology as needs evolve.

Equipped with a digital current meter, the Metered PDU provides local load monitoring and helps to avoid potential overloads while providing reliable, rack-mount (zero U or 1U), multi-locking receptacle, single or three-phase, power distribution from any protected UPS, generator or mains input power source.



Ordering Information

Part Number	Category	Sub Category	Volts	Amps	Plug Form	Configuration	Receptacle Qty 1	Receptacle Type 1	Receptacle Qty 2	Receptacle Type 2	Breaker	Color
Metered												
Standard												
PDU-10670	Metered	Standard	230V	13A	BS1363	Vertical	10	BS1363			No	Black
PDU-10470	Metered	Standard	230V	16A	2P+E (IP44)	Horizontal	12	IEC C13	4	IEC C19	No	Black
PDU-10444	Metered	Standard	230V	16A	2P+E (IP44)	Vertical	12	BS1363			No	Black
PDU-2643	Metered	Standard	230V	32A	2P+E (IP44)	Vertical	24	IEC C13	6	IEC C19	Yes	Black
Upgradeable												
PDU-12099	Metered	Upgradeable	230V	16A	2P+E (IP44)	Vertical	12	Locking IEC C13	6	Locking IEC C19	No	Black
PDU-12333	Metered	Upgradeable	230/400V WYE	16A	3P+N+E (IP44)	Horizontal	12	Locking IEC C13	6	Locking IEC C19	No	Black
PDU-12336	Metered	Upgradeable	230/400V WYE	16A	3P+N+E (IP44)	Vertical	36	IEC C13	6	IEC C19	No	Black



Power Distribution and Climate Monitoring *(continued)*

Power Monitoring PDU

Simply capture all the data needed to analyze trends and resolve issues before they lead to costly downtime. Optional environmental sensors provide the ability to track critical climate variables such as temperature, airflow, humidity and dew point. Remote power and environmental monitoring information is available through any Web browser so no external software is required.

Outlet Level Power Monitoring

Outlet measurements can be used to accurately reconcile power usage per rack for a customer or department. Use these measurements to verify SLAs or for budgeting purposes; the measurements have been tested and verified by ANSI C12.1 and IEC 62053-21 to meet 1% Accuracy Class requirements.

Belden's units support SNMP (v1, v2c, v3) and allows the data to easily integrate with Data Center Infrastructure Management (DCIM) systems or receive alerts when thresholds are breached.

Upgradeable Unit Level Power Monitoring

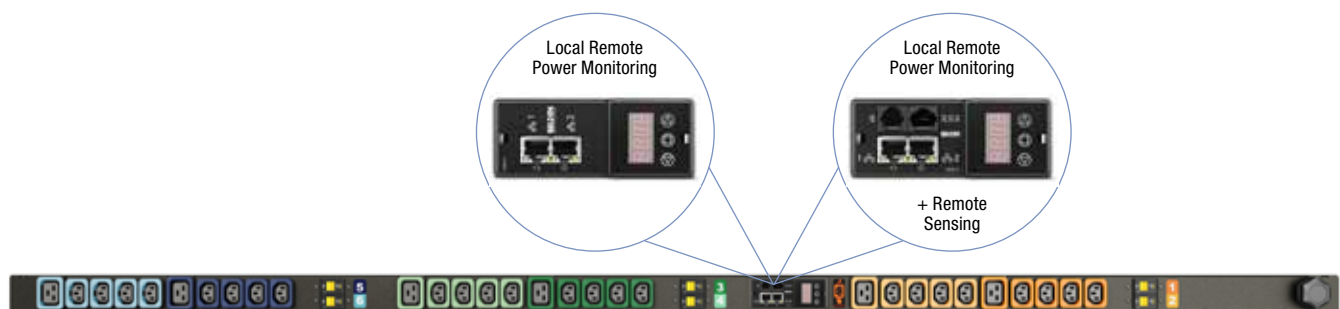
The Belden Upgradeable PDUs adapts to your business well into the future. Simply choose the functionality that suits your requirements today with the flexibility to install technology as needs evolve.

With remote power monitoring, data center managers can receive notifications of current threshold breach, preventing unnecessary downtime. Data from the unit can be accessed through any Web browser, without requiring external software. Data can be integrated into Simple Network Management Protocol (SNMP) systems for remote notification, and the intuitive

graphical user interface (GUI) allows managers to quickly access pertinent information.

Upgradeable Local and Remote Power Monitoring + Remote Sensing

The unit's environmental sensor port gives data center managers the ability to track critical climate variables like temperature, airflow, humidity and dew point with the use of a Geist remote sensor. With hot-swappable upgrade technology, users may easily upgrade PDUs to the latest available technology by replacing the HSMD module; all without causing any interruption.



Ordering Information

Part Number	Category	Sub Category	Volts	Amps	Plug Form	Configuration	Receptacle Qty 1	Receptacle Type 1	Receptacle Qty 2	Receptacle Type 2	Breaker	Color
Monitored												
Upgradeable Unit Level												
PDU-11623	Monitored	Upgradeable Unit Level	230V	16A	2P+E (IP44)	Vertical	20	BS1363 Right	0	0	No	Black
PDU-11861	Monitored	Upgradeable Unit Level	230V	16A	2P+E (IP44)	Vertical	20	Locking IEC C13	6	Locking IEC C19	No	Black
PDU-11316	Monitored	Upgradeable Unit Level	230V	32A	2P+E (IP44)	Vertical	36	IEC C13	6	IEC C19	Yes	Black
Upgradeable Unit Level + Remote Sensing												
PDU-11804	Monitored	Upgradeable Unit Level EC	230/400V WYE	32A	3P+N+E (IP44)	Vertical	24	Locking IEC C13	6	Locking IEC C19	Yes	Black
PDU-11862	Monitored	Upgradeable Unit Level EC	230V	16A	2P+E (IP44)	Vertical	20	Locking IEC C13	6	Locking IEC C19	No	Black
PDU-11879	Monitored	Upgradeable Unit Level EC	230V	32A	2P+E (IP44)	Vertical	30	Locking IEC C13	6	Locking IEC C19	Yes	Black
Outlet Level												
PDU-11245	Monitored	Outlet Level	230V	32A	2P+E (IP44)	Vertical	18	Locking IEC C13	6	Locking IEC C19	Yes	Black
PDU-10940	Monitored	Outlet Level	230/400V WYE	32A	3P+N+E (IP44)	Vertical	12	Locking IEC C13	12	Locking IEC C19	Yes	Black



Switched PDUs

Belden switched PDUs provide hands-on control. While monitored PDUs can display information remotely, only switched PDUs offer the ability to use that data and disable individual power outlets. Manage critical issues that arise with the click of a few buttons. Disable problem equipment by cutting power to specific outlets, reboot equipment remotely by cycling power, and save time and money by avoiding sending technicians to the source of the issue.

Switched Outlet Level Monitoring

The outlet level monitoring PDUs track granular power consumption data of all equipment. The Max Group Amps (MGA) feature offers an extra level of protection, preventing circuit overload by letting users set the threshold for maximum number of amps.

Simply capture the data needed to analyze trends and resolve issues before they lead to costly downtime. With a click of a few buttons users can disable problem equipment by cutting power to specific outlets, rebooting equipment remotely. With flexible access rights and security settings, create and manage user accounts to promptly handle issues when they arise.

Switched Unit Level Monitoring

The Switched unit level monitoring series can also control (switch on and off) individual receptacles, while it provides a comprehensive view of power usage in a data center.

