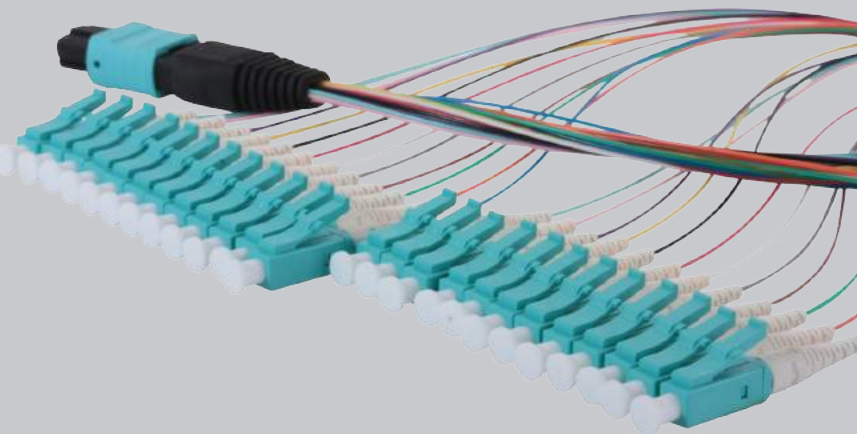


# KINGTON

## Data Center Solutions MPO/MTP Cabling System



Data centres are at the heart of any business IT capability. Independent of their respective sizes, high availability and peak performance are required all-day, every-day. As networks are designed, deployed, scaled up, and replaced, infrastructure managers are struggling to keep pace because of complex architectures and operations processes. You can solve these challenges and meet the expanding needs of cloud architectures with our data center solutions. Our extensive knowledge and expertise, coupled with high performance network connectivity and a centrally managed physical infrastructure support you in reducing deployment time, minimizing unplanned outages and infrastructure management costs.

# MTP® Assemblies For 40G/100G

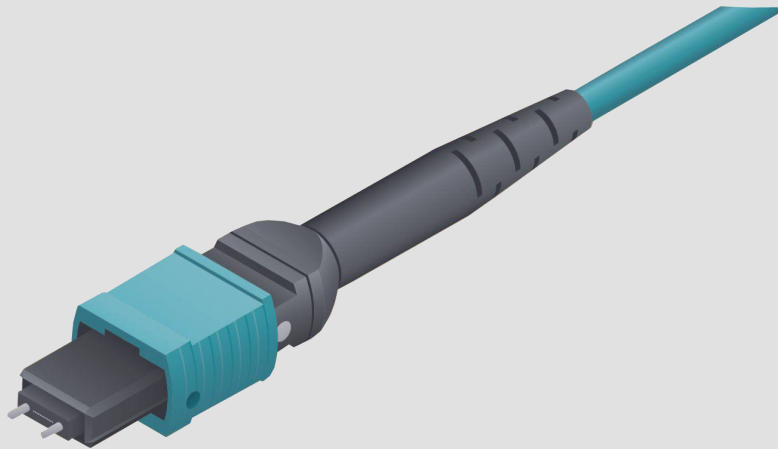
**KINGSTON** MTP® Assemblies that specially designed for laser optimized 40G/100G structured cabling system that employs parallel optics transmission. For 40G Ethernet, 4Tx and 4 Rx fibers are transmitted at 10G for an aggregate of 40G by utilizing a 12-fiber MTP® connector.

Likewise, a 100G Ethernet is to use 10 Tx and 10 Rx fibers that are transmitted at 10G for an aggregated of 100G by using a 24-fiber MTP® connector.

Alternatively, 100G can use 2pcs of 12-fiber MTP® connector. However, the single port 24-fiber connector is the preferred approach.

## Keyed Characteristic:

- ▶ Most cost effective solution for getting 40G/100G transmissions for short reach systems.
- ▶ Pre-terminated 12-fiber or 24-fiber MTP® solutions offered in customized configurations.
- ▶ Specifically terminated with unique fiber channeling to cater for 40G/100G Ethernet.
- ▶ High Density solution within tiniest physical space.
- ▶ To support high bandwidth applications.



