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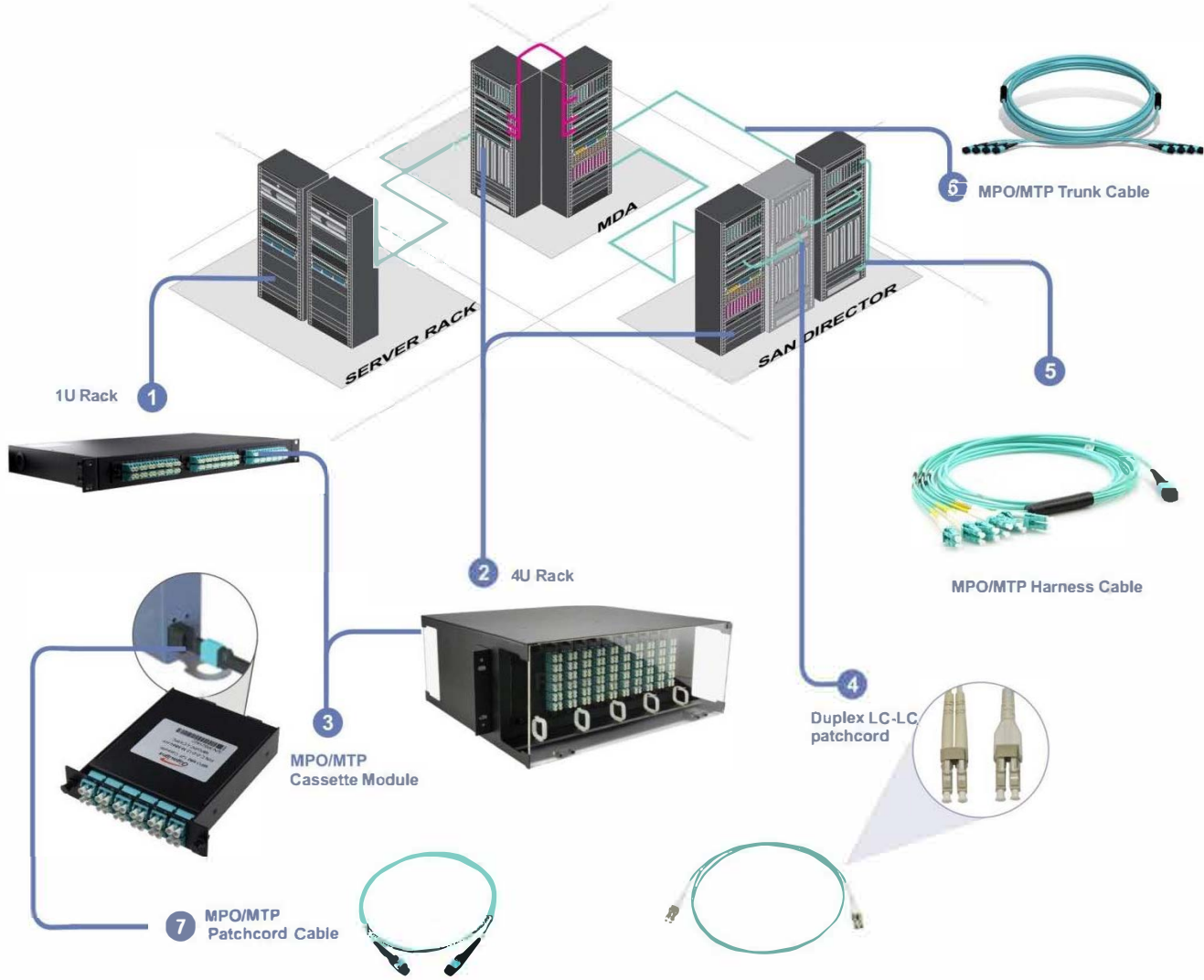
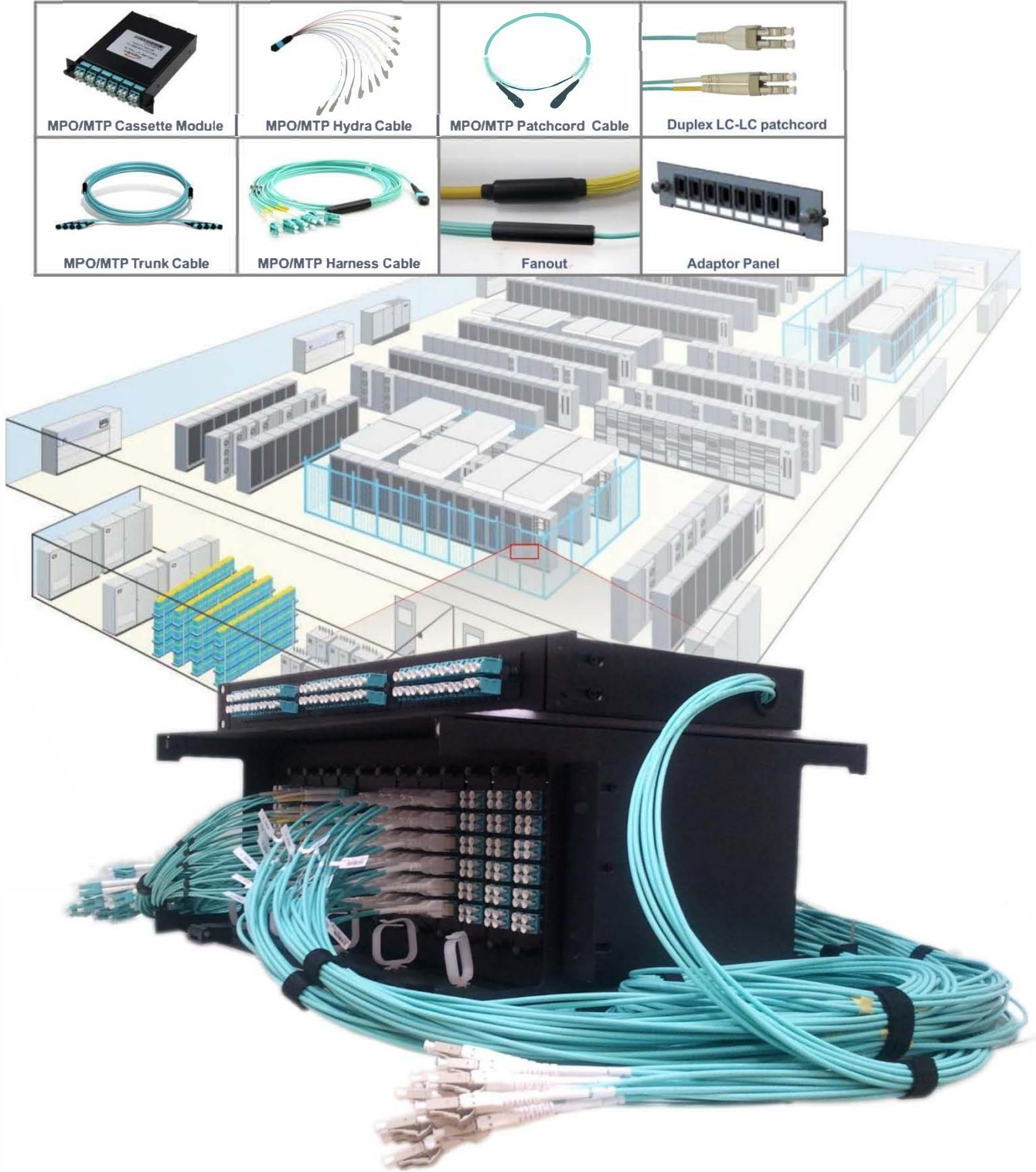
MPO/MTP Cabling System