Ordering Information

Part Number	Category	Sub Category	Volts	Amps	Plug Form	Configuration	Receptacle Qty 1	Receptacle Type 1	Receptacle Qty 2	Receptacle Type 2	Breaker	Color
Switched												
Unit Level												
PDU-10776	Switched	Unit Level Monitoring	230V	16A	2P+E (IP44)	Vertical	20	Locking IEC C13	4	Locking IEC C19	No	Black
PDU-11246	Switched	Unit Level Monitoring	230V	32A	2P+E (IP44)	Vertical	20	Locking IEC C13	4	Locking IEC C19	Yes	Black
PDU-8421	Switched	Unit Level Monitoring	230/400V WYE	16A	3P+N+E (IP44)	Vertical	21	Locking IEC C13	3	Locking IEC C19	No	Black
PDU-8422	Switched	Unit Level Monitoring	230/400V WYE	32A	3P+N+E (IP44)	Vertical	21	Locking IEC C13	3	Locking IEC C19	Yes	Black
Outlet Level												
PDU-10820	Switched	Outlet Level Monitoring	230V	16A	2P+E (IP44)	Vertical	20	Locking IEC C13	4	Locking IEC C19	No	Black
PDU-8426	Switched	Outlet Level Monitoring	230/400V WYE	32A	3P+N+E (IP44)	Vertical	21	Locking IEC C13	3	Locking IEC C19	Yes	Black

Power Distribution and Climate Monitoring *(continued)*

Environmental Monitors and Sensors



9318-0500



9318-0560



9318-0570

Applications

- Belden climate monitors and sensors allow precise monitoring/alarming of key environmental parameters for improved equipment availability in mission critical applications (Data Center, networking closet, remote locations)
- Built-in intuitive web interface for remote access via Ethernet browser
- Built-in and external sensor options (temperature, humidity, air flow, water detection, door position, smoke)
- SNMP-enabled for compatibility with leading DCIM package
- Recognize IP-based camera for space viewing
- Set alarm threshold, can be sent to up to five e-mail addresses
- Allows viewing of data graphs and analysis of historical logs
- Power supply included
- UL and cUL listed

CE Plug and Receptacle Configuration

IEC				
Amp	Volt	Power Inlet	Power Receptacle	
15/10*	125 OR 250	C-14		C-13
20/16*	125 OR 250	C-20		C-19
Amp	Volt	Pin and Sleeve Plug	Pin and Sleeve Receptacle	
20/16*	250/230*	2P+E	2P+E	
30/32*	250/230*	2P+E	2P+E	
60/63*	250/230*	2P+E	2P+E	
20/16*	230/400* x 3~ WYE	3P+N+E	3P+N+E	
30/32*	230/400* x 3~ WYE	3P+N+E	3P+N+E	

* Rating for CE products



Accessories

Description	Part Number
Other Accessories	
Environmental Monitors	
Compact Self-Contained Environmental Monitor (5.25"Lx1.75"Hx1.5"W); Provides Web-Based Remote Surveillance with On-Board Temperature and Humidity/Dew Point Sensors. Has Input Capacity for Two External Sensors	9318-0500
Rack Mount 1Ru Environmental Monitor. Provides Web-Based Remote Surveillance of Temperature, Relative Humidity, Dew Point, Airflow, Light, Sound. Up to (5) Additional Digital Sensors Can Be Connected to the Unit	9318-0540
Rack Mount 1RU Environmental Monitor. Provides Web-Based Remote Surveillance of Temperature, Relative Humidity, Dew Point, Airflow, Light, Sound. Up to (5) Additional Digital Sensors Can Be Connected to the Unit. Comes Equipped with an LCD Display with Scrolling Measurements and a Built-In Audible Alarm	9318-0560
Rack Mount 1RU Environmental Monitor. Provides Web-Based Remote Surveillance of Temperature and any Additional Sensors Connected to the Unit. Comes Equipped with (4) Digital and (6) Analog Sensor Ports, an LCD Display with Scrolling Measurements, Built-In Audible Alarm and (3) Relay Output Ports	9318-0570
Environmental Monitors Accessories	
19" Rack Mount 16-Way Splitter, 1RU for RJ12 Sensors	9318-0510
Remote PDU Display, RJ12 Connection	9318-0506
Sensors (compatible with environmental monitors and intellignet PDU)	
Remote Temperature Sensor with 12 Ft. Wire	9318-0501
Remote Temperature Sensor with 20 Ft. Wire	9318-0510
Remote Temperature Sensor with 50 Ft. Wire	9318-0511
Remote Temperature/Air Flow/Humidity and Dew Point Sensor with 12 Ft. Wire	9318-0503
Remote Temperature/Air Flow/Humidity and Dew Point Sensor with 20 Ft. Wire	9318-0515
Remote Temperature/Air Flow/Humidity and Dew Point Sensor with 50 Ft. Wire	9318-0516
Remote Door Position Analog Sensor	9318-0504
Remote Water Detection Analog Sensor	9318-0505
DLinks Web Camera Kit	9318-0509
Temperature Displays (local monitoring only)	
19" Rack Mount Temperature Display with Thermocouple; 1RU Blanking Panel Type	9318-0512
Temperature Display with Thermocouple; 1.72"H x 3.8"W x 1.1"D	9318-0513



9318-0506
Remote PDU Display



DLinks Web
Camera Kit



Top:
9318-0503
Temp/Air Flow/Humidity Remote Sensor
Bottom:
9318-0513 Temperature Display
with Thermocouple

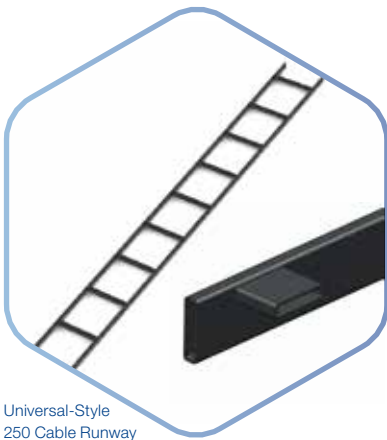
Description	Part Number
Power Cord Management	
Cable Management Ring Plastic (Qty = 5) 3" x 1.5" Reversible	XMR01
Cable Management Ring Kit (Qty = 5) 2.5"W x 3"D	XMR03
Slack Management Spool Kit (includes 2 spools)	BHSP020
Quick Mount Base (Qty=10) with Fastener, for 1/4" Holes	XCTM
Velcro Cable Ties, 25 per Roll, 8" L x 0.5"W	AX100783
Velcro Cable Ties, 25 per Roll, 12" L x 0.5"W	AX100784

Cable Runway System

Universal-Style 250 Cable Runway

The maximum load capacity when supported every 5" with minimal deflection is 132 Lbs/ft. Welded steel tubing construction, individually boxed.

- Overall length = 10"
- Side stringer = 1.5" x 0.375" x 0.065" (38.1 mm x 9.52 mm x 1.65 mm)
- Cross member = 1.5" x 0.375" x 0.065" welded at 12" intervals
- Available in black (B) or white (W) powder coated finish



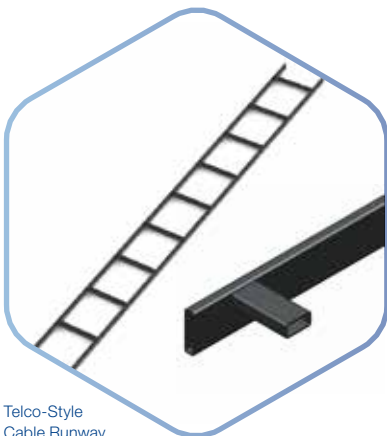
Universal-Style
250 Cable Runway

Black Finish	White Finish	Width	Shipping Weight
Universal-Style 250 Cable Runway			
BLRS250-06B	BLRS250-06W	6" (152.4 mm)	19 Lbs (8.62 kg)
BLRS250-12B	BLRS250-12W	12" (304.8 mm)	24 Lbs (10.89 kg)
BLRS250-18B	BLRS250-18W	18" (457.2 mm)	28 Lbs (12.70 kg)
BLRS250-24B	BLRS250-24W	24" (609.6 mm)	32 Lbs (14.51 kg)
BLRS250-30B	BLRS250-30W	30" (762 mm)	37 Lbs (16.78 kg)
BLRS250-36B	BLRS250-36W	36" (914.4 mm)	42 Lbs (19.05 kg)

Telco-Style Cable Runway

The maximum load capacity when supported every 5" with minimal deflection is 132 Lbs/ft. Welded steel tubing construction, individually boxed.