## Specification

Unique Fiber Channeling for 40G/100G Ethernet	40G on 12-fiber MTP® Connector Channel #1~4 for Rx Channel #9~12 for Tx Channel #5~8 unused
	100G on 24-fiber MTP® Connector Channel #2~11 for Rx Channel #14~23 for Tx Channel #1,12,13,24 unused
	100G on 2pcs of 12-fiber MTP® Connector Channel #2~11 for Tx to the firstly connector Channel #2~11 for Rx to the second connector Channel #1 & #12 unused for both end connector
Cable Structure	12 or 24 Mini-fibers Cable
Cable Jacket Colors	Aqua - Multimode (OM3)
	Heather Voilet - Multimode (OM4)
Coonector Type Option	Pinned MTP® (Male Type) Non-pinned MTP® (Female Type)
Available Fiber Mode Options	Multimode (OM3 & OM4)
Jacket Material Options	Riser (OFNR) Low Smoke Zero Halogen (LSZH) Plenum (OFNP)

## Optical Performance

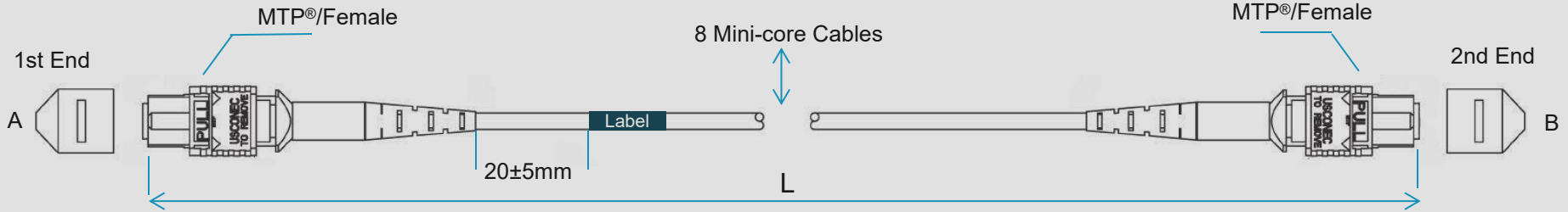
Type	Standard MTP® Connector	Low Loss MTP® Connector
Fiber Mode	Multimode	Multimode
	@850nm	@850nm
Insertion Loss	≤0.60dB	≤0.35dB
	Typical 0.25dB	Typical 0.10dB
Return Loss	≥20dB	≥20dB

※ Customized optical performance is available upon request, please contact kington team for more details

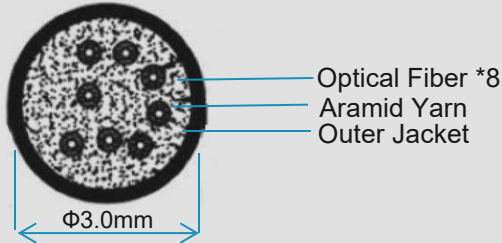
# 40G MTP® Assemblies

## 40G on 12-fiber MTP® Connector

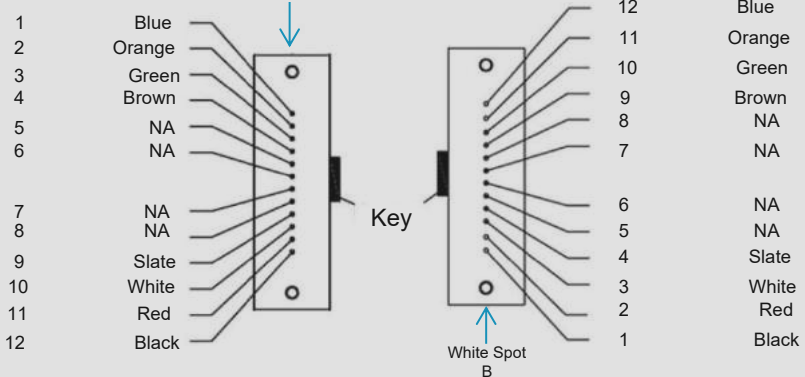
Channels #1~4 for Rx  
 Channels #9~12 for Tx  
 Channels #5~8 unused