Solutions Guide



Data Center Solution

Typical Application Scenario Data Center



- 1

1U Rack
- 2

4U Rack
- 3

MPO/MTP Cassette Module
- 4

Duplex LC-LC patchcord
- 5

MPO/MTP Harness Cable
- 6

MPO/MTP Trunk Cable
- 7

MPO/MTP Patchcord Cable

MPO/MTP Optimate System

MPO/MTP Patchcord



Description	Configuration	Connectors
12f MPO/MTP Patchcord	MPO-MPO Type A	12f MPO to 12f MPO
24f MPO/MTP Patchcord	MPO-MPO Type B	2x12f MPO to 2x12f MPO
48f MPO/MTP Patchcord	MPO-MPO Type C	24f MPO to 24f MPO
	Customized Polarity	48f MPO to 48f MPO
	Female or Male	

MPO/MTP Harness



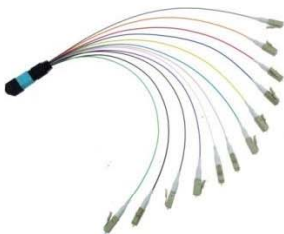
Description	Configuration	Connectors
MPO/MTP Harness cable	MPO to 4x duplex LC/SC	MPO/MTP
	MPO to 10x duplex LC/SC	LC/LC uniboot
	MPO to LC/SC/MU/FC/E2000	SC/MU/FC/E2000
	4~144 fibers breakout	

MPO/MTP Trunk



Description	Configuration	Connectors
MPO/MTP Trunk cable	2x12f MPO-2x12f MPO 24f trunk	12/24f MPO MTP
	4x12f MPO-2x12f MPO 48f trunk	
	6x12f MPO-6x12f MPO 72f trunk	
	9x8f MPO-9x8f MPO 72f trunk	
	N*12f MPO-N*12f MPO trunk	
	Spool package	
	eye Pulling structure	

MPO/MTP Hydra



Description	Configuration	Connectors
MPO/MTP Hydra cable	12f MPO-12 LC/SC/FC/MU/E2000	MPO/MTP
	24f MPO-24 LC/SC/FC/MU/E2000	LC/LC uniboot
		SC/FC/MU/E2000

Adaptor Panel



Description	Configuration	Connectors
Adaptor Panel	6 LC/SC Adapter	MPO/MTP
	6 MPO/MTP Adapter	
	6 LC W/4 ports Adapter	
	8 MPO/MTP Adapter	
	8 LC Adapter	
	12 SC simplex Adapter	
	24 LC duplex Adapter	

Generic optical jumper

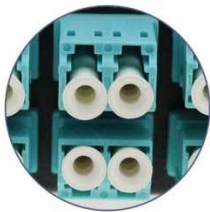
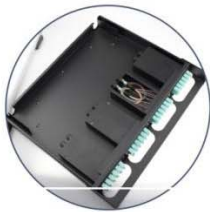


Description	Configuration	Connectors
Simplex and Duplex optical jumper	Simplex LC-LC, SC-SC, LC-SC, etc.	LC/SC/FC/MU/E2000
	Duplex LC-LC, SC-SC, LC-SC, etc.	

MPO/MTP Cassette



Description	Configuration	Connectors
MPO/MTP LC Cassette	12f MPO to 12 LC/SC	12/24/48f MPO MTP
MPO/MTP SC Cassette	24f MPO to 24 LC	LC/SC/FC/MU/E2000
Can be plugged into 1U and 4U rack	2x12f MPO to 24 LC	
	48f MPO to 48 LC	
	N*12f MPO to N*12 LC	
	Different density module box and	
	1U & 4U rack available	



