SYSTIMAX® EHD ULL fiber panels solution guide

Enhanced high-density fiber solutions
for ultra low-loss applications

COMMSCOPE®

By 2021, global data center IP traffic will hit 15.3 zettabytes (ZB) a year. On the surface, handling this tsunami of data will require higher-bandwidth applications and a more robust, ultra low-loss fiber infrastructure. As a leader in data center infrastructure, however, CommScope knows the real issues you face are more complex. How do you:

- Maximize per-RU port density without creating congestion at the fiber panel?
- Handle more moves/adds/changes without interrupting live channels?
- Maximize the potential of MPO connectivity?

At CommScope, we're always anticipating—focusing on the right questions in order to develop the best solutions at the right time. The results are innovations such as our enhanced high-density (EHD) fiber solutions. With concentrated port density and simplified design, our unique high-speed fiber panel system keeps your infrastructure scalable, manageable and agile. And, as part of our High Speed Migration platform, it provides long-term migration support and a clear path to 100 GbE and beyond. Backed by the strength of CommScope, it's a vision for the future. And the expertise to take you there.

Unleash your network's potential with EHD fiber solutions

EHD fiber solutions are designed for today's more crowded and demanding environments, including hyperscale and large enterprise data centers. Available in 1U, 2U or 4U configurations, they support 72 duplex LC ports or 72 MPO ports per RU.

Yet its compact, simplified design enables fast, easy deployment, even in the most populated racks or cabinets. The unique sliding-tray design enables open access, from the front and rear, to each individual fiber. So moves, adds, changes and future modifications can be made quickly and easily—without interrupting live channels.

As a result, EHD fiber solutions are perfect for core switching and aggregation layers, high- and ultra-high-density spine/leaf architectures, and data center cross-connects and inter-connects.

An end-to-end connectivity solution

The EHD fiber solution consists of high-density panels, fiber modules, adapter packs, splice cassettes and preterminated single and multimode fiber trunks, arrays and fanouts. It also includes the confidence of CommScope's Application Assurance, part of our **25-year product warranty**.

EHD panels

EHD panels support up to 144 fibers (LC) or 576/864/1728 fibers (8f/12f/24f MPO) per 1RU. Despite their enhanced high-density capabilities, EHD panels make fiber management surprisingly easy. The sliding trays enable front and rear access to individual connectors for installation/patching while integrated fiber managers reduce the overall cable count—simplifying access to individual patch cords. This design also allows modules to be replaced or updated, even when adjacent modules are installed and active.

EHD modules and adapter packs

The EHD solution uses modular adapter packs, enabling you to take full advantage of pluggable MPO connectivity, a common building block in many migration roadmaps. EHD modules support singlemode, OM4 and OM5 Wideband multimode fiber. With support for SYSTIMAX ULL, you can meet the demanding loss budgets of today's ultra low-loss links.

Preterminated cables and assemblies

When paired with our preterminated ULL LazrSPEED® OM4, LazrSPEED OM5 Wideband multimode and TeraSPEED® singlemode cabling, CommScope's EHD fiber solutions give you the loss budget to run wide open over longer link spans. Trunk cabling, array and patch cords, breakouts—it's an end-to-end, high-speed, lowest loss solution to help you get from where you are to where you need to go.

EHD splice modules

The EHD solution uses modular splice modules for integrated splicing and patching applications. The EHD splice modules, which include 24 fibers LC style are available in stranded and ribbon versions supporting singlemode and OM4. With the support for SYSTIMAX ULL, you can meet the demanding loss budgets of today's ultra low-loss links.

Application assurance

And only CommScope is confident enough to guarantee support for your high-speed optic applications—including those you may want to run in the future! Your equipment may change every few years but, at CommScope, we're committed to ensuring your infrastructure remains scalable, manageable and agile enough to serve you over the long term. See CommScope SYSTIMAX® Infrastructure System 25-year Extended Product Warranty and Application Assurance for details and conditions.