- Overall length = 10"
- Side stringer = 1.5" x 0.375" x 0.065" (38.1 mm x 9.52 mm x 1.65 mm)
- Cross member = 0.5" x 1" x 0.065" welded at 9" intervals
- Available in black (B) or white (W) powder coated finish



Telco-Style
Cable Runway

Black Finish	White Finish	Width	Shipping Weight
Telco-Style Cable Runway			
BLRT252-06B	BLRT252-06W	6" (152.4 mm)	22 Lbs (9.98 kg)
BLRT252-12B	BLRT252-12W	12" (304.8 mm)	24 Lbs (10.89 kg)
BLRT252-18B	BLRT252-18W	18" (457.2 mm)	26 Lbs (11.79 kg)
BLRT252-24B	BLRT252-24W	24" (609.6 mm)	28 Lbs (12.70 kg)



UL Classified Cable Runway

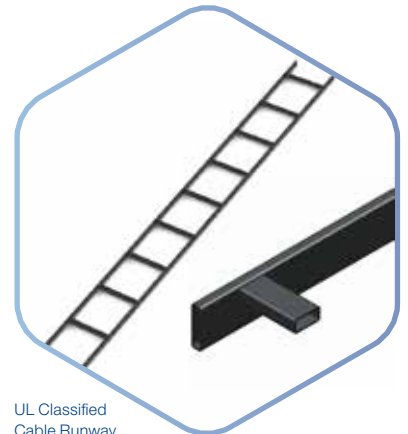
The maximum load capacity when supported every 5" with minimal deflection is 132 Lbs/ft. Welded steel tubing construction, individually boxed.

- Overall length = 10"
- Side stringer = 1.5" x 0.375" x 0.065" (38.1 mm x 9.52 mm x 1.65 mm)
- Cross member = 0.5" x 1" x 0.065" welded at 9" intervals
- Available in black (B) or gold (G) chemical finish over zinc plating

Black Finish	Gold Finish	Width	Shipping Weight
--------------	-------------	-------	-----------------

UL Classified Style 275 Cable Runway

Black Finish	Gold Finish	Width	Shipping Weight
BLRU275-06B	BLRU275-06G	6" (152.4 mm)	19 Lbs (8.62 kg)
BLRU275-12B	BLRU275-12G	12" (304.8 mm)	24 Lbs (10.89 kg)
BLRU275-18B	BLRU275-18G	18" (457.2 mm)	28 Lbs (12.70 kg)
BLRU275-24B	BLRU275-24G	24" (609.6 mm)	32 Lbs (14.51 kg)



UL Classified Cable Runway

Quick Ship Cable Runway Bundle

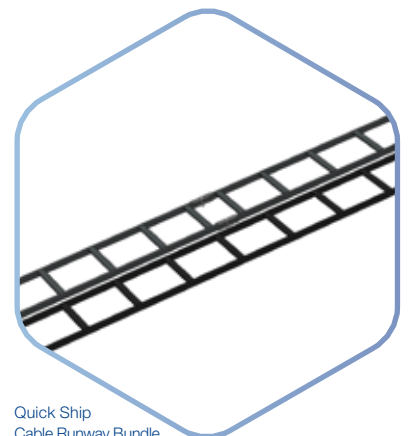
Designed to meet UPS small package shipping requirements.

- (Qty = 2) 5" Universal cable runway; combined length is 10"
- (Qty = 1) Butt-Splice Kit Part Number BLBS301-15B
- Available in black (B)

Black Finish	Width	Shipping Weight
--------------	-------	-----------------

Quick Ship Cable Runway Bundle

Black Finish	Width	Shipping Weight
BLRQ250-06B	6" (152.4 mm)	19 Lbs (8.62 kg)
BLRQ250-12B	12" (304.8 mm)	24 Lbs (10.89 kg)



Quick Ship Cable Runway Bundle

Cable Runway Radius Bend

Creates a gradual bend for cascading cable runs.

- Made of 1.5" x 0.375" tubular steel
- Three cross members welded at approximately 23° increments
- Outside/inside is determined by welding cross members closer to cable side
- Available in black (B) or white (W) powder coated finish

Black Finish	White Finish	Width	Shipping Weight
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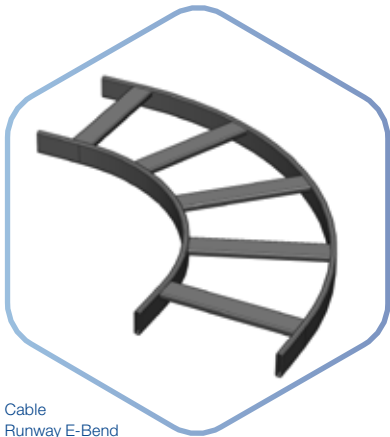
Cable Runway Radius Bend

Black Finish	White Finish	Width	Shipping Weight
BLOR723-06B/BLIR724-06B	BLOR723-06W/BLIR724-06W	6" (152.4 mm)	3 Lbs (1.36 kg)
BLOR723-12B/BLIR724-12B	BLOR723-12W/BLIR724-12W	12" (304.8 mm)	4 Lbs (1.82 kg)
BLOR723-18B/BLIR724-18B	BLOR723-18W/BLIR724-18W	18" (457.2 mm)	5 Lbs (2.27 kg)
BLOR723-24B/BLIR724-24B	BLOR723-24W/BLIR724-24W	24" (609.6 mm)	6 Lbs (2.72 kg)
BLOR723-30B/BLIR724-30B	BLOR723-30W/BLIR724-30W	30" (762 mm)	7 Lbs (3.17 kg)
BLOR723-36B/BLIR724-36B	BLOR723-36W/BLIR724-36W	36" (914.4 mm)	8 Lbs (3.63 kg)



Cable Runway Radius Bend

Cable Runway System *(continued)*



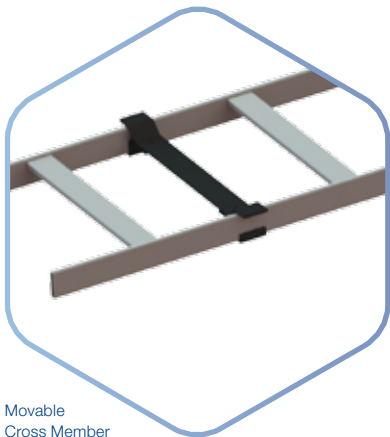
Cable
Runway E-Bend

Cable Runway E-Bend

Creates a 90° gradual sweep in horizontal plane for cable runway runs. Designed for cabling in conformance with minimum bend radius requirements (typically four times the cable diameter). Made of lightweight 1.5" x 0.375" tubular steel to fit standard cable runway.

- Cross members welded at approximately 23° increments
- Conforms to Category 5e/6/6A requirements
- Available in black (B) or white (W) powder coated finish

Black Finish	White Finish	Width	Shipping Weight
Cable Runway E-Bend			
BLEB822-12B	BLEB822-12W	12" (304.8 mm)	12 Lbs (5.44 kg)
BLEB822-18B	BLEB822-18W	18" (457.2 mm)	19 Lbs (8.62 kg)
BLEB822-24B	BLEB822-24W	24" (609.6 mm)	27 Lbs (12.25 kg)



Movable
Cross Member

Movable Cross Member

Movable cross member allows for cable droppings combined with the radius drop where the cabinet or cable manager below does not align with the fixed cross member of the cable pathway.

- Fits on 12" and 18" cable pathway
- Can be used with Radius Drop Kit
- Includes hardware and bracket to mount to stringers
- Available in black (B) or white (W) powder coated finish

Black Finish	White Finish	Width	Shipping Weight
Movable Cross Member			
BLMC115-12B	BLMC115-12W	12" (304.8 mm)	2 Lbs (0.91 kg)
BLMC115-18B	BLMC115-18W	18" (457.2 mm)	3.5 Lbs (1.59 kg)

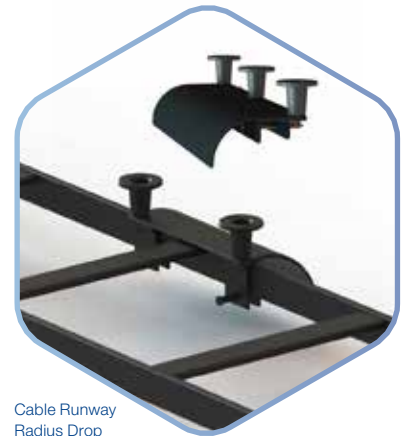


Cable Runway Radius Drop

Mounts to the side stringer or cross member of cable runway to help maintain proper Category 5e/6/6A or fiber bend radius.