MPO/MTP Connector

MPO/MTP Connectivity

Cable Performance

Fibre Type (ISO/IEC 11801)	OS1/OS2	OM1	OM2	OM3	OM4
Attenuation Coefficient [dB/km]	≤ 0.38 Max (1310nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)
	≤ 0.25 Max (1310nm)	≤ 1.5 Max (1300nm)	≤ 1.5 Max (1300nm)	≤ 1.5 Max (1300nm)	≤ 1.5 Max (1300nm)
	≤ 0.34 Typ (1550nm)	≤ 2.9 Typ (850nm)	≤ 2.7 Typ (850nm)	≤ 2.7 Typ (850nm)	≤ 2.7 Typ (850nm)
	≤ 0.19 typ (1550nm)	≤ 1.2 Typ (1300nm)	≤ 0.9 typ (1300nm)	≤ 0.9 typ (1300nm)	≤ 0.9 typ (1300nm)
Minimum Bandwidth : Overfilled Launch [Mhz-km]	NA	≥ 200 (850nm)	≥ 500 (850nm)	≥ 1500 (850nm)	≥ 3500 (850nm)
		≥ 500 (1300nm)	≥ 500 (1300nm)	≥ 500 (1300nm)	≥ 500 (1300nm)
Minimum Bandwidth : Laser Effective Modal Bandwidth [Mhz-km]	NA	NA	NA	≥ 2000 (850nm)	≥ 4700 (850nm)

Connector Performance - MTP

Connector Mating	IL Typical	IL MAX	IL Typical Premium	IL MAX Premium	IL Typical	IL MAX	Return Loss
MTP Elite (MM)	0.20 dB	0.35 dB	NA	MTP Elite (SM)	0.18 dB	0.25 dB	>60dB
MTP Standard (MM)	0.35 dB	0.60 dB	NA	MTP Standard(SM)	0.25 dB	0.75 dB	>60dB
LC, SC (MM)	0.15dB	0.30dB	NA	LC, SC (SM)	0.18dB	0.25dB	>55/65dB*
LC, SC Premium (MM)	0.08dB	0.15dB	NA	LC, SC Premium (SM)	0.12dB	0.15dB	>55/65dB*

Connector Termination

Connector Type	Conformance	Singlemode	Multimode	SM Duplex	MM Duplex
SC connector	IEC 61754-4	SM PC- Blue APC- Green	MM PC- Beige	SM PC- Blue APC- Green with clips	MM PC- Beige/Aqua with clips Boot -Red & Black
LC connector	IEC 61754-20	SM PC- Blue APC- Green Boot-White	MM PC- Beige Boot-White	SM PC- Blue APC- Green with clips Boot-White	MM PC- Beige/Aqua with clips Boot-White
ST connector	IEC 61754-2	SM PC- Yellow boot	MM PC- Black boot	SM PC- Yellow boot	MM PC- Red & Black boot
FC connector	IEC 61754-13	SM PC- Blue boot APC- Green boot	MM PC- Black boot	SM PC- Black boot APC- Green boot	MM PC- Black boot

SOLUTION

The Elite MTP and Premium LC discrete connectors with reduced insertion losses can reallocate power of interconnection losses to cover longer channel length.

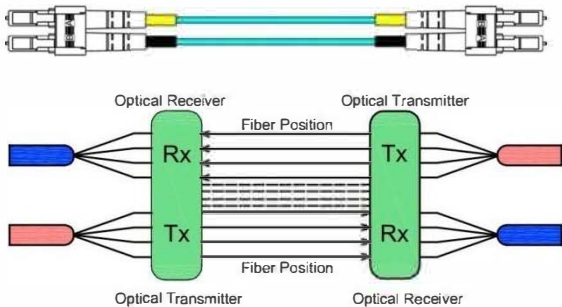
Reduced Topology

Hone’s high technical expertise and excellent geometry-control methods enable us to provide extreme low-loss terminations with MT core dip less than 100nm, and all performance are 100% tested and guaranteed.

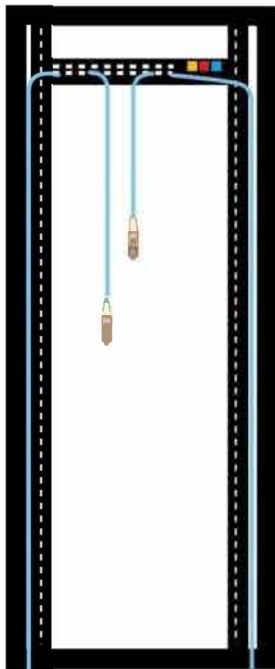
Connector Mating	Reduced Topology	
	IL typical	IL MAX
Elite (MM)	0.15dB	0.25dB
MTP Standard(MM)	0.35dB	0.5dB
LC, SC (MM)	0.05dB	0.1dB

Full Infrastructure

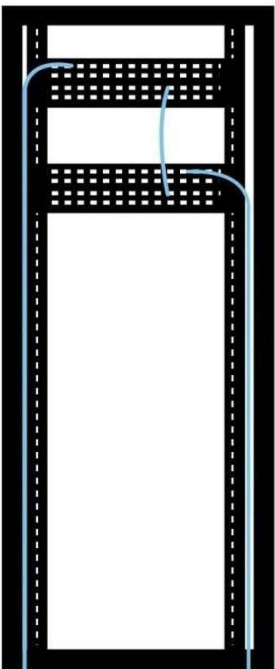
CONNECTOR	Standard	Premium / Elite	Reduced Topology Standard	Reduced Topology Elite
INTERC NR	4 x MTP , 4 x LC	4 x MTP , 4 x LC	4 x MTP , 4 x LC	4 x MTP , 4 x LC
Power Budget for 100m	2.6dB	2.6dB	2.6dB	2.6dB
Average Link Loss	2.3dB	1.42dB	2.1dB	1.1dB
Max Link Loss	3.9dB	2.3dB	3.1dB	1.5dB