SCALABLE

- 1RU, 2RU and 4RU—scalable to 576 LC ports or 288 MPO ports in a 4RU panel

- EHD modules support singlemode, OM4 and OM5 Wideband multimode

- Ultra low-loss performance enables future high-speed applications over longer link spans

- Enables 8-/12-/24-fiber multimode trunks, a fundamental building block of 10/40/ 100 GbE migration

- Modules and adapter packs can be moved and re-installed in any EHD panel as needs change

MANAGEABLE

- Preterminated fiber trunk cables—with 288 LC-connected fibers and prestubbed 2RU enclosure—significantly reduce MAC time

- Open access—front and rear—to each individual fiber

- Intuitive, flexible labeling simplifies port identification

AGILE

- Supports 10/40/100 GbE migration for duplex and parallel network types

- Duplex and parallel links can be mixed in the same EHD panel

- Modules can be changed/updated without disrupting adjacent active links

- Left and right cable entry simplifies installation and MACs
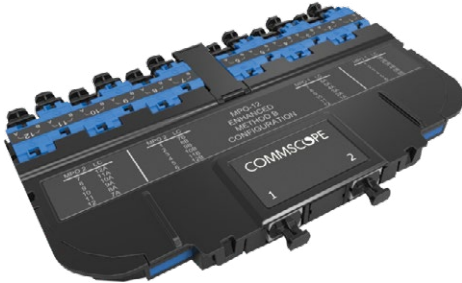
Configuring your
SYSTIMAX® EHD fiber solution

STEP 1: SELECT PANELS AND ACCESSORIES

SYSTIMAX EHD panels

MATERIAL ID	PRODUCT CODE	DESCRIPTION
EHD-1U	EHD-1U	SYSTIMAX EHD 1U sliding tray fiber panel, accepts (6) EHD ULL modules, splice cassettes or MPO panels, providing up to 72 duplex LC ports or up to 72 MPO ports
EHD-2U	EHD-2U	SYSTIMAX EHD 2U sliding tray fiber panel, accepts (12) EHD ULL modules, splice cassettes or MPO panels, providing up to 144 duplex LC ports or up to 144 MPO ports
EHD-4U	EHD-4U	SYSTIMAX EHD 4U sliding tray fiber panel, accepts (24) EHD ULL modules, splice cassettes or MPO panels, providing up to 288 duplex LC ports or up to 288 MPO ports
EHD-CMB	EHD-CMB	EHD external cable management cabinet mounting bracket
EHD-CMB-GAB	EHD-CMB-GAB	EHD external cable management cabinet mounting bracket for trunk gland adapters
760238380	EHD-BK-2U	EHD splice cassette blocking kit for 2RU panel
760238381	EHD-BK-4U	EHD splice cassette blocking kit for 4RU panel

STEP 2: SELECT MODULES AND ADAPTER PACKS

- ULL modules feature unpinned, rear MPO connectors to accept ULL preterminated trunk assemblies

- Utilizing Method B Enhanced polarity method, the ULL modules ensure transmit and receive paths are correctly routed in parallel applications

- Available in standard distribution modules and ribbon or stranded splice cassettes

SYSTIMAX EHD Distribution Modules

MATERIAL ID	PRODUCT CODE	DESCRIPTION
760237958	EHD08-DM-24LC-LS-B-ULL	EHD ULL MPO-8 distribution module, 24LC to 3x8f MPOs unpinned, LazrSPEED OM4, dust plugs
760237959	EHD08-DM-24LC-WB-B-ULL	EHD ULL MPO-8 distribution module, 24LC to 3x8f MPOs unpinned, LazrSPEED OM5 Wideband , dust plugs
760237957	EHD08-DM-24LC-SM-B-ULL	EHD ULL MPO-8 distribution module, 24LC to 3x8f MPOs unpinned, TeraSPEED SM, dust plugs
760237993	EHD12-DM-24LC-LS-B-ULL	EHD ULL MPO-12 distribution module, 24LC to 2x12f MPOs unpinned, LazrSPEED OM4, dust plugs
760237994	EHD12-DM-24LC-WB-B-ULL	EHD ULL MPO-12 distribution module, 24LC to 2x12f MPOs unpinned, LazrSPEED OM5 Wideband , dust plugs
760237992	EHD12-DM-24LC-SM-B-ULL	EHD ULL MPO-12 distribution module, 24LC to 2x12f MPOs unpinned, TeraSPEED SM, dust plugs
760237999	EHD24-DM-24LC-LS-B-ULL	EHD ULL MPO-24 distribution module, 24LC to 1x24f MPOs unpinned, LazrSPEED OM4, dust plugs
760238000	EHD24-DM-24LC-WB-B-ULL	EHD ULL MPO-24 distribution module, 24LC to 1x24f MPOs unpinned, LazrSPEED OM5 Wideband , dust plugs