## 8-Fiber Mini-core Cables



## Channel No. Fiber Color



## 40G: 1X12F MTP Fiber Chart

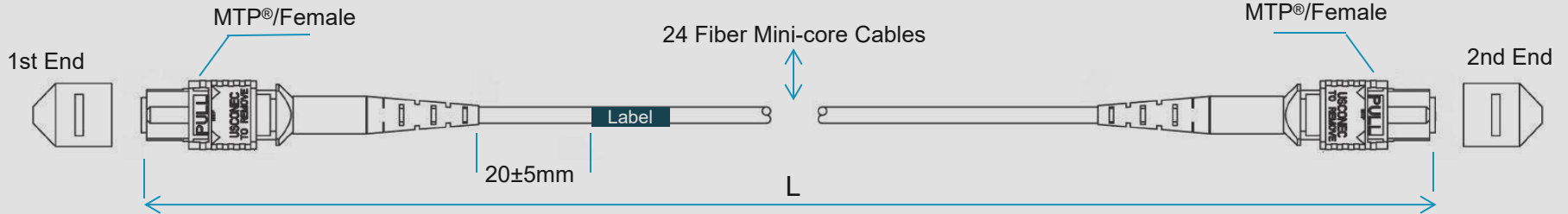
Fiber Color	MTP®		MTP®
Blue	Rx	←	Tx
Orange	Rx	←	Tx
Green	Rx	←	Tx
Brown	Rx	←	Tx
Not Used	NA	.....	NA
Not Used	NA	.....	NA
Not Used	NA	.....	NA
Not Used	NA	.....	NA
Slate	Tx	→	Rx
White	Tx	→	Rx
Red	Tx	→	Rx
Black	Tx	→	Rx

40G 12-Fiber MTP Connector: - Channel 1-4 are Receive (Rx)  
 - Channel 9-12 are Transmit (Tx)  
 - Channel 5-8 are Not Used

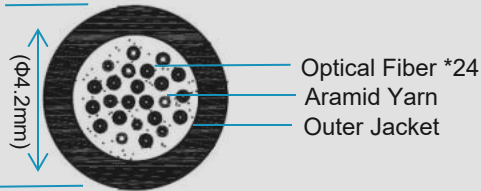
# 100G MTP® Assemblies

## 100G on 24-fiber MTP® Connector

Channels #2~11 for Rx  
 Channels #14~23 for Tx  
 Channels #1,12,13,24 unused

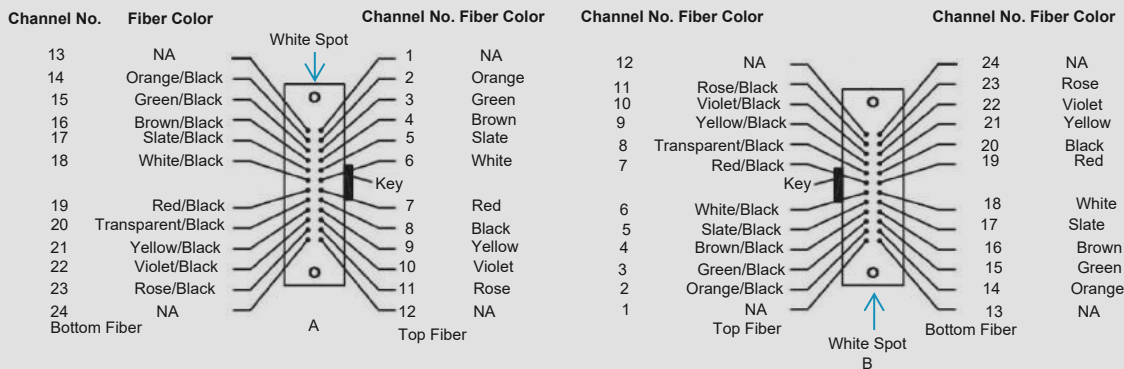


## 24-Fiber Mini-core Cables



100G: 1X24F MTP Fiber Chart			
Fiber Color	MTP Top Row		MTP Bottom Row
Not Used	NA	.....	NA
Orange	Tx	↔	Rx
Green	Tx	↔	Rx
Brown	Tx	↔	Rx
Grey	Tx	↔	Rx
White	Tx	↔	Rx
Red	Tx	↔	Rx
Black	Tx	↔	Rx
Yellow	Tx	↔	Rx
Violet	Tx	↔	Rx
Rose	Tx	↔	Rx
Not Used	NA	.....	NA