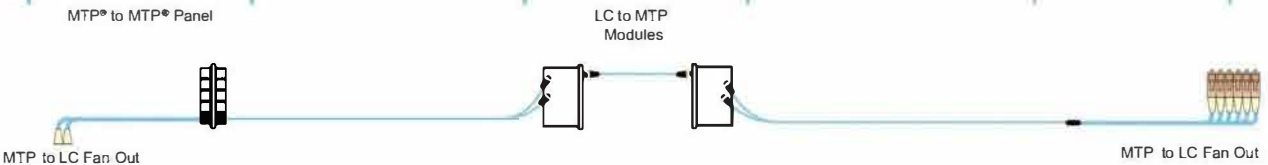
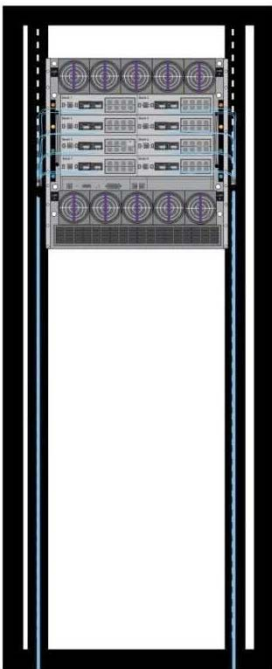
Equipment Cabinet (ECA)



Main Distribution Area (MDA)



Equipment Cabinet (ECA)



MPO/MTP Patchcord Cable



Features

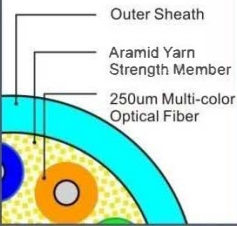
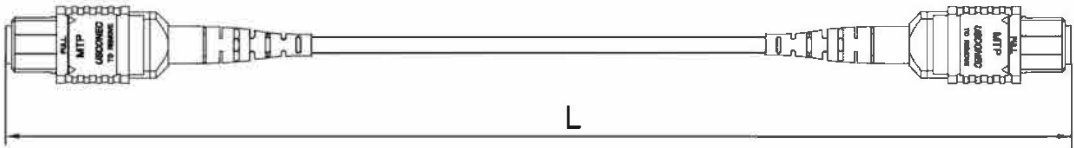
- ◆ MPO / MTP connector interface patchcord.
- ◆ Different cable structures available to cater for different installation needs.
- ◆ Available in 4/8/12/24/48 cable fibers with round to ribbon optical cable.
- ◆ Improves and simplifies fiber routing, decreases fiber management space.
- ◆ Comply with IEC 61754-7, Telcordia GR-1435-CORE, RoHS.

Applications

- ◆ For installation in horizontal patch extension from consolidation point to the workstation outlets.
- ◆ High Density Fiber Management. Telecommunications and Broadband / CATV networks.
- ◆ DACS.
- ◆ LAN/WAN Premises

Assembly drawing

Length	Tolerance
$0 \leq L < 1\text{m}$	+50/-0 mm
$1\text{m} \leq L < 10\text{m}$	+100/-0 mm
$10\text{m} \leq L$	+1% L/-0



Overview

Hone's MPO / MTP patchcords are simplex multi-fiber Cable using the MPO / MTP connector in fiber counts of 4, 8, 12, 24 or 48. They offer Male and Female MPO / MTP connectors on each end,available in 4~48 fibers versions as well as multi-mode (62.5/125, 10G OM2 / OM3 / OM4,Bend-insensitive fiber, etc.) and single-mode(G652D, G657A1 etc.) fiber types

Quick Glance key Feature

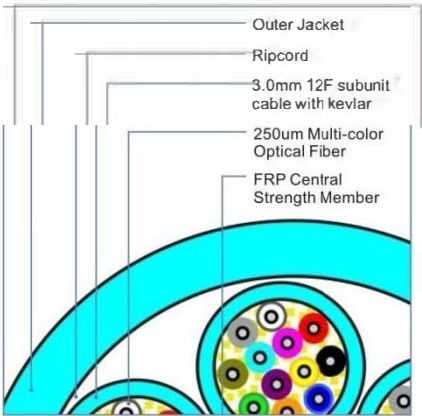
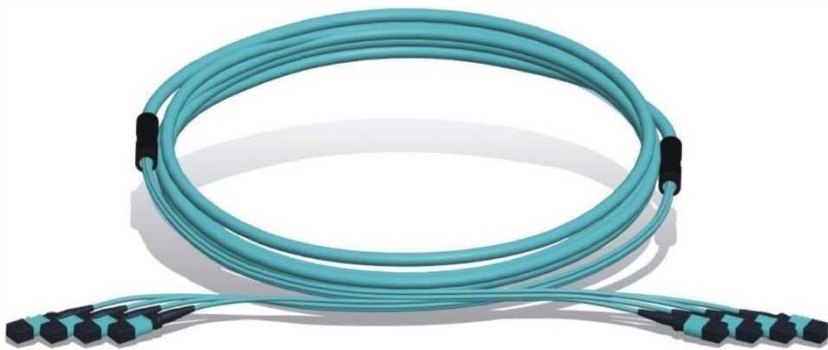


Part Number Generator

GMP	X	X	XX	X	XXX	XX	XXX/XXX	XXX/XXX	XXX
Type	Polarity Options	Insertion Loss type	Fiber count	Connector Type	Fiber Type	Jacket Type	A-end Connector	B-end Connector	Cable Length
G GigaC™	A Type A	0 Standard	04 04-F	M Male	SM1 G652D	OR Riser	MTP/APC MTP APC	MTP/APC MTP APC	001~999m
M MPO /MTP	B Type B	1 Elite / Low Loss	08 08-F	F Female	SM2 G657A1	LS LSZH	MTP/PC MTP PC	MTP/PC MTP PC	
P Patchcords	C Type C		12 12-F	H Male on one side	SM3 G657A2	OP Plenum	MPO/APC MPO APC	MPO/APC MPO APC	
	R Type R		24 24-F		MM1 OM1	XX NA	MTP/PC MTP PC	MTP/PC MTP PC	
	O Others				MM2 OM2				
					MM3 OM3				
					MM4 OM4				