SYSTIMAX EHD Splice Modules

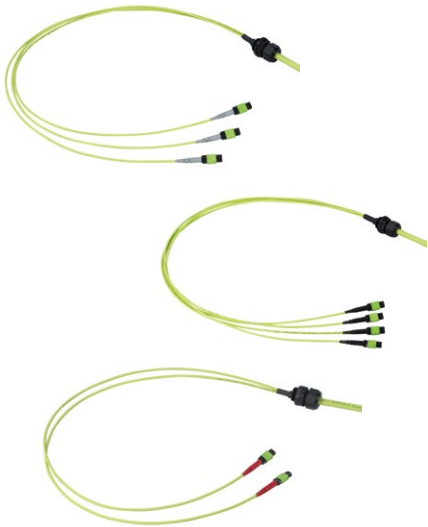| MATERIAL ID	PRODUCT CODE	DESCRIPTION
760237943	EHD-SP-24LC-LS-AS-ULL	EHD ULL 24f LC stranded pigtail splice cassette OM4
760237941	EHD-SP-24LC-LSR-AS-ULL	EHD ULL 24f LC ribbon pigtail splice cassette OM4
760237944	EHD-SP-24LC-SM-AS-ULL	EHD ULL 24f LC UPC stranded pigtail splice cassette SM
760237942	EHD-SP-24LC-SMR-AS-ULL	EHD ULL 24f LC UPC ribbon pigtail splice cassette SM

SYSTIMAX EHD MPO Adapter Pack

MATERIAL ID	PRODUCT CODE	DESCRIPTION
760235622	EHD-DP-12MPO-ALL-B	EHD MPO Adapter Panel, 12 x MPO

ORDERING INFORMATION

SYSTIMAX ULL preterminated trunk cables

- · Available in LazrSPEED 550 OM4 and OM5 Wideband and TeraSPEED singlemode fiber solutions
- · TeraSPEED singlemode 8- and 12-fiber or multimode 8- 12- and 24-fiber MPO connectors ensure fast and simple connections
- · Factory-terminated and tested trunk cables provide superior quality and performance for field connections.
- · Guaranteed transmit-to-receive connectivity using Method B Enhanced polarity maximizes administrative convenience
- · Simplified reconfiguration for moves, adds and changes (MACs)
- · Easy upgrade path to parallel transmission and associated applications, and increased value of existing infrastructure

SYSTIMAX ULL MPO-8 trunk cables

1 U	2 G	3 V	4 Q	5 X	6 Q	7 X	8 Q	9 H	10 -	11 N	12 A	13 M	14-16 010
Construction type U Ultra-low loss	**Family** G Trunk, Plenum J Trunk, LSZH/ Riser	**Fiber type** G TeraSPEED singlemode (A2) X LazrSPEED 550 multimode V LazrSPEED OM5 WB multimode	**Termination end** A QP MPO (female) QX MPO (male) · No female to female configurations		**Termination end** B QX MPO (male)		**Construction** Q 8 Fiber PmP	**Fiber count** 8 8-fiber R 16-fiber F 24-fiber H 48-fiber U 64-fiber L 96-fiber		**Color** M Aqua N Lime green J Yellow · LazrSPEED OM4 standard is aqua · LazrSPEED OM5 standard is lime green · TeraSPEED singlemode standard is yellow	**Options** A No gland B With gland C With pulling eye	**Unit of measure** F Feet M Meter	**Length** 010-999 Feet 003-305 Meter

SYSTIMAX ULL MPO-12 trunk cables

1	2	3	4	5	6	7	8	9	10	11	12	13	14-16
U	J	X	M	X	M	X	A	K	-	M	A	F	010

Construction type	Family	Fiber type	Termination end A	Termination end B	Construction	Fiber count	Color	Options	Unit of measure	Length
U Ultra-Low Loss	G Trunk, Plenum J Trunk, LSZH/Riser	G TeraSPEED singlemode (A2) X LazrSPEED 550 multimode V LazrSPEED OM5 WB multimode	MP MPO (female) MX MPO (male) · No female to female configurations	MX MPO (male)	A 12 Fiber PmP	D 12-fiber F 24-fiber H 48-fiber K 72-fiber L 96-fiber M 144-fiber	M Aqua N Lime green J Yellow · LazrSPEED OM4 standard is aqua · LazrSPEED OM5 standard is lime green · TeraSPEED singlemode standard is yellow	A No gland B With gland C With pulling eye	F Feet M Meter	010-999 Feet 003-305 Meter

