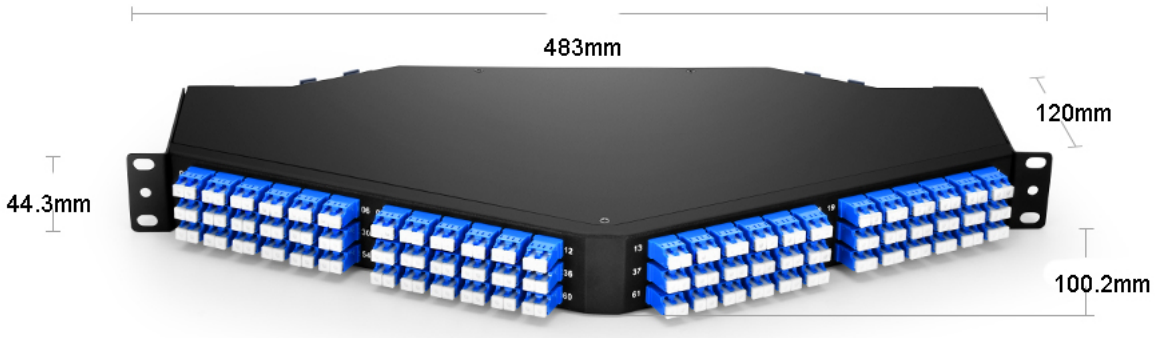
UHD MPO-LC ANGLED INTEGRATED PATCH PANEL

1U 19’ 122F LOADED WITH 12 X 12F MPO&MTP-LC FANOUT 0.9MM CABLE

Description



The UHD MPO-LC angled integrated Patch panel is a 1U (44.3 mm) high-density fiber distribution patch panel designed for 19-inch (483 mm) rack mounting. It is an integrated, non-modular angled breakout panel with a total capacity of 144 fibers:

Front — 12 groups of LC ports, 12 LC ports per group (72 x LC duplex adapters = 144 LC ports), mounted on an angled plane for improved patch-cord management;
Rear — 12 x MPO-12 adapters accept high-density MPO trunk cables (12 x 12 fibers = 144 fibers);
Internal interconnection — factory-terminated 0.9 mm tight-buffered breakout cords with MPO (male) plugs, each MPO-12 trunk fanning out to one group of 12 LC ports without any field splicing.

The chassis is manufactured from SPCC, combining light weight with high mechanical strength and reliable grounding. The panel supports OS1, OS2, OM3, OM4 and OM5 fiber classes, with UPC or APC polish options, making it suitable for single-mode and multimode networks from enterprise LAN to data center backbones. The angled front design guides patch cords to the cable-management channels at a controlled angle, protecting fiber bend radius and simplifying front access.

Technical Specifications

Product name	UHD 1U 19’ MTP&MPO-LC 144F Angled Integrated rack mount Patch Panel	**Part no.**	UHD2S3-xxxx
Front Adapter Type	LC UPC Duplex	**Rear Adapter Type**	MTP/MPO （key up-key down）
Front Interfaces	144	**Rear Interfaces**	12
Insertion Loss	Standard MPO/MTP≤0.5dB Super low loss MPO/MTP≤0.35dB, LC≤0.3dB	**Return Loss**	MPO/MTP≥60dB(SM);20dB (MM), LC≥50dB(SM);35dB(MM)
MTP Adapter	Key up to key down	**Cable Polarity**	Polarity A/B
Cassette Type	1RU 19’ Angled	**Dimensions**	44.3mmx 483mmx 220.2mm

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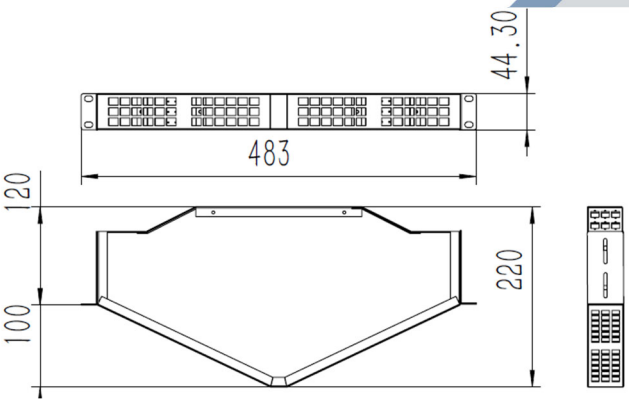
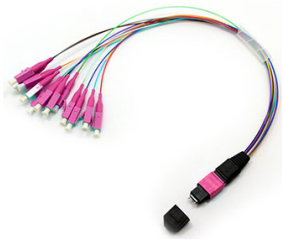
Drawing

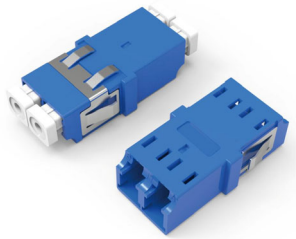


Other Accessories

12F MPO-LC 0.9mm fanout 50cm	End A	End B	Optical Performance
	1x12F MPO&MTP (Male) with Pin	12x LC simplex 0.9 connectors	Standard MPO IL<0.5dB Super low loss MPO IL<0.35dB LC ‘s IL<0.3dB

MPO Adapter	Keyway	Footprint	Insertion Loss	Color
	Opposed (Up-Down) Aligned (Up-Up)	MPO/MTP standard	≤0.2dB	Black

LC DX Reduced flange Adapter	Keyway	Footprint	Insertion	Color
	Aligned (Up-Up)	SC Footprint	≤0.2dB	SM:BLUE OM3:AQUA OM4:MAGENTA OM5:LIME GREEN

LC Reduced flange TF Adapter	Keyway	Footprint	Insertion	Color
	Aligned (Up-Up)	SC Footprint	≤0.2dB	SM:BLUE OM3:AQUA OM4:MAGENTA OM5:LIME GREEN

Design Principles

Integrated Non-Modular Design

Unlike cassette-based patch panels, this panel is a one-piece integrated breakout unit: the breakout harness is permanently installed at the factory, eliminating modular cassette slots and their associated insertion loss and mechanical tolerance. The result is a compact, robust panel with a clean front face.

Angled LC Mounting

The front LC adapters are mounted on an angled plane. Patch cords exit the adapters at a controlled angle and are guided into the side cable-management channels, keeping the minimum bend radius, reducing strain on connectors, and improving front-panel readability and access.

Fixed High-Density Breakout

The panel terminates 144 fibers in a single 1U of rack space: 12 MPO-12 trunk interfaces on the rear are broken out into 144 individual LC connections on the front. Each MPO-12 trunk fans out to one 12-LC group, giving a clean one-to-one mapping. This removes the need for separate LC patch panels and trunk fan-out cassettes, saving rack height and cabling volume.

Factory-Terminated Breakout Harness

The internal interconnection is a pre-terminated, pre-tested 0.9 mm loose-buffered breakout harness with MPO (male) plugs. Because the harness is factory terminated, no splicing or field termination is required during installation, which improves link quality and shortens deployment time. Each MPO-12 trunk fans out to one 12-LC group, giving a clean one-to-one mapping.

0.9 mm loose-Buffered Fiber Design

0.9 mm loose-buffered fiber provides a compact, robust breakout medium inside the panel. The buffered construction protects the fiber from mechanical stress and simplifies routing while maintaining the required minimum bend radius.

Polarity Management

MPO-based links follow the polarity methods (Type A, Type B and Type C) defined in ANSI/TIA-568.3-D. The fixed breakout harness is manufactured with the selected polarity; trunk cables, harness and patch cords are chosen together to ensure end-to-end polarity consistency.

SPCC Chassis and Standard Mounting

The SPCC chassis offers a light weight, high rigidity and an effective grounding path, while ventilated openings allow natural airflow. The panel follows the 19-inch equipment practice (483 mm width, 44.3 mm per rack unit) in accordance with EIA-310-E / IEC 60297-3-100, ensuring drop-in compatibility with standard racks.

International Standards & Compliance

Standard	Title / Scope
IEC 61754-7	Fibre optic connector interfaces — Type MPO connector family (multi-fiber push-on).
TIA-604-5 (FOCIS 5)	Fiber optic connector intermateability standard — Type MPO.
ISO/IEC 11801-1	Information technology — Generic cabling for customer premises.
ANSI/TIA-568.3-D	Optical fiber cabling components standard (including MPO polarity Methods A/B/C).
Telcordia GR-1209-CORE	Generic requirements for passive optical components.
Telcordia GR-1221-CORE	Generic reliability assurance requirements for passive optical components.
Telcordia GR-1435	Generic requirements for multi-fiber optical connectors.
IEC 61300-3-4	Basic test and measurement procedures — Attenuation (insertion loss measurement).
IEC 60825-1	Safety of laser products — Part 1: Equipment classification and requirements.
EIA-310-E / IEC 60297-3-100	19-inch rack equipment practice: 482.5 mm width, 44.45 mm per rack unit.
RoHS 2011/65/EU	Restriction of hazardous substances.

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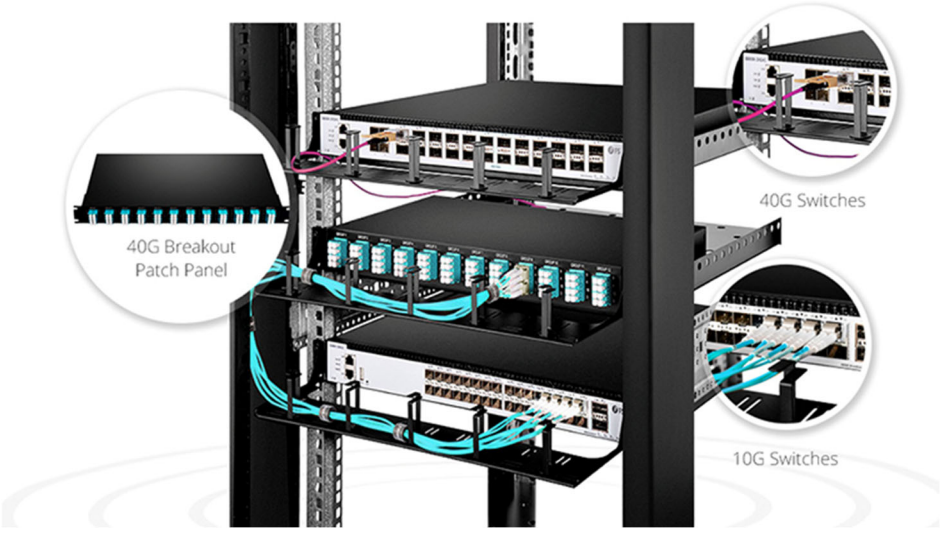
Application

Data centers — MDA / HDA / EDA zones: 40G, 100G or 400G MPO backbone links terminated on the rear, fanned out to duplex LC server and switch access ports.
Enterprise and campus LAN — backbone consolidation and high-density patching in equipment rooms and telecommunications rooms.
Telecom central offices and FTTx — high-density single-mode (OS1/OS2) fiber distribution and ODF-style termination.
Cloud and colocation facilities — space-constrained patching where every rack unit of height is at a premium.
Storage networks (SAN) and high-performance computing — deterministic, high-channel-count fiber management.



Installation

Mount the panel on 19-inch rack rails using the slotted mounting ears; tighten all rack screws to prevent movement.
Connect the chassis grounding stud to the rack earth before cabling.
Plug MPO trunk cables into the rear MPO-12 adapters; the internal breakout harness is already factory-terminated, so no splicing is required.
Route front patch cords into the angled cable-management channels, respecting the minimum bend radius of the cables.
Label each group (G1–G12) and port according to the local labeling plan.

Maintenance

Clean connector ferrules before every mating; always fit dust caps on unused adapters and connectors.
Do not look directly into a fiber end-face or adapter while a light source is connected — laser safety per IEC 60825-1.
Keep fibers within their bend radius at all times; avoid sharp folds and tensile loads on patch cords and trunk cables.
Check insertion loss after re-mating; repeated contamination is the most common cause of excess loss in high-density patching.

Order Index

Full loaded MPO/MTP-LC 96F Patch panel

Patch panel	-	MPO adapter	-	LC adapter	-	MPO/MTP Quality level	-	Fiber mode
UHD2S –3		0-unloaded		0-unloaded		0-unloaded		0– unloaded
		1-Opposed (Up-Down)		1-Lc Standard DX no flange		1-Standard loss Senko MPO Male		1– G657A1
		2-Aligned (Up-Up)		2-Lc Standard DX no flange TF Type		2-Super low loss Senko MPO Male		2-G657A2/B2
						3-Standard loss MTP Male		3-G657B3
						4-Super low loss Elite MTP Male		4-BIF OM1
						5-Standard loss OMC MPO Male		5-BIF OM2
						6-Super low loss OMC MPO Male		6-BIF OM3
								7-BIF OM4
								8-BIF OM5

For Example:UHD2S-3-1-1-1-1