

# Introduction to Inside Plant Solutions

## FieldSmart® Products



FieldSmart is the only fiber management platform designed around a single architecture – the Clearview® Cassette and the small count Clearview xPAK – for inside plant networks. FieldSmart supports a wide range of panel configurations, densities, connector styles and adapter options.

Designed from the ground up with field-proven experience, the FieldSmart platform is a truly unique solution for today's rapid deployment demands. With FieldSmart, you control your capital cost, reduce operational costs and provide a consistent product platform throughout the network.

The flexibility in design and configuration of the Clearview Cassette is implemented into all of the FieldSmart products, which are well suited for multiple inside plant applications. The inside plant products provide a system of modular and scalable building blocks to configure a frame system that delivers industry-leading scalability and fiber protection without jeopardizing density or increasing cost.

The Telcordia-certified FieldSmart FxMP Panels are intelligently designed to provide the user with superior fiber access and craft-friendly, radius-protected fiber management for routing and deploying fiber jumpers. The panels fit in 19" or 23" standard frames.

The FieldSmart Fiber Crossover High Density (FxHD) System and the Fiber Crossover Distribution System (FxDS) Frame Kit are both flexible and scalable. Complete compatibility in footprint and route paths between the frames allow you to pick and choose the FxHD and FxDS for any application environment, with future migration built in. You can place a FxHD frame next to a FxDS frame and they will look the same in your lineup.



FieldSmart Frames



FieldSmart Panels

# Introduction to Inside Plant Solutions

## FieldSmart® Products



### FieldSmart Fiber Crossover High Density (FxHD) Distribution System

Designed for the ultimate in frame density and footprint, the FxHD maximizes your real estate investment providing for a lower total cost of ownership in high density environments. Lower cost of ownership is not only realized in real estate savings but also in installation and service turn-up time, trouble shooting and restoration and MAC (moves, adds and changes) work in interconnect and cross-connect environments.

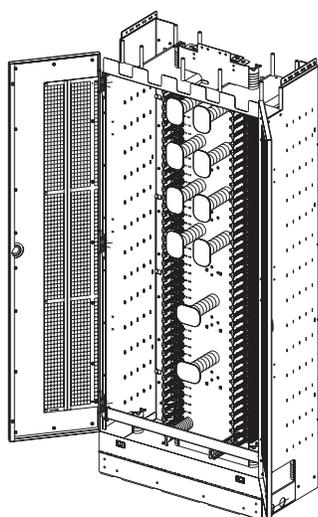
### FieldSmart Fiber Crossover Distribution System (FxDS)

Designed for flexibility of configuration, the FxDS is a series of building blocks in which individual components of the system are configured to the environment in which they are placed. An industry standard 7' x 19" (2133.60 mm x 482.60 mm) seismic frame is factory kitted and assembled with a set of interbay vertical slack management panels, crossover troughs and removable doors to provide for uninhibited access to routed jumpers and incoming multi-fiber cables. The FxDS requires only 4 SKU's to configure initial deployment.

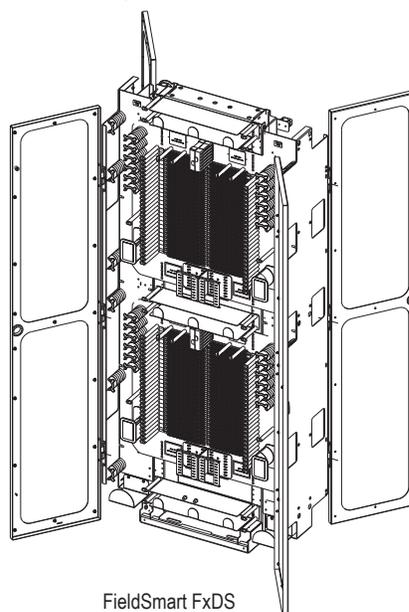
### FxHD vs. FxDS Frame System Comparison

Clearfield® extends flexibility with your choice of FieldSmart frame systems. Complete compatibility in footprint and route paths between the frames allow you to pick and choose the FxHD and FxDS for the desired application environment with future migration built in.

	FxHD	FxDS
Dimensions	7' H x 36" W x 18" D (2133.60 mm x 914.40 mm x 457.20 mm)	7' H x 36" W x 18" D (2133.60 mm x 914.40 mm x 457.20 mm)
Recommended Applications	Large fiber count applications or any space constrained applications - highest fiber count solution available in the marketplace today	Medium to large fiber count applications
Description	Designed for density, the FxHD maximizes your real estate investment and is well suited for high density environments	Designed for flexibility of configuration, the FxDS system can be configured to multiple environments
Density Number of Terminations per Frame	2,016 SC; 4,032 (back-to-back mounting)	1,728 SC
All Front Access	Yes - can be deployed back to back	No - front and rear access
On-frame Splicing	Excellent - with no loss of density; splicing in Clearview® Blue Cassette	Excellent - with no loss of density; splicing in Clearview Blue Cassette
Off-frame Splicing	N/A	Excellent - using patch only Clearview Cassette
Slack Storage	Built into frame	Built into frame kit



FieldSmart FxHD



FieldSmart FxDS

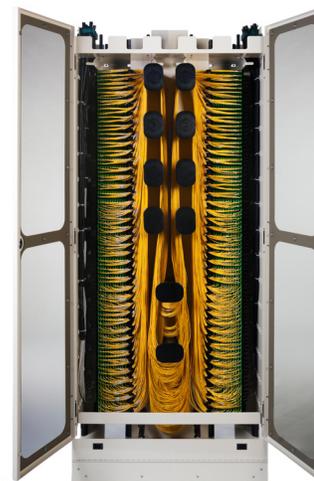
**Inspect and clean EVERY connector BEFORE inserting into adapter. See page 305 for cleaning instructions**

# FieldSmart® Fiber Crossover High Density (FxHD) Frame



## Application

With the FieldSmart FxHD front access design, Clearview® Cassettes are shifted to the outside of the frame and away from a fixed panel configuration. Instead of traditional panel configurations, the frame is configured with a series of Clearview Blue cassettes teamed with building brackets built into user-defined building blocks. The FxHD Frame provides the ultimate in modularity and flexibility to scale from 12 to 2,016 ports in any fiber count optimizing your ability to maximize fiber investment and assets. Clearview Blue's in-cassette buffer tube storage allows the FxHD to reclaim the space used for traditional panels and mass buffer storage and to redeploy it by using building blocks of Clearview Blue Cassettes.



## Description

The FieldSmart High Density Fiber Crossover Distribution System (FxHD) is the highest density fiber management frame solution available in the industry today, providing 2,016 SC terminations in a 7' (2133.60 mm) frame or when mounted back-to-back, FxHD supports a maximum density of 4,032 terminations in a space savings footprint of 9 square feet (36" x 36") (914.40 mm x 914.40 mm).

FieldSmart FxHD is an integrated fiber management solution utilizing the Clearview Blue Cassette. Designed around the same footprint as the FxDS fiber frame at 18" x 36" (457.20 mm x 914.40 mm) and utilizing the same full length doors for maximum physical fiber protection, the FxHD easily integrates alongside existing FieldSmart FxDS or other industry standard frame systems. Those deploying the FieldSmart FxHD can start with one Clearview Blue Cassette and add additional cassettes as additional capacity is needed, up to a total of 168 cassettes and 2016 ports of connectivity. This port count represents an additional 288 ports in a standard 7' (2133.60 mm) frame – or a 17% increase in density over the FxDS frame solution. With instant access to all cassettes, adapters and jumpers, the frame is designed as a front access frame. This means that all of your installation, MAC (moves, adds and changes) work and routing of jumpers is done from one side of the frame providing you the option to reclaim the aisle space required for frame solutions that require rear access - and to use that space for other equipment or more frames. The FxHD can be placed against a wall, a cage in data center collocation environments or installed back to back. The FxHD frame solution provides a 40% reduction in floor space requirement while still meeting 30" (762.00 mm) aisle spacing requirements.

Designed in conjunction with Clearview Blue, the FxHD extends the Clearfield® commitment to modular and scalable solutions by introducing tech-friendly, tool-less deployment to standard building blocks. Individual components are configured to application requirements while providing bend-radius protection, physical fiber protection and route-path diversity for the consolidation and distribution of fiber.

User-defined Clearview building blocks configured to exact port count specifications can be deployed in seconds with Smart-Connect tool-less fasteners. Clearview Blue Cassettes simply slide into building block assemblies with a "hard-stop" feature ensuring perfect alignment every time. Additional buffer tube/ribbon slack is stored within each cassette eliminating buffer tube congestion, pile-up or identification miscues. The dedicated "w-shaped" intrabay route scheme ensures long term reliability of circuits by maximizing proper slack storage of any jumper length, greatly reducing the chance of jumper tie-in or weaving. Full length doors provide complete physical fiber protection when closed and instant visual and physical access to the entire frame when opened.

For scenarios where maximizing real estate is a premium, service providers may choose to deploy an FxHD front only access, allowing frames to be mounted back-to-back or against structures such as walls, existing frame equipment or building supports.

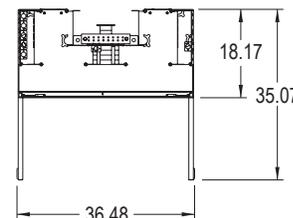
## Features and Benefits

### Integrity

- One frame size accommodates up to 2,016 ports or 4,032 ports when back-to-back
- Supports all industry standard singlemode and multimode connectors
- 100% performance tested for insertion loss, return loss and final mechanical inspection
- Supports distribution, tight-buffer and ribbon fiber types for inside and outside plant constructions

### Protection

- Full length doors provide visual and physical access to the entire frame when opened and complete physical fiber protection when closed
- Complete bend-radius protection throughout all routing schemes
- Diverse route-paths minimize cable pile-up and ensure long term reliability of circuits
- Integrated "w-shaped" intrabay route scheme does not compete with adjacent frames and maximizes proper slack storage of any jumper length, greatly reducing the chance of jumper tie-in or weaving (4 meters suggested)
- Radius protected storage for up to 10 feet (3.04 M) of buffer tube slack provided in Clearview Blue Cassette



# FieldSmart<sup>®</sup> Fiber Crossover High Density (FxHD) Frame



## Access

- FxHD is front access only to ensure maximum accessibility to achieve 2016 SC terminations or 4032 in a back-to-back frame system
- Top entry/exit through horizontal fiber trough and bottom entry through raised floors supported front and rear of frame
- Fold-down trough door allows complete access to interbay lay-in routing for 6,000 jumpers (3,000 left and 3,000 right) through the frame and adjacent frames
- A four meter jumper can get you from any port to any port
- Supports SmartRoute rear interbay troughing route-paths
- Uses Clearview<sup>®</sup> Blue Cassette front access with removable 12-pack adapter plate allowing quick and easy access to back of adapters for troubleshooting, maintenance and cleaning without disturbing live circuits in other cassettes

## Investment

- Fully loaded or “grow-as-you-go” integration allows the user choices to provide for cost containment as subscriber take-rates dictate
- Compatible alongside FxDS frame line up as well as traditional 19” (482.60 mm) or 23” (584.20 mm) frame solutions
- Pre-configured/pre-loaded factory terminated assemblies
- Custom configured with standard building blocks supporting all application environments
- Patch and splice (Clearfield’s in-cassette splicing solution), patch only and plug-and-play configurations supported

## Technical Specifications

FieldSmart FxHD Frames	
Dimensions	7' H x 36" W x 18" D (2133.60 mm x 914.40 mm x 457.20 mm)
Ratings	Compliant to Telcordia GR-449
Port Density	2,016 SC or 4,032 LC (front access only, back-to-back mounting)
Cassette Types Supported	Clearview Blue
Connector Types	SC/UPC, SC/APC, LC/UPC, LC/APC, MPO (additional options available upon request)
Cable Types	Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield <sup>®</sup>
Splice Capacity	12-24 splices in each Clearview Cassette
Storage Capacity	One meter of 900 μm fiber and up to three meters of jacketed fiber
Cable Entry Compatibility	Top and bottom (floor) entry
Cable Entry Clamp Location	16 (eight left, eight right) <i>Note: Center clamping compatible for left and right same sheath distribution of buffer tubes/sub units</i>
Recommended Jumper Length	Four meters, plus two meters (13' + 6.6') for each additional frame
Material	Stainless steel with almond powder coating

## Pre-Configured Part Numbers

Part Number	Description
014602-PATCH AND SPLICE	FxHD kit, patch and splice, front access only, maximum 2,016 ports (includes built in fiber management and cassette mounting brackets, doors, iso pad, floor mount kit)
014602-PATCH ONLY	FxHD kit, patch only, front access only, maximum 2,016 ports (includes built in fiber management, two doors, iso pad, floor mount kit)
014743	FxHD 576 port PON Insert (Select one of the following part numbers for feeder ports.)