SYSTIMAX ULL MPO-24 trunk cables

1	2	3	4	5	6	7	8	9	10	11	12	13	14-16
U	G	V	2	X	2	X	B	H	-	N	A	M	010

Construction type	Family	Fiber type	Termination end A	Termination end B	Construction	Fiber count	Color	Options	Unit of measure	Length
U Ultra-Low Loss	G Trunk, Plenum J Trunk, LSZH/Riser	X LazrSPEED 550 multimode V LazrSPEED OM5 WB multimode	2C MPO (female) equipment 2P MPO (female) 2X MPO (male) · No female to female configurations · Male to female will be configured as trunk extensions	2X MPO (male)	B 24-fiber PmP	F 24-fiber H 48-fiber K 72-fiber L 96-fiber M 144-fiber	M Aqua N Lime green · LazrSPEED OM4 standard is aqua · LazrSPEED OM5 standard is lime green	A No gland B With gland C With pulling eye	F Feet M Meter	010-999 Feet 003-305 Meter

SYSTIMAX ULL ruggedized fanout cables

- 8-, 12- and 24-fiber MPO connector-based modular design enables simple connections
- Ruggedized fanouts are constructed with LazrSPEED 550 OM4 and OM5 Wideband and TeraSPEED singlemode fibers
- Factory terminated and tested for instant field connections giving guaranteed quality and performance
- Designed for administrative convenience–guaranteed transmit-to-receive connectivity
- No special or non-standard polarity components

1	2	3	4	5	6	7	8	9	10	11	12	13	14-16
U	L	X	M	P	L	C	A	D	-	M	E	F	010

1 — Construction type
- U Ultra-low loss

2 — Cable family
- L Rugged F/O Plenum
- N Rugged F/O LSZH/Riser

3 — Fiber type
- G TeraSPEED singlemode (A2)
- X LazrSPEED 550 multimode
- V LazrSPEED OM5 WB multimode

4/5 — Connector 1
- QP 8f MPO (female)
- QX 8f MPO (male)
- MP 12f MPO (female)
- MX 12f MPO (male)
- 2P 24f MPO (female)
- 2X 24f MPO (male)

6/7 — Connector 2
- LC LC standard

· Standard breakout length for Connector 1 is 33 in

8 — Cordage size
- A 12-fiber PmP cable
- Q 8-fiber PmP Cable
- B 24-fiber PmP Cable

*24-fiber PmP cable not available for TeraSPEED singlemode

9 — Fiber count
- D 12-fiber
- F 24-fiber
- S 32-fiber
- G 36-fiber
- H 48-fiber
- U 64-fiber
- K 72-fiber
- L 96-fiber

10/11 — Color
- M Aqua
- N Lime green
- J Yellow

· LazrSPEED OM4 standard is aqua
· LazrSPEED OM5 standard is lime green
· TeraSPEED singlemode standard is yellow

12 — Breakout length LC End
- A No gland 24 in breakout
- E No gland 24 in breakout with gland
- F 24 in breakout with gland
- G 24 in breakout pulling grip
- S 36 in breakout no gland
- T 36 in breakout pulling grip
- U 36 in breakout with gland
- H 48 in breakout no gland
- J 48 in breakout with gland
- K 48 in breakout pulling grip
- L 72 in breakout no gland
- M 72 in breakout with gland
- N 72 in breakout pulling grip

13 — UOM
- F Feet
- M Meter

14-16 — Length minimal length based on breakout
24 in	7-999 ft
36 in	8-999 ft
48 in	9-999 ft
72 in	11-999 ft
36 in	8-999 ft
24 in	2-305 m
36-48 in	3-305 m
72 in	4-305 m

· Total length includes the breakout

SYSTIMAX ULL fiber-optic LC patch cords

- Duplex zipcord construction provides better mechanical performance with less risk of damage from crimping
- Rugged 1.6-millimeter cordage for durable and easy-to-handle connections
- Colored outer jacket for easy identification

1	2	3	4	5	6	7	8	9	10	11	12	13	14-16
U	D	X	L	C	L	C	4	2	-	M	X	F	010

1 — Construction type
- U Ultra-low loss

2 — Cable family
- D Plenum
- F LSZH/Riser

3 — Fiber type
- G TeraSPEED singlemode (A2)
- X LazrSPEED 550 multimode
- V LazrSPEED OM5 WB multimode