- Quick and easy installation
- Cross member radius drop (BLRRD100-XXX) fits 6", 12" and 18" W cross member tubing on Universal Runway (Series 250)
- Stringer Radius Drop (BLRRD101-XXX) attaches to the side of the runway
- Provides 3" bend radius
- Available in black (B)

Black Finish	Cable Runway Width	Product Width	Cable Spools
Cable Runway Radius Drop			
BLRRD100-06B	6" (152.4 mm)	5" (127 mm)	2 ea.
BLRRD100-12B	12" (304.8 mm)	11" (279.4 mm)	3 ea.
BLRRD100-18B	18" (457.2 mm)	17" (431.8 mm)	3 ea.
BLRRD101-11B	Universal	5" (127 mm)	2 ea.
BLRRD101-12B	Telco	8" (203.2 mm)	2 ea.
BLRRD101-13B	Misc.	11" (279.4 mm)	3 ea.



Cable Runway Radius Drop

Cable Spool Divider Kit

Separates cables for improved cable management. Bracket is mounted to cross sections anywhere you like from left to right. Kit includes 5 units. Cable spool is 4" tall made of plastic; bracket is made of steel.

- Available in black (B)

Black Finish	Used With	Qty/Kit
Cable Spool Divider Kit		
BLDU-05B	Universal Style 250 Runway	5 pcs
BLDT-05B	Telco Style 252 and UL Style 275 Runways	5 pcs



Cable Spool Divider Kit

Junction Kits

Butt-Splice Kit

Connect two sections of runway end-to-end. Fits both solid and tubular steel 1.5" x 0.375" and 2" x 0.375".

Kit consists of:

- (Qty = 4) splice plates
- (Qty = 2) 3/8"-16 trimmed head bolts
- (Qty = 2) 3/8"-16 hex nuts
- Available in black (B) and white (W) for non UL, available in black (B) and gold (G) for UL



Butt-Splice Kit

Black Finish	White Finish	Gold Finish	Description	Shipping Weight
Butt-Splice Kit				
BLBS301-15B	BLBS301-15W	–	1.5" x 0.375" (38.1 mm x 9.52 mm)	1 Lbs (0.45 kg)
BLBS301-20B	BLBS301-20W	–	2" x 0.375" (50.8 mm x 9.52 mm)	1 Lbs (0.45 kg)
BLBSU301-15B	–	BLBSU301-15G	1.5" x 0.375" (38.1 mm x 9.52 mm)	1 Lbs (0.45 kg)

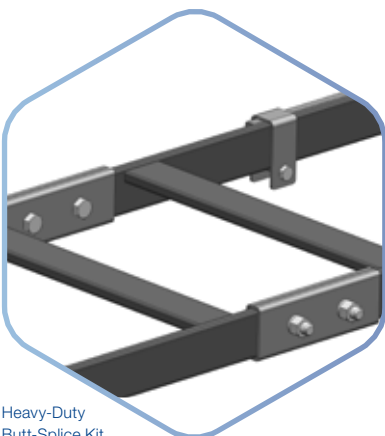
Heavy-Duty Butt-Splice Kit

For butting two lengths of runway together. Cable runway drilling is required.

- Bolt through Butt-Splice Kit for earthquake areas

Kit consists of:

- (Qty = 4) splice plates for 1.5" stringers
- (Qty = 4) 3/8"-16 x 1.25" cap screws
- (Qty = 4) 3/8"-16 hex nuts
- Available in black (B)



Heavy-Duty Butt-Splice Kit

Black Finish	Description	Shipping Weight
Heavy-Duty Butt-Splice Kit		
BLBSH299-15B	Heavy-Duty Butt-Splice Kit	3 Lbs (1.36 kg)
BLBSHU299-15B	UL Classified Butt-Splice Kit	3 Lbs (1.36 kg)





Junction-Splice Kit

Used to create a 90° junction splice with all types of 1.5" x 0.375" or 2" x 0.375" cable runway.

Kit consists of:

- (Qty = 4) corner clamp plates
- (Qty = 2) 3/8"-16 x 1" long trimmed head bolts
- (Qty = 2) 3/8"-16 hex nuts
- (Qty = 2) 3/8" split lock washers
- Available in black (B)

Black Finish	Description	Shipping Weight
Junction-Splice Kit		
BLJS302-15B	1.5" x 0.375" (38.1 mm x 9.52 mm)	1 Lbs (0.45 kg)
BLJS302-20B	2" x 0.375" (50.8 mm x 9.52 mm)	1 Lbs (0.45 kg)
BLJSU302-15B	1.5" x 0.375" (38.1 mm x 9.52 mm)	1 Lbs (0.45 kg)



Junction-Splice Kit

Heavy-Duty Junction-Splice Kit

Bolt-through Junction-Splice Kit for vertical runs or seismic requirements. Cable runway drilling is required.

- Material is 2" x 2" x 0.1875" steel angle

Kit consists of:

- (Qty = 2) splice angles
- (Qty = 4) 3/8"-16 x 1.25" hex cap screws
- (Qty = 4) 3/8"-16 hex nuts
- (Qty = 4) 3/8"-16 split lock washers
- Available in black (B)

Black Finish	Description	Shipping Weight
Heavy-Duty Butt-Splice Kit		
BLBSH299-15B	Heavy-Duty Butt-Splice Kit	3 Lbs (1.36 kg)
BLBSHU299-15B	UL Classified Butt-Splice Kit	3 Lbs (1.36 kg)



Heavy-Duty Butt-Splice Kit

Junction Kits *(continued)*



90°
Runway-Splice Kit

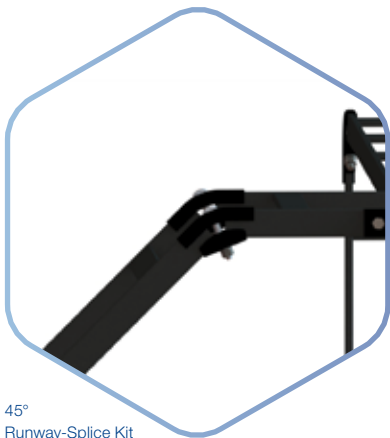
90° Runway-Splice Kit

Designed to butt splice 1.5" x 0.375" cable runway at a 90° angle.

Kit consists of:

- (Qty = 2) 90° outside clamps
- (Qty = 2) inside edge clamps
- (Qty = 2) 3/8"-16 x 2.50" trimmed round head, square neck bolts
- (Qty = 2) 3/8"-16 hex nut and lock washer
- Available in black (B)

Black Finish	Description	Shipping Weight
90° Runway-Splice Kit		
BLRSK314-90B	90° Runway-Splice Kit	1 Lbs (0.45 kg)
BLRSK314-9UB	90° Runway-Splice Kit UL Classified	1 Lbs (0.45 kg)



45°
Runway-Splice Kit

45° Runway-Splice Kit

Designed to butt splice 1.5" x 0.375" cable runway at a 45° angle.

Kit consists of:

- (Qty = 2) 45° outside clamps
- (Qty = 2) inside edge clamps
- (Qty = 2) 3/8"-16 trimmed round head, square neck bolts
- Available in black (B)

Black Finish	Description	Shipping Weight
45° Runway-Splice Kit		
BLRSK313-45B	45° Runway-Splice Kit	1 Lbs (0.45 kg)
BLRSK313-4UB	45° Runway-Splice Kit UL Classified	1 Lbs (0.45 kg)



Adjustable
Junction-Splice Kit

Adjustable Junction-Splice Kit

Designed for use with 1.5" x 0.375" cable runway, adjusts to form any junction angle, electrical, etc.

