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Submittal # 2

We are sending you  Herewith  Delivered by Hand  Under Separate Cover  Via ELECTRONIC

Plans  Prints  Shop Dwgs  Samples  Specifications  Other \_\_\_\_\_

Copies	Item	# Pages	Description
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1	2	3	Corning- FREEDM- One Tight-Buffered Cable, Plenum
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1	4	3	Corning- Closet Connector Housing- Four Rack Unit
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1	7	1	Corning- Wall-Mountable Connector Housing
1	8	4	Chatsworth- Adjustable Server Rack & Associated Parts

The Above Listed Items are transmitted as indicted below:

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\_\_\_\_\_

# FREEDM® Loose Tube, Gel-Free Cable, Riser

144 F, Single-mode (OS2)

CORNING

Corning Cable Systems FREEDM® Loose Tube Gel-Free Riser Cables are flame-retardant, indoor/outdoor, riser-rated cables designed for interbuilding and intrabuilding backbones in aerial, duct and riser applications. These cables are protected against water penetration by innovative waterblocking tapes and yarns that swell to absorb water. Waterblocking without the use of messy gels provides more efficient and craft-friendly cable preparation. It also makes cable access easier and simplifies the use of buffer tube fan-out kits. The buffer tubes and fibers in each tube are color-coded for quick, easy identification. The SZ-stranded, loose tube design isolates fibers from installation and environmental rigors and allows for easy midspan access. The cable design is also National Electrical Code® (NEC®) listed (OFNR and FT-4). The all-dielectric cable construction requires no grounding or bonding and the UV-resistant, flame-retardant jacket is rugged, durable and easy to strip.

This cable is available in 12 different jacket colors - blue, orange, green, brown, slate, white, red, black, yellow, purple, rose and aqua. The colored jacket allows for easy visual identification of the cables while still providing all of the required environmental protection of an indoor/outdoor cable jacket. Black is the standard jacket color using the standard part numbers shown here. Contact Customer Care at 1-800-743-2675 to order other color options.

## Features and Benefits

### Riser rating

No transition splices when entering buildings

### Gel-free waterblocking technology

Craft-friendly cable preparation

### Color-coded tubes and fibers

Quick and easy identification

### All-dielectric construction

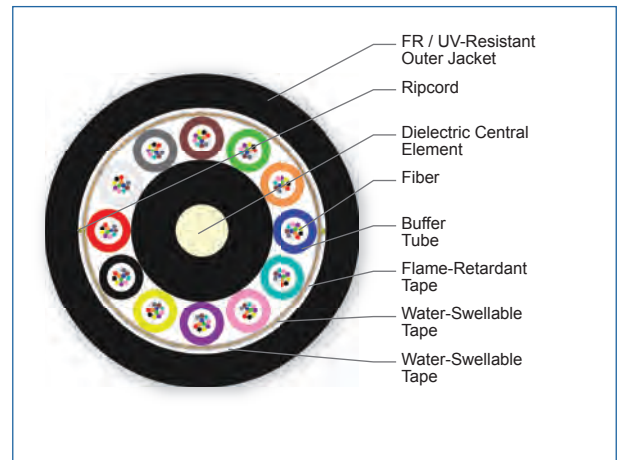
Requires no grounding or bonding

### UV-resistant, flame-retardant jacket

Rugged, durable and easy to strip



Part Number: 144EUF-T4101D20



Cross Section of Part Number: 144EUF-T4101D20

## Standards

### Approval and Listings

National Electrical Code®  
(NEC®) OFNR, CSA OFN  
FT-4

CORNING

# FREEDM<sup>®</sup> Loose Tube, Gel-Free Cable, Riser

144 F, Single-mode (OS2)

CORNING

## Standards

**Common Installations** Outdoor lashed aerial and duct; indoor when installed according to National Electrical Code<sup>®</sup> (NEC<sup>®</sup>) Article 770

**Design and Test Criteria** ANSI/ICEA S-104-696

## Specifications

General Specifications	
Environment	Indoor/Outdoor Cables
Application	Aerial, Direct Buried, Duct, General Purpose Horizontal, (Vertical Riser)
Cable Type	Loose Tube
Product Type	Dielectric
Flame Rating	Riser (OFNR)
Fiber Category	Single-mode (OS2)

Temperature Range	
Storage	-40 °C to 70 °C (-40 °F to 158 °F)
Installation	-10 °C to 60 °C (14 °F to 140 °F)
Operation	-40 °C to 70 °C (-40 °F to 158 °F)

Cable Design	
Central Element	Dielectric
Fiber Count	144
Fiber Coloring	Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua
Fibers per Tube	12
Number of Tube Positions	12
Number of Active Tubes	12
Buffer Tube Color Coding	Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua
Buffer Tube Diameter	2.5 mm (0.1 in)
Tape	Water-swellable
Number of Ripcords	2

# FREEDM<sup>®</sup> Loose Tube, Gel-Free Cable, Riser

## 144 F, Single-mode (OS2)

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### Cable Design

Outer Jacket Material	Flame-Retardant, UV-Resistant
Outer Jacket Color	Black

### Mechanical Characteristics Cable

Max. Tensile Strengths, Short-Term	2700 N (600 lbf)
Max. Tensile Strengths, Long-Term	810 N (180 lbf)
Weight	251 kg/km (168 lb/1000 ft)
Nominal Outer Diameter	17.7 mm (0.7 in)
Min. Bend Radius Installation	266 mm (10.5 in)
Min. Bend Radius Operation	177 mm (7 in)

### Chemical Characteristics

RoHS	Free of hazardous substances according to RoHS 2002/95/EG
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## Fiber Specifications

### Optical Characteristics (cabled)

Fiber Type	Single-mode
Fiber Core Diameter	8.2 μm
Fiber Category	OS2
Fiber Code	E
Performance Option Code	01
Wavelengths	1310 nm / 1383 nm / 1550 nm
Maximum Attenuation	0.4 dB/km / 0.4 dB/km / 0.3 dB/km
Serial 1 Gigabit Ethernet	5000 m / - / -
Serial 10 Gigabit Ethernet	10000 m / - / 40000 m

\* ITU-T G.652 D compliant.

\* Meets 0.75 ns optical skew when used in all Corning Cable Systems Plug & Play™/Pretium EDGE® Systems Solutions.

- Notes:
- 1) Improved attenuation and bandwidth options available.
  - 2) Bend-insensitive single-mode fibers available on request.
  - 3) Contact a Corning Cable Systems Customer Care Representative for additional information.