# FieldSmart<sup>®</sup> Fiber Crossover High Density (FxHD) Tie Panel



## Application

Provides an in the field configured interconnect or cross-connect environment for 12 to 2,016 ports of high density fiber in the central office and headend environments.

## Description

The FieldSmart FxHD Tie Panel is a high density, low-maintenance fiber distribution system exclusively for the FxHD frame system. Tie panels are intelligently designed to provide the user with superior fiber access while using craft-friendly radius protected fiber management for routing and deploying fiber jumpers or multi-fiber cables, on both sides of the adapter plate for cross-connect environments.



## Features and Benefits

### Integrity

- Terminations are designed and tested to Telcordia GR-326
- Supports all industry standard singlemode and multimode connectors and cabling

### Protection

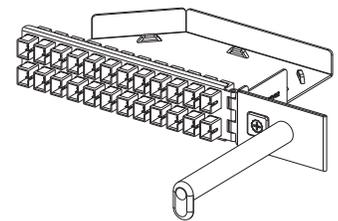
- Ruggedized hinged bulkhead
- Cable clamp protects against twisting and pistoning at the assembly breakout point

### Access

- Front access frame system
- Front and rear access via hinged bulkhead

### Investment

- Panel sizes available in 24 ports
- “Grow-as-you-go” integration allows the user choices to provide for cost containment as subscriber take-rates dictate
- Industry-leading density, 2,016 ports in a 7’ (2133.60 mm) FxHD frame system



## Technical Specifications

FieldSmart FxHD Tie Panel	
Dimensions	1.6" H x 6.96" W x 5.39" D (40.64 mm x 176.78 mm x 136.91 mm)
Port Density	24
Connector Types	SC/UPC, SC/APC, LC/UPC, LC/APC, MPO (additional options available upon request)
Cable Types	Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield <sup>®</sup>
Material	Aluminum with almond powder coating

# FieldSmart<sup>®</sup> Fiber Crossover High Density (FxHD) Tie Panel



## Pre-Configured Part Numbers

Part Number	Description
FMA-XXX-68	FxHD Tie Panel Bulkhead - four 24 port - SC/UPC SM, two left and two right
FMA-XXX-69	FxHD Tie Panel Bulkhead - four 24 port - SC/APC SM, two left and two right
FMA-XXX-70	FxHD Tie Panel Bulkhead - four 24 port - LC/UPC SM, two left and two right
FMA-XXX-73	Left tie plate - looking from the front. 24 x LC/UPC singlemode
FMA-XXX-74	Left tie plate - looking from the front. 24 x SC/UPC singlemode
FMA-XXX-75	Left tie plate - looking from the front. 24 x SC/APC singlemode
FMA-XXX-76	Right tie plate - looking from the front. 24 x LC/UPC singlemode
FMA-XXX-77	Right tie plate - looking from the front. 24 x SC/UPC singlemode
FMA-XXX-78	Right tie plate - looking from the front. 24 x SC/APC singlemode

## Pre-Configured Part Numbers - Accessory

Part Number	Description
008140	Frame Clamp Kit, includes 7/16, 1/4, 1/2, 3/4, 7/8 and 1" saddle clamps and grommet tape

# FieldSmart<sup>®</sup> Fiber Crossover Distribution System (FxDS) Frame Kit



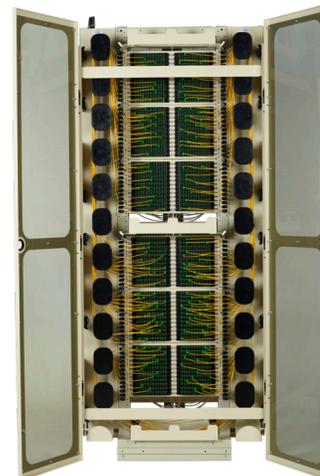
## Application

The FxDS Frame Kit is a fully contained fiber management system for the inside plant. The seven foot seismic frame is provided along with full length front and rear doors that provide protection for termination fields, incoming distribution cables and interbay routed jumpers. When used in conjunction with the FxDS panels, ultimate density and protection is offered at “grow-as-you-go” cost.

## Description

The FieldSmart Fiber Crossover Distribution System (FxDS) provides a system of modular and scalable building blocks to configure a frame system that delivers industry-leading scalability and fiber protection without jeopardizing density or increasing cost.

The FxDS system easily configures for panel placement and scales simply from 12 ports to a full rack of 1,728 ports as needed. The FieldSmart FxDS requires only four unique building blocks (SKUs) to configure initial deployment. The user then adds into the frame whatever is needed as subscriber take rates dictate. The FxDS Frame Kit is an industry standard 7' x 19" (2133.60 mm x 482.60 mm) seismic frame that is easily assembled with a set of vertical interbay slack management panels, two upper and lower crossover troughs and a set of removable doors.



### With SmartRoute Trough

SmartRoute Troughing builds upon the cable management functionality with a sleek method of providing a continuous channel for bay-to-bay routing in a safe and efficient manner without increasing jumper lengths. SmartRoute Troughing allows the service provider to carry the distance and weight of thousands of jumpers on a horizontal plane. This spreads the pile up and eliminates the risk of micro and macro bends. When used across multiple frames, up to three continuous channels are created allowing bay-to-any-bay routing in a safe and efficient manner.

### With PON Kit

Front route troughs are available when the frame is deployed with a PON Kit or for environments where interbay routes are not anticipated.

## Features and Benefits

### Integrity

- Compliant to Telcordia GR-449
- Zone 4 Seismic Rated
- Scales easily from 12 ports to 1,728 ports on a full frame
- Easily configured for initial placement

### Protection

- Complete bend-radius protection of all fiber cable throughout the routing schemes
- Diverse route-paths minimize cable pile-up and ensure long term reliability of the circuits

### Access

- Front and rear access
- Interbay for each frame is not shared with adjacent frames. Minimizes cable crossover and tie-ins, allowing for easy identification
- Removable full length doors allow for superior access to routed jumpers and incoming distribution cables

### Investment

- One frame size (7' x 19"; 2133.60 mm x 482.60 mm) accommodates up to 1,728 ports or 1,152 ports in a PON environment, with full horizontal and vertical slack management support
- Compatible with Clearview<sup>®</sup> optical component packaging that integrates into crossover bulkheads, eliminating the need to dedicate a separate chassis
- Fully loaded or “grow-as-you-go” integrations allow the user choices to provide for cost containment as subscriber take-rates dictate
- Frame components are used throughout the network from inside plant to outside plant to access networks
- Custom configured with common building blocks, it supports any and all applications

# FieldSmart<sup>®</sup> Fiber Crossover Distribution System (FxDS) Frame Kit



## Technical Specifications

FieldSmart FxDS Frame Kit	
Dimensions	7' H x 36" W x 18" D (2133.60 mm x 914.40 mm x 457.20 mm)
Ratings	Compliant to Telcordia GR-449
Port Density	1,728 SC or 3,456 LC
Cassette Types Supported	Clearview <sup>®</sup> Blue
Connector Types	SC/UPC, SC/APC, LC/UPC, LC/APC, MPO (additional options available upon request)
Cable Types	Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield <sup>®</sup>
Splice Capacity	12 splices in each Clearview Cassette
Storage Capacity	One meter of 900 μm fiber
Cable Entry Compatibility	Top and bottom (floor) entry
Cable Entry Clamp Location	On-frame cable clamps <i>Note: On-frame cable clamps included with FxDS Patch Panels</i>
Recommended Jumper Length	Three meters, plus two meters (13' + 6.6') for each additional frame
Material	Steel with almond powder coating

## Pre-Configured Part Numbers

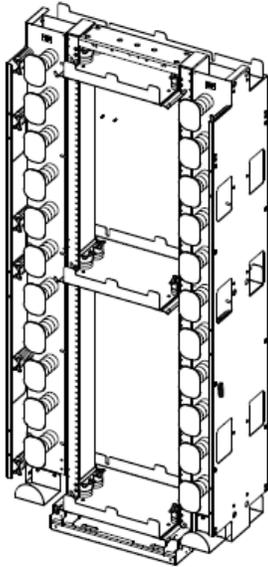
Part Number	Description
010802	FxDS Frame kit (Includes 7' x 19" (2133.60 mm x 482.60 mm) frame, two doors - dual, two interbays, three traditional troughs, iso pad, floor mount kit)
010802-SR	FxDS SmartRoute Frame Kit (includes 7' x 19" (2133.60 mm x 482.60 mm) frame, two door sets - dual, two interbays, three SmartRoute troughs, iso pad and floor mount kit)
010802-PON INSERT ONLY	FxDS Frame kit (Includes 7' x 19" (2133.60 mm x 482.60 mm) frame, two doors - dual, two interbays with no spools, three traditional troughs, iso pad, floor mount kit. <i>Note: Must order 010263 insert</i> )
010802-PON INSERT ONLY-SR	FxDS Frame kit (Includes 7' x 19" (2133.60 mm x 482.60 mm) frame, two doors - dual, two interbays with no spools, three SmartRoute troughs, iso pad, floor mount kit). <i>Note: Must order 010263 insert</i>
010263	FxDS 576 Port PON Insert (Select one of the following adapter plate tie kits for feeder ports. You will need to order a total of four of these per PON insert.)
FMA-XXX-57	Tie kit, adapter plate, 12 SC/UPC singlemode, trimmed to cassette height
FMA-XXX-64	Tie kit, adapter plate, 12 SC/APC singlemode, trimmed to cassette height
FMA-XXX-81	Tie kit, adapter plate, 12 LC/UPC singlemode, trimmed to cassette height
011236	Frame mounting kit for use with raised floors
009106	Floor mount hardware kit

# FieldSmart® Fiber Crossover Distribution System (FxDS)

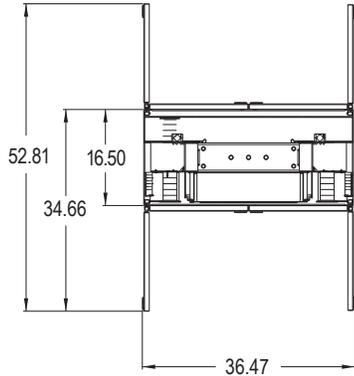


## Frame Kit

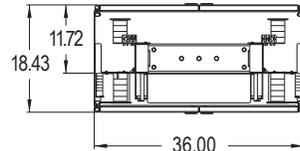
### Frame Kit



P/N 010802

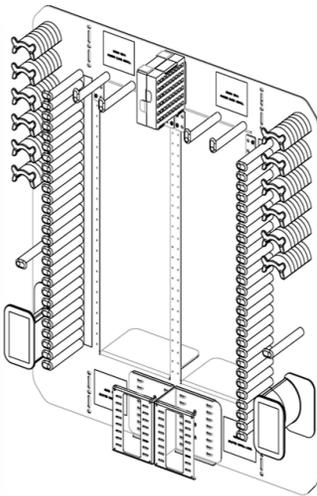


FxDS Frame Kit - Top View Doors Open

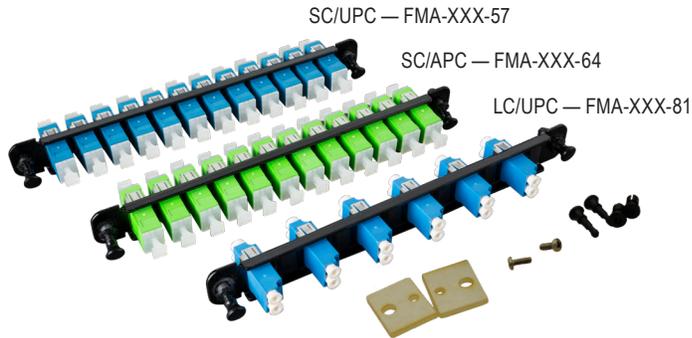


FxDS Frame Kit - Top View Doors Closed

### PON Insert



P/N 010263



Tie Adapter Plate Kit

# FieldSmart® Fiber Crossover Distribution System (FxDS) Standard Frames



## Application

Frames are used for mounting equipment in central office, head end or data center applications.

## Description

FieldSmart FxDS Standard Frames are available in 7' (2133.60 mm), 8' (2438.40 mm) or 9' (2743.20 mm) heights and in 19" or 23" (482.60 mm or 584.20 mm) widths. Frames are seismic-rated and come with an unequal flange. When used with FieldSmart FxDS Panels, they provide the highest port density in the industry - up to 1,728 ports in a 7' (2133.60 mm) frame.

## Features and Benefits

### Integrity

- Compliant to Telcordia GR-449; Seismic rated (Zone 4) GR-63-CORE, Issue 4
- Made from high-strength, low alloy steel that can accommodate up to up to 500 lbs. (226.80 kg)
- EIA mounting - 1.75" (44.45 mm) and WECCO mounting - 1" (25.40 mm)
- Front and rear of upright tapped for 12-24 screws

### Protection

- Frames can be ordered loaded with panels and cable management as a "rack and stack" solution
- Unequal flange
- Isolation pads are used to provide electrical isolation for FxDS standard seismic frames
- Interbay cable management panel optional

### Access

- One frame size accommodates up to 1,728 or 1,152 ports in a PON environment, with full horizontal and vertical slack management support

### Investment

- Fully loaded or "grow-as-you-go" integrations allow the user choices to provide for cost containment as subscriber take-rates dictate
- Frame components are used throughout the network from inside plant to outside plant to access networks

## Technical Specifications

FieldSmart FxDS Standard Frames	
Dimensions	Available in 7', 8' or 9' heights (2133.60 mm, 2438.40 mm or 2743.20 mm) and in either 19" or 23" (482.60 mm or 584.20 mm) widths; depth is 10" (254.00 mm) (5" frame + 5" guard box)
Ratings	Compliant to Telcordia GR-449
Cable Entry Clamp Location	On-frame (Note: Cable clamps included with FxDS Patch Panels)
Material	Steel

\* Mounting hardware not included. Order separately.



# FieldSmart® Fiber Crossover Distribution System (FxDS) Standard Frames



## Pre-Configured Part Numbers

### EIA Spacing

Part Number	Description
FMA-A1A-E	19" (482.60 mm) seismic frame, 7' (2133.60 mm) high, CLSD, EIA Universal ( $\frac{5}{8}$ " - $\frac{5}{8}$ " - $\frac{1}{2}$ "; 15.88 mm - 15.88 mm - 12.70 mm) hole pattern, almond white
FMA-A1C-E	19" (482.60 mm) seismic frame, 8' (2438.40 mm) high, CLSD, EIA Universal ( $\frac{5}{8}$ " - $\frac{5}{8}$ " - $\frac{1}{2}$ "; 15.88 mm - 15.88 mm - 12.70 mm) hole pattern, almond white
FMA-A2A-E	23" (584.20 mm) seismic frame, 7' (2133.60 mm) high, CLSD, EIA Universal ( $\frac{5}{8}$ " - $\frac{5}{8}$ " - $\frac{1}{2}$ "; 15.88 mm - 15.88 mm - 12.70 mm) hole pattern, almond white
FMA-A2C-E	23" (584.20 mm) seismic frame, 8' (2438.40 mm) high, CLSD, EIA Universal ( $\frac{5}{8}$ " - $\frac{5}{8}$ " - $\frac{1}{2}$ "; 15.88 mm - 15.88 mm - 12.70 mm) hole pattern, almond white

### WECO Spacing

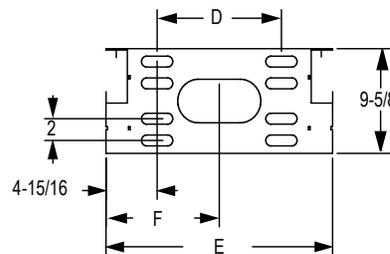
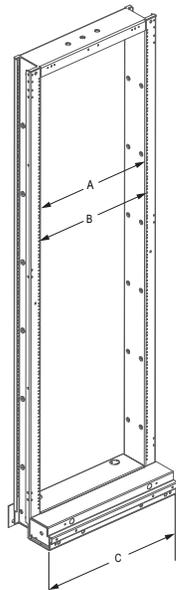
Part Number	Description
FMA-A1A	19" (482.60 mm) seismic frame, 7' (2133.60 mm) high with 1" (25.40 mm) WECO hole spacing, almond white
FMA-A1C-SUB	19" (482.60 mm) seismic frame, 8' (2438.40 mm) high with 1" (25.40 mm) WECO hole spacing, almond white
FMA-A2A	23" (584.20 mm) seismic frame, 7' (2133.60 mm) high with 1" (25.40 mm) WECO hole spacing, almond white
FMA-A2C	23" (584.20 mm) seismic frame, 8' (2438.40 mm) high with 1" (25.40 mm) WECO hole spacing, almond white

### Accessory

Part Number	Description
009106	Floor Mounting Hardware Kit

## Dimension Specifications

Rack	A	B	C	D	E	F
19" (482.60 mm)	17 $\frac{1}{2}$ " (444.50 mm)	18 $\frac{5}{16}$ " (481.00 mm)	21 $\frac{15}{16}$ " (557.20 mm)	12" (304.8 mm)	21 $\frac{7}{8}$ " (555.60 mm)	10 $\frac{15}{16}$ " (277.80 mm)
23" (584.20 mm)	21 $\frac{1}{2}$ " (546.10 mm)	22 $\frac{5}{16}$ " (582.61 mm)	25 $\frac{15}{16}$ " (658.80 mm)	16" (406.40 mm)	25 $\frac{7}{8}$ " (657.20 mm)	12 $\frac{15}{16}$ " (328.60 mm)



# FieldSmart® Fiber Crossover Distribution System (FxDS) Accessories



## Interbay Cable Management Panels

### Description

Interbay cable management is part of an overall fiber management system that includes frames and troughs. In addition to incremental slack take-up, the interbay provides a route-path between frames. Interbay cable management panels are ordered to match the height of the frame and are available in 7' (2133.60 mm), 8' (2438.40 mm) and 9' (2743.20 mm) versions. End guards are available for the end of a line up to minimize potential damage to jumpers. Interbay cable management is suggested for all fiber applications. Clearfield's recommendation is to mount one interbay on both sides of each frame and place an interbay with end guard on each end of the lineup.



### Configured Part Numbers

F M A -      Z     

1      2

**1 Select Frame Width**                      **2 Select Frame Height**

E = Interbay without endguard              A = 7 feet (2133.60 mm)      D = 9 feet (2743.20 mm)  
 F = Interbay with endguard                  C = 8 feet (2438.40 mm)

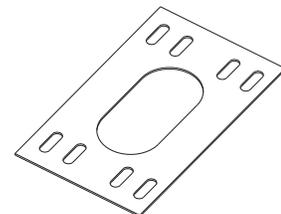
### Pre-Configured Part Numbers

Part Number	Description
FMA-EZA-PT	FxDS Interbay Cable Management Panel, 7' H x 5" W (2133.60 mm x 127.00 mm), without end guards, with 1" (25.4 mm) grommeted cable pass through holes
FMA-EZA-PT-3I	FxDS Interbay Cable Management Panel, 7' H x 3" W (2133.60 mm x 76.20 mm), without end guards, custom with 1" (25.40 mm) grommeted cable pass through holes
FMA-FZA-PT	FxDS Interbay Cable Management Panel, 7' H x 5" W (2133.60 mm x 127.00 mm), with end guards, custom with 1" (25.40 mm) grommet cable pass through holes
FMA-FZA-PT-3I	FxDS Interbay Cable Management Panel, 7' H x 3" W (2133.60 mm x 76.20 mm), with end guards, with 1" (25.40 mm) grommet cable pass through holes
FMA-XXX-119	Kit, mounting bracket for FxDS Interbay, non-seismic, front mount

## Isolation Pad

### Description

The Isolation Pad provides isolation between the floor and the equipment rack.



### Pre-Configured Part Numbers

Part Number	Description
FMA-L1Z-SUB	Isolation Pad Kit, 19" (482.60 mm) frame, 9.5" D x 22" W (241.30 mm x 558.80 mm)
FMA-L2Z-SUB	Isolation Pad Kit, 23" (584.20 mm) frame, 9.5" D x 26" W (241.30 mm x 660.40 mm)

## Floor Mount Hardware Kit

Part Number	Description
009106	Floor Mounting Hardware Kit

# FieldSmart® Fiber Crossover Distribution System (FxDS) Accessories



## Crossover Troughs

### Description

Troughs are an integral part of the FieldSmart fiber management platform. When used properly, troughs provide a protected route path when running jumpers between equipment. Crossover Troughs are used when radius spools are not required. They are simply used to cross from one side of the frame to another or to reach another frame. They come standard with a front door for additional protection and improved appearance. Crossover Troughs are 3" or 5" deep and available in 19" and 23" mounting.



### Pre-Configured Part Numbers

Part Number	Description
FMA-B13-SUB	FxDS Crossover Trough, 3" x 19" (76.20 mm x 482.60 mm) (no spools)
FMA-B15	FxDS Crossover Trough, 5" x 19" (127.00 mm x 482.60 mm) (no spools)
FMA-B23	FxDS Crossover Trough, 3" x 23" (76.20 mm x 584.20 mm) (no spools)
FMA-B25	FxDS Crossover Trough, 5" x 23" (127.00 mm x 584.20 mm) (no spools)

## Active Gear Troughs

### Description

Troughs are an integral part of the FieldSmart fiber management platform. When used properly, troughs provide a protected route path when running jumpers between equipment. Active Gear Troughs are equipped with nine radius fingers (19") and 11 radius fingers (23") on the open bottom. It is designed to be placed directly above or below an active gear chassis to manage slack and access of active gear cards and associated fiber ports. The Active Gear Troughs are 5" deep and available in 19" and 23" mounting.



### Pre-Configured Part Numbers

Part Number	Description
FMA-D15	FxDS Active Gear Trough, 5" x 19" (127.00 mm x 482.60 mm) (with management spools and fingers)
FMA-D25	FxDS Active Gear Trough, 5" x 23" (127.00 mm x 584.20 mm) (with management spools and fingers)

## Slack Management Troughs

### Description

Troughs are an integral part of the FieldSmart fiber management platform. When used properly, troughs provide a protected route path when running jumpers between equipment. Slack Management Troughs contain radius spools that add additional incremental slack take-up to the fiber management system. They come standard with a front door for additional protection and improved appearance. Slack Management Troughs are 5" deep and available in 5" and 7" heights and 19" and 23" mounting.



### Pre-Configured Part Numbers

Part Number	Description
FMA-C15	FxDS Slack Management Trough, 5" x 19" (127.00 mm x 482.60 mm) (with spools)
FMA-C25	FxDS Slack Management Trough, 5" x 23" (127.00 mm x 584.20 mm) (with spools)
FMA-C27	FxDS Slack Management Trough, 7" x 23" (177.80 mm x 584.20 mm) (with spools)

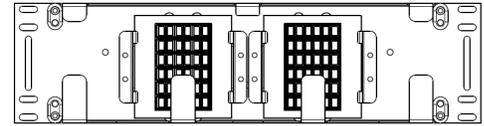
# FieldSmart<sup>®</sup> Fiber Crossover Distribution System (FxDS) Accessories



## Staging Plate Trough

### Description

Troughs are an integral part of the FieldSmart fiber management platform. When used properly, troughs provide a protected route path then running jumpers between equipment. The Staging Plate Trough has two staging plates equipped with 36 positions each for “parking” optical splitter legs until they are ready to use.



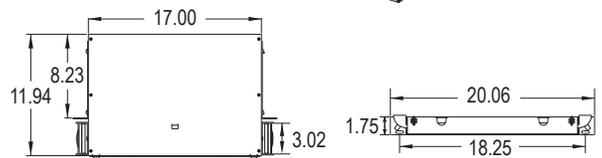
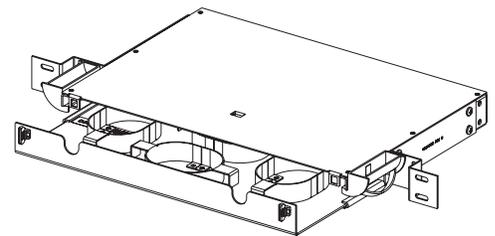
### Pre-Configured Part Numbers

Part Number	Description
FMA-XXX-41	FieldSmart FxDS Staging Plate Trough, 5" x 19" (127.00 mm x 482.60 mm)

## Slack Management Panel

### Description

This panel mounts in either 19" or 23" (482.60 mm or 584.20 mm) frame and stores excess jumper length in a 1RU (1.75"; 44.45 mm) drawer based panel. It contains bend-radius spools for incremental and horizontal slack take up. When closed, the drawer protects fiber from accidental damage. The panel accommodates varying lengths of horizontal slack take up for up to 48, 3 mm jumpers.



### Pre-Configured Part Numbers

Part Number	Description
FMA-G11	Slack management panel for 19" (482.60 mm) frame
FMA-G21	Slack management panel for 23" (584.20 mm) frame

# FieldSmart® Fiber Crossover Multi Purpose (FxMP)

## Frame Clamp Kit and Splice Deck Clamp Kit



### Application

For on-frame patch and splice applications, the desire to clamp onto the frame rather than a FieldSmart FxMP Panel may be required to address proper cable sweep from the frame into the panel. The frame clamp can also be used to manage incoming cable at an additional location on the frame, when a more robust and rigid capture is required due to the O.D. size of the cable and the number of incoming cables.

### Description

The FieldSmart FxMP Frame Clamp Kit comes with bracket for mounting onto the frame, clamp shells and mounting hardware. Mounts to 19" or 23" standing frames or cabinets.



### Features and Benefits

- Can be used on any frame
- Comes with multiple size clamps
- Holds cable diameters up to 1" in diameter

### Pre-Configured Part Numbers

Part Number	Description
008140	Frame clamp kit, green polypropylene
018513	Saddle clamp, 1" diameter, grey polyimide, VO
018514	Saddle clamp, 3/4" diameter, grey polyimide, VO
018515	Saddle clamp, 7/8" diameter, grey polyimide, VO

# FieldSmart<sup>®</sup>

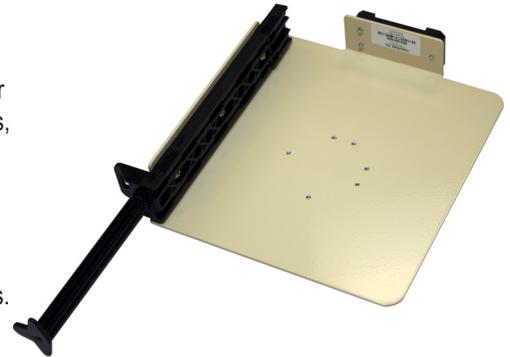
## DIN Rail Cassette Mounting Kit



### Application

The FieldSmart DIN Rail Cassette Mounting Kit easily mounts to any TS-35 (35 mm wide x 7.5 mm high or greater rail) industry standard DIN rail. The DIN rail clip “grips” the rail on both the top and bottom lips for tool-less installation. This is an ideal solution for applications requiring maximum system reliability and flexibility. It is perfectly suited for Transportation, Machine Building, Municipality, Oil and Gas Refinery, and Alternative Power Generation applications. It is also ideal for more general use in customer premise locations, enterprise networks and remote locations. Utilizing the Clearview<sup>®</sup> Blue Cassette, the new DIN Rail Mounting Kit allows you to bring fiber management to areas where it was not able to be installed before.

Each cassette will provide 12 ports of connectivity for patch and splice (Clearfield’s in-cassette splicing solution), patch only (stubbed) or plug and play (MPO/MTP) configurations.



### Description

The DIN Rail Cassette Mounting Kit includes the cassette mounting tray, bracket and rail mount clip. DIN rail tray and cassettes can be mounted vertically, horizontally or with adapters facing out with no specialty bulkheads needed. Up to two Clearview Cassettes can be mounted on one bracket. Brackets can be mounted next to each other for future growth.

### Features and Benefits

#### Integrity

- Allows Clearview Cassettes to attach to DIN 35 mm slotted rail
- Modular and scalable

#### Protection

- Durable steel plate
- Radius bend protection of all fiber cable within the blue cassettes

#### Access

- Provides central location where external and internal wiring can be connected quickly and efficiently
- Associated devices can be mounted adjacent to each other, thus reducing the length of interconnect wiring
- 360° cassette mounting options

#### Investment

- Reduces installation time
- Saves space - no need to panel mount all components
- Versatile mounting options
- Easy snap on/snap off capability

### Technical Specifications

FieldSmart DIN Rail Cassette Mounting Kit	
Dimensions	Cassette Tray: 1.72” H x 7.75” W x 6.96” D (43.69 mm x 196.85 mm x 176.78 mm) Rail Mount Clip: 2.68” H x 1.38” W x 0.32” D (68.07 mm x 35.05 mm x 8.13 mm)
Port Density	12 or 24 ports
Cassette Types Supported	Clearview <sup>®</sup> Blue
Connector Types	SC/UPC, SC/APC, LC/UPC, LC/APC

### Pre-Configured Part Number

Part Number	Description
FMA-DIN RAIL	FieldSmart DIN Rail Cassette Mounting Kit

# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Patch Panels



## Application

Provides an interconnect or cross-connect environment for up to 288 SC ports or 576 LC ports of high density fiber for inside plant environments and outside FDH deployments.

## Description

The FieldSmart FxMP Panel is a high density, low maintenance fiber distribution panel for use in a data style rack/cabinet, a 19" (482.60 mm) or a 23" (584.20 mm) frame. Utilizing the Clearview® Cassette, FieldSmart FxMP Panels are intelligently designed to provide the user with superior fiber access and craft-friendly, radius protected, fiber management for routing and deploying fiber jumpers.

### Stand Alone Panel in a 19" or 23" (482.60 mm or 584.20 mm) Frame

When you already have the frame and want to add just a panel or two of incremental fiber management, the FxMP is configured with front and rear protection blocks for complete slack storage and physical fiber protection.

### Stand Alone Panel in an OSP Active Cabinet

Make the crossover into the OSP with the identical product. Patch only environments are supported without additional components, while a rear protection block enables patch and splice (Clearfield's in-cassette splicing solution) configurations. The common architecture saves you time and money in reducing inventory costs and shorter training period.

### Stand Alone Panel in a Data Rack/Cabinet

When you already have a data rack or cabinet and simply need to add fiber management, the FxMP is available to mount in this smaller footprint, providing all the fiber protection you need without the added cost. Available in black.



Top Protection - Closed



Top Protection - Black

## Features and Benefits

### Integrity

- RUS listed
- Fully certified to Telcordia NEBS Level 3 GR-63, GR-1089, GR-449, GR-20 and GR-409
- Terminations are designed and tested to Telcordia GR-326
- Supports all industry standard singlemode and multimode connectors

### Protection

- Front cover is easily removable and installation of cassettes is simple with no tools needed
- Individual radius fingers provide organized and intuitively managed fiber jumpers and minimize pile-up
- Slide rails for cassettes provide a stable attachment utilizing the cassette T-rail, and are incorporated into the rear protection of panels
- Pre-terminated OSP buffer tubes are protected by bend-limited tubing and have their slack stored inside the panel to protect against environmental and human damage
- The top metal protective cover slides out for top protection over the fiber cables and can sit in 3 positions: closed, open 3.25" (82.55 mm) and open 4.77" (121.16 mm)

### Access

- Front access to pre-terminated assemblies with removable adapter plates for testing, cleaning and maintenance
- The entire 12-fiber Clearview Cassette is removable for hot-swap changes
- Front and rear access to panel
- New larger designation cards provide greater writing area for standard and high density panels
- Reversible Mounting Ears provide added flexibility

### Investment

- Using the Clearview Cassette, all fibers are deployed in increments of 12, allowing users to scale from 12 ports to full configuration without additional equipment

# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Patch Panels



## Technical Specifications

FieldSmart FxMP Patch Panels					
Port Density	24/48	72/144	96/192	144/288	288/576
Dimensions	1.75" H (44.45 mm)	3.5" H (88.90 mm)	4" H (101.60 mm)	6" H (152.40 mm)	11" H (279.40 mm)
Ratings	Compliant to Telcordia GR-63, GR-1089, GR-449, GR-20 and GR-409				
Cassette Types Supported	Clearview® Blue with 1 mounting tab				
Connector Types	SC/UPC, SC/APC, LC/UPC, LC/APC, FC/UPC, FC/APC, ST/UPC, MPO				
Cable Types	Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield®				
Splice Capacity	12-24 splices in each Clearview Cassette				
Storage Capacity	One meter of 250 μm fiber				
Front Protection	3.25" (82.6 mm) or 4.77" (121.16 mm) radius fingers				
Color	Almond or black				
Material	Steel and aluminum with powder paint coating				

## Configured Part Numbers - Patch and Splice

**G** -      -      -      -      -      -      **Z Z**

1 2 3 4 5 6 7 8

**1 Select Chassis Size \***

J = 1.75" (44.45 mm)(1 RU) 24/48 port maximum (SC/LC)  
 E = 3.50" (88.90 mm)(2 RU) 72/144 port maximum (SC/LC)  
 K = 4" (101.60 mm) 96/192 port maximum (SC/LC)  
 G = 6" (152.40 mm) 144/288 port maximum (SC/LC)  
 H = 11" (279.40 mm) 288/576 port maximum (SC/LC)

**2 Select Panel Type**

B = Patch and splice  
 C = MPO (12 fiber)  
 D = Tie  
 F = HD Patch and Splice  
 J = HD Tie

**3 Select Color and Rod Size**

A = Almond 3.25" (82.55 mm)  
 B = Almond 4.77" (121.16 mm)  
 C = Black 3.25" (82.55 mm)  
 D = Black 4.77" (121.16 mm)

**4 Select Port Count**

X X X = port count in increments of 12  
 X X X = port count in increments of 24 (HD Version)

**5 Select Connector Style**

A = SC/UPC                      J = FC/UPC  
 C = SC/APC                    M = ST/UPC  
 F = LC/UPC                    Z = None  
 H = LC/APC

**6 Select Mode / Type**

0 = No Fiber  
 1 = Singlemode - non-ribbon  
 2 = Singlemode - ribbon  
 3 = Multimode (62.5)  
 5 = Multimode (50)  
 7 = Multimode (50) Laser Om3

**7 Select Jacket Construction**

F = Loose Tube  
 Z = N/A

**8 Select Rear Protection**

A = Slack Basket  
 B = Rear Cover

\* Max port counts are for SC and LC adapters.  
 For ST and FC adapters the max port counts are:

1RU = 24      4" = 48      11" = 192  
 2RU = 48      6" = 96

# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Patch Panels



## Configured Part Numbers - Patch Only

**G** - **Z** XXXM or XXXF

1 2 3 4 5 6 7 8 9

**1 Select Chassis Size\***

J = 1.75" (44.45 mm)(1 RU) 24/48 port maximum (SC/LC)  
 E = 3.50" (88.90 mm)(2 RU) 72/144 port maximum (SC/LC)  
 K = 4" (101.60 mm) 96/192 port maximum (SC/LC)  
 G = 6" (152.40 mm) 144/288 port maximum (SC/LC)  
 H = 11" (279.40 mm) 288/576 port maximum (SC/LC)

**2 Select Panel Type**

A = Patch Only  
 E = HD Patch Only (LC)

**3 Select Color and Rod Size**

A = Almond 3.25" (82.55 mm)  
 B = Almond 4.77" (121.16 mm)  
 C = Black 3.25" (82.55 mm)  
 D = Black 4.77" (121.16 mm)

**4 Select Port Count**

XX X = port count in increments of 12  
 XX X = port count in increments of 24 (HD version)

**5 Select Connector Style**

A = SC/UPC J = FC/UPC  
 C = SC/APC M = ST/UPC  
 F = LC/UPC Z = None  
 H = LC/APC

**6 Select Mode / Type**

0 = No Fiber  
 1 = Singlemode - non-ribbon  
 2 = Singlemode - ribbon  
 3 = Multimode (62.5)  
 5 = Multimode (50)  
 7 = Multimode (50) Laser Optimized

**7 Select Cable Construction**

A = Indoor riser rated (IFC)  
 B = OSP (riser rated, in door/outdoor)  
 C = Indoor, plenum (IFC)  
 E = OSP (non-rated)  
 F = Patch and splice  
 M = OSP (armored)  
 Z = N/A

**8 Select Rear Protection**

A = Slack Basket  
 B = Rear Cover

**9 Select Cable Exit\*\***

1 = Top right 4 = Bottom left  
 2 = Top left 5 = Top  
 3 = Bottom right 6 = Bottom

**XXXM or XXXF**

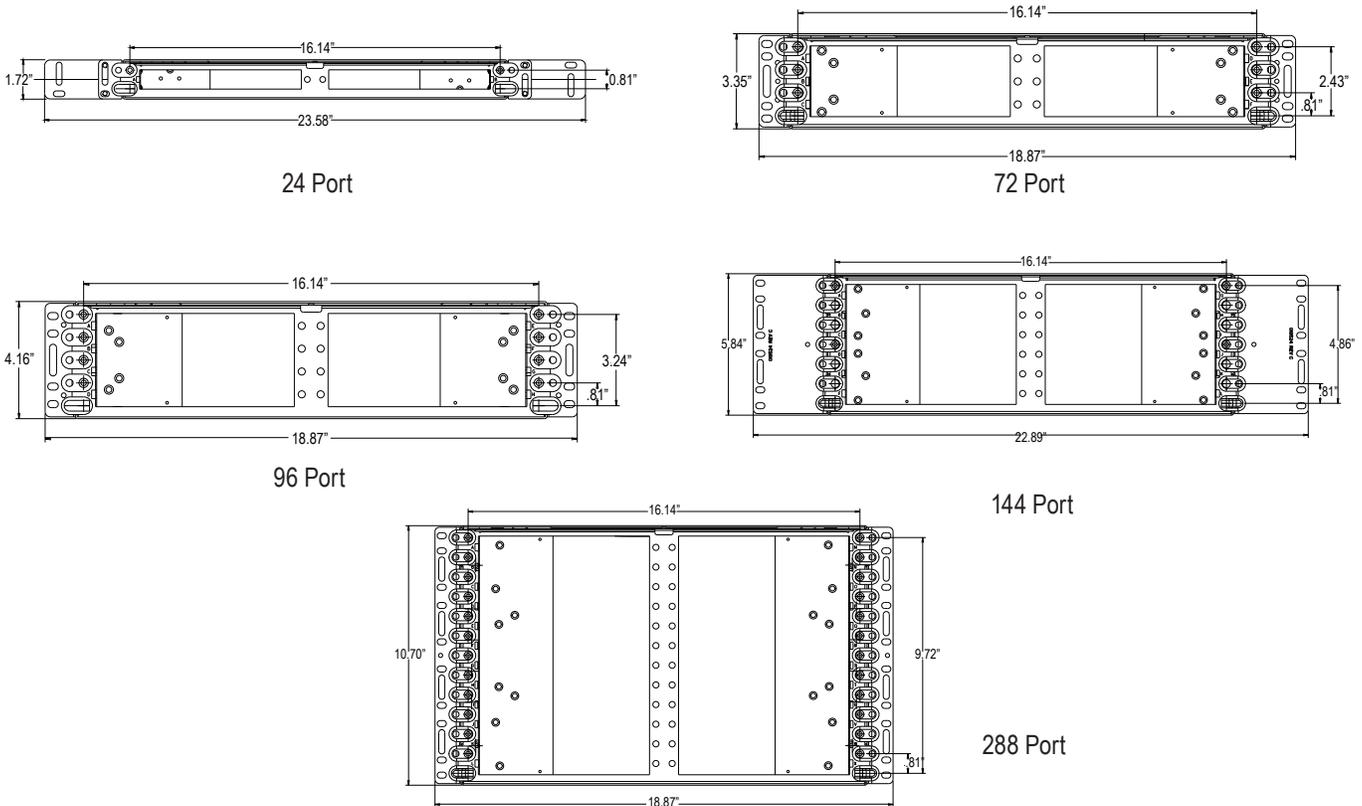
XXXM = Length in meters  
 XXXF = Length in feet

\* Max port counts are for SC and LC adapters.  
 For ST and FC adapters the max port counts are:  
 1RU = 24 4" = 48 11" = 192  
 2RU = 48 6" = 96

\*\* Cable exit is defined by which direction the cable exits the panel when viewing it from the back.

## Configurations

### FieldSmart Fiber Crossover Multi Purpose (FxMP) Front Views

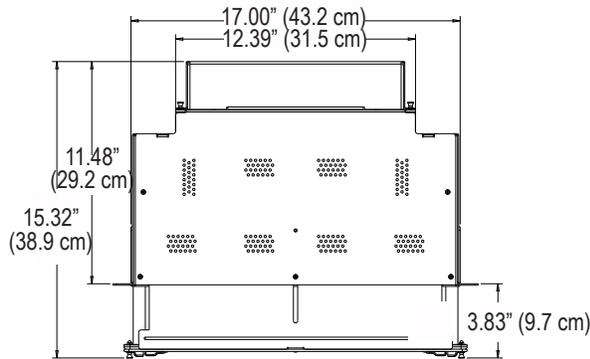


# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Patch Panels

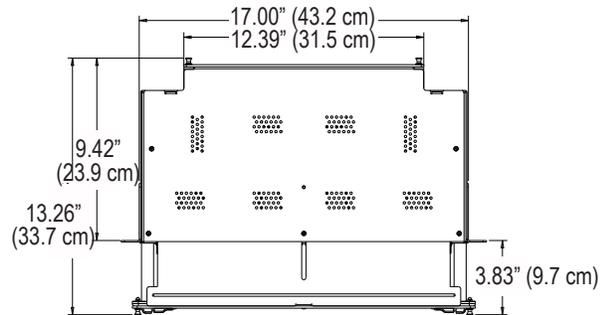


## Configurations

### FieldSmart Fiber Crossover Multi Purpose (FxMP) Top Views

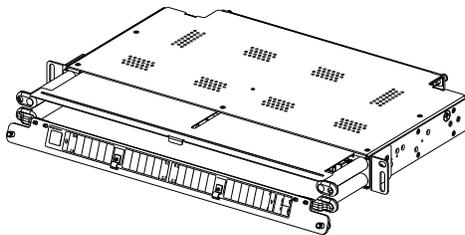


Bulkhead with Slack Basket - Top View  
Shown with Short Rods (3.25")

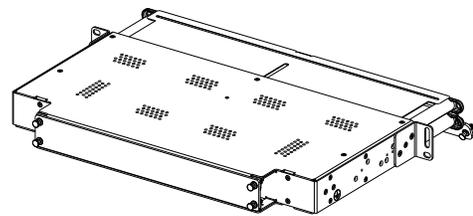


Bulkhead with Rear Door - Top View  
Shown with Short Rods (3.25")

### FieldSmart Fiber Crossover Multi Purpose (FxMP) 24 Port Fiber Panels

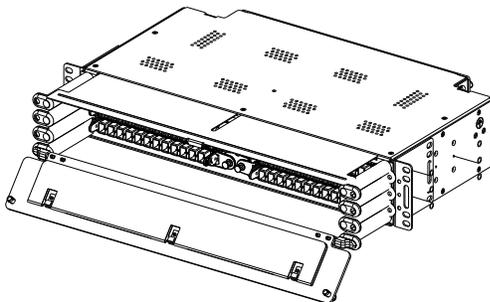


24 Port  
Front View

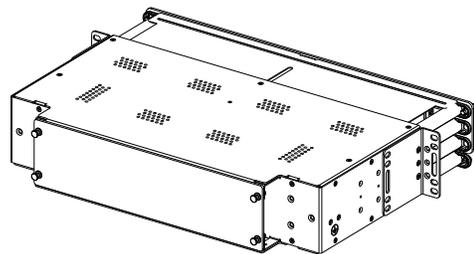


24 Port  
Rear View with Rear Protection

### FieldSmart Fiber Crossover Multi Purpose (FxMP) 72 Port Fiber Panels



72 Port  
Front View



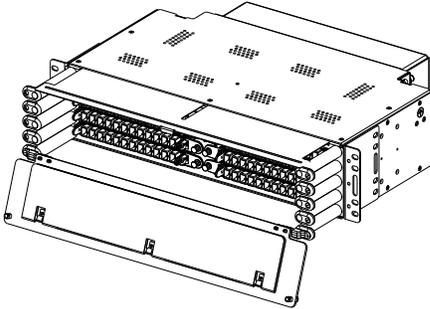
72 Port  
Rear View with Rear Protection

# FieldSmart<sup>®</sup> Fiber Crossover Multi Purpose (FxMP) Patch Panels

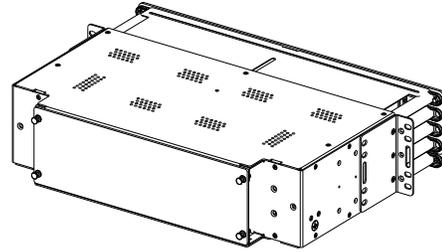


## Configurations

### FieldSmart Fiber Crossover Multi Purpose (FxMP) 96 Port Fiber Panels

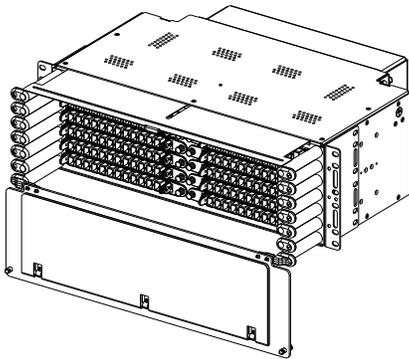


96 Port  
Front View with Slack Basket

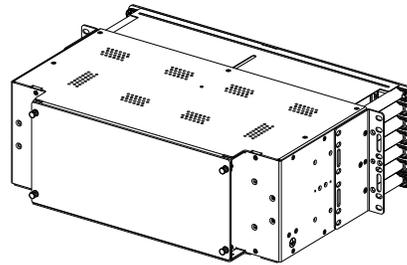


96 Port  
Rear View with Rear Protection

### FieldSmart Fiber Crossover Multi Purpose (FxMP) 144 Port Fiber Panels

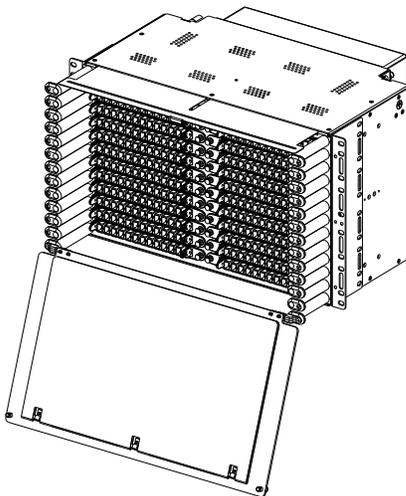


144 Port  
Front View with Slack Basket

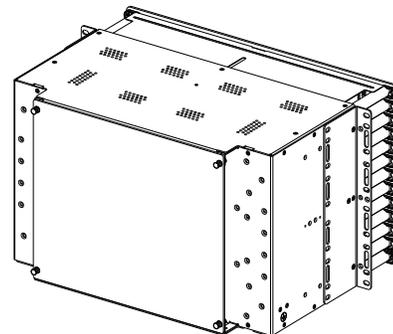


144 Port  
Rear View with Rear Protection

### FieldSmart Fiber Crossover Multi Purpose (FxMP) 288 Port Fiber Panels



288 Port  
Front View with Slack Basket



288 Port  
Rear View with Rear Protection

# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Tie Panels



## Application

The FieldSmart FxMP Tie Panel provides an in the field configured interconnect or cross-connect environment for 12 to 288 ports of high density fiber in central office/headend environments.

## Description

The FieldSmart FxMP Tie Panel is a high density, low-maintenance fiber distribution panel for use in a 19" or 23" (482.60 mm or 584.20 mm) frame. Tie panels are intelligently designed to provide the user with superior fiber access, utilizing craft-friendly radius protected fiber management for routing and deploying fiber jumpers or multi-fiber cables, on both sides of the adapter plate for cross-connect environments. They use a removable adapter plate that mounts on the right side or left side of the panel.

## Features and Benefits

### Integrity

- RUS listed
- Fully certified to Telcordia GR-63 and GR-1089 (NEBS 3), GR-449, GR-20 and GR-409
- Optical component configurations use Telcordia GR 1221/1209 compliant devices
- Terminations are designed and tested to Telcordia GR-326
- Supports all industry standard singlemode and multimode connectors

### Protection

- Front cover is easily removable with no tools needed
- Cable clamp protects against twisting and pistoning at the assembly breakout point
- Top metal protective cover slides out for top protection over the fiber cables

### Access

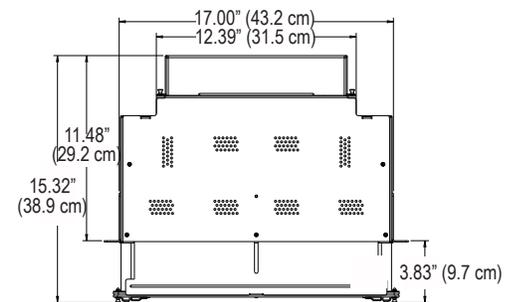
- Front access with removable adapter plates for testing, cleaning and maintenance
- Front and rear access to panel

### Investment

- Panel sizes available in 1.75" (44.45 mm) 1RU (24 ports), 3.50" (88.90 mm) 2RU (72 ports), 4" (101.60 mm) (96 ports), 6" (152.40 mm) (144 ports) and 11" (279.40 mm) (288 ports) *(Note: all port counts based on SC adapter style)*
- Industry-leading density, supporting 288 ports SC in 11" (279.40 mm)
- 19" and 23" (482.60 mm and 584.20 mm) reversible mounting brackets for flexibility



Top Protection - Closed



Bulkhead with Slack Basket - Top View  
Shown with Short Rods (3.25")

# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Tie Panels



## Technical Specifications

FieldSmart FxMP Tie Panels					
Port Density	24	72	96	144	288
Dimensions	1.75" H x 17.5" W x 14.40" D (44.45 mm x 444.50 mm x 365.76 mm)	3.5" H x 17.5" W x 14.40" D (44.45 mm x 444.50 mm x 365.76 mm)	4" H x 17.5" W x 14.40" D (44.45 mm x 444.50 mm x 365.76 mm)	6" H x 17.5" W x 14.40" D (44.45 mm x 444.50 mm x 365.76 mm)	11" H x 17.5" W x 14.40" D (44.45 mm x 444.50 mm x 365.76 mm)
Ratings	Fully certified to Telcordia GR-63 and GR-1089 (NEBS 3), GR-449, GR-20 and GR-409				
Cassette Types Supported	N/A				
Connector Types	SC/UPC, SC/APC, LC/UPC, LC/APC, FC/UPC, FC/APC, ST/UPC				
Splice Capacity	N/A				
Storage Capacity	N/A				
Front Protection	3.25" (82.55 mm) and 4.75" (120.65 mm) radius fingers				
Material	Steel and aluminum with almond or black powder coating				

## Configured Part Numbers - Patch and Splice

G - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ 0 Z - \_\_\_\_\_ Z Z

1 2 3 4 5 6

**1 Select Chassis Size**

J = 1.75" (44.45 mm) (1 RU) 24/48 port maximum (SC/LC)  
 E = 3.50" (88.90 mm) (2 RU) 72/144 port maximum (SC/LC)  
 K = 4" (101.60 mm) 96/192 port maximum (SC/LC)  
 G = 6" (152.40 mm) 144/288 port maximum (SC/LC)  
 H = 11" (279.40 mm) 288/576 port maximum (SC/LC)

**2 Select Panel**

D = Tie  
 J = HD Tie

**3 Select Color and Rod Size**

A = Almond 3.25" (82.55 mm)  
 B = Almond 4.77" (121.16 mm)  
 C = Black 3.25" (82.55 mm)  
 D = Black 4.77" (121.16 mm)

**4 Select Port Count**

XX X = port count in increments of 12  
 XX X = port count in increments of 24 (HD Version)

**5 Select Connector Style**

A = SC/UPC                      H = LC/APC  
 C = SC/APC                    J = FC/UPC  
 F = LC/UPC                    M = ST/UPC

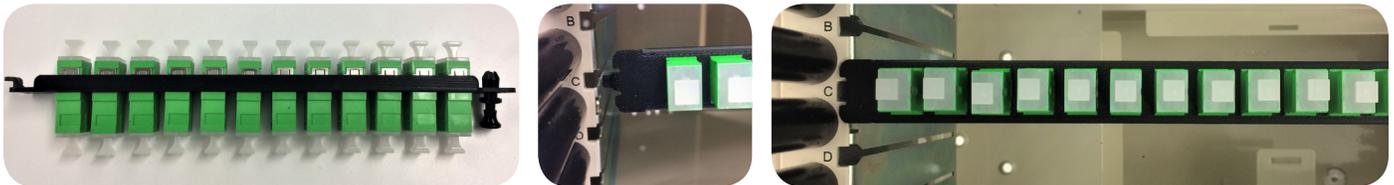
**6 Select Rear Protection**

A = Slack Basket  
 B = Rear Cover

## Tie Panel Plates

Tie plates will attach to the panel in a similar manner to cassettes, except instead of sliding a T-rail into one of the panel's slide rails, the hook on the end of the tie plate will insert into the front of the slide rail. Press on the push/pull plunger to secure the tie plate.

Note: Images may not match product received. Fiber routing and protection will remain the same.



# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Tie Plate Kit



## Pre-Configured Part Numbers - Standard

Part Number	Description
FMA-XXX-169-L	Adapter Plate, FxMP, SM, 12 x SC/UPC, Left Side
FMA-XXX-169-R	Adapter Plate, FxMP, SM, 12 x SC/UPC, Right Side
FMA-XXX-170-L	Adapter Plate, FxMP, SM, 12 x SC/APC, Left Side
FMA-XXX-170-R	Adapter Plate, FxMP, SM, 12 x SC/APC, Right Side
FMA-XXX-171-L	Adapter Plate, FxMP, SM, 12 x LC/UPC, Left Side
FMA-XXX-171-R	Adapter Plate, FxMP, SM, 12 x LC/UPC, Right Side
FMA-XXX-172-L	Adapter Plate, FxMP, SM, 12 x LC/APC, Left Side
FMA-XXX-172-R	Adapter Plate, FxMP, SM, 12 x LC/APC, Right Side

## Pre-Configured Part Numbers - High Density

Part Number	Description
FMA-XXX-173-L	Adapter Plate, FxMP, SM, 24 x High Density LC/UPC, Left Side
FMA-XXX-173-R	Adapter Plate, FxMP, SM, 24 x High Density LC/UPC, Right Side
FMA-XXX-174-L	Adapter Plate, FxMP, SM, 24 x High Density LC/APC, Left Side
FMA-XXX-174-R	Adapter Plate, FxMP, SM, 24 x High Density LC/APC, Right Side

# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Optical Component Chassis (OCC)



## Application

The FieldSmart FxMP Optical Component Chassis (OCC) is used for housing optical component modules. The FxMP Optical Component Chassis is available for horizontally mounted modules. These products are needed when optical components are required. They are typically used in CATV headends and telephone company central offices.

## Description

An optical component chassis is mounted in a rack and holds optical components modules. Fiber jumper management is provided from the front of the optical component module to the interbay cable management panels. Optical components are splitters or WDM's that are housed in the flexible Clearview® Cassette. The FieldSmart® modules require an Optical Component Chassis to house the modules in a frame. The 1RU splitter/"pizza box" does not require a separate chassis and is available in 19" or 23" (482.60 mm or 584.20 mm) mounting versions. (See the WaveSmart® Splitters data sheet for additional ordering information)

This one rack unit "Pizza Box" module is a rack mountable (19" or 23") product with front female adapters. This solution may be suitable if a single optical component is needed in a frame and no future growth will be needed. Since the module has mounting ears, no separate chassis is needed for this solution. The optical component is housed within the rack mountable box.

## Features and Benefits

### Integrity

- RUS listed
- Fully certified to NEBS Level 3 Telcordia GR-63, GR-1089, GR-449, GR-20 and GR-409
- Supports all industry standard singlemode and multimode connectors

### Protection

- VO-rated ruggedized Lexan front cover

### Access

- Front and rear access to panel

### Investment

- Virtually any combination of split ratios and number of components can be achieved in one of the four Clearview Cassette sizes
- An economical, dense and user-friendly solution for deploying splitters or WDM's in a central office design
- 1RU optical components available for smaller, limited deployments
- Horizontal mounting versions of the FieldSmart FxMP OCC are available in five sizes to accommodate any size project
- Reversible mounting ears for 19" or 23" (482.60 mm or 584.20 mm) provide mounting flexibility (except in 1RU)
- Chassis incorporates the superior fiber management system of the FieldSmart FxMP panel line
- Allows for a "grow-as-you-go" design to reserve rack space for future growth



Clearview Cassette  
Horizontal Orientation



1RU "Pizza Box" Chassis

# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Optical Component Chassis (OCC)



## Technical Specifications

FieldSmart FxMP Optical Component Chassis		
Dimensions	Clearview Cassette: 1 High	0.8" H x 8.75" W x 8" D (20.32 mm x 222.25 mm x 203.20 mm)
	Clearview Cassette: 2 High	1.6" H x 8.6" W x 7.06" D (40.64 mm x 218.44 mm x 179.32 mm)
	Clearview Cassette: 3 High	2.41" H x 8.6" W x 7.06" D (61.21 mm x 218.44 mm x 179.32 mm)
	Clearview Cassette: 6 High	4.84" H x 8.6" W x 7.06" D (122.94 mm x 218.44 mm x 179.32 mm)
	1RU (19")(482.60 mm)	1.75" H x 19" W x 15.02" D (44.45 mm x 482.60 mm x 381.51 mm)
	1RU (23")(584.20 mm)	1.75" H x 23" W x 15.02" D (44.45 mm x 584.20 mm x 381.51 mm)
Ratings	Fully certified to NEBS Level 3 Telcordia GR-63, GR-1089, GR-449, GR-20 and GR-409	
Cassette Types Supported	Clearview® Blue, Clearview xPAK	
Material	Steel and aluminum with almond powder coating. Also available in black.	

## FieldSmart Chassis Capacity - Number of Components

Component Type	Horizontal 1.75"/1RU	Horizontal 3.5"/2RU	Horizontal 6"	Horizontal 11"
FSAN WDM	8	24	48	96
1 x 2	8	24	48	96
1 x 3	6	18	36	72
1 x 4	4	12	24	48
1 x 8	2	6	12	24
1 x 16	0	2	6	12
1 x 32	0	2	4	8
1 x 64	0	0	2	4

## Configured Part Numbers

T -      -      -      - 000 - Z0Z - BZZ

**1** **2** **3**

### 1 Select Chassis Size

J = 1.75" (44.45 mm) 1RU 24/48 port maximum (SC/LC)  
 E = 3.50" (88.90 mm) 2RU 72/144 port maximum (SC/LC)  
 K = 4" (101.60 mm) 96/192 port maximum (SC/LC)  
 G = 6" (152.40 mm) 144/288 port maximum (SC/LC)  
 H = 11" (279.40 mm) 288/576 port maximum (SC/LC)

### 2 Select Style

K = Horizontal

### 3 Select Color and Rod Size

A = Almond 3.25" (82.55 mm)  
 B = Almond 4.77" (121.16 mm)  
 C = Black 3.25" (82.55 mm)  
 D = Black 4.77" (121.16 mm)

# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Optical Component Chassis (OCC) - LGX



## Application

The FieldSmart FxDS Optical Component Chassis (OCC) is used for housing optical component modules. The FxDS Optical Component Chassis is available for LGX vertically mounted modules. These products are needed when optical components are required. They are typically used in CATV headends and telephone company central offices.

## Description

An optical component chassis is mounted in a rack and holds optical components modules. Fiber jumper management is provided from the front of the optical component module to the interbay cable management panels. Optical components are splitters or WDM's that are metal LGX housing based. Optical components can be housed in the flexible Clearview® Cassette or in one of our four sizes of LGX style modules. The LGX modules require an Optical Component Chassis to house them in a frame.



LGX Vertical Orientation

## Features and Benefits

### Integrity

- RUS listed
- Compliant to Telcordia GR-449
- Supports all industry standard singlemode and multimode connectors

### Protection

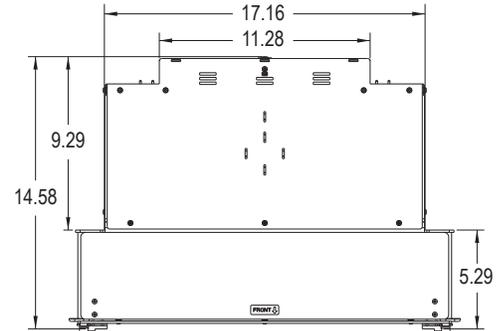
- Optional ruggedized Lexan front cover
- Optional rear protection module available for additional protection
- Non-removable adapter plates

### Access

- Front and rear access to panel

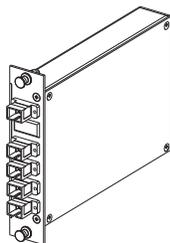
### Investment

- Virtually any combination of split ratios and number of components can be achieved in one of the four Clearview Cassette sizes
- An economical, dense and user-friendly solution for deploying splitters or WDM's in a central office design
- Clearfield supports legacy splitter deployments by offering optical components in an LGX footprint
- Available for both 19" or 23" (482.60 mm or 584.20 mm) mounting
- Chassis incorporates the superior fiber management system of the FieldSmart FxDS panel line
- Allows for a "grow-as-you-go" design to reserve rack space for future growth

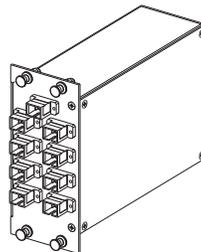


## Accessories

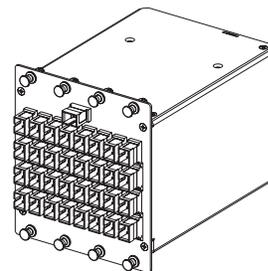
- LGX/MOC
- Blank plates



1 Wide LGX



2 Wide LGX



4 Wide LGX

# FieldSmart® Fiber Crossover Multi Purpose (FxMP) Optical Component Chassis (OCC) - LGX



## Technical Specifications

FieldSmart FxDS Optical Component Chassis		
	LGX ½ Wide Module	0.56" H x 5.12" W x 6.72" D (14.22 mm x 130.05 mm x 170.69 mm)
	LGX 1 Wide Module	1.15" H x 5.12" W x 6.25" D (29.21 mm x 130.05 mm x 158.75 mm)
	LGX 2 Wide Module	2.27" H x 5.12" W x 6.25" D (57.66 mm x 130.05 mm x 158.75 mm)
	LGX 4 Wide Module	4.55" H x 5.12" W x 6.25" D (115.57 mm x 130.05 mm x 158.75 mm)
Ratings	Compliant to Telcordia GR-449	
Material	Steel and aluminum with almond powder coating	

## LGX Footprint Chassis Capacity - Number Of Components

Component Type	LGX 6"
FSAN WDM	28
1 x 2	28
1 x 3	14
1 x 4	14
1 x 8	14
1 x 16	3
1 x 32	3
1 x 64	0

## Configured Part Numbers

T \_\_\_\_\_ - ZZ \_\_\_\_\_ - ZZZ

1
2
3

<p><b>1 Frame Size and Chassis Type</b></p> <p>M = 19" and 23" (482.60 mm and 584.20 mm) FxDS LGX vertical cassettes</p>	<p><b>2 Protection Modules</b></p> <p>7 = No front bad protection 8 = Front protection only 9 = Rear protection only A = Both front and rear protection</p>	<p><b>3 Number of Slots</b></p> <p>A = 2                      E = 12 B = 4                      F = 16 C = 6                      G = 24 D = 8                      H = 14</p>
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# SmartRoute Infinity Panel

## 1RU Panel



### Application

The SmartRoute Infinity 1RU Panel is designed to simplify and speed up fiber installations when landing 24 to 48 fibers in any interconnect or cross-connect environment. Clearfield's SmartRoute Infinity Panel combines cable wrap technology and MPO connectorization in a single panel to help relieve cable congestion, simplify ordering and eliminate incorrect cable lengths for IFC cable assemblies while saving labor and installations costs.

The SmartRoute Infinity Panel combines two separate, but critical fiber connectivity elements: The intermediate fiber panel and the IFC fiber cable assembly into one easy-to-deploy unit. If your network is comprised of both singlemode and multimode fiber, the Infinity Panel can be configured with singlemode fiber on one rod assembly and multimode fiber on the other rod assembly.



### Description

The SmartRoute Infinity Panel combines micro-distribution cable, rod technology and MPO connectorization in a single panel to help relieve cable congestion, simplify ordering and eliminate incorrect cable lengths for IFC cable assemblies. It also provides savings on labor and installation costs. The Infinity Panel contains two internal rod assemblies that can hold up to 100 feet each of IFC cable. The panel can provide 24 SC or 48 LC connections in front and MPO, plug-and-play, SC/LC breakouts for pigtails on the cabled far end.



### Features and Benefits

#### Integrity

- Terminations are designed and tested to Telcordia GR-326
- Clearfield FiberDeep Guarantee: 0.2dB insertion loss or less, exceeding industry standards
- Supports all industry standard singlemode and multimode connectors

#### Protection

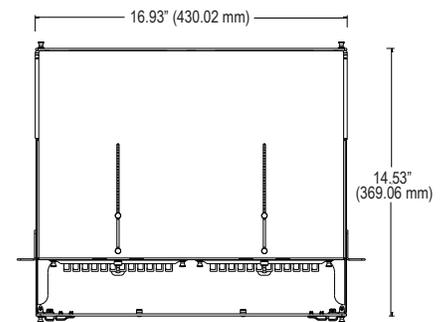
- Infinity Panel rod technology allows an installer to payout the exact amount of cable required from the panel, leaving the remaining slack safely stored within the panel
- Individual radius fingers organize and intuitively manage fiber jumpers
- Removable front protection provides physical fiber protection, reducing service interruptions

#### Access

- Straight forward, simple design means installation crews spend less time figuring out how to deploy
- Dual rod assemblies can be utilized independently
- Removable front adapter plates provide access to preterminated assemblies for testing, cleaning and maintenance

#### Investment

- Pre-connectorized options eliminate splice labor and speed network construction
- Rod assemblies reduce upfront deployment costs by simplifying site survey inspections, reducing labor hours and streamlining cable deployment



# SmartRoute Infinity Panel

## 1RU Panel



### Technical Specifications

SmartRoute Infinity Panel 1RU Panel	
Dimensions	1.70"H x 16.93"W x 14.53"D (43.18 mm x 430.02 mm x 369.06 mm)
Mounting Options	19" mounting ear with 23" extension
Front Protection	Polycarbonate front cover with attached designation card
Connector Types	SC and LC
Port Density	24 ports = SC/UPC or SC/APC; 48 ports = LC/UPC or LC/APC
Cabled End	SC and LC breakouts, MPO
Maximum Internal Cable Length	2 Rod Assemblies with 3mm 12-fiber micro cable = 100 feet per rod assembly/200 feet

### Configured Part Numbers

S	R	Front Panel Left Side or Single Module					Rear Connector Left Side or Single Module				Front Panel Right Side				Rear Connector Right Side			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>1</b>	<b>Module Assembly</b>	2 = Dual Module Slots 3 = Single Module Slot					<b>7</b>	<b>Left Rear Breakout</b> B = 1 Meter C = ½ Meter P = Pulling Eye Z = None (MPO Only)				<b>13</b>	<b>Right Port Count</b> 1 = 12 2 = 24 (LC only) Z = None					
<b>2</b>	<b>Left Front or Sing Assembly Module Connector Type</b>	A = SC/UPC C = SC/APC F = LC/UPC Duplex H = LC/APC Duplex					<b>8</b>	<b>Left Rear Upjacketing</b> A = 900 um B = 2 mm Z = None (MPO Only)				<b>14</b>	<b>Right Rear Connector Type</b> A = SC/UPC C = SC/APC E = LC/UPC Simplex G = LC/APC Simplex R = MPO Female 24 Port 6 = MPO Female 12 Port					
<b>3</b>	<b>Left Mode &amp; Type</b>	1 = SM Stranded Non-ribbon 7 = MM OM3 Laser Optimized					<b>9</b>	<b>Left Side Length</b> 2 = 50 Feet 4 = 100 Feet				<b>15</b>	<b>Right Rear Breakout</b> B = 1 meter C = ½ meter P = Pulling Eye Z = None					
<b>4</b>	<b>Left Jacket Construction</b>	5 = Indoor Riser Microcable (SM only) Y = Indoor Micro Distribution Cable (MM only)					<b>10</b>	<b>Right Front Panel Connector Type</b> A = SC/UPC C = SC/APC F = LC/UPC Duplex H = LC/APC Duplex Z = None				<b>16</b>	<b>Right Rear Upjacketing</b> A = 900 um B = 2 mm Z = None					
<b>5</b>	<b>Left Port Count</b>	1 = 12 2 = 24 (SC-Single, LC-Dual) 4 = 48 (LC Single Module Only)					<b>11</b>	<b>Right Mode &amp; Type</b> 1 = SM Stranded Non-ribbon 7 = MM OM3 Laser Optimized Z = None				<b>17</b>	<b>Rear Spool Right Side Length</b> 2 = 50 feet 4 = 100 feet Z = None					
<b>6</b>	<b>Left Rear Connector Type</b>	A = SC/UPC C = SC/APC E = LC/UPC simplex G = LC/APC simplex R = MPO female 24 port 6 = MPO female 12 port					<b>12</b>	<b>Right Jacket Construction</b> 5 = Indoor Microcable (SM Only) Y = Indoor Micro Distribution Cable (MM Only) Z = None										

### Application

The FieldSmart Small Count Delivery (SCD) Panel for a rack is a cost-effective way to provide fiber management protection in interconnect or cross-connect environments when landing a small number of fibers. It provides connectivity for Clearview® Blue Cassettes and xPAKs in a 1RU footprint.

### Description

The FieldSmart SCD Panel provides the ability to rack-mount Clearview devices in a single rack unit. The 2 slot panel version supports the 12 port Clearview Cassette or the two port, four port or six port Clearview xPAK in a single rack unit. The 3 slot panel version supports up to 3 Clearview xPAKs in a single rack unit. The product is available as either a 19" or 23" (482.60 mm or 584.20 mm) rack-mount unit. The FieldSmart SCD 1RU is intelligently designed to provide the user with superior fiber access while using craft-friendly radius protected fiber management for routing and deploying fiber jumpers.

### Features and Benefits

#### Integrity

- RUS listed
- Terminations are designed and tested to Telcordia GR-326
- Compliant to Telcordia GR-449, GR-20, GR-409 and GR-1221/1209
- Clearview devices support all industry standard singlemode and multimode connectors

#### Protection

- Individual radius fingers provide organized and intuitively managed fiber jumpers, minimizing pile up

#### Access

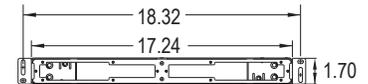
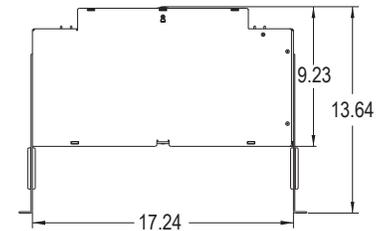
- Clearview devices are removable for hot-swap changes
- Front and rear access to panel
- Splicing integrated within the cassette for optimal protection and space utilization

#### Investment

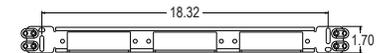
- Fiber protection is optimized within the Clearview device
- FieldSmart SCD extends this protection with minimal added cost or overhead



*Rack Mount SCD Panel  
with xPAK and Clearview Blue Cassette*



*SCD-X1RU-RM*



*SCD-X1RU-RM-3*

### Technical Specifications

FieldSmart 1RU Small Count Delivery Panel - Rack	
Dimensions	1.70" H x 17.24" W x 9.23" D (43.18 mm x 437.90 mm x 234.44 mm)
Ratings	Compliant to Telcordia GR-449
Port Density	24 SC or 48 LC (cassette version), 12 SC or 36 LC (xPAK version)
Cassette Types Supported	Clearview Blue, Clearview xPAK, or mix and match
Connector Types	SC/UPC, SC/APC, LC/UPC, LC/APC, FC/UPC, FC/APC, ST/UPC, MPO
Cable Types	Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield®
Splice Capacity	12-24 splices in each Clearview Cassette
Storage Capacity	One meter of 900 μm fiber
Material	Steel and aluminum with almond powder coating

### Pre-Configured Part Numbers

Part Number	Description
SCD-X1RU-RM	FieldSmart SCD 1RU Rack Mount; 2 slots (cassette and xPAK compatible)
SCD-X1RU-RM-3	FieldSmart SCD 1RU Rack Mount, 3 slots (xPAK compatible only)
008145	Blank Plate for 2 Slot Panel (each)
FMA-XXX-189	Blank Plate Kit for xPAK 3 Slot Panel (each)

### Application

The Small Count Delivery Panel for a cabinet is a cost-effective way to provide fiber management protection in interconnect or cross-connect environments when landing a small number of fibers. It provides connectivity for Clearview® Blue Cassettes and xPAKs in a 1RU footprint.

### Description

The FieldSmart SCD Panel for a cabinet provides a cost-effective means to cabinet-mount up to two Clearview devices: the 12 port Clearview Cassette or the two port, four port or six port Clearview xPAK in a single rack unit. The product is available as either a 19" or 23" (482.60 mm or 584.20 mm) data cabinet-mount unit. The FieldSmart SCD 1RU is intelligently designed to provide the user with superior fiber access while using craft-friendly radius protected fiber management for routing and deploying fiber jumpers.



Cabinet Mount SCD Panel with xPAK and Clearview Blue Cassette

### Features and Benefits

#### Integrity

- RUS listed
- Terminations are designed and tested to Telcordia GR-326
- Clearfield® FiberDeep® Guarantee: 0.2 dB insertion loss or less, exceeding industry standards
- Compliant to Telcordia GR-449, GR-20, GR-409 and GR-1221/1209
- Clearview devices support all industry standard singlemode and multimode connectors

#### Protection

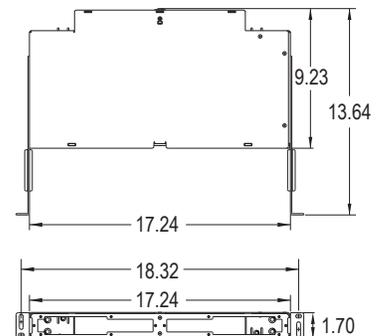
- Individual radius fingers or pass-through radius routing provides organized and intuitively managed fiber jumpers, minimizing pile up

#### Access

- Clearview devices are removable for hot-swap changes
- Front and rear access to panel
- Splicing integrated within the cassette for optimal protection and space utilization

#### Investment

- Fiber protection is optimized within the Clearview device
- FieldSmart SCD extends this protection with minimal added cost or overhead



SCD-X1RU-CM

### Technical Specifications

FieldSmart 1RU Small Count Delivery Panel - Cabinet	
Dimensions	1.70" H x 17.24" W x 9.23" D (43.18 mm x 437.90 mm x 234.44 mm)
Ratings	Compliant to Telcordia GR-449
Port Density	24 SC or 48 LC
Cassette Types Supported	Clearview Blue and Clearview xPAK
Connector Types	SC/UPC, SC/APC, LC/UPC, LC/APC, FC/UPC, FC/APC, ST/UPC, MPO
Cable Types	Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield®
Splice Capacity	12 splices in each Clearview Cassette
Storage Capacity	One meter of 900 μm fiber
Material	Steel and aluminum with almond powder coating

### Pre-Configured Part Numbers

Part Number	Description
SCD-X1RU-CM	FieldSmart SCD 1RU Cabinet Mount

# FieldSmart® Fiber Crossover Distribution System (FxDS) Fiber Entrance Cabinet (FEC)



## Application

The FieldSmart Fiber Entrance Cabinet (FEC) provides off-frame splicing for the central office, headend or remote hut. Fiber Entrance Cabinets are typically placed in the fiber entrance room and used to transition OSP fiber sheaths to IFC cabling.

## Description

The FieldSmart FEC is built on a modular platform scaling 288 heat shrink fusion (HSF) or 864 mass fusion (ribbon) fiber splices at a time. Multiple entry/exit points allow for multiple distribution and OSP fiber sheaths to enter into the FEC from top, bottom or sidewalls and transition from conduit, overhead fiber tray or raised flooring. A removable splice block, holding twelve 24-fiber splice trays allows the user access and the ability to prep away from the cabinet. Intuitive buffer tube and sub-unit slack routing prevents cable tie-in with a clockwise routing scheme to allow quick and easy re-entry after initial deployment or to add additional capacity. If vertical real estate is available, the FEC can be ganged together, in modular fashion, allowing scalability up to 864-fiber splices and beyond.

Each cable entrance plate will support cable diameters up to one inch. Lockable cupboard style doors allow for easy access with minimal swing clearance needed for tight aisle clearances.



## Features and Benefits

### Integrity

- Industry standard splice tray
- Sturdy construction using 16 gauge steel

### Protection

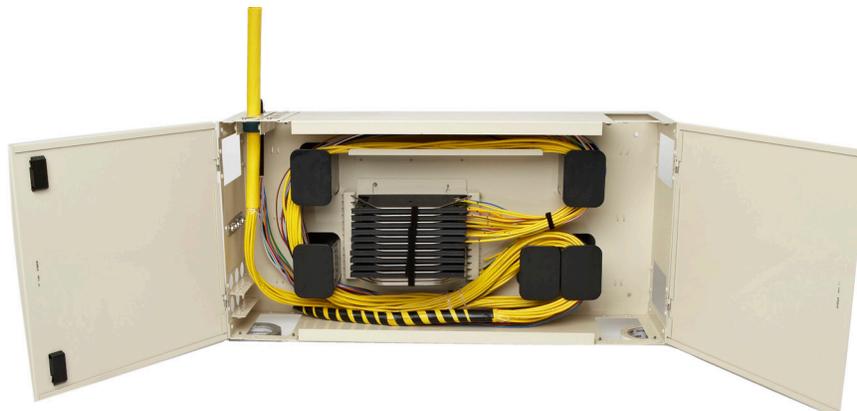
- Piano hinged doors, with removable hinge pin provides extra stability
- Ruggedized cable clamps protect against twisting and pistoning at the assembly breakout point
- Full bend-radius protection throughout cabinet

### Access

- Multiple entry/exit points allow distribution and OSP fiber sheaths to enter from top, bottom or sidewalls
- Cable entrance plates support cable diameters up to one inch
- Removable splice trays provide technicians access to prep outside of the cabinet
- Intuitive, clockwise fiber management routing scheme prevents cable tie-in
- Ability to store five meters of exposed buffer tubes
- Removable hinge pin allows for easy door removal

### Investment

- Splice trays supports both loose tube and ribbon constructions for single and mass fusion (ribbon) splicing
  - Maximum of 24 splice per tray LT (288)
  - Maximum of 72 splice per tray RB (864)
- FECs can be ganged together in a modular fashion when vertical real estate space permits



# FieldSmart® Fiber Crossover Distribution System (FxDS) Fiber Entrance Cabinet (FEC)



## Technical Specifications

FieldSmart FxDS Fiber Entrance Cabinet	
Dimensions	17.5" H x 34.5" W x 8.25" D (444.50 mm x 876.30 mm x 209.55 mm)
Ratings	Compliant to Telcordia GR-449
Cable Types	Indoor Riser, Indoor Plenum, Indoor/Outdoor, Outdoor (Riser/Non-Rated), Outdoor Armored (Riser/Non-Rated), FieldShield®
Splice Capacity	288 heat shrink fusion (HSF) loose tube or 864 mass fusion (MF) ribbon splices
Storage Capacity	One meter of 900 μm fiber and five meters of exposed buffer tube
Material	16 gauge cold rolled steel with almond powder coating

## Pre-Configured Part Numbers

Part Number	Description
009894	Fiber Entrance Cabinet - 288 splice capacity (Includes one clamp kit. No splice trays.)
019339	Splice Tray for FEC - 24 heat shrink fusion (HSF) or 72 MF mass fusion (MF)
010505	Clamp Kit (includes four clamp plates, four ½" (12.70 mm) clamps, four 1" (25.40 mm) clamp plugs and appropriate hardware)
010503	Locking Kit