Example Part Number: HONE-A-1-12-M-MM4-LS-MPO/PC-MPO/PC-010

MPO/MTP Trunk Cable



Features

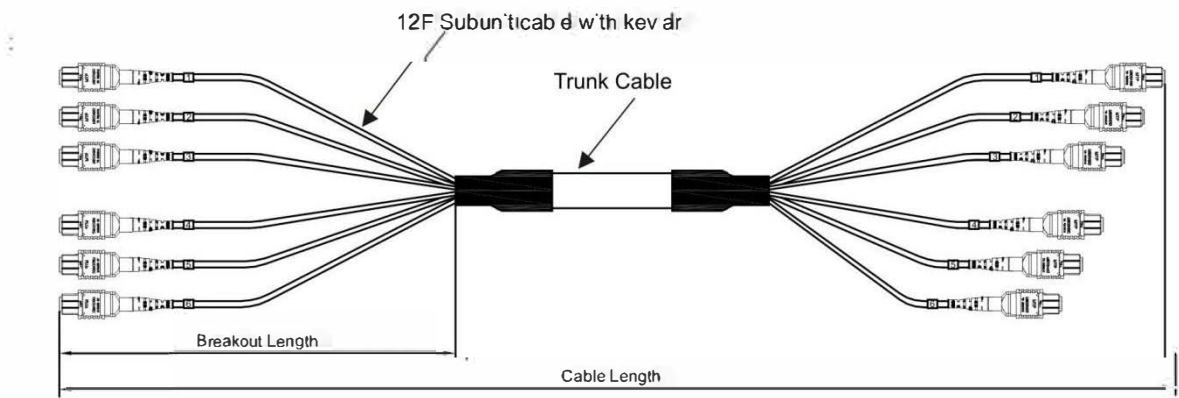
- MPO / MTP connector or MPO hybrid interface patchcord.
- Available from 12 to 144 fibers in increments of 12 fibers
- Available in multi-mode (62.5/125, 10G OM2 / OM3 / OM4, Bend-insensitive fiber, etc.) and single-mode (G652D, G657A1 etc.)
- Generic connector interface available in Simplex or Duplex LC, SC, etc
- Connectivity protected through customized dual shelf reel & pulling-eye during layout
- Comply with Telcordia GR-1435-CORE, GR-326-CORE, RoHS.

Applications

- For installation in horizontal patch extension from consolidation point to the workstation outlets.
- High Density Fiber Management.
- DACS.
- LAN/WAN Premises

Length	Tolerance
0 ≤ L < 1m	+50/-0mm
1m ≤ L < 10m	+100/-0 mm
10m ≤ L	+1% L/-0

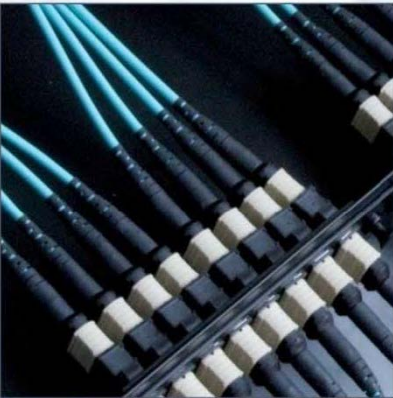
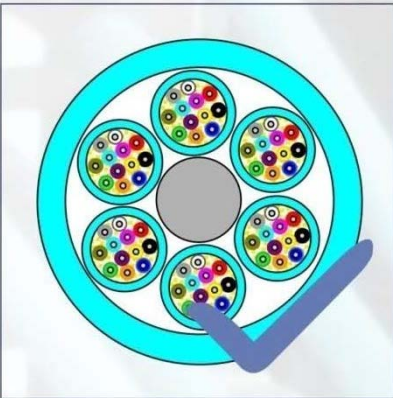
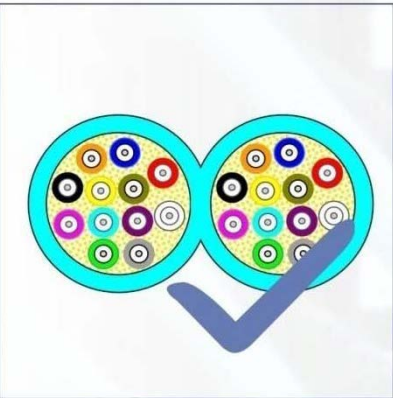
Assembly drawing



Overview

Hone's trunk cable assemblies contain MPO to MPO and MPO hybrid types. Plug and Play Reels, pulling eye are designed to be quickly pulled and connected to Plug and Play Modules and Adapter Plates. Through customized configuration, these reels & pulling-eye ensure the high -performance, high-density connections can be made efficiently where you need them.

Quick Glance key Feature

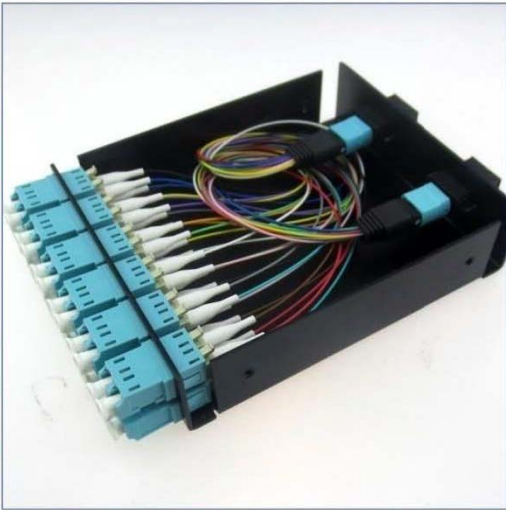
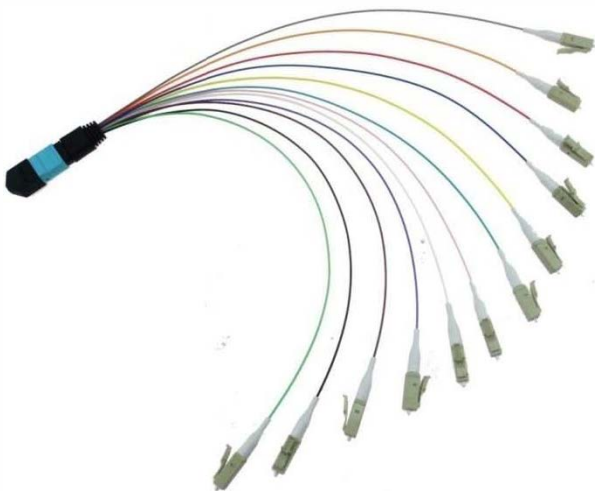


Part Number Generator

GMT	X	X	XX	X	XXX	XX	XXXX	XXXX	XXX/XXX	XXX/XXX	XXX
Type	Polarity Options	Insertion Loss type	Fiber Count	Connector Type	Fiber Type	Jacket Type	Length On A-end	Length On B-end	A-end Connector	A-end Connector	Cable Length
G GigaC™	A Type A	0 Standard	04 04-F	M Male	SM1 G652D	OR Riser	0500 500mm	0500 500mm	MTP/APC MTP APC	MTP/APC MTP APC	001~999m
M MPO /MTP	B Type B	1 Elite / Low Loss	08 08-F	F Female	SM2 G657A1	LS LSZH	1000 1000mm	1000 1000mm	MTP/PC MTP PC	MTP/PC MTP PC	
T TRUCK CABLE	R Type R		12 12-F	H Male on one side	SM3 G657A2	OP Plenum			MPO/APC MPO APC	MPO/APC MPO APC	
	C Type C		24 24-F		MM1 OM1	XX NA			MTP/PC MTP PC	MTP/PC MTP PC	
	O Others				MM2 OM2						
					MM3 OM3						
					MM4 OM4						

Example Part Number: HONE-A-1-12-F-MM3-LS-0500-0500-MPO/PC-MPO/PC-XXX

MPO/MTP Hydra Cable



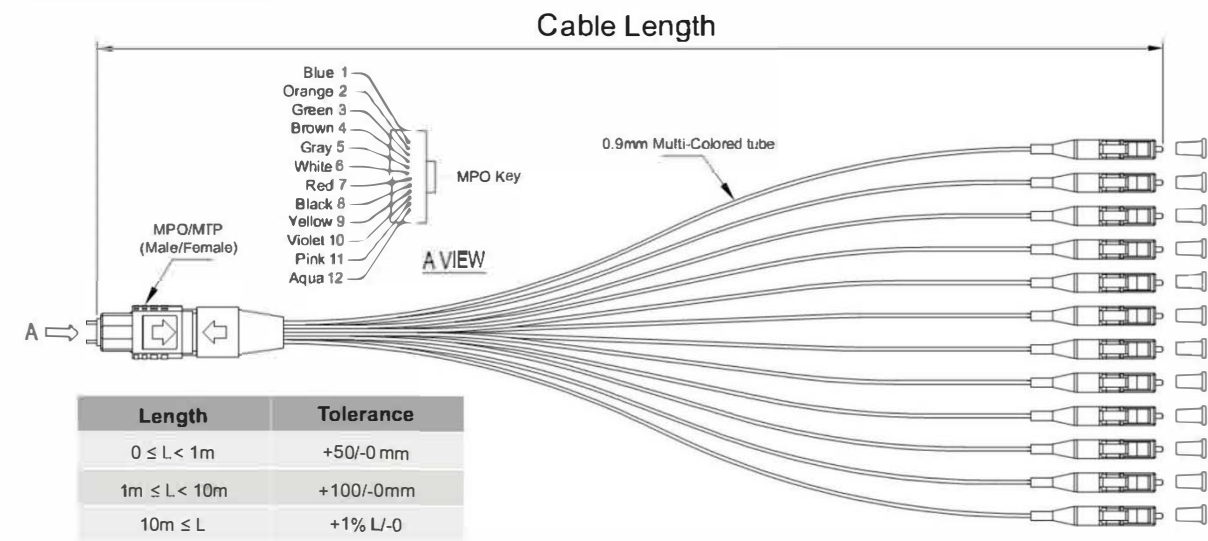
Features

- High-density and small design, Easy and fast installation.
- Available in 12 / 24 / 48 fiber versions.
- Field connections with guaranteed quality and simplifies fiber routing.
- Modular system management, easy reconfiguration for moves, adds, and changes.
- Customized fiber polarity in the module.

Applications

- Data Centre Infrastructure.
- High Density Fiber Management.
- Telecommunications networks and Broadband / CATV networks.
- LAN/WAN Premises

Assembly drawing



Overview

Hone's MPO / MTP harness cable assemblies, is deployed inside plug and play cassette modules. This solution is a 12-colored 0.9mm cable utilizing a MPO / MTP connector on one end and generic connectors (such as LC, SC, FC, etc.) on the other end. They can be used together with Hone's plug and play modules, MPO / MTP Adapter Plates, and other solutions, also available in 8/12/24 fibers versions as well as Multi-mode (Standard 50/125, 62.5/125, BI 10Gig 50/125) and Single-mode fiber types.

Quick Glance key Feature



Part Number Generator

GMH	X	XX	X	XXX	XX	XXX/XXX	XXX/XXX	XXX
Type	Insertion Loss type	Fiber count	Connector Type	Fiber Type	Jacket Type	A-end Connector	B-end Connector	Cable Length
G GigaC™	0 Standard	04 04-F	M Male	SM1 G652D	HY Hytel	MTP/APC MTP APC	LC/APC	001~999m
M MPO /MTP	1 Elite / Low Loss	08 08-F	F Female	SM2 G657A1	OR Riser	MTP/PC MTP PC	LC/UPC	
H Hydra		12 12-F		SM3 G657A2	LS LSZH	MPO/APC MPO APC	SC/APC	
		24 24-F		MM1 OM1	OP Plenum	MTP/PC MTP PC	SC/UPC	
				MM2 OM2	XX NA		FC/APC	
				MM3 OM3			FC/UPC	
				MM4 OM4				

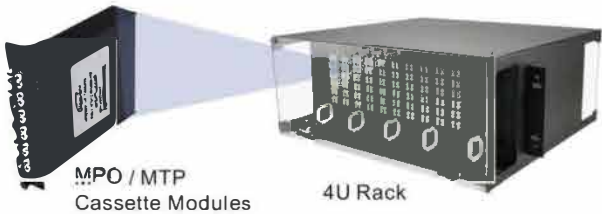
Example Part Number: GMH-1-12-M-MM3-HY-MPO/PC-LC/UPC-XXX

MPO / MTP Cassette Module



Features

- High-density and small design, Easy and fast installation.
- Available in 12 / 24 / 48 fiber versions.
- Field connections with guaranteed quality and simplified fiber routing.
- Modular system management, easy reconfiguration for moves, adds, and changes.
- Customized polarity in the module.



Applications

- Data Centre Infrastructure.
- High Density Fiber Management.
- Telecommunications networks and Broadband / CATV networks.
- LAN/WAN Premises

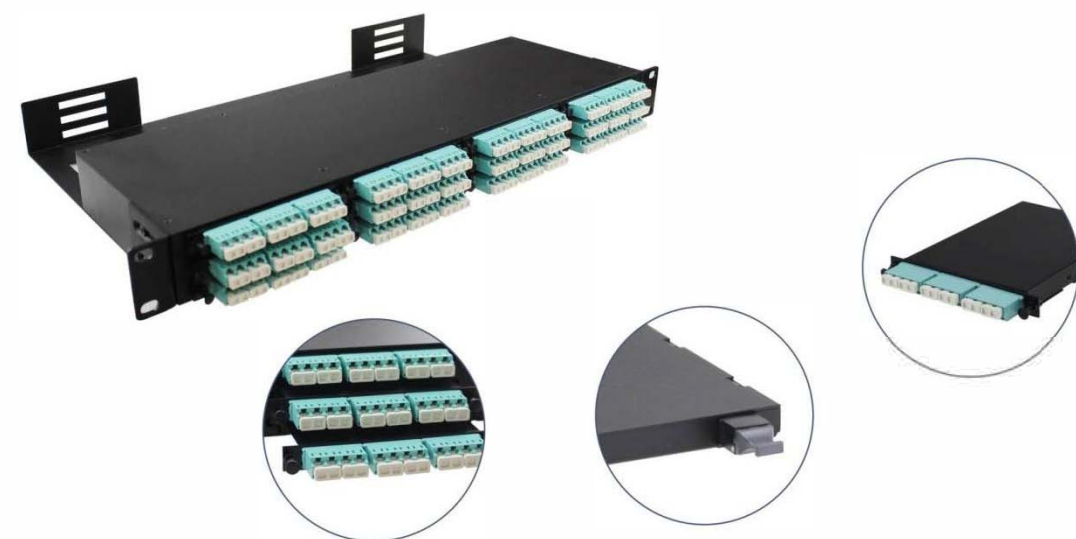
Overview

Hone's MPO / MTP Cassette Modules provide secure transition between MPO / MTP and LC or SC discrete connectors. They provide a quick, reliably high performance and efficient way to deploy up to 24 LC or 12 SC fiber ports in a single module. The Modules can be mounted in 1U or 4U 19" multislot chassis. They are available in Multi-mode and Single-mode cable.

Quick Glance key Feature



Ultra High Density MPO/MTP Panel System

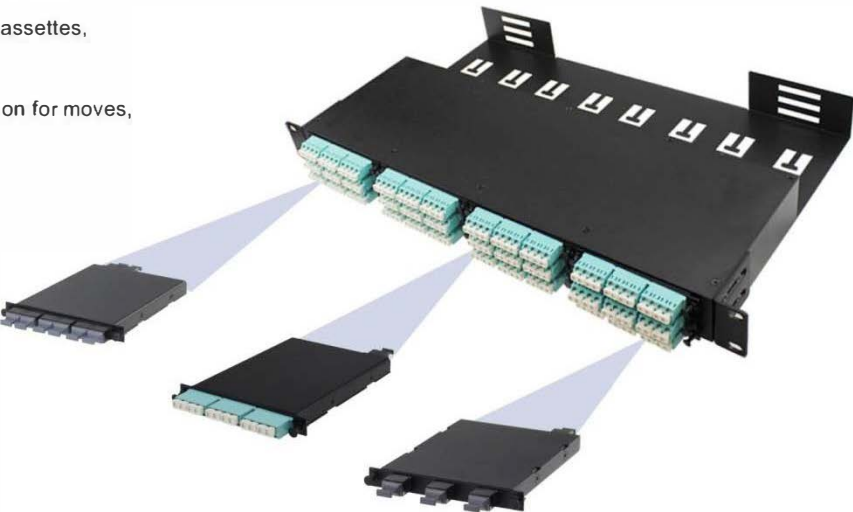


Features

- Ultra high density and compact design, easy for installation
- Hold up to 12 slots, each can be configured with cassettes, adapter plates, or splice trays
- Modular System management, Easy reconfiguration for moves, adds and changes.
- Available in 144 fibers in 1 U rack.
- Customized Polarity in the module.
- Field connection with guaranteed quality and simplified fiber routing.

Applications

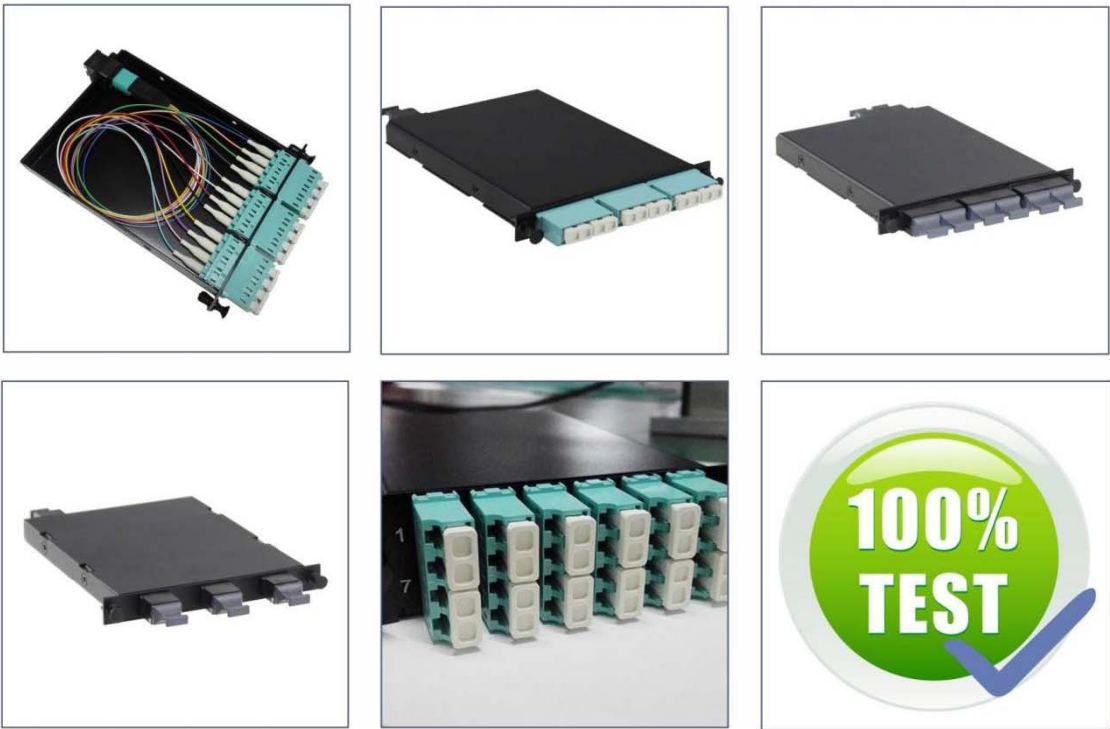
- Data Centre Infrastructure,
- Ultra-high Density Fiber Management
- Migration from 10G to 40/100G
- Telecommunications and Broadband/CATV Networks



Overview

H0ne UHD MPO/MTP cabling system offers a simple installation, easy accessibility and reliable fiber management solution. Same as it provides 72~144 fibers solution in a standard 19" rack, there are options of 3 slots, 4 slots, or 12 slots available in the front of 19" rack, each slot can be used to accommodate H0ne High density MPO/MTP module. 12 pcs MTP- LC 12-F cassette module can be inserted into one 19" rack, thus providing an easy solution for 144 fiber deployment in an 1U rack. The H0ne UHD

Quick Glance key Feature



Part Number Generator

1RU 96 fibers	1U-04
1RU 144 fibers	1U-12

Extras	
Description	Part Number
MPO-12LC Mini Cassette	H0NE-X-12-M-OM3-HY-MPO/PC-LC/UPC
1xMPO-3xMPO Mini Cassette	H0NEX-24-M-OM3-HY-MPO/PC-MPO/PC
2xMPO-6xMPO Mini Cassette	H0NE-X-48-M-OM4-HY-MPO/PC-MPO/PC
2xMPO-24LC Mini Cassette	H0NE-X-24-M-OM5-HY-MPO/PC-MPO/PC

Patch Panels for use with MPO/MTP Cassette Modules

1U 3-Slot Sliding Patch Panel For MPO/MTP Modules



1U Chassis
scaling up to
36 ~ 144 discrete fibres

Overview

Samwell offers an innovative, robust 1U sliding patch panel, which is designed to accommodate up to 3 LGX Modules or MPO/MTP cassettes in a 1U space.

By utilizing different types of adaptors and fiber cables, we can offer a variety of solutions to end users, thus facilitate rapid deployment of high density data center infrastructure as well as improved troubleshooting and reconfiguration during moves, adds and changes.

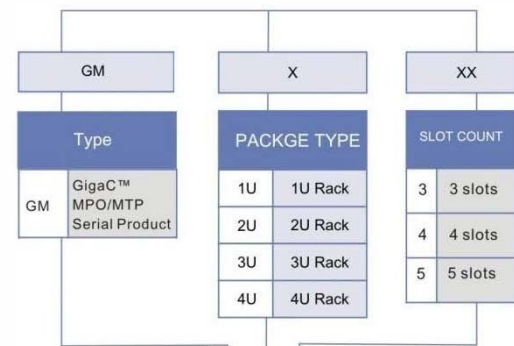
Features

- Up to 5 LGX/MTP modules in 1U
- Multiple adaptor options available
- Individually labelled ports
- Accepts loose tube, distribution and pre-terminated cables
- Fits standard 19" cabinet

Applications

- Data centres, premise installations, telecommunication networks
- Ethernet, Fibre Channel, LAN and WAN
- Data communication and telecommunication networks
- Indoor applications

Part Number Generator



Example Part Number: GM-X-XX

4U 12-Slot Sliding Patch Panel For MPO/MTP Modules



4U Chassis
up to 288 discrete fibers

Hone offers 4U Rack with 12 slots for cabling in data center. The chassis also offers multiple cable entry solutions: MPO/MTP trunk cables connected to 12 individual MPO/MTP cassettes for pre-terminated solutions.

Features

- Customized 2~4U rack configuration
- Up to 12 modules in 4U rack
- Individually labelled ports
- Accepts loose tube, distribution and pre-terminated cables
- Fits standard 19" cabinet

Applications

- Data centers, premise installations, telecommunication networks
- Ethernet, Fiber Channel Management
- Data communication and telecommunication networks
- Indoor applications

Adaptor Plates

LC duplex Adapter		SC duplex Adapter	
	6 LC Adapter 6 MPO/MTP Adapter		6 SC Adapter 6 LC W/4 ports Adapter
MPO/MTP Adapter		LC duplex Adapter	
	8 MPO/MTP Adapter 8 LC Adapter		24 LC duplex Adapter 12 SC simplex Adapter
Dust Panel			
			