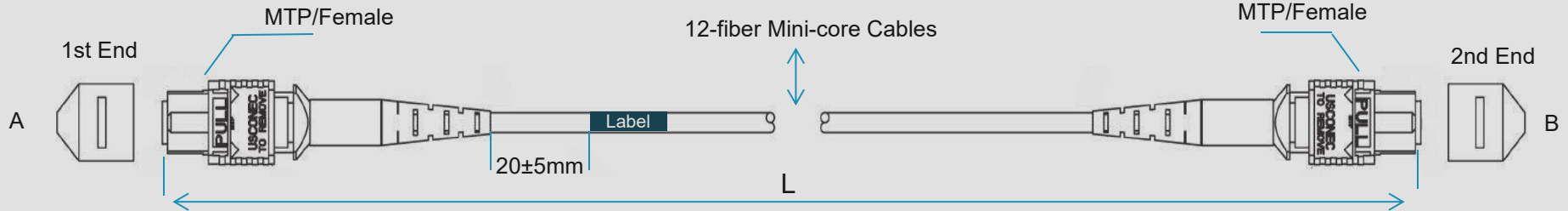
100G 24-Fiber MTP Connector: -Channel 2-11 are Transmit (Tx) For The Top Row  
 -Channel 14-23 are Receive(Rx) For The Bottom Row  
 -Channel 1,13,23&24 are Not Used



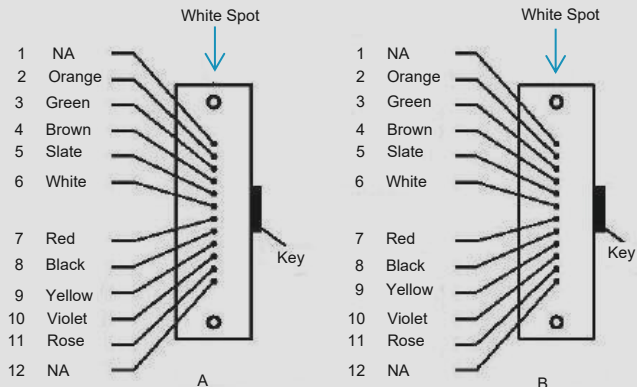
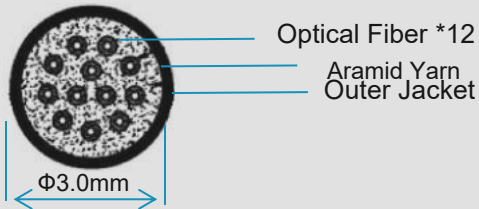
# 100G MTP® Assemblies

100G on 2pcs of 12-fiber MTP® Connector, 2pcs of 12-fiber MTP® Trunk Assemblies with same specifications are used

Channels #2~11 for Tx to the first connector  
 Channels #2~11 for Rx to the second connector  
 Channels #1&12, unused for both connectors



## 12-Fiber Mini-core Cables



100G: 2X12F MTP Fiber Chart			
Fiber Color	MTP Top Row		MTP Bottom Row
Not Used	NA	.....	NA
Orange	Tx	↔	Rx
Green	Tx	↔	Rx
Brown	Tx	↔	Rx
Grey	Tx	↔	Rx
White	Tx	↔	Rx
Red	Tx	↔	Rx
Black	Tx	↔	Rx
Yellow	Tx	↔	Rx
Violet	Tx	↔	Rx
Rose	Tx	↔	Rx
Not Used	NA	.....	NA