Kit consists of:

- (Qty = 4) adjustable corner plates
- (Qty = 2) 3/8"-16 x 2" hex cap screws
- (Qty = 2) 3/8"-16 hex nuts
- (Qty = 2) 3/8"-16 split lock washers
- Available in black (B)

Black Finish	Description	Shipping Weight
Adjustable Junction-Splice Kit		
BLAJS616-00B	Adjustable Junction-Splice Kit	2 Lbs (0.91 kg)

Note: Requires one kit to attach one end of cable runway



Swivel Splice Kits

Splices cable runway vertically, horizontally or perpendicularly. Adjusts to any angle, not limited to 45° or 90°. Flexible swivel design simplifies cable runway installation by making it easier to route around existing plumbing, electrical, etc. Steel material. Hardware and instructions are included.

Butt-Swivel (487)

Kit consists of:

- (Qty = 8) bracket ends
- (Qty = 8) 5/16"-18 x 0.75" round head square, neck bolts
- (Qty = 2) 5/16"-18 x 1" round head square, neck bolts
- (Qty = 10) 5/16"-18 x 1" hex nuts, split lock washers
- Available in black (B)

Junction-Swivel (488)

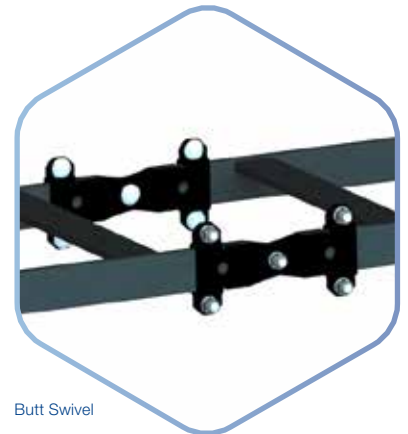
Kit consists of:

- (Qty = 4) bracket ends
- (Qty = 2) bracket supports and plate clamps
- (Qty = 2) 5/16"-18 x 1" round head square, neck bolts
- Qty = 8) 5/16"-18 x 0.75" round head square, neck bolts
- (Qty = 10) 5/16"-18 hex nut, split lock washers
- Available in black (B)

Vertical-Swivel (489)

Kit consists of:

- (Qty = 4) bracket ends
- (Qty = 2) bracket clamps and plate clamps
- (Qty = 2) 5/16"-18 x 1" round head, square neck bolts
- (Qty = 6) 5/16"-18 x 0.75" round head, square neck bolts
- (Qty = 8) 5/16"-18 hex nuts, split lock washers
- Available in black (B)



Butt Swivel



Junction Swivel



Vertical Swivel

Black Finish	Description	Shipping Weight
Swivel Splice Kits		
BLBSS487-00B	Butt-Swivel Splice Kit	1 Lbs (0.45 kg)
BLJSS488-00B	Junction-Swivel Splice Kit	1 Lbs (0.45 kg)
BLVBS489-00B	Vertical-Swivel Splice Kit	1 Lbs (0.45 kg)
BLBSS487-0UB	UL Classified Butt-Swivel Splice Kit	1 Lbs (0.45 kg)
BLBSS488-0UB	UL Classified Junction-Swivel Splice Kit	1 Lbs (0.45 kg)
BLVBS489-0UB	UL Classified Vertical-Swivel Splice Kit	1 Lbs (0.45 kg)

Junction Kits *(continued)*

Cable Runway Corner Bracket

Creates a radius for L-, T- or X-shaped intersections of cable runway formed when two or more pieces of cable runway are connected together with the Junction-Splice Kit (BLJS302-15B or BLJSU302-15B) or Heavy-Duty Junction-Splice Kit (BLJSH298-15B).

- Single-piece welded assembly fabricated from 0.375" x 1.5" x 0.065" wall rectangular steel tubing
- Easy installation; brackets/hardware included
- Available in black (B) or white (W) powder coated finish



Cable Runway
Corner Bracket

Finish	DIM	Description	Shipping Weight
Cable Runway Corner Bracket			
Black Finish			
BLCSE959-15B	A/B	15" Corner Bracket	4 Lbs (1.82 kg)
BLCSE959-24B	A/B	24" Corner Bracket	6 Lbs (2.72 kg)
White Finish			
BLCSE959-15W	—	15" Corner Bracket	4 Lbs (1.82 kg)
BLCSE959-24W	—	24" Corner Bracket	6 Lbs (2.72 kg)

Cable Runway Closing Kit

The cable runway closing kit is used to the close end of a runway. Compatible with Universal style 250, Telco style 252 and UL style 275.

Kit consists of:

- (Qty = 1) end closing bar
- (Qty = 4) corner clamp plates
- (Qty = 2) 3/8"-16 x 1.25" bolts
- (Qty = 2) 3/8" hex nuts
- Available in black (B), white (W) or gold (G) chemical finish over zinc plating



Cable Runway
Closing Kit

Black Finish	White Finish	Gold Finish	Width	Shipping Weight
Cable Runway Closing Kit				
BLCSE700-06B	BLCSE700-06W	BLCSE700-06G	6" (152.4 mm)	2 Lbs (0.91 kg)
BLCSE700-12B	BLCSE700-12W	BLCSE700-12G	12" (304.8 mm)	3 Lbs (1.36 kg)
BLCSE700-18B	BLCSE700-18W	BLCSE700-18G	18" (457.2 mm)	4 Lbs (1.82 kg)
BLCSE700-24B	BLCSE700-24W	BLCSE700-24G	24" (609.6 mm)	5 Lbs (2.27 kg)



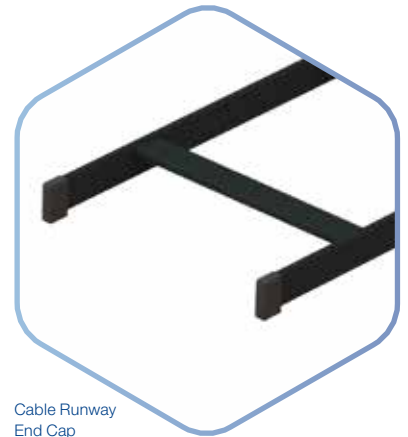
Cable Runway End Cap

Covers, protect exposed end of runway. Compatible with Universal style 250, Telco style 252 and UL style 275. Black, plastic material.

Kit consists of:

- (Qty = 2) end CAP

Black Finish	Description (Used With:)	Shipping Weight
Cable Runway End Cap		
BLPEC642-002	Protective End Caps for 1.5" x 0.375" Stringer (Pair)	1 Lbs (0.45 kg)



Cable Runway End Cap

Retaining Post For Cable

The retaining post is compatible with Universal, Telco and UL runways and allow for extra cable routing capacity.

Kit consists of:

- (Qty = 1) Post, bracket, and end cap
- (Qty = 1) 1/4"-20 x 1.25" hex cap screw, split lock washer and hex nut
- Available in black (B)

Black Finish	Description	Shipping Weight
Retaining Post For Cable		
BLCRP596-06B	Cable Retaining Post, 6", Qty = 1	1 Lbs (0.45 kg)
BLCRP596-56B	Cable Retaining Post, 6", Qty = 50	29 Lbs (13.15 kg)



Retaining Post for Cable

Support Brackets

Cable Runway Wall to Rack Kit

The Belden cable runway Wall to Rack Kit is a one-part-number solution that provides support for cable between the rack and the wall.