4/5 — Connector 1
- LC Standard

6/7 — Connector 2
- LC LC Standard
- UC Unconnectorized

8 — Cordage size
- 2 1.6mm simplex
- 4 1.6mm zipcord

9 — Fiber count
- 1 1-fiber
- 2 2-fiber

10/11 — Color
- M Aqua
- N Lime green
- J Yellow

· LazrSPEED OM4 standard is aqua
· LazrSPEED OM5 standard is lime green
· TeraSPEED singlemode standard is yellow

12 — Breakout length
- X No breakout

13 — UOM
- F Feet
- M Meter

14-16 — Length
- 2-200 Feet
- 1-061 Meters

· Other lengths available please contact CommScope

SYSTIMAX ULL fiber-optic MPO-8 patch cords

1	2	3	4	5	6	7	8	9	10	11	12	13	14-16
U	Q	G	Q	X	Q	X	J	8		-	J	A	F	010

Construction type	Cable family	Fiber type	Connector 1	Connector 2	Cordage size	Fiber count	Color	Breakout length	UOM	Length
U Ultra-low loss	Q Plenum array R LSZH array	G TeraSPEED singlemode (A2) X LazrSPEED 550 multimode V LazrSPEED OM5 WB multimode	QP 8f MPO (female) QX 8f MPO (male)	QP 8f MPO (female) QX 8f MPO (male) UC Unconnected	J 8-fiber PmP Array Cord	8 8-fiber	M Aqua N Lime green J Yellow	A No gland	F Feet M Meter	010-999 ft 003-305 m

SYSTIMAX ULL fiber-optic MPO-12 patch cords

1	2	3	4	5	6	7	8	9	10	11	12	13	14-16
U	Q	G	M	X	M	X	G	D		-	J	A	F	010

Construction type	Cable family	Fiber type	Connector 1	Connector 2	Cordage size	Fiber count	Color	Breakout length	UOM	Length
U Ultra-low loss	Q Plenum array R LSZH array	G TeraSPEED singlemode (A2) X LazrSPEED 550 multimode V LazrSPEED OM5 WB multimode	MP 12f MPO (female) MX 12f MPO (male)	MP 12f MPO (female) MX 12f MPO (male) UC Unconnected	G 12-fiber PmP Array Cord	D 12-fiber	M Aqua N Lime green J Yellow	A No gland	F Feet M Meter	010-999 ft 003-305 m

SYSTIMAX ULL fiber-optic MPO-24 patch cords

1	2	3	4	5	6	7	8	9	10	11	12	13	14-16
U	Q	V	2	X	2	X	H	F		-	N	A	F	010

Construction type	Cable family	Fiber type	Connector 1	Connector 2	Cordage size	Fiber count	Color	Breakout length	UOM	Length
U Ultra-low loss	Q Plenum array R LSZH array	X LazrSPEED 550 multimode V LazrSPEED OM5 WB multimode	2P 24f MPO (female) 2X 24f MPO (male)	2P 24f MPO (female) 2X 24f MPO (male) UC Unconnected	H 24-fiber PmP Array Cord	F 24-fiber	M Aqua N Lime green	A No gland	F Feet M Meter	010-999 ft 003-305 m

SYSTIMAX ULL LC array cords

- · TeraSPEED singlemode 8- and 12-fiber or multimode 8- 12- and 24-fiber MPO connectors ensure fast and simple connections
- · All 8-fiber MPO arrays have QSFP wiring
- · Available in LazrSPEED 550 OM4 and LazrSPEED 550 OM5 Wideband multimode and TeraSPEED singlemode fibers
- · Factory-terminated and tested trunk cables provide superior quality and performance for field connections
- · MPO-LC array fanouts are constructed with 1.6-millimeter reinforced zipcord furcation tubing for outstanding durability and dependability
- · Array fanouts are available with multiple breakout lengths to simplify installation

1	2	3	4	5	6	7	8	9	10	11	12	13	14-16
U	Q	X	M	P	L	C	G	D	-	M	E	F	010

Construction type	Cable family	Fiber type	Connector 1	Connector 2	Cordage size	Fiber count	Color	Breakout length	UOM	Length minimal length based on breakout
U Ultra-low loss	**Q** Plenum array **R** LSZH array	**G** TeraSPEED singlemode (A2) **X** LazrSPEED 550 multimode **V** LazrSPEED OM5 WB multimode	**QP** 8f MPO (female) **QX** 8f MPO (male) **MP** 12f MPO (female) **MX** 12f MPO (male) **2P** 24f MPO (female) **2X** 24f MPO (male)	**LC** LC connector	**G** 12-fiber PmP Array Cord **J** 8-fiber PmP Array Cord **H** 24-fiber PmP Array Cord *24-fiber PmP cable not available for TeraSPEED singlemode	**8** 8-fiber **D** 12-fiber **F** 24-fiber	**M** Aqua **N** Lime green **J** Yellow · LazrSPEED OM4 standard is aqua · LazrSPEED OM5 standard is lime green · TeraSPEED singlemode standard is yellow	**D** 12 in breakout No gland **E** 24 in breakout No gland **H** 48 in breakout No gland **L** 72 in breakout No gland	**F** Feet **M** Meter	**12 in** 3-999 ft **24 in** 4-999 ft **48 in** 6-999 ft **72 in** 8-999 ft **12 in** 1-305 m **24-48 in** 2-305 m **72 in** 3-305 m · Other lengths available please contact CommScope

SYSTIMAX ULL MPO array cords

- 8-, 12- and 24-fiber MPO connector-based modular design enables simple connections
- Array cords are constructed with LazrSPEED 550 OM4 and OM5 Wideband and TeraSPEED singlemode fibers
- Factory-terminated and tested for instant field connections giving guaranteed quality and performance
- MPO-MPO arrays are constructed with 3.0 mm PmP array cords
- Arrays are available with multiple breakout lengths; minimum overall assembly length may vary based on breakout length selected (please see configuration table for specifics)

1	2	3	4	5	6	7	8	9	10	11	12	13	14-16
U	Q	X	M	P	M	P	G	D	-	M	E	F	010

Construction type
U Ultra-low loss

Cable family
Q Plenum array
R LSZH array

Fiber type
G TeraSPEED singlemode (A2)
X LazrSPEED 550 multimode
V LazrSPEED OM5 WB multimode

Connector 1
QP 8f MPO (female)
QX 8f MPO (male)
MP 12f MPO (female)
MX 12f MPO (male)
2P 24f MPO (female)
2X 24f MPO (male)
2C 24f MPO (female) equipment

Connector 2
QP 8f MPO (female)
QX 8f MPO (male)
MP 12f MPO (female)
MX 12f MPO (male)
2P 24f MPO (female)
2X 24f MPO (male)

Cordage size
G 12-fiber PmP Array Cord
J 8-fiber PmP Array Cord
H 24-fiber PmP Array Cord

*24-fiber PmP cable not available for TeraSPEED singlemode

Fiber count
8 8-fiber
D 12-fiber
F 24-fiber

Color
M Aqua
N Lime green
J Yellow

· LazrSPEED OM4 standard is aqua
· LazrSPEED OM5 standard is lime green
· TeraSPEED singlemode standard is yellow

Breakout length
D 12 in breakout No gland
E 24 in breakout No gland
H 48 in breakout No gland
L 72 in breakout No gland

UOM
F Feet
M Meter

Length
minimal length based on breakout

12 in	3-999 ft
24 in	4-999 ft
48 in	6-999 ft
72 in	8-999 ft
12 in	1-305 m
24-48 in	2-305 m
72 in	3-305 m

· Total length includes the breakout

*For use when there is more than one MPO connector on one or both ends (ie: 1x2, 1x3, 2x3)

*2P, 2X and 2C only available for multimode fiber

PHYSICAL SPECIFICATIONS

EHD sliding fiber panel dimensions

1U = Depth 538.48 mm (21.20 in) x Height 44.45 mm (1.75 in) x Width 482.60 mm (19.00 in)
2U = Depth 538.48 mm (21.20 in) x Height 88.90 mm (3.50 in) x Width 482.60 mm (19.00 in)
4U = Depth 538.48 mm (21.20 in) x Height 177.80 mm (7 in) x Width 482.60 mm (19.00 in)

EHD sliding fiber panel weight (installation weight)

1U = 6.35 kg (14.00 lb)
2U = 8.80 kg (19.40 lb)
4U = 15.60 kg (34.40 lb)

EHD capacity

1U = Accepts 6 EHD universal modules, or EHD MPO adapter packs
2U = Accepts 12 EHD universal modules, or EHD MPO adapter packs
4U = Accepts 24 EHD universal modules, or EHD MPO adapter packs

CommScope (NASDAQ: COMM) helps design,

build and manage wired and wireless networks

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technologists has empowered customers in all

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