100G 2X12-Fiber MTP Connector: -Channel 2-11 are Transmit (Tx) For The First Connector  
 -Channel 2-11 are Receive(Rx) For The Second Connector  
 -Channel 1&12 are Not Used for both connectors

# Technical Information



## MTP® Connector

Connector Type	IL Average	IL Maximum	Return Loss
MTP® Elite (MM)	0.25db	0.35db	> 20db
MTP® (MM)	0.35db	0.65db	> 20db
MTP®Elite (SM)	0.25db	0.35db	> 55db
MTP® (SM)	0.35db	0.75db	> 55db

## Generic Connector

Fiber Type	Singlemode		Multimode
Parameter	UPC	APC	UPC
Insertion Loss Maximum	<0.30dB		
Return Loss	>55dB	>60dB	>20dB
Durability	1000 Matings		
Operating Temperature	-40°C to 80°C		
Test Wavelength	1310nm		850nm

## Recommended Buffer Fiber and Color-coded Connectors

Cable Type	Single-mode MTP® Elite® Connector	Single-mode MTP® Standard Connector	Multimode MTP® Elite® Connector	Multimode MTP® Standard Connector
Bare Ribbon				
Flat ribbon Cordage				
Cable Ø 3.0mm				
Cable Ø 4.5mm				
Cable Ø 5.0mm	<u>Mustard Color</u>	<u>Blue Color</u>	<u>Aqua Color</u>	<u>Beige Color</u>

### Notes:

Information, specifications and product offerings in this catalogue are subject to change without notice. Product photos and drawings are provided for the convenience of our customers and for reference only.

# MTP® Trunk Cable

## Products Overviews:

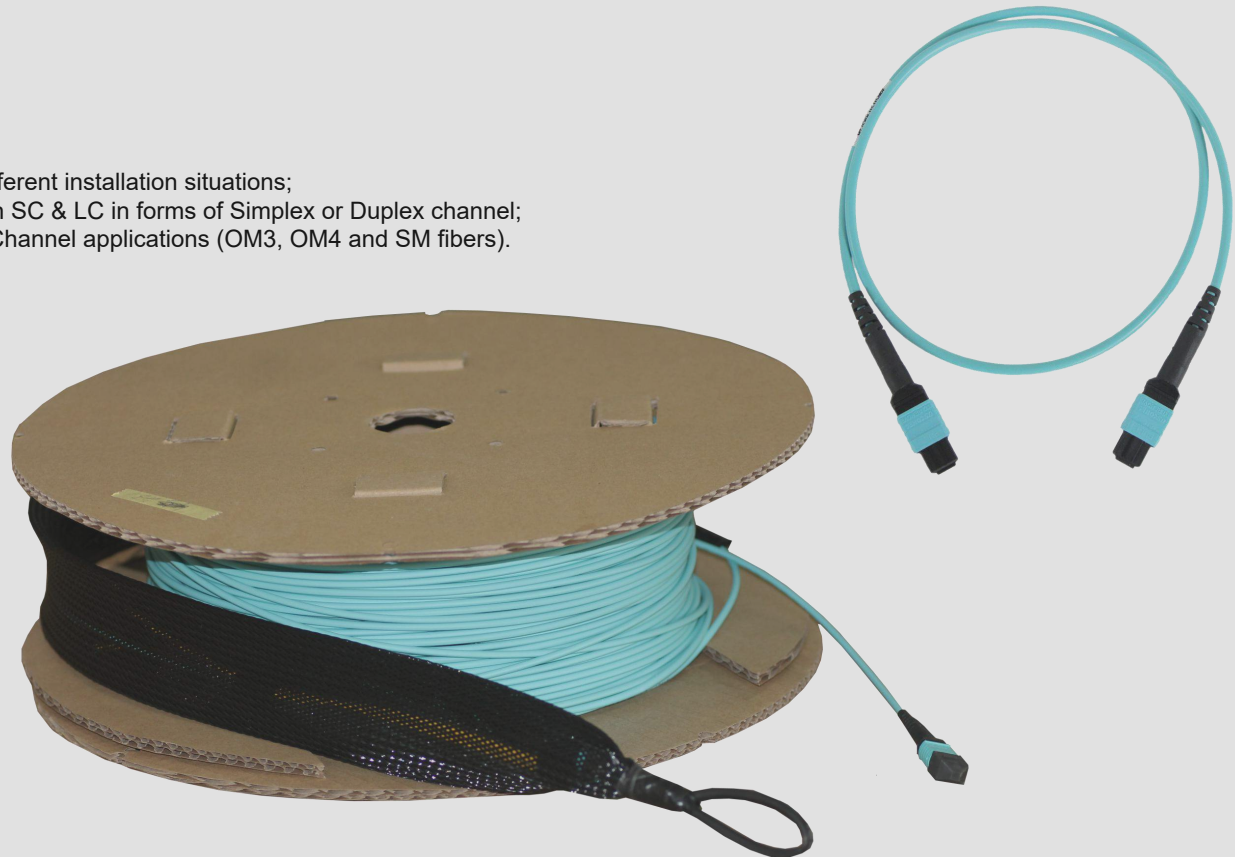
Pre-connector MTP® Trunk Cable Assemblies are made up of 12, 24, 48 fiber LSZH jacketed micro cables terminated at both ends with MTP® Connectors (without pins). These are used as backbone or horizontal cable interconnections. These plug and play solutions with micro core cable maximize bend radius and minimize cable weight and size. MTP® Trunk Cable are factory pre-terminated, tested and packed along with the test reports. These assemblies are available in OM3, OM4 and SM fiber. Standard lengths of 5, 10, 25 meters are available. Custom lengths are also available on request. The MTP® Trunk cables are packed as coils in lengths up to 50m long and on reels. OM3 and OM4 cables are available in aqua and SM cables are in yellow color.