# FREEDM<sup>®</sup> Loose Tube, Gel-Free Cable, Riser

144 F, Single-mode (OS2)



## Ordering Information

Part Number	144EUF-T4101D20
Product Description	FREEDM <sup>®</sup> Loose Tube, Gel-Free Cable, Riser, 144 F, Single-mode (OS2)



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# FREEDM® One Tight-Buffered Cable, Plenum

24 F, Single-mode (OS2)

CORNING

Corning Cable Systems FREEDM® One Cables are flame-retardant, UV-resistant, indoor/outdoor cables designed for aerial, duct and direct-buried applications with no need for a transition splice when entering the building. The tight-buffered construction facilitates easier termination for low-fiber-count applications in the local area network (LAN) and eliminates need for fan-out kits. The design features TIA-598 color-coded 900 µm TBII® Buffered Fibers for easy identification, consistent stripping and direct termination. The small diameter and bend radius of the cable allow for easy installation in space-constrained areas while the innovative waterblocking technology is ideal for OSP applications. The all-dielectric cable construction requires no grounding or bonding and the UV-resistant, flame-retardant jacket is rugged, durable and easy to strip.

This cable is available in 12 different jacket colors - blue, orange, green, brown, slate, white, red, black, yellow, purple, rose and aqua. The colored jacket allows for easy visual identification of the cables while still providing all of the required environmental protection of an indoor/outdoor cable jacket. Black is the standard jacket color using the standard part numbers shown here. Contact Customer Care at 1-800-743-2675 to order other color options.

## Features and Benefits

### Waterblocking technology

OSP (outdoor) applications

### Small diameter and bend-radius

Easy installation in space-constrained areas

### Color-coded fibers

Quick and easy identification

### All-dielectric construction

Requires no grounding or bonding

### UV-resistant, flame-retardant jacket

Rugged, durable and easy to strip

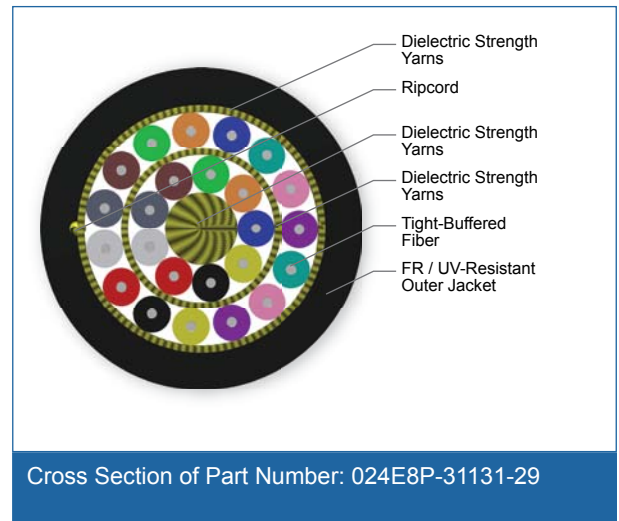
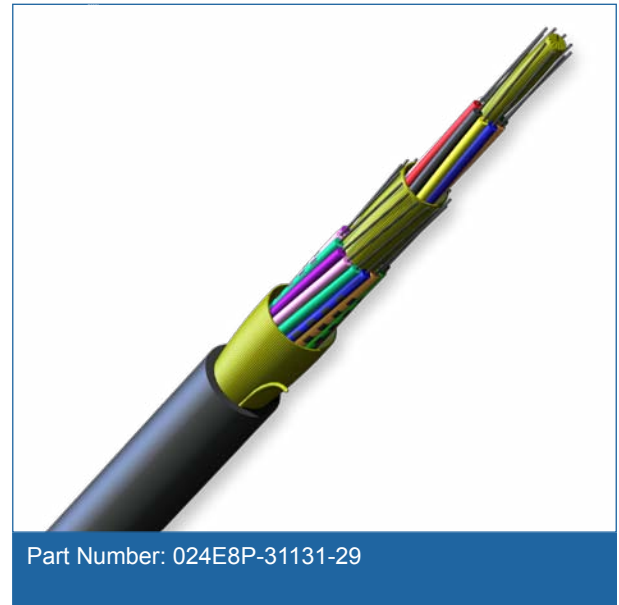
## Standards

### Approval and Listings

National Electrical Code®  
(NEC®) OFNP, CSA FT-6

### Design and Test Criteria

ICEA S-104-696



# FREEDM<sup>®</sup> One Tight-Buffered Cable, Plenum

24 F, Single-mode (OS2)

CORNING

## Specifications

General Specifications	
Environment	Indoor/Outdoor Cables
Application	Aerial, Direct Buried, Duct, General Purpose Horizontal, (Vertical Riser, Plenum)
Cable Type	Tight-Buffered
Product Type	Dielectric
Flame Rating	Plenum (OFNP)
Fiber Category	Single-mode (OS2)

Temperature Range	
Storage	-40 °C to 70 °C (-40 °F to 158 °F)
Installation	0 °C to 60 °C (32 °F to 140 °F)
Operation	-40 °C to 70 °C (-40 °F to 158 °F)

Cable Design	
Central Element	Dielectric
Fiber Count	24
Tight Buffer Color	Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua, Blue*, Orange*, Green*, Brown*, Slate*, White*, Red*, Black*, Yellow*, Violet*, Rose*, Aqua*
Tensile Strength Elements and/or Armoring - Layer 1	Water-swellable strength members
Outer Jacket Material	Flame-Retardant, UV-Resistant
Outer Jacket Color	Black

Mechanical Characteristics Cable	
Weight	65 kg/km (44 lb/1000 ft)
Nominal Outer Diameter	8 mm (.31 in)
Min. Bend Radius Installation	120 mm (4.7 in)
Min. Bend Radius Operation	40 mm (1.6 in)
Max. Tensile Strengths, Short-Term	1350 N (300 lbf)
Max. Tensile Strengths, Long-Term	400 N (90 lbf)

# FREEDM® One Tight-Buffered Cable, Plenum

24 F, Single-mode (OS2)

CORNING

## Chemical Characteristics

RoHS	Free of hazardous substances according to RoHS 2002/95/EG
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## Fiber Specifications

### Optical Characteristics (cabled)

Fiber Core Diameter	8.2 µm
Fiber Type	Single-mode
Fiber Category	OS2
Fiber Code	E
Performance Option Code	31
Wavelengths	1310 nm / 1383 nm / 1550 nm
Maximum Attenuation	0.65 dB/km / 0.65 dB/km / 0.5 dB/km
Serial 1 Gigabit Ethernet	5000 m / - / -
Serial 10 Gigabit Ethernet	10000 m / - / 40000 m

\* ITU-T G.652 D compliant

Notes: 1) Improved attenuation and bandwidth options available  
2) Bend-insensitive single-mode fibers available on request  
3) Contact a Corning Cable Systems Customer Care Representative for additional information

## Ordering Information

Part Number	024E8P-31131-29
Product Description	FREEDM® One Tight-Buffered Cable, Plenum, 24 F, Single-mode (OS2)



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CORNING



# CCH Pigtail Splice Cassette

12 F, LC, UPC, Duplex, Single-mode (OS2), Single-Fiber (250 μm)

CORNING

CCH Pigtail Splice Cassettes enable faster field splicing and easy modular management of connectorization within the housing.

The CCH Pigtail Splice Cassettes are pre-loaded and pre-routed for quick fusion splicing of either individual or ribbon fiber pigtails, utilizing the same space saving platform as the standard CCH Splice Cassette.

The pre-routed Pigtail Cassettes reduce field labor by streamlining the features and components of the pigtail cassette to allow for efficiencies in the field. They are prepped with a 3m pigtail assembly with all pre-existing CCH Panel connector options. The Pigtail Cassettes have 900 μm at the connector panel for added durability and colored 250 μm for ease of splicing as well as having strain relief pre-applied to the assemblies from the manufacturing facility.

With the Pigtail Cassette, the field will also enjoy the elimination of individual splice trays or separate splice housings, as well as allowing splicing to be done away from the rack housing in a suitable workspace as needed. The modular design makes it easy to access the fiber in an individual cassette without disturbing the other fibers in the housing.

Each cassette is shipped the pigtail CCH Panel of choice, 1 rail for use with CCH-01U/2U/3U housings, and 2 rails used with CCH-04U housings. Grommets and cable ties for additional strain relief, and protective braided tubing for incoming cable are also included. Splicing cassettes ship with 12 single fiber heat-shrink splice protectors.

**Many of our fiber optic hardware products are highly configurable. If you don't see what you are looking for here, please review the ordering matrix contained in the family spec sheet found on the right, or contact customer care at 1-800-743-2671.**



Part Number: CCH-CS12-A9-P00RE

## Features and Benefits

### **Manage cable slack for a CCH Panel in a modular footprint**

Fast, easy and reliable initial routing, and quick, simple reaccess for moves, adds and changes (MACs)

### **Includes everything needed to convert a CCH housing for modular routing and/or splicing**

Easy ordering and field installation

### **Modular splice capability**

Manage all splices inside the housing

### **900um jacket at the connector panel**

Added fiber protection at the connector

CORNING

# CCH Pigtail Splice Cassette

12 F, LC, UPC, Duplex, Single-mode (OS2), Single-Fiber (250 μm)

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## Features and Benefits

### Colored 250um at splice point

Easy to identify and prep colored 250um for fast and easy splicing

### Pre-prepped Splice Cassette

Saves time in the field with a ready to splice product

## Standards

### Approval and Listings

Meets ANSI/TIA/EIA-568A and 606

## Specifications

General Specifications	
Application	Enterprise Networks, Data Center
Product Type	Rack-Mountable Hardware
Mounting Type	CCH Housings, Wall-Mountable
Cable Type	Single fiber (250 μm)
Fiber Category	Single-mode (OS2)
Technology	Fusion Splice

Design - Hardware	
Connector Configuration	LC
Connector Polish	UPC
Fiber Count	12
Panel or Module Type	CCH
Splice Protectors Type	Single fiber Heat-shrink
Number of Splice Protectors	12

Mechanical Characteristics	
Dimensions (LxWxD)	6.4 in x 1.4 in x 7.9 in 162.0 mm x 35.0 mm x 200.0 mm

# CCH Pigtail Splice Cassette

12 F, LC, UPC, Duplex, Single-mode (OS2), Single-Fiber (250 μm)

CORNING

## Design Adapter

Adapter Type	LC
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## Chemical Characteristics

RoHS	Free of hazardous substances according to RoHS 2002/95/EG
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## Ordering Information

Part Number	CCH-CS12-A9-P00RE
Product Description	CCH Splice Cassette, 12 F, LC, UPC, Duplex, Single-mode (OS2), Single-Fiber (250 μm)

## Shipping Information

Units per Delivery	1/1
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# Closet Connector Housing (CCH)

four rack units, holds 12 CCH connector panels

CORNING

Closet connector housings (CCHs) provide interconnect or cross-connect capabilities between outside plant, riser or distribution cables and opto-electronics. Like other LANscape solutions hardware, the housings accept CCH connector panels. In addition, the housings accept CCH cassettes and CCH modules.

From fiber and cable routing and strain relief, to port labeling and termination, these housings reduce the risk of error that can disrupt networks.

The units are designed for rack mounting in 19-in (48 cm) racks or optional 23-in (58 cm) equipment racks (1.75-in EIA hole spacing). They are available in rack space options of 1U (two panels, cassettes or modules), 2U (four panels, cassettes or modules), 3U (six panels, cassettes or modules) and 4U (12 panels, cassettes or modules). The 1U, 2U and 3U options feature a slide-out tray and see-through, removable top covers. The CCH-04U features a clear door, removable front and rear enclosures and a platinum-colored interior for maximum visibility and access.

Every CCH housing is shipped complete with strain relief brackets, routing clips and guides, and mounting brackets for proper installation. Documentation labels are provided and components can be added as needed to construct a fiber distribution frame for any application. All housings include a removable tinted polycarbonate front door. All size housings have field-installable lock kits available for both front and rear doors.

All CCH housings can also be upgraded for pigtail splicing to full fiber capacity and easy, modular fiber management through the use of CCH Splice Cassettes (CCH-CS), or for easy, modular fiber management when using field-installable connectors through the use of CCH Slack Cassettes (CCH-CF).



CCH-04U (open) | Photo LAN1860

## Features and Benefits

### Interconnect and cross-connect capability

Ideal for field connectorization

### Removable, translucent top covers (1U, 2U, 3U), removable rear cover (4U)

Visibility and ease of access for installation, testing, and troubleshooting

### Internal and external strain-relief options

Flexibility for installation and moves, adds, and changes (MACs)

### Accepts panels, modules, and cassettes

Variety of field-termination options

CORNING

# Closet Connector Housing (CCH)

four rack units, holds 12 CCH connector panels



## Features and Benefits

### Adaptable to use as a modular splice housing

Splices are stored and protected in same footprint

## Standards

<b>Approvals and Listings</b>	Meets ANSI/TIA/EIA-568A and 606
<b>RoHS</b>	Free of hazardous substances according to RoHS 2011/65/EU
<b>UL-Listed</b>	United States and Canadian safety standards

## Specifications

General Specifications	
Application	Enterprise Networks, Data Center, Carrier Networks
Mounting Type	Rack 19-in, Rack 23-in, Cabinet-mount
Product Type	Fiber Optic Hardware
Environment	Indoor
Mounting Technology	Flush mount, Protruding, Recessed
Access Type	Front and rear access slidable
Lockable	Yes

Design - Hardware	
Housing Type	CCH
Housing Color	Black
Height Unit	4U
Locking Availability	Front or rear
Number of Panels per Housing	12
Panel or Module Type	CCH
Splice Tray Options	CCH Splice Cassette (CCH-CS)

Mechanical Characteristics	
Dimensions (HxWxD)	17.8 cm x 48.3 cm x 43 cm (7 in x 19 in x 17 in)

# Closet Connector Housing (CCH)

four rack units, holds 12 CCH connector panels



## Ordering Information

Part Number	CCH-04U
Product Description	Closet Connector Housing (CCH), four rack units, holds 12 CCH connector panels
EAN Code	4056418169439

## Shipping Information

Units per Delivery	1/1
Shipping Weight	7.5 kg (17 lb)
Dimensions (HxWxD)	58.42 cm x 58.42 cm x 30.48 cm (23 in x 23 in x 12 in)



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# Closet Connector Housing (CCH)

3 rack units, holds 6 CCH connector panels

CORNING

Designed based on thousands of hours of customer feedback, Corning Cable Systems Closet Connector Housings (CCHs) offer more than two dozen innovative features that make installation and troubleshooting of fiber optic connectivity faster, easier and more cost effective.

From fiber and cable routing and strain relief, to port labeling and termination, these housings reduce the risk of error that can disrupt networks.

Closet Connector Housings (CCHs) provide interconnect or cross-connect capabilities between outside plant, riser or distribution cables and opto-electronics. Like all LANscape Solutions hardware, the housings accept CCH connector panels. In addition, the housings accept CCH cassettes and CCH modules.

The units are designed for rack mounting in 19-in (48 cm) racks or optional 23-in (58 cm) equipment racks (1.75-in EIA hole spacing). They are available in rack space options of 1U (two panels, cassettes or modules), 2U (four panels, cassettes or modules), 3U (six panels, cassettes or modules) and 4U (twelve panels, cassettes or modules). The 1U, 2U and 3U options feature a slide-out tray and see-through, removable top covers. The CCH-04U features a clear door, removable front and rear enclosures and a platinum-painted interior for maximum visibility and access.

Every CCH housing is shipped complete with strain relief brackets, routing clips and guides, and mounting brackets for proper installation. Documentation labels are provided and components can be added as needed to construct a fiber distribution frame for any application. All housings include a removable tinted polycarbonate front door. All size housings have field-installable lock kits available for both front and rear doors.

All CCH housings can also be upgraded for pigtail splicing to full fiber capacity and easy, modular fiber management through the use of CCH Splice Cassettes (CCH-CS), or for easy, modular fiber management when using field-installable connectors through the use of CCH Slack Cassettes (CCH-CF).



Part Number: CCH-03U

## Features and Benefits

### Interconnect and cross-connect capability

Ideal for field connectorization

### Removable, translucent top covers (1U, 2U, 3U), removable rear cover (4U)

Visibility and ease of access for installation, testing and troubleshooting

# Closet Connector Housing (CCH)

3 rack units, holds 6 CCH connector panels

CORNING

## Features and Benefits

### Internal and external strain-relief options

Flexibility for installation and moves, adds and changes (MACs)

### Accepts panels, modules and cassettes

Variety of field termination options

### Adaptable to use as a modular splice housing

Splices are stored and protected in same footprint

## Standards

**Approval and Listings** Meets ANSI/TIA/EIA-568A and 606

## Specifications

General Specifications	
Application	Enterprise Networks, Data Center
Mounting Type	Rack 19-in, Rack 23-in, Cabinet-mount
Product Type	Fiber Optic Hardware

Design - Hardware	
Housing Color	Black
Housing Type	CCH
Height Unit	3U
Locking Availability	Front or rear
Maximum Number of Panels per Housing	6
Panel or Module Type	CCH
Splice Tray Options	Use CCH Splice Cassette (CCH-CS)

Mechanical Characteristics	
Dimensions (HxWxD)	13.3 cm x 48.3 cm x 43 cm (5.25 in x 19 in x 17 in)



# Closet Connector Housing (CCH)

3 rack units, holds 6 CCH connector panels



## Chemical Characteristics

RoHS	Free of hazardous substances according to RoHS 2002/95/EG
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## Ordering Information

Part Number	CCH-03U
Product Description	Closet Connector Housing (CCH), 3 rack units, holds 6 CCH connector panels

## Shipping Information

Units per Delivery	1/1
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# Closet Connector Housing (CCH)

2 rack units, holds 4 CCH connector panels

CORNING

Designed based on thousands of hours of customer feedback, Corning Cable Systems Closet Connector Housings (CCHs) offer more than two dozen innovative features that make installation and troubleshooting of fibre optic connectivity faster, easier and more cost effective.

From fibre and cable routing and strain relief, to port labelling and termination, these housings reduce the risk of error that can disrupt networks.

Closet Connector Housings (CCHs) provide interconnect or cross-connect capabilities between outside plant, riser or distribution cables and opto-electronics. Like other LANscape Solutions hardware, the housings accept CCH connector panels. In addition, the housings accept CCH cassettes and CCH modules.

The units are designed for rack mounting in 19-in (48 cm) racks or optional 23-in (58 cm) equipment racks (1.75-in EIA hole spacing). They are available in rack space options of 1U (two panels, cassettes or modules), 2U (four panels, cassettes or modules), 3U (six panels, cassettes or modules) and 4U (twelve panels, cassettes or modules). The 1U, 2U and 3U options feature a slide-out tray and see-through, removable top covers. The CCH-04U features a clear door, removable front and rear enclosures and a platinum-painted interior for maximum visibility and access.

Every CCH housing is shipped complete with strain relief brackets, routing clips and guides, and mounting brackets for proper installation. Documentation labels are provided and components can be added as needed to construct a fibre distribution frame for any application. All housings include a removable tinted polycarbonate front door. All size housings have field-installable lock kits available for both front and rear doors.

All CCH housings can also be upgraded for pigtail splicing to full fibre capacity and easy, modular fibre management through the use of CCH Splice Cassettes (CCH-CS), or for easy, modular fibre management when using field-installable connectors through the use of CCH Slack Cassettes (CCH-CF).



Part Number: CCH-02U

## Features and Benefits

### **Interconnect and cross-connect capability**

Ideal for field connectorization

### **Removable, translucent top covers (1U, 2U, 3U), removable rear cover (4U)**

Visibility and ease of access for installation, testing and troubleshooting

# Closet Connector Housing (CCH)

2 rack units, holds 4 CCH connector panels



## Features and Benefits

### Internal and external strain-relief options

Flexibility for installation and moves, adds and changes (MACs)

### Accepts panels, modules and cassettes

Variety of field termination options

### Adaptable to use as a modular splice housing

Splices are stored and protected in same footprint

## Standards

<b>Approval and Listings</b>	Meets ANSI/TIA/EIA-568A and 606
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<b>RoHS</b>	Free of hazardous substances according to RoHS 2002/95/EG
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**UL-Listed**

## Specifications

General Specifications	
Application	Enterprise Networks, Data Centre, Carrier Networks
Mounting Type	Rack 19", Rack 23"
Product Type	Fibre Optic Hardware
Environment	Indoor
Mounting Technology	Flush mount, Protruding, Recessed
Access Type	Front and rear access slidable
Lockable	Yes

# Closet Connector Housing (CCH)

2 rack units, holds 4 CCH connector panels

CORNING

## Design - Hardware

Housing Type	CCH
Housing Colour	Black
Height Unit	2U
Locking Availability	Front or rear
Number of Panels per Housing	4
Panel or Module Type	CCH
Splice Tray Options	CCH Splice Cassette (CCH-CS)

## Mechanical characteristics

Dimensions (HxWxD)	8.9 cm x 48.3 cm x 43 cm (3.5 in x 19 in x 17 in)
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## Ordering Information

Part Number	CCH-02U
Product Description	Closet Connector Housing (CCH), 2 rack unit, holds 4 CCH connector panels

## Shipping Information

Units per Delivery	1/1
Shipping Weight	5.4 kg (12 lb)
Dimensions (HxWxD)	54.61 cm x 57.15 cm x 19.05 cm (21.5 in x 22.5 in x 7.5 in)



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# Wall-Mountable Connector Housing (WCH)

Holds 4 CCH connector panels/cassettes

CORNING

Corning wall-mountable connector housing (WCH) product family offers enhanced innovative features that make installation and troubleshooting of fiber optic connectivity faster, easier and more cost-effective. From fiber and cable routing and strain-relief to port labeling and termination, these housings reduce the risk of error that can disrupt networks.

The WCH housing provides interconnect or cross-connect capabilities between the outside plant, riser or distribution cables and the opto-electronics. With the WCH-02P (two panels, cassettes or modules), WCH-04P (four panels, cassettes or modules), and WCH-06P (six panels, cassettes or modules) capacity, the rugged metal housings can be wall mounted in main cross-connects, telecommunication rooms or other areas where space is a premium. Units accept standard closet connector housing (CCH) cassettes, connector panels and modules for a variety of connectivity options.

The WCH product family features a clear, transparent jumper side door for easy visibility during installation and testing, easy-to-use recessed mounting holes with mounting screws, documentation labels, removable strain-relief brackets, routing clips and guides, improved latches, as well as a preinstalled bubble level for simple and accurate installation. All housings also have field-installable lock kits available for both cable entry and jumper side doors.



Part Number: WCH-04P

## Features and Benefits

### Interconnect and cross-connect capabilities

Ideal for field splicing and connectorization

### Accepts CCH cassettes, panels and modules

Variety of preterminated and field-installable capabilities

### Lockable, transparent jumper side door

Visibility and ease of access for installation, testing and troubleshooting

### Removable strain-relief bracket

Flexibility for installation and moves, adds and changes (MACs)

### Segregated cable and fiber slack routing

Fiber protection

CORNING

# Wall-Mountable Connector Housing (WCH)

Holds 4 CCH connector panels/cassettes

CORNING

## Standards

<b>RoHS</b>	Free of hazardous substances according to RoHS 2002/95/EG
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## Specifications

General Specifications	
Application	Enterprise Networks
Mounting type	Wall-Mountable
Product Type	Wall-Mountable Hardware

Design - Hardware	
Housing Color	Black
Housing Type	WCH
Locking Availability	Provider door and jumper door
Number of Panels/Cassettes per Housing	4
Panel or Cassette Type	CCH
Splice Tray/Splice Cassette Options	Up to 4 CCH Cassettes
Maximum Fiber Capacity	96

Mechanical Characteristics	
Dimensions (HxWxD)	35.8 cm x 42.2 cm x 10.7 cm (14.1 in x 16.1 in x 4.2 in)

## Ordering Information

Part Number	WCH-04P
Product Description	Wall-Mountable Closet Housing (WCH), holds 4 CCH connector panels/cassettes
EAN Code	4042673249207

# Wall-Mountable Connector Housing (WCH)

Holds 4 CCH connector panels/cassettes



## Shipping Information

Units per Delivery	1/1
Shipping Weight	4.6 kg (10.0 lb)
Package Contents	Housing; installation guide; 4 blank panels; 4 panel ID labels; hardware kit; internal strain-relief bracket; intermediate strain-relief bracket; 4 x 4-in tie wraps; 4 x 8-in tie wraps; dust brushes; 4 mounting screws; bubble level



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# ADJUSTABLE SERVERRACK AND QUADRARACK™

## KEY FEATURES

- Stability and strength of a welded steel enclosure in an open four-post frame
- Open design for unrestricted airflow and easy access to equipment and cabling
- Self-squaring assembly with welded front and rear frames reduces assembly time
- Mounting channels adjust in depth to provide front and rear support for equipment
- Maximizes floor space with a minimal rack footprint
- Rack components are bonded together during assembly in accordance with industry standards
- Includes a Two Mounting Hole Ground Terminal Block for easy attachment to the Telecommunications Grounding Busbar
- Choose square-punched or threaded equipment mounting holes
- Rack-mount units are marked and numbered on the mounting channels
- Easy to bay together to create multi-rack configurations
- Use with any CPI Cabling Section to manage cables
- Support large equipment on heavy-duty shelves or on side-mounted Equipment Support Rails

## APPLICATIONS

- The Adjustable ServerRack with EIA Universal square-punched equipment mounting holes support rack-mount server and data storage equipment in data centers or computer equipment rooms
- The Adjustable QuadraRack™ with EIA Universal threaded equipment mounting holes support large modular network or voice switches and routers in communications equipment rooms
- Use with shelves or rails to support large, heavy computer and data processing equipment

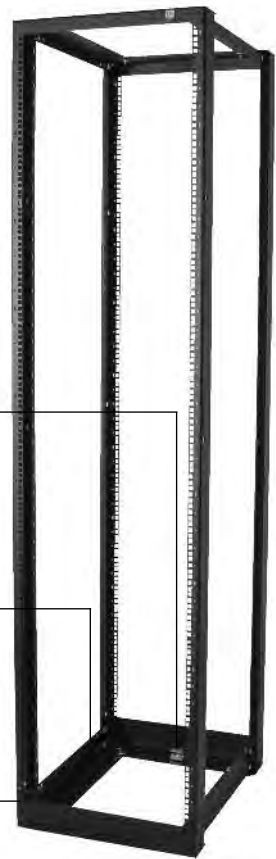
## USE WITH

- Velocity® Cable Management
- Evolution® Cable Management
- MCS Master Cabling Section
- CCS Combination Cabling Section
- VCS Vertical Cabling Section

## RELATED ACCESSORIES

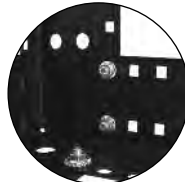
- Universal Horizontal Cable Manager
- Jumper Trays
- Heavy-Duty Equipment Shelves and Rails
- Vertical and Horizontal Power Strips
- CenterView KVM Console
- CEnterPoint™ KVM Switch/Console

Configure This Online



### Two Mounting Hole Ground Terminal Block

Easy attachment to Telecommunications Grounding Busbar



### Adjustable Mounting Channels

Adjusts front-to-rear in .98" (25mm) increments during assembly



### Self-Squaring Assembly

Reduce assembly time with welded front and rear frames

The Adjustable ServerRack and the Adjustable QuadraRack™ provide a sturdy, cost-effective solution for supporting rack-mount network, computer server and data storage equipment in data centers, computer equipment rooms and other IT facilities. Both racks offer the strength and stability of an enclosure in an open four-post frame that provides easy access to equipment and cabling.

Each rack will support up to 2,000 lb (907.2 kg) of equipment. The corner posts are C-shaped equipment mounting channels that provide front and rear support for 19" wide rack-mount equipment or shelves. The front and rear frames are welded to reduce assembly time. Four brackets connect the front and rear corners of the rack. The rack is available in four heights and four depth ranges. The front-to-rear depth of the mounting channels can be adjusted up to 5.91" (150 mm) in depth in .98" (25 mm) increments during assembly. The mounting channels are fixed in place once assembled to surround and protect equipment.

The Adjustable ServerRack has square-punched holes that let you change mounting hardware (cage nuts) to match specific computer server and data storage equipment mounting requirements. The Adjustable QuadraRack has threaded mounting holes that make installation time of patch panels, fiber enclosures and network switches shorter. Each rack-mount unit is marked and numbered on the channels making it easy to locate and position equipment. A second set of holes along the sides of the channels lets you add optional side-mounted Equipment Support Rails that use no additional rack-mount space.

The Adjustable ServerRack and the Adjustable QuadraRack can be used in combination with CPI Standard Racks (two-post racks), Cabling Sections (vertical cable managers) and overhead Cable Runway (ladder rack) to support a wide range of equipment storage applications. Attach 6" (150 mm) wide to 24" (600 mm) wide CPI Cable Runway to the top of the rack with a Cable Runway Mounting Bracket. CPI Cabling Sections bolt directly to the side of the channels, and the base of the rack is punched for easy floor attachment.

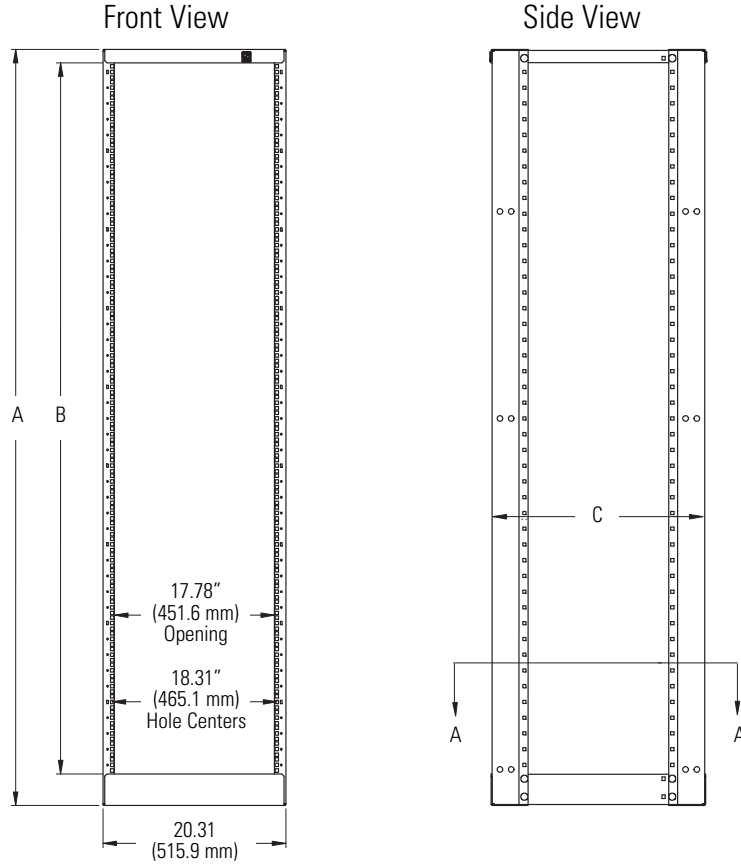
See reverse for product specifications and ordering information. Please contact CPI Technical Support for configuration assistance.



**SPECIFICATIONS**

- Four-post frame with square-punched or threaded mounting holes used to support 19" wide rack-mount network, computer server and data storage equipment and shelves
- For indoor use only, in environmentally controlled areas; may not be used outdoors, in industrial or harsh environments, or in plenum spaces
- Includes:
  - (2) mounting frames
  - (4) horizontal braces
  - Assembly hardware
  - (1) Two Mounting Hole Ground Terminal Block and Antioxidant Joint Compound
  - Adjustable ServerRack (square-punched mounting holes) includes (25) #12-24 cage nuts and screws
  - Adjustable QuadraRack (threaded mounting holes) includes (50) #12-24 screws
  - Order installation hardware separately (P/N 40604-003 for concrete floors)
- Available sizes: See Dimensions and Ordering Information
- Usable equipment space: See Dimensions and Ordering Information
- Equipment Support:
  - Front and rear pairs of C-shaped equipment mounting channels
  - Adjustable depth at assembly, 5.91" (150 mm) front-to-rear in fixed .98" (25 mm) increments
  - 19" wide, EIA-310-D compliant hole pattern
  - 1-3/4" (44.45 mm) high rack-mount unit
  - Universal hole pattern, 5/8"-5/8"-1/2" (15.9 mm - 15.9 mm - 12.7 mm) vertical hole spacing
  - Adjustable ServerRack has square-punched .375" (9.53 mm) equipment mounting holes
  - Adjustable QuadraRack has threaded #12-24 equipment mounting holes
  - Rack-mount units are marked and numbered bottom-to-top on the channels
- Load capacity: 2000 lb (907.2 kg) of equipment, evenly distributed
- Grounding and Bonding:
  - Rack components are bonded together during assembly in accordance with industry standards
  - (2) ground connections (two pairs of M6 studs on 5/8" centers) are located at the front and rear of the rack on the bottom center of the frame
  - Includes (1) Two Mounting Hole Ground Terminal Block with Antioxidant Joint Compound
- Certifications: 19"W, EIA-310-D compliant
- Material: Steel
- Construction:
  - Welded front and rear frame, bolted assembly
  - Ships unassembled
- Finish: Epoxy-polyester hybrid powder coat paint available in black, gray, computer beige or glacier white

**DIMENSIONS**



**ORDERING INFORMATION**

**1521 Adjustable ServerRack and Adjustable QuadraRack™, 19" EIA**

Mounting Hole Style		Mounting Channel Depth Range (C) - in (mm)
1	Square-Punched	15.75 to 21.65 (400 - 550) Deep
2	Square-Punched	22.64 to 28.54 (575 - 725) Deep
3	Square-Punched	29.53 to 35.43 (750 - 900) Deep
4	Square-Punched	36.42 to 42.32 (925 - 1075) Deep
5	#12-24 Threaded	15.75 to 21.65 (400 - 550) Deep
6	#12-24 Threaded	22.64 to 28.54 (575 - 725) Deep
7	#12-24 Threaded	29.53 to 35.43 (750 - 900) Deep
8	#12-24 Threaded	36.42 to 42.32 (925 - 1075) Deep

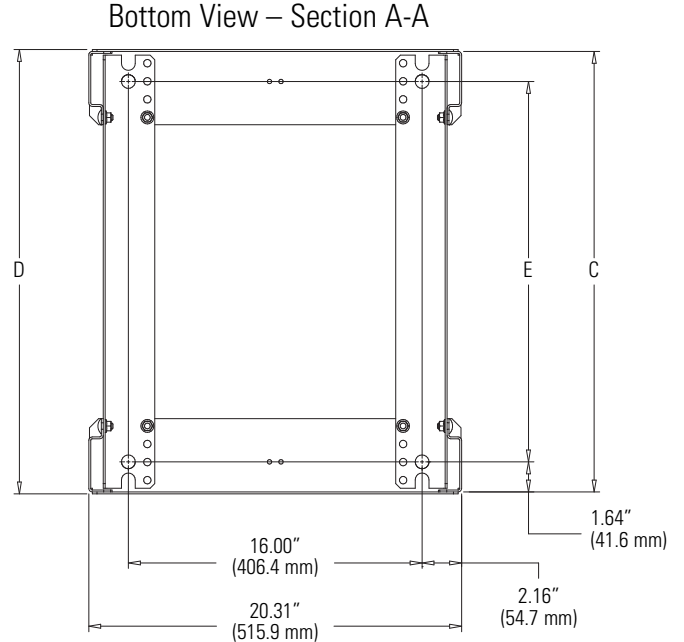
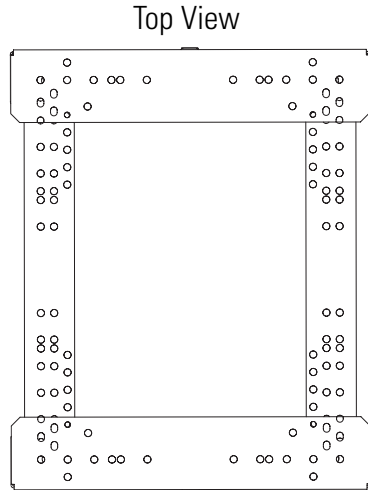
Color	
1	Gray
2	Computer White
7	Black
E	Glacier White

Height			
	U	(A) - in (mm)	(B) - in (mm)
01	38U	72 (1800)	67 (1700)
03	45U	84 (2100)	79 (2000)
15	51U	96 (2400)	91 (2300)
08	58U	108 (2740)	103 (2620)

**1521 X - X XX**

Note: Mounting channel depth adjusts in .98" (25 mm) increments during assembly. The mounting depth is fixed once the rack is assembled. See the table on page 3 for a list of mounting channel depth settings by part number.

DIMENSIONS



Mounting Channel Depth Settings and Dimensions by Part Number							
Part Numbers		Channel Depth (C)		Overall Depth (D)		Floor Mounting Holes (E)	
Adjustable ServerRack	Adjustable QuadraRack™	in	mm	in	mm	in	mm
15211-XXX	15215-XXX	15.75	400	15.96	405.4	12.47	316.7
		16.73	425	16.94	430.3	13.45	341.6
		17.72	450	17.93	455.4	14.44	366.8
		18.70	475	18.91	480.3	15.42	391.7
		19.69	500	19.90	505.5	16.41	416.8
		20.67	525	20.88	530.4	17.39	441.7
		21.65	550	21.86	555.2	18.37	466.6
15212-XXX	15216-XXX	22.64	575	22.85	580.4	19.36	491.7
		23.62	600	23.83	605.3	20.34	516.6
		24.61	625	24.82	630.4	21.33	541.8
		25.59	650	25.80	655.3	22.31	566.7
		26.57	675	26.78	680.2	23.29	591.6
		27.56	700	27.77	705.4	24.28	616.7
		28.54	725	28.75	730.3	25.26	641.6
15213-XXX	15217-XXX	29.53	750	29.74	755.4	26.25	666.8
		30.51	775	30.72	780.3	27.23	691.6
		31.50	800	31.71	805.4	28.22	716.8
		32.48	825	32.69	830.3	29.2	741.7
		33.46	850	33.67	855.2	30.18	766.6
		34.45	875	34.66	880.4	31.17	791.7
		35.43	900	35.64	905.3	32.15	816.6
15214-XXX	15218-XXX	36.42	925	36.63	930.4	33.14	841.8
		37.40	950	37.61	955.3	34.12	866.6
		38.39	975	38.60	980.4	35.11	891.8
		39.37	1000	39.58	1005	36.09	916.7
		40.35	1025	40.56	1030	37.07	941.6
		41.34	1050	41.55	1055	38.06	966.7
		42.32	1075	42.53	1080	39.04	991.6

- Notes:
1. There are seven depth settings for each part number as listed in the table above.
  2. Each rack adjusts front-to-rear in depth up to 5.91" (150 mm) in .98" (25 mm) increments.
  3. Rack mounting channel depth is fixed once assembled.
  4. Overall Depth (D) is Channel Depth (C) + .21" (5.3 mm).
  5. Floor Mounting Holes (E) are Channel Depth (C) - 3.28" (83.3 mm).

ADJUSTABLE SERVERRACK AND QUADRARACK™ ACCESSORIES



**Solid and Vented Shelves**

Support heavy peripheral equipment in the Adjustable ServerRack or Adjustable QuadraRack.

- 19" W x 1U shelf with adjustable depth rear mounting brackets
- Supports 200 lb (90.7 kg) of equipment
- Solid or vented support surface; 17.68" (449.1 mm) wide
- Made of steel
- Includes assembly hardware

Solid and Vented Shelves, 19"W x 1U				
Part Number		Description - in (mm)		Shipping Weight lb (kg)
Solid	Vented	Shelf Depth	Mounting Channel Depth	
15245-X01	15255-X01	13.84 (351.5)	15.75 (400) - 21.65 (550)	10 (4.5)
15245-X02	15255-X02	20.73 (526.5)	22.64 (575) - 28.54 (725)	12 (5.4)
15245-X03	15255-X03	27.62 (701.6)	29.53 (750) - 35.43 (900)	15 (6.8)
15245-X04	15255-X03	34.51 (876.6)	36.42 (925) - 42.32 (1075)	18 (8.2)

X=Color; 1=Gray, 2=Computer Beige, 7=Black, E=Glacier White.



**32" Deep Sliding Shelf**

Support deep equipment in the Adjustable ServerRack or Adjustable QuadraRack.

- 19" Wide x 2U sliding shelf with adjustable depth rear mounting brackets
- Attaches to rack channels set 36.42" (925 mm) to 38.39" (975 mm) deep
- Supports 160 lb (72.5 kg) of equipment
- Solid or vented support surface is 15.5" (393.7 mm) wide by 32" (812 mm) deep
- Shelf extends 32" (812 mm) and locks in the open and closed positions
- Made of steel and available in gray, computer beige and black

32" Deep Sliding Shelf		
Part Number	Description	Shipping Weight lb (kg)
11913-X19	19"W Vented Shelf	25 (11.3)
11914-X19	19"W Solid Shelf	25 (11.3)

X=Color; 1=Gray, 2=Computer Beige, 7=Black



**Center Rail**

Add Center Rail to AQR or ASR to provide an additional pair of mounting rails for rack-mount equipment

- One pair of 19"W mounting rails with square-punched or threaded equipment mounting rails
- Adjustable depth - attach the rails at any point along the side of the rack
- Marked and numbered rack-mount spaces simplify equipment installation
- 1,000 lb (453.6 kg) equipment load bearing capacity when used as an independent pair or rails; rack load remains 2,000 lb (907.2 kg) when Center Rail is used as the front or rear pair of a four-point mounting solution
- Maximum mount depth is 6" (152 mm) less than the channel depth of the rack
- Made of steel, includes installation hardware

Center Rail			
Part Number		Description Rack Height U - in (mm)	Shipping Weight lb (kg)
Square-Punched	Threaded #12-24		
15330-X01	15335-X01	38U, 72 (1800)	20 (9.1)
15330-X03	15335-X03	45U, 84 (2100)	23 (10.4)
15330-X15	15335-X15	51U, 96 (2400)	26 (11.8)
15330-X08	15335-X08	58U, 108 (2740)	29 (13.2)

X=Color; 1=Gray, 2=Computer Beige, 7=Black, E=Glacier White. Cannot be used with Equipment Support Rails (P/N 15235-X0X)



**Equipment Support Rails**

Provide additional support for heavy rack-mount equipment.

- Attaches to the side of Adjustable ServerRack or Adjustable QuadraRack
- Extends to match the depth of the rack
- Provides a 1.5" (38 mm) wide front-to-rear support surface for equipment
- Does not interfere with rack-mount space
- Supports 200 lb (90.7 kg) of equipment
- Includes assembly and installation hardware

Equipment Support Rails			
Part Number	Description - in (mm)		Shipping Weight lb (kg)
	Mounting Channel Depth		
15235-X01	15.75 (400) to 19.69 (500) D		5 (2.3)
15235-X02	20.67 (525) to 24.61 (625) D		6 (2.7)
15235-X03	25.59 (650) to 29.53 (750) D		7 (3.2)
15235-X04	30.51 (775) to 34.45 (875) D		9 (4.1)
15235-X05	35.43 (900) to 39.37 (1000) D		10 (4.5)
15235-X06	40.35 (1025) to 44.29 (1125) D		12 (5.4)

X=Color; 1=Gray, 2=Computer Beige, 7=Black, E=Glacier White. Cannot be used with Center Rail (P/N 1533X-XXX).



**Cable Runway Mounting Bracket**

The Cable Runway Mounting Bracket attaches CPI Cable Runway to the top of the Adjustable ServerRack or Adjustable QuadraRack.

- Aligns with the front, rear or side of the rack
- Supports 6" (150 mm) wide to 24" (600 mm) wide CPI Cable Runway
- S-shaped bracket is made of steel
- Measures 3.3" (84 mm) wide by 1.0" (25 mm) high by 24.4" (620 mm) long
- Includes installation hardware and J-bolts for Cable Runway

Cable Runway Mounting Bracket		
Part Number	Description - in (mm)	Shipping Weight lb (kg)
15205-X01	For 6W (150) to 24W (600) Cable Runway	5 (2.3)

X=Color; 1=Gray, 2=Computer Beige, 7=Black, E=Glacier White. Note: May be wider or deeper than the rack footprint.