Kit consists of:

- (Qty = 1) 54" cable runway
- (Qty = 1) Wall angle support bracket
- (Qty = 1) Rack to runway mounting plate
- (Qty = 1) Pair of end caps
- (Qty = 3) J-bolt kits (BLJBK-001)
- Available in black (B) or white (W) powder coated finish



Cable Runway
Wall to Rack Kit

Black Finish	White Finish	Description	Shipping Weight
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Cable Runway Wall to Rack Kit

Black Finish	White Finish	Description	Shipping Weight
BLRW250-06B	BLRW250-06W	6" (152.4 mm)	16 Lbs (7.26 kg)
BLRW250-12B	BLRW250-12W	12" (304.8 mm)	19 Lbs (8.62 kg)

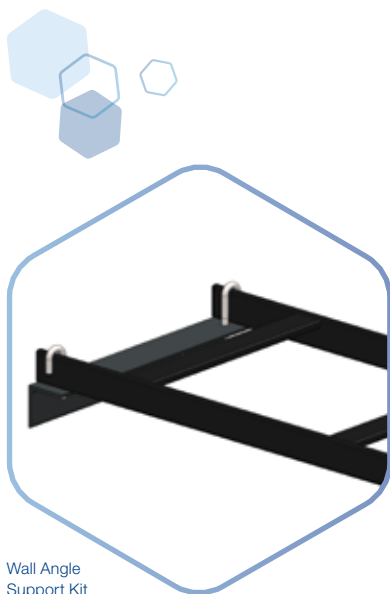
Compatible with 3" wide upright equipment rack

Wall Angle Support Kit, Cable Runway

2" x 2" x 3/16" (7 Gauge) steel support angle is designed for wall-mounting specific widths of cable runway.

Kit consists of:

- (Qty = 1) wall angle
- (Qty = 2) 5/16"-18 x 2.25" J-bolts
- (Qty = 2) 5/16"-18 hex nuts
- (Qty = 2) 5/16" lock washers
- Available in black (B)



Wall Angle
Support Kit

Black Finish	Width	Shipping Weight
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Wall Angle Support Kit, Cable Runway

Black Finish	Width	Shipping Weight
BLWAS421-06B	6" (152.4 mm)	2 Lbs (0.91 kg)
BLWAS421-12B	12" (304.8 mm)	3 Lbs (1.36 kg)
BLWAS421-18B	18" (457.2 mm)	5 Lbs (2.27 kg)
BLWAS421-24B	24" (609.6 mm)	6 Lbs (2.72 kg)



Triangular Support Bracket, Aluminum

Provides wall support for cable runway. Made of 0.25" x 2" aluminum bar, Load rating is 100 Lbs.

Kit consists of:

- (Qty = 1) triangular bracket
- (Qty = 2) 5/16"-18 x 2.25" J-bolts
- (Qty = 2) 5/16"-18 hex nuts and split washers
- Available in black (B)

Black Finish	Width	Shipping Weight
Triangular Support Bracket, Aluminum		
BLTSB312-06B	4" to 6" (101.6 to 152.4 mm)	2 Lbs (0.91 kg)
BLTSB312-12B	6" to 12" (152.4 mm to 304.8 mm)	3 Lbs (1.36 kg)
BLTSB312-18B	12" to 18" (304.8 mm to 457.2 mm)	3 Lbs (1.36 kg)



Triangular Support Bracket, Aluminum

Triangular Support Bracket, Steel

Provides wall support for cable runway. Made of cold-rolled steel, Load rating is 400 Lbs.

Kit consists of:

- (Qty = 1) vertical wall-mounting bracket
- (Qty = 1) runway support channel
- (Qty = 1) angle support channel
- (Qty = 3) clevis pins (5/16" diameter) and cotter pins
- (Qty = 2) 5/16"-18 x 2.25" J-bolts
- (Qty = 2) 5/16"-18 x hex nuts and split washers
- Available in black (B)h

Black Finish	Width	Shipping Weight
Triangular Support Bracket, Steel		
BLTSB746-12B	6" to 12" (152.4 to 304.8 mm)	5 Lbs (2.27 kg)
BLTSB746-18B	18" (457.2 mm)	8 Lbs (3.63 kg)
BLTSB746-24B	24" (609.6 mm)	9 Lbs (4.08 kg)



Triangular Support Bracket, Steel

Support Brackets *(continued)*



3" Channel
Rack-to-Runway
Mounting Plate

3" Channel Rack-to-Runway Mounting Plate

Secures cable runway to the top of standard rack and universal rack. Mounts either parallel or perpendicular.

- Material is 11 gauge steel, Installation best practice includes Runway Elevation Kit.

Kit consists of:

- (Qty = 1) mounting plate
- (Qty = 4) 5/16"-18 x 2.25" J-bolts
- (Qty = 4) 5/16"-18 hex nuts
- (Qty = 4) 5/16" split lock washer
- Available in black (B)

Black Finish	Width	Shipping Weight
3" Channel Rack-to-Runway Mounting Plate		
BLRTR595-9B	9" to 12" (228.6 to 304.8 mm)	3 Lbs (1.36 kg)
BLRTR595-15B	15" to 18" (381 mm to 457.2 mm)	4 Lbs (1.82 kg)



Cable Runway Elevation Kit

Supports cable runway above a continuous row of two and four post racks or cabinets of varying heights, and provides additional space between the tops of the racks or cabinets and the cable runway, which can create smoother cable transitions.

- Three ranges of incremental elevation
- Can be mounted perpendicular or parallel
- Rack kit includes a single pair of brackets and assembly hardware
- Rack kits attach to the top of the rack with a Rack-to-Runway

Mounting Plate (BLRTR595-9B, -15B), sold separately

- Cabinet kits include two pairs of brackets and assembly hardware
- Cabinet kits attach directly to the top of the cabinet
- Available in black (B)



Cable Runway
Elevation Kit

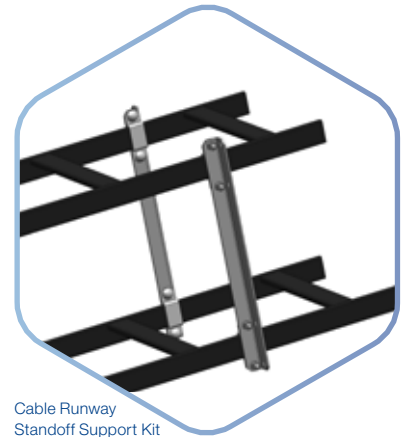
Rack Black Finish	Cabinet White Finish	Description	Shipping Weight
Cable Runway Elevation Kit			
BLREK506-02B	BLREK506-12B	2", 2.5", 3" (50.8 mm, 63.5 mm, 76.2 mm)	2 Lbs (0.91 kg)
BLREK506-04B	BLREK506-16B	4", 5", 6" (101.6 mm, 127 mm, 152.4 mm)	2.4 Lbs (1.09 kg)
BLREK506-10B	BLREK506-18B	10", 11", 12" (254 mm, 279.4 mm, 304.8 mm)	3 Lbs (1.36 kg)



Cable Runway Standoff Support Kit

Allows the attachment of cable runway 12" directly above and either parallel or perpendicular to existing cable runway. Each kit consists of the following items: two steel angle pieces, four steel brackets and eight sets of nuts, bolts and washers. The angle pieces are black.

Black Finish	Description	Shipping Weight
Cable Runway Standoff Support Kit		
BLRSS470-12B	12" (304.8 mm)	1 Lbs (0.45 kg)



Cable Runway Standoff Support Kit

Vertical Wall Brackets

Used to secure Cable Runway with 1.5" x 3/8" stringers to a wall. Sold in pairs.

- Wall mounting hardware not included
- Available in black (B)

Black Finish	Description	Shipping Weight
Vertical Wall Brackets		
BLVWB608-00B	Vertical Wall Bracket, Pair	1 Lbs (0.45 kg)



Vertical Wall Brackets

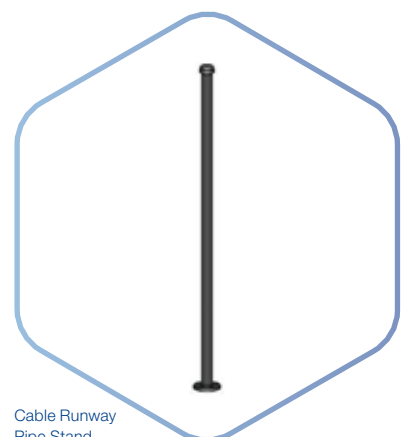
Cable Runway Pipe Stand

Pipe stand allow support of runway from the floor.