## Keyed Characteristics:

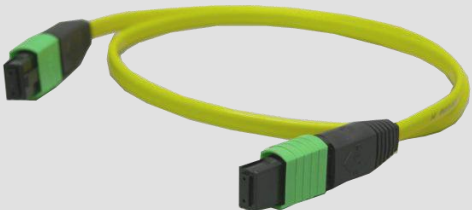
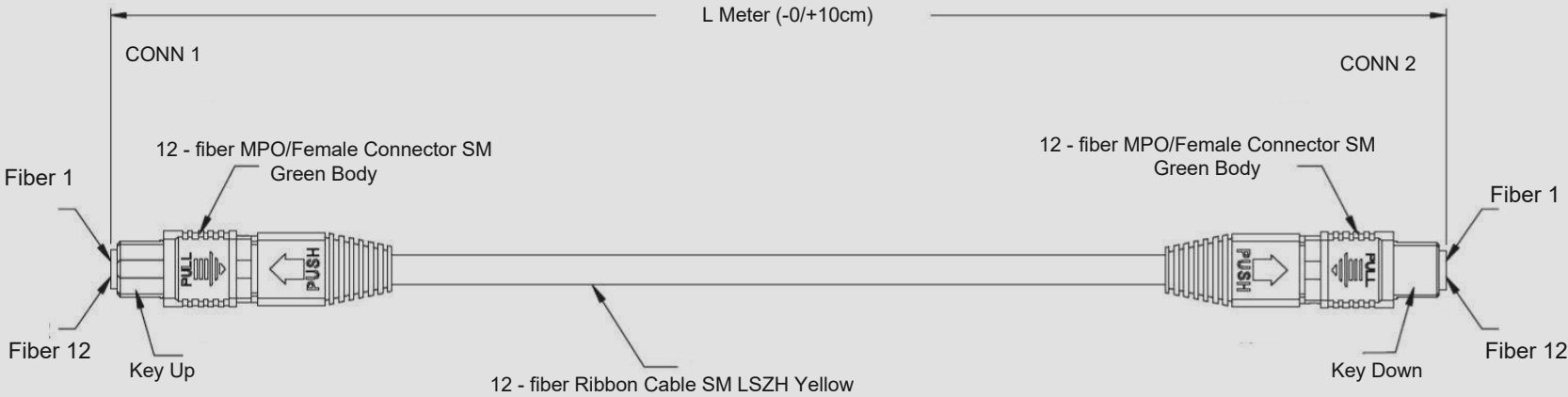
- High Performance in IL & RL;
- Available in 8, 12 and 24 fiber;
- Precise dimension;
- 100% in-house tested;
- Customized furcation length to cater for different installation situations;
- Single-fiber connector interface available in SC & LC in forms of Simplex or Duplex channel;
- Support higher speed Ethernet and Fibre Channel applications (OM3, OM4 and SM fibers).

## Use / Application:

- Data Centre Infrastructure;
- Storage Area Network-Fiber Channel;
- Emerging 40 & 100Gps Protocols.

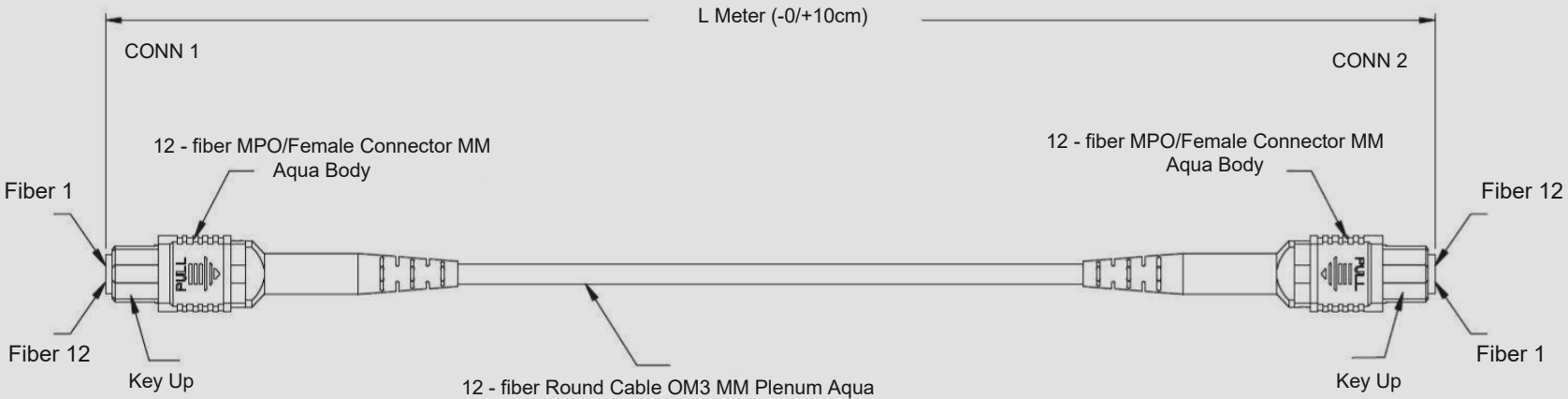


# Assembly Structure Illustration



CONN 1 Fiber Number	Buffer Color	CONN 2 Fiber Number
Fiber 1	Blue	Fiber 1
Fiber 2	Orange	Fiber 2
Fiber 3	Green	Fiber 3
Fiber 4	Brown	Fiber 4
Fiber 5	Grey	Fiber 5
Fiber 6	White	Fiber 6
Fiber 7	Red	Fiber 7
Fiber 8	Black	Fiber 8
Fiber 9	Yellow	Fiber 9
Fiber 10	Violet	Fiber 10
Fiber 11	Rose	Fiber 11
Fiber 12	Aqua	Fiber 12

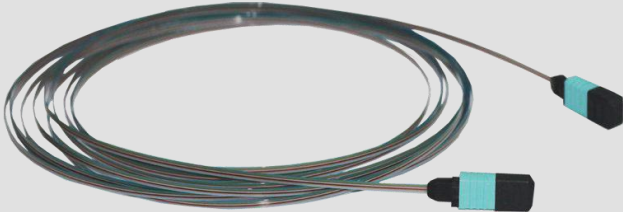
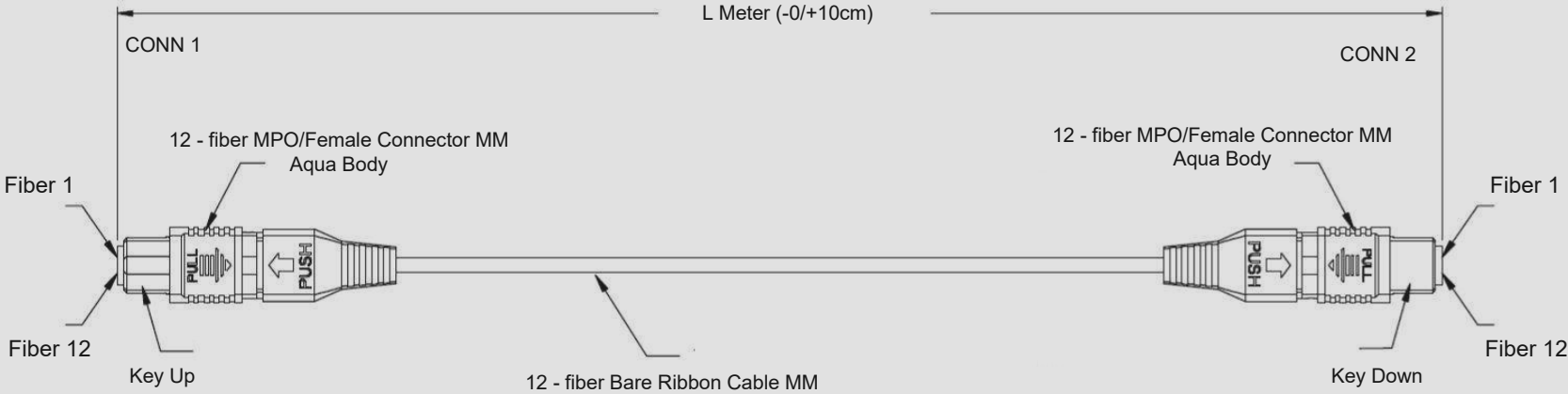
# Assembly Structure Illustration



CONN 1 Fiber Number	Buffer Color	CONN 2 Fiber Number
Fiber 1	Blue	Fiber 12
Fiber 2	Orange	Fiber 11
Fiber 3	Green	Fiber 10
Fiber 4	Brown	Fiber 9
Fiber 5	Grey	Fiber 8
Fiber 6	White	Fiber 7
Fiber 7	Red	Fiber 6
Fiber 8	Black	Fiber 5
Fiber 9	Yellow	Fiber 4
Fiber 10	Violet	Fiber 3
Fiber 11	Rose	Fiber 2
Fiber 12	Aqua	Fiber 1



# Assembly Structure Illustration



CONN 1 Fiber Number	Buffer Color	CONN 2 Fiber Number
Fiber 1	Blue	Fiber 1
Fiber 2	Orange	Fiber 2
Fiber 3	Green	Fiber 3
Fiber 4	Brown	Fiber 4
Fiber 5	Grey	Fiber 5
Fiber 6	White	Fiber 6
Fiber 7	Red	Fiber 7
Fiber 8	Black	Fiber 8
Fiber 9	Yellow	Fiber 9
Fiber 10	Violet	Fiber 10
Fiber 11	Rose	Fiber 11
Fiber 12	Aqua	Fiber 12

# MTP® Fan-out Hydra Cable

## Products Overview:

Pre-connector MTP® Fan-Out Hydra Cable Assemblies are designed for high density applications which require high performance and speedy installation without onsite termination. MTP® Fan-Out Hydra Cable Assembly is made up of 12 LSZH jacketed cable terminated at one end in MTP® connectors, through a bifurcation unit, to SC or LC connectors terminated on 2mm OD simplex cables. These are used to connect equipment in racks to MTP® terminated backbone cables. MTP® fan-out cables are numbered for full traceability. Available in 12 core configuration, these space saving assemblies comes with either MTP® Male or MTP® Female Connectors on one end and LC or SC Connectors on the other end. They are available in OM3, OM4 or SM fiber in lengths of 5, 10, 25 meters, custom lengths are available on request.

## Keyed Characteristics:

