

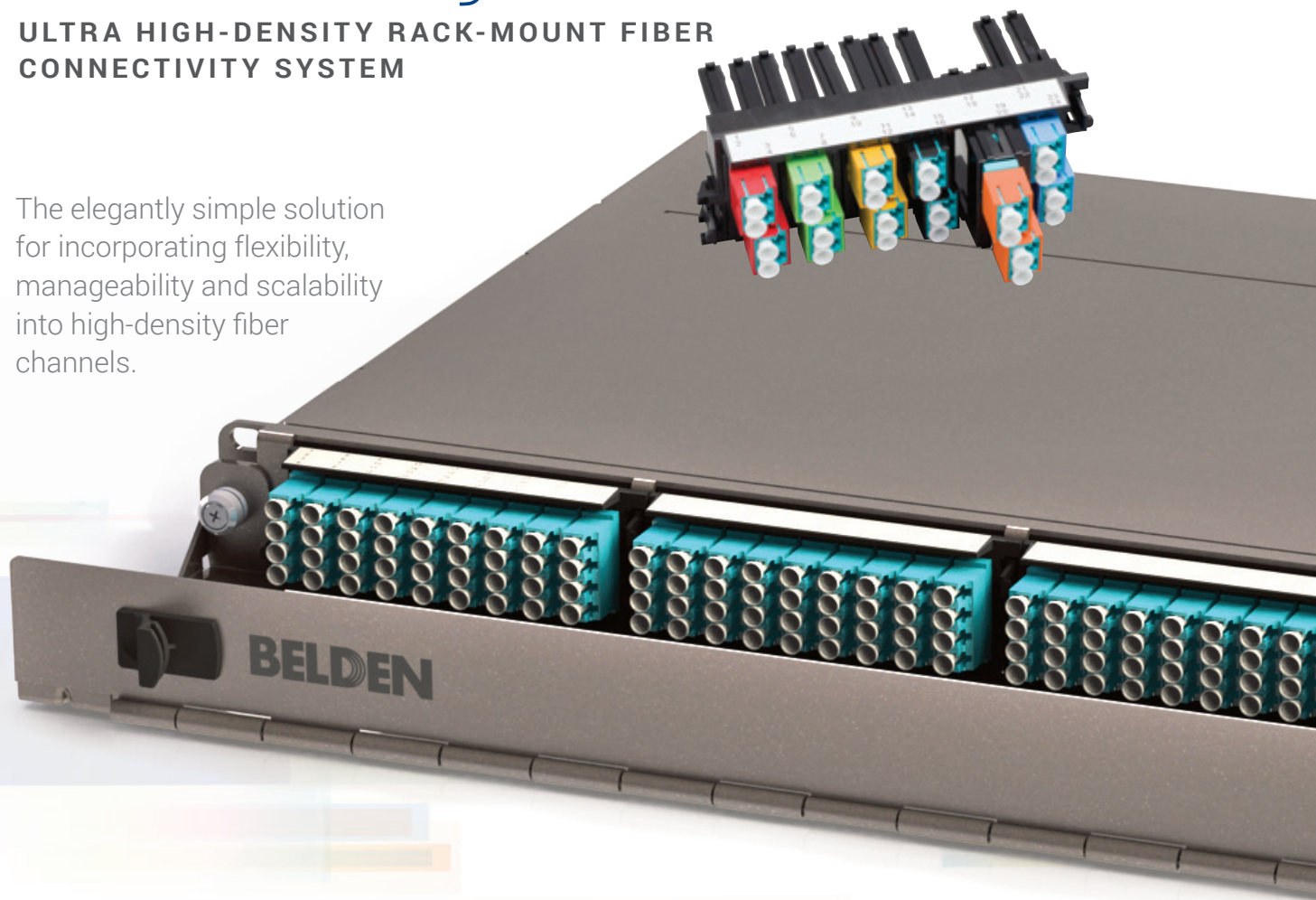
Fiber**Express**®

UHD System

Product Bulletin
PB500

ULTRA HIGH-DENSITY RACK-MOUNT FIBER CONNECTIVITY SYSTEM

The elegantly simple solution for incorporating flexibility, manageability and scalability into high-density fiber channels.



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

FASTER

- Faster field-termination with sliding, tilting drawers
- Faster pre-term installation with fixed shelves and cassettes
- Faster MACs with fewer components

EASIER

- Easier installation with tool-less removable drawers and lighter weight
- Easier port identification with clear visible labeling
- Easier configuration with LC, SC, ST and MPO modules

BETTER

- Better fiber protection with covered patch cord tray
- Better density with up to 72 LC Duplex ports per 1U
- Better visibility with Titanium finish option

Key Features

- 1U, 2U, and 4U
- 19" and 23" rack mount options
- Feature rich housing
- Cost effective shelf
- Support for pre-term and field-termination
- Ultra high density: up to 72 LC Duplex or MPO adapters per 1U
- Superior cable management and access
- Efficient one-person installation
- Adaptable for present and future needs

The integrated patch cord tray eliminates stress on bundled cords, boots and couplers.



Ultra High-Density Rack-Mount Fiber Connectivity System

Designed for fast, easy deployment of high-density interconnects and cross-connects in Data Centers and LANs, the FX UHD System provides superior port access and protection with up to double the density of comparable units for a 50% space reduction. Whether in a top of rack, end of row or centralized environment, the intuitive, modular design means fewer components and a single system to support a variety of port counts and configurations.

With support for both legacy ST and SC and modern LC and MPO applications, the FX UHD offers cost effective migration from current 1G and 10G to 40G and 100G applications with only a simple cassette or adapter frame change—and it includes all the installation and management features you need to maintain maximum uptime.

Feature-Rich FX UHD Housing or Entry-Level FX UHD Fixed Shelf to Meet Your Specific Needs

Feature-Rich FX UHD Housing

Ideal for field-termination and crafted of the highest quality materials, the FX UHD Housing features a slide-out module tray that tilts down at a 23-degree angle for superior accessibility. The quickly installed lid and removable front and rear trays add to system flexibility and provide unprecedented visibility to the work at hand. The optional field-upgradable, 144 splice tray kit can be easily added to any or all of the system's 1U module trays. Without the splice tray, the housing depth is reduced by more than 25 cm (>10") compared to competitive products, allowing easier cable management and increased space for opposite-rail-mounted equipment.

Available in 1U, 2U and 4U density, the 19" FX UHD Housing supports 72 LC Duplex Connectors (144 fibers) per 1U or 72 MPO Connectors per 1U. Available in 4U density, the 23" FX UHD Housing supports 90 LC Duplex Connectors (180 fibers) per 1U or 90 MPO Connectors per 1U.

Entry-Level FX UHD Shelf

With the same look and feel, the cost-effective FX UHD Fixed Shelf are ideal for pre-term systems. Available in standard or recessed, the recessed version requires minimal clearance with only 65 mm (2.56") from the rack rail to the front of the patch cord tray, allowing it to fit behind even the largest of PDUs. The removable door provides protection and labeling without requiring any additional space to fully open.

The 19" 1U FX UHD Fixed Shelf supports 72 LC Duplex Connectors (144 fibers) or 72 MPO Connections, while the 4U supports 180 LC Duplex Connections (360 fibers) or 180 MPO Connections.

The 4U FX UHD Fixed Shelf is also ideal for cross-connects. Vertical module mounting combined with FX Ultra modules that feature a 1-inch pullout make it easy to manage high-density connections at the front of the system.



Tool-less removable trays and lightweight housing for single installer installation—4U FX UHD weighs just 2.4 kg (5.4 lb).



Sleek front faceplate for easy shelf identification and highly-visible port labeling—lets you find the right fiber every time.



Slide-out module trays tilt downward—giving you superior access to a variety of cassettes and frames.

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

Optimizes Space in Mixed Media Environments

Belden KeyConnect frames with modular inserts makes it possible to combine fiber, copper and multimedia connectivity—all in the same rack unit of space within in any member of the FX UHD family.



For rapid expansion within a data center as it grows, Belden Low-Loss Pre-term solutions using the FX UHD System enables ZDA (zone distribution) architectures. ZDA allows pre-cabling the core switch to the row on Day 0 and rapid deployment down the row on Day 1 as capacity is needed.



With the same look and feel, the cost effective FX UHD Shelf and the feature-rich FX UHD Housing can be mixed and matched to create unique Half Pre-Term systems that provide field termination benefits like exact cable length, the ability to fit in smaller conduits, and rapid cost-effective installation of pre-term solutions.

Termination Type	Feature-Rich FX UHD Housing	Entry-Level FX UHD Shelf
Pre-Term Assemblies		
MPO Trunks	✓	✓
Jacketed Fan-Out	✓	✓
900 μ m Fan-Out	✓	✗
Field Termination		
Pig-Tail w/Splicing	✓	✗
900 μ m Connectorization (ie. FX Brilliance)	✓	✗
Jacketed Connectorization	✓	✓

To Learn More...

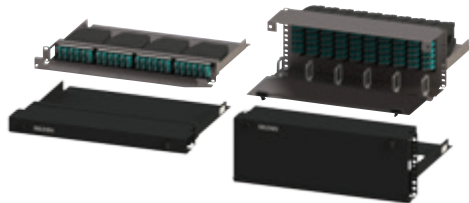
For more information call **1.800.BELDEN.1** (1.800.235.3361) or visit our web site at www.belden.com for more information on Belden FX UHD Systems.

FX UHD Housing



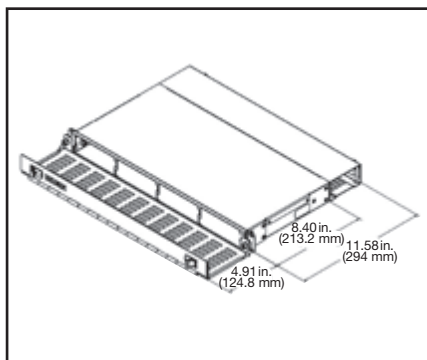
Description	Belden Part Number	
	Titanium	Black
1U Housing with removable front and rear tray	AX104681	AX105563
2U Housing with removable front and rear tray	AX104682	AX105564
4U Housing with removable front and rear tray	AX104683	AX105565
4U 23" Housing with front and rear tray	AX105379	-
Optional 1U Splice Housing Kit, 72 Splices (add up to 4 on the 4U Housing)	AX105174	AX105677
Optional 1U Splice Housing Kit, 144 splices (add up to 4 on the 4U Housing)	AX104684	AX105678
Optional Patch Cord Tray Cover, 19in	AX105162	AX105672

FX UHD Fixed Shelf

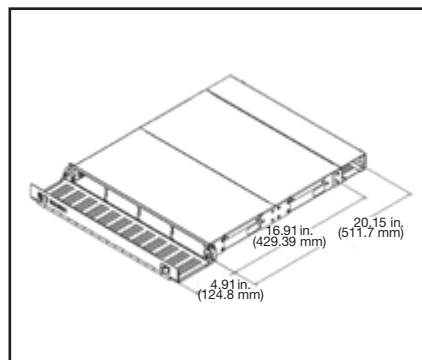


Description	Belden Part Number	
	Titanium	Black
1U Standard Fixed Shelf with fixed front and rear tray	AX105164	AX105673
1U Recessed Fixed Shelf with fixed front and rear tray	AX105165	AX105674
4U Standard Fixed Shelf with fixed front and rear tray	AX105166	AX105675
4U Recessed Fixed Shelf with fixed front and rear tray	AX105167	AX105676

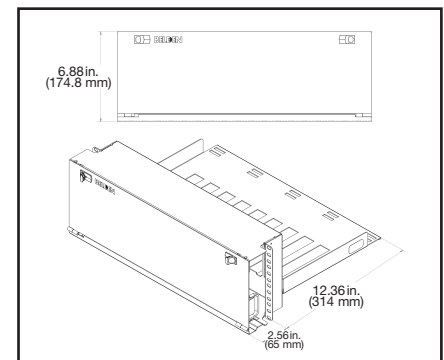
FX UHD Patch Panel Dimensions



FX UHD 1U Housing



FX UHD 1U Housing with mounted Splice Housing Kit



FX UHD 4U Recessed Shelf

See individual tech-data sheets for dimensions of 19" and 23" 4U FX UHD Housings, 2U FX UHD Housing, 1U and 4U FX UHD Standard Shelves and 1U FX UHD Recessed Shelf.



FX UHD and FX Ultra Cassettes

Building a Tailored SmartPart Number

Fixed Letter Series

FC

1. Choose Fiber Type

3

2. Choose Product Family

U

3. Choose Port Count (Patch Side)

03

4. Choose Connector (Patch Side)

LD

5. Choose Connector (Trunk Side)

MM

6. Choose Polarity (Trunk)

A

7. Choose Adapter Color

A

Fiber Type	
1 OM1	
3 OM3	
4 OM4	
S OS2	

Product Family	
H FX UHD	
U FX Ultra (1" Pull)	
L FX U Angled Left	
R FX U Angled Right	

Port Count (Patch Side)	
03	
06	
12	
18	

Connector (Patch Side)	
LD LC Duplex	
LA LC/APC Duplex	
LS LC Duplex w/Shutters	
LQ LC/APC Duplex w/Shutters	
SD SC Duplex	
SC SC Simplex	
SA SC/APC Duplex	
SB SC/APC Simplex	
SS SC Duplex w/Shutters	
SR SC Simplex w/Shutters	
SQ SC/APC Duplex w/Shutters	
SP SC/APC Simplex w/Shutters	
ST ST	
MP MPO Up/Down	

Connector (Trunk Side)	
MM MPO-12 (m)	
MF MPO-12 (f)	
FS Fiber Splice Cassette	

Polarity (Trunk)	
A Type-A	
1 Type-A ALT.*	

Adapter Color	
K Beige	
N Black	
A Aqua	
E Erika V.	
B Blue	
G Green	

Use Angled cassettes for MoR or EoR (Middle or End of Row) when combining with Belden AngleFlex copper patch panels to achieve a clean uniform appearance.



*Please see the Belden Fiber Optics catalog page 12 for an explanation of using Type-A-Alternate Cassettes.

Pair a Type-A and Type-A ALT on Type-B MPO Trunk to ensure correct port number and to provide simple upgrade path to SR4 (40G/100G) protocols.

Examples:

FC3H18LDMF - FX UHD Cassette, 18-Port (36-fiber) LC Duplex to 3-Port MPO-12(female), Polarity Type-A for OM3 fiber with Aqua Adapters

FC4U12LDMF - FX Ultra Cassette with 1" Pull-Out, 12-Port (24-fiber) LC Duplex to 2-Port MPO-12(female), Polarity Type-A for OM4 fiber with Erika Violet Adapters

Standard Type-A Cassettes



FX UHD 18-Port Cassette

Description			Belden Part Number				
Patch Ports (fibers)	Trunk Ports	Family	OM1 Beige Adapters	OM3 Aqua Adapters	OM4 Erika Violet Adapters	OS2 Blue Adapters	SM/APC Green Adapters
LC Duplex to MPO-12(f)							
18 (36)	3	FX UHD*	-	FC3H18LDMF	FC4H18LDMF	FCSH18LDMF	FCSH18LAMF
12 (24)	2	FX Ultra	FC1U12LDMF	FC3U12LDMF	FC4U12LDMF	FCSU12LDMF	FCSU12LAMF
LC Duplex w/Shutters to MPO-12(f)							
6 (12)	1	FX Ultra	-	-	-	FCSU06LSMF	FCSU06LQMF
SC Duplex to MPO-12(f)							
6 (12)	1	FX Ultra	FC1U06SDMF	FC3U06SDMF	FC4U06SDMF	FCSU06SDMF	FCSU06SAMF
SC Simplex to MPO-12(f)							
12 (12)	1	FX Ultra	-	-	-	FCSU12SCMF	FCSU12SBMF
SC Simplex w/Shutters to MPO-12(f)							
6 (6)	1	FX Ultra	-	-	-	FCSU06SRMF	FCSU06SPMF

*Optional HD Patch cord release tool AX104685

Standard Type-A-Alternate Cassettes*



FX Ultra 12-Port Cassette with 1" Pull-Out

Description			Belden Part Number				
Patch Ports (fibers)	Trunk Ports	Family	OM1 Beige Adapters	OM3 Aqua Adapters	OM4 Erika Violet Adapters	OS2 Blue Adapters	SM/APC Green Adapters
LC Duplex to MPO-12(f)							
18 (36)	3	FX UHD*	-	FC3H18LDMF1A	FC4H18LDMF1E	FCSH18LDMF1B	FCSH18LAMF1G
12 (24)	2	FX Ultra	FC1U12LDMF1K	FC3U12LDMF1A	FC4U12LDMF1E	FCSU12LDMF1B	FCSU12LAMF1G
LC Duplex w/Shutters to MPO-12(f)							
6 (12)	1	FX Ultra	-	-	-	FCSU06LSMF1B	FCSU06LQMF1G

*Please see the Belden Fiber Optics catalog page 12 for an explanation of using Type-A-Alternate Cassettes.

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Standard Angled Cassettes



Description	Left			Right		
Patch Ports (fibers)	OM3 Aqua Adapters	OM4 Erika Violet Adapters	SM Blue Adapters	OM3 Aqua Adapters	OM4 Erika Violet Adapters	SM Blue Adapters
LC Duplex to MPO-12(f) Type-A						
12(24)	FC3L12LDMF	FC4L12LDMF	FCSL12LDMF	FC3R12LDMF	FC4R12LDMF	FCSR12LDMF
LC Duplex to MPO-12(f) Type-A Alternate						
12(24)	FC3L12LDMF1A	FC4L12LDMF1E	FCSL12LDMF1B	FC3R12LDMF1A	FC4R12LDMF1E	FCSR12LDMF1B
SC Duplex to MPO-12(f) Type-A						
6 (12)	FC3L06SDMF	FC4L06SDMF	FCSL06SDMF	FC3R06SDMF	FC4R06SDMF	FCSR06SDMF
SC Duplex to MPO-12(f) Type-A Alternate						
6 (12)	FC3L06SDMF1A	FC4L06SDMF1E	FCSL06SDMF1B	FC3R06SDMF1A	FC4R06SDMF1E	FCSR06SDMF1B

Standard Splice Cassettes



Description	Belden Part Number				
Patch Ports (fibers)	OM1 Beige Adapters	OM3 Aqua Adapters	OM4 Erika Violet Adapters	SM Blue Adapters	SM/APC Green Adapters
MPO Type-A (Key-Up/Key-Down)					
12	FC1H12MPFS	FC3H12MPFS	FC4H12MPFS	-	FCSH12MPFS
LC Duplex					
12 (24)	FC1H12LDFS	FC3H12LDFS	FC4H12LDFS	FCSH12LDFS	FCSH12LAFS
SC Duplex					
6 (12)	FC1H06SDFS	FC3H06SDFS	FC4H06SDFS	FCSH06SDFS	-
SC Simplex					
12 (12)	-	-	-	-	FCSH12SBFS
ST (Metal Adapters)					
12 (12)	FCSH12STFS				

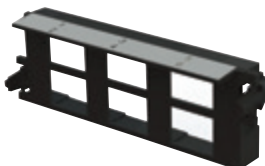
FX UHD Fiber Management Spools



Description	Belden Part Number
FX UHD Fiber Management Spool kit, includes base plates and eight spool segments	AX105700
FX UHD Fiber Management Spool, four spare segments	AX105766

For use with FX UHD 19" Housings. Requires one per RU.

FX Ultra KeyConnect Frames



Description	Belden Part Number	
FX UHD KeyConnect Frame, 6-Port	FFZH06KC	
FX UHD KeyConnect Frame, 8-Port	FFZH08KC	
1 x LC Duplex KeyConnect Adapter, Multimode, OM1, Beige	AX102417	
1 x LC Duplex KeyConnect Adapter, Multimode, OM3, Aqua	AX104939	
1 x LC Duplex KeyConnect Adapter, Singlemode, OS2, Blue	AX102421	
Copper		
1 x 10GX KeyConnect Modular Jack, CAT6A	AX104156	AX102283

FX UHD and FX Ultra Field-Terminated Frames

Building a Tailored SmartPart Number

Fixed Letter Series

FF

1. Choose Fiber Type

3

Fiber Type	
1	OM1
3	OM3
4	OM4
S	OS2

2. Choose Product Family

H

Product Family	
H	FX UHD
U	FX Ultra (1" Pull)

3. Choose Port Count

18

Port Count (Patch Side)	
03	
06	
12	
18	

4. Choose Connector for Patch Side

LD

Connector (Patch Side)	
LD	LC Duplex
LA	LC/APC Duplex
LS	LC Duplex w/Shutters
LQ	LC/APC Duplex w/Shutters
SD	SC Duplex
SC	SC Simplex
SA	SC/APC Duplex
SB	SC/APC Simplex
SS	SC Duplex w/Shutters
SR	SC Simplex w/Shutters
SQ	SC/APC Duplex w/Shutters
SP	SC/APC Simplex w/Shutters
ST	ST
MP	MPO Up/Down
MR	MPO Up/Up

5. Choose Adapter Color

A

Adapter Color	
K	Beige
N	Black
A	Aqua
E	Erika V.
B	Blue
G	Green

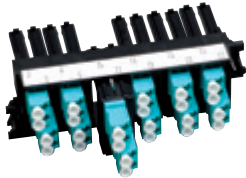
Use manageable density FX Ultra modules in dynamic patching environments where ease of access and use and speed are critical. Use FX UHD modules in static patching environments where density is the critical factor.

Examples:

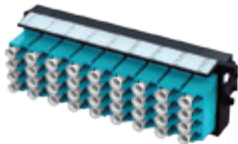
FF4H18MP - FX UHD Frame, 18-Port MPO Type-B (Key-Up/Key-Down) Erika Violet Adapters for OM4 fiber

FFSU12LD - FX Ultra Frame with 1" Pull-Out, 12-Port (24-fiber) LC Duplex Blue Adapters for OS2 fiber

Standard Frames



FX Ultra 12-Port Frame with 1" Pull Out



FX UHD 18-Port Frame

Description		Belden Part Number				
Patch Ports (fibers)	Family	OM1 Beige Adapters	OM3 Aqua Adapters	OM4 Erika Violet Adapters	SM Blue Adapters	SM/APC Green Adapters
MPO Type-A (Key-Up/Key-Down)						
18	FX UHD	–	FF3H18MP	FF4H18MP	–	FFSH18MP
12	FX Ultra	–	FF3U12MP	FF4U12MP	–	FFSU12MP
LC Duplex						
18 (36)	FX UHD	–	FF3H18LD	FF4H18LD	FFSH18LD	FFSH18LA
12 (24)	FX Ultra	FF1U12LD	FF3U12LD	FF4U12LD	FFSU12LD	FFSU12LA
LC Duplex w/Shutters						
6 (12)	FX Ultra	–	–	–	FFSU06LS	FFSU06LQ
SC Duplex						
6 (12)	FX Ultra	FF1U06SD	FF3U06SD	FF4U06SD	FFSU06SD	FFSU06SA
SC Simplex						
12 (12)	FX Ultra	–	–	–	FFSU12SC	FFSU12SB
SC Simplex w/Shutters						
6 (6)	FX Ultra	–	–	–	FFSU06SR	FFSU06SP
ST						
12 (12), Metal	FX Ultra	FFSU12ST				–

FX Accessories



Description	Belden Part Number
FX UHD Blank Plate	FFZH00BB
144-Splice Accessory Kit (Shrink Tubes and Wire Markers)	AX104705
FX Ultra Color-Coded Icon Kit	AX104572
FX UHD Patch Cord Release Tool	AX104685

Refer to the Belden Fiber Systems and Copper Systems Catalog for information on compatible components.