Kit consists of:

- (Qty = 1) floor flange
- (Qty = 1) appropriate length of 2" pipe
- (Qty = 1) pipe cap, center drilled and tapped for a 5/8"-11 threaded rod (BLTR440, not included)
- (Qty = 3) 5/8"-11 hex nuts
- (Qty = 3) 5/8" split lock washers
- (Qty = 4) 1/4"-20 x 1.5" studs
- (Qty = 4) 1/4"-20 concrete anchors
- (Qty = 4) 1/4"-20 hex nuts
- (Qty = 4) 1/4" type B washer
- Available in black (B)

Black Finish	Height	Shipping Weight
Cable Runway Pipe Stand		
BLPSR684-79B	79" (2006.6 mm)	16 Lbs (7.26 kg)
BLPSR684-85B	85" (2159 mm)	18 Lbs (8.16 kg)
BLPSR684-91B	91" (2311.4 mm)	20 Lbs (9.07 kg)



Cable Runway Pipe Stand

Support Brackets *(continued)*

Framing Clamp Kit

Allows runway attachment to pipe stand.

- Include a pair of bracket and hardware
- To install, you will need 5/8" threaded rod (BLTR440-002)
- Available in black (B)



Framing
Clamp Kit

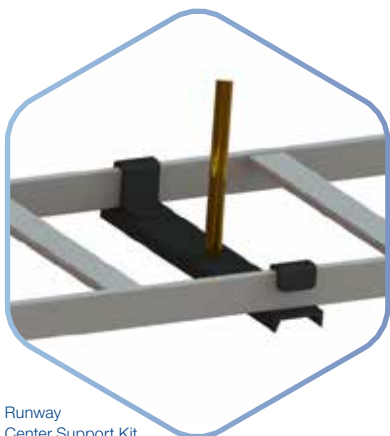
Black Finish	Description	Shipping Weight
Framing Clamp Kit		
BLCBK609-001B	Clamp Bracket Kit, Pair	0.3 Lbs (0.14 kg)

Runway Center Support Kit

Used to attach cable runway to auxiliary framing.

Kit consists of:

- (Qty = 1) support bracket
- (Qty = 1) reinforcement bar
- (Qty = 2) 5/8"-11 hex nuts
- (Qty = 1) 5/8"-11 split lock washers
- (Qty = 1) 12" L threaded rod cover
- (Qty = 1) J-bolt kit (2 J-bolts; 2 nuts; 2 washers)
- Available in black (B)



Runway
Center Support Kit

Black Finish	Description	Shipping Weight
Runway Center Support Kit		
BLCCK362-06B	6" (152.4 mm)	2 Lbs (0.91 kg)
BLCCK362-12B	12" (304.8 mm)	3 Lbs (1.36 kg)
BLCCK362-18B	18" (457.2 mm)	4 Lbs (1.82 kg)
BLCCK362-24B	24" (609.6 mm)	5 Lbs (2.27 kg)

Note: Kit does not include threaded rod





Ceiling Attachment Kit

The ceiling attachment kit is used to suspend the runway from the ceiling. Made of steel with gold over zinc plated plating finish.

Kit consists of:

- (Qty = 1) ceiling bracket
- (Qty = 1) 3/8"-16 x 6" or 5/8"-11 x 6" rod
- (Qty = 1) Support bracket for compatible with type 250, 252, 275 style runway
- (Qty = 4) 3/8"-16 or 5/8"-11 hex nuts

Gold Finish	Description	Shipping Weight
Ceiling Attachment Kit		
BLTCK310-38	3/8"	3 Lbs (1.36 kg)
BLTCK310-58	5/8"	7 Lbs (3.18 kg)

Note: The recommended spacing between the ceiling attachment kit is 5" . The ceiling hole diameter is 0.375" (9.52 mm) for 0.375" (9.52 mm) rod kit and 0.500" (12.7 mm) for 0.625" (15.87 mm) kit.

Support Bracket for Runway

Used do secure threaded rod to runway.

- Available in black (B)

Black Finish	Description	Shipping Weight
Support Bracket for Runway		
BLRSB408-038B	3/8" (9.52 mm)	0.1 Lbs (0.04 kg)
BLRSB408-058B	5/8" (15.87 mm)	0.1 Lbs (0.04 kg)

Ceiling Support Bracket

Used do secure threaded rod to ceiling.

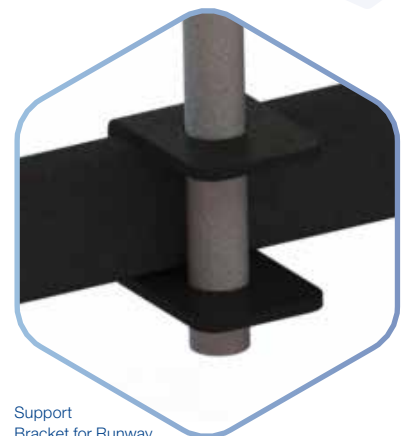
- Available in black (B)

Black Finish	Description	Shipping Weight
Ceiling Support Bracket		
BLCSB406-038B	3/8"	1 Lbs (0.45 kg)
BLCSB406-058B	5/8"	1 Lbs (0.45 kg)

Note: hardware not included



Ceiling Attachment Kit



Support Bracket for Runway



Ceiling Support Bracket

Support Brackets *(continued)*



Threaded Rods

Threaded Rods

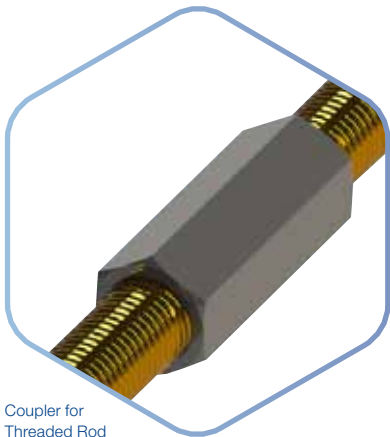
Use to suspend runway from the ceilings.

- Gold over zinc plating

Gold Finish	Description	Shipping Weight
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Threaded Rods

BLTR440-001	3/8" (0.52 mm) - 16 UNC, 6" (152.4 mm) long	2 Lbs (0.91 kg)
BLTR440-003	3/8" (0.52 mm) - 16 UNC, 12" (304.8 mm) long	5 Lbs (2.27 kg)
BLTR440-002	5/8" (15.87 mm) - 11 UNC, 6" (152.4 mm) long	5 Lbs (2.27 kg)
BLTR440-004	5/8" (15.87 mm) - 11 UNC, 12" (304.8 mm) long	10 Lbs (4.53 kg)



Coupler for Threaded Rod

Coupler for Threaded Rod

Allow coupling of two threaded rod.

Part Number	Description	Shipping Weight
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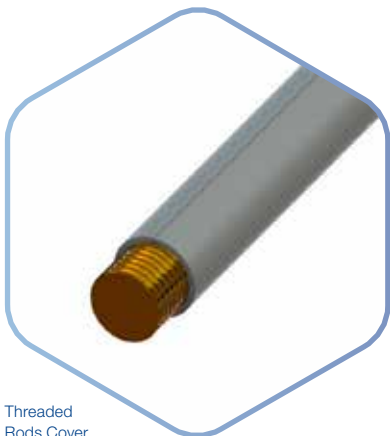
Coupler for Threaded Rod

BLCR697-038	3/8" - 16" (406.4 mm)	0.3 Lbs (0.14 kg)
BLCR697-058	5/8" - 11" (279.4 mm)	0.3 Lbs (0.14 kg)

Threaded Rods Cover

Use to cover threaded rods and protect cables.

- Black plastic tubing, ID = 0.630" (16 mm)



Threaded Rods Cover

Part Number	Description	Shipping Weight
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Threaded Rods Cover

BLTRC085-010	10" (254 mm)	5 Lbs (2.27 kg)
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J-Bolt Kit, Auxiliary Framing Channel/Rack Top Bar

Used to attach a 2" x 1" auxiliary framing channel to a 1.5" equipment rack top bar.

- Gold over zinc plating

Kit consists of:

- (Qty = 1) 1/4" x 1" x 3.5" cold-rolled steel plate
- (Qty = 2) 5/16"-18 x 3.25" J-bolts
- (Qty = 2) 5/16"-18 hex nuts and split lock washers

Gold Finish	Description	Shipping Weight
J-Bolt Kit, Auxiliary Framing Channel/Rack Top Bar		
BLJBK-002	J-Bolt Kit	1 Lbs (0.45 kg)

J-Bolt Clip Kit, Auxiliary Framing Channel/Cable Runway

For fastening cable runway to auxiliary framework. Material is steel finished.

- Gold over zinc plating

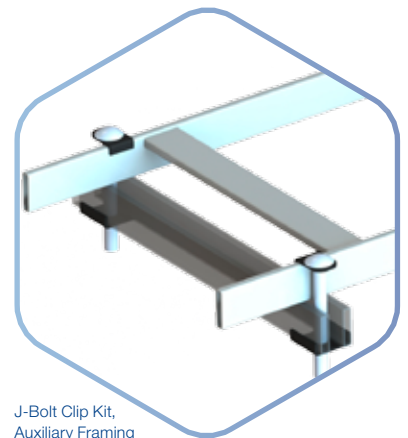
Kit consists of:

- (Qty = 2) clip J-bolt
- (Qty = 2) 1/2"-13 split lock washer
- (Qty = 2) 1/2"-13 hex nut

Gold Finish	Description	Shipping Weight
J-Bolt Clip Kit, Auxiliary Framing Channel/Cable Runway		
BLJBC-001	3/8" x 2" (9.52x50.8 mm)	1 Lbs (0.45 kg)
BLJBC-002	5/8" x 2" (15.87x50.8 mm)	1 Lbs (0.45 kg)
BLJBC-003	1" x 2" (25.4x50.8 mm)	1 Lbs (0.45 kg)



J-Bolt Kit,
Auxiliary Framing
Channel/Rack Top Bar



J-Bolt Clip Kit,
Auxiliary Framing
Channel/Cable Runway

Support Brackets *(continued)*



Clip J-Bolt,
Auxiliary Framing
Channel/Cable Runway

Clip J-Bolt, Auxiliary Framing Channel/Cable Runway

Used to attach cable runway to auxiliary framing.

- Sold individually
- Gold over zinc plating

Kit consists of:

- (Qty = 1) 1/2"-13 lock nut
- (Qty = 1) 1/2" split lock washer

Gold Finish	Description	Shipping Weight
Clip J-Bolt, Auxiliary Framing Channel/Cable Runway		
BLJBC-004	1/2"-13 x 4.375" (12.7 mm - 13 x 111.12 mm)	1 Lbs (0.45 kg)
BLJBC-005	1/2"-13 x 4.875" (12.7 mm - 13 x 123.82 mm)	1 Lbs (0.45 kg)



J-Bolt Kit,
Auxiliary Framing
Channel/Wall Angle Support

J-Bolt Kit, Auxiliary Framing Channel/Wall Angle Support

Used to attach a 2" x 1" auxiliary framing channel to a wall angle support.

- Gold over zinc plating

Kit consists of two each:

- 1/4"-20 x 1.75" J-bolts
- 1/4"-20 hex nuts
- 1/4" split lock washers

Gold Finish	Description	Shipping Weight
J-Bolt Kit, Auxiliary Framing Channel/Wall Angle Support		
BLJBK-001	J-Bolt Kit	1 Lbs (0.45 kg)





J-Bolts (Hook Bolt, Round Bend), Auxiliary Framing Channel/Cable

Used to bolt cable runway, auxiliary framing channels and/or bars together.

- Gold over zinc and black zinc plate finish
- Includes nut and split lock washer
- Commercial grade, kits sold individually

Gold/Black Finish	Nominal Size	Length	Opening	Shipping Weight
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J-Bolts (Hook Bolt, Round Bend), Auxiliary Framing Channel/Cable

BLJB-001	1/4"-20	1.75" (44.45 mm)	7/32" (5.56 mm)	1 Lbs (0.45 kg)
BLJB-002	1/4"-20	2" (50.8 mm)	7/32" (5.56 mm)	1 Lbs (0.45 kg)
BLJB-003	5/16"-18	2.25" (57.15 mm)	7/16" (11.11 mm)	1 Lbs (0.45 kg)
BLJB-004	5/16"-18	2.75" (69.85 mm)	7/16" (11.11 mm)	1 Lbs (0.45 kg)
BLJB-005	5/16"-18	3.25" (82.55 mm)	7/16" (11.11 mm)	1 Lbs (0.45 kg)
BLJB-006	5/16"-18	3.75" (95.25 mm)	7/16" (11.11 mm)	1 Lbs (0.45 kg)
BLJB-007	5/16"-18	3.75" (95.25 mm)	7/16" (11.11 mm)	1 Lbs (0.45 kg)
BLJB-008	5/16"-18	6.20" (157.48 mm)	7/16" (11.11 mm)	1 Lbs (0.45 kg)



J-Bolts
(Hook Bolt, Round
Bend), Auxiliary Framing Channel/Cable

BELDEN
SENDING ALL THE RIGHT SIGNALS





Warranty

■ Warranty	92 - 95
Warranty	94 - 95

Warranty

Limited Warranty

Belden warrants that, for a period of one (1) year following the date of delivery to the original customer, the products it offers for sale in the catalog are free from material defects in material and workmanship. The foregoing warranty is subject to the terms, limitations and conditions set forth below.

All PDUs and Accessories – Standard

One Year Warranty

This warranty does not include damage to the product resulting from accident or misuse, including exposure to water or any other corrosive material. This warranty excludes damage to equipment if surge or spike reaches that equipment through an unprotected source connected to it (i.e., printer, modem, phone line, etc.). It shall not apply to any product, which has been connected, installed, used or otherwise adjusted other than in accordance with written instructions furnished by BELDEN.

WARRANTY WILL BE VOIDED IF THE UNITS ARE OPENED, MODIFIED OR ALTERED DURING THE WARRANTY PERIOD.

Containment and Cooling Warranty

BELDEN warrants Containment and Cooling products for a period of one (1) year following the date of delivery. If the BELDEN product becomes defective during the one (1) year warranty period, BELDEN will elect to either repair or replace the unit free of charge. This warranty does not include damage to the product resulting from accident or misuse, including exposure to water or any other corrosive material.

WARRANTY WILL BE VOIDED IF THE UNITS ARE OPENED, MODIFIED OR ALTERED DURING THE WARRANTY PERIOD.

Powerstrip Warranty

If a BELDEN power strip product becomes defective during the warranty period listed below, BELDEN will elect to either repair or replace the unit free of charge.



Repairs or Adjustments

Belden, at its discretion, will make any repairs or adjustments to any products that are due to defects and/or workmanship. The warranties provided above (the “Warranties”) do not extend to any items that upon inspection by Belden are deemed to have been misused, neglected, improperly treated, improperly installed, or used in violation of instructions or specifications approved by Belden, or otherwise handled, installed, shipped or used in violation of industry standards for metal fabrication and solid state electronic equipment.

Limitation of Liability

Belden’s sole liability under any of the Warranties will be to repair or replace, at its discretion, products that do not meet the specifications and descriptions provided in the catalog or purchase order due to defects in material and workmanship. To the maximum extent permitted by law, under no circumstances shall Belden be liable for any consequential, special, or other indirect damages (including, but not limited to lost profits) for breach of this warranty. Belden’s total liability under any of the Warranties shall be limited to the price actually paid by the customer for the product(s) covered. Except as specifically set forth above, Belden expressly disclaims any other representation or warranties of any kind, expressed or implied, arising by law or custom, with respect to products set forth in the catalog or otherwise sold by Belden, including without limitation, warranties or merchantability, fitness for a particular purpose, non-infringement or any other matter.

Conditions of Warranty

The foregoing Warranties apply only to standard products set forth in the catalog. Custom products are covered by warranties stated in the Terms and Conditions of Sale of Belden’s quotation at the time of the order.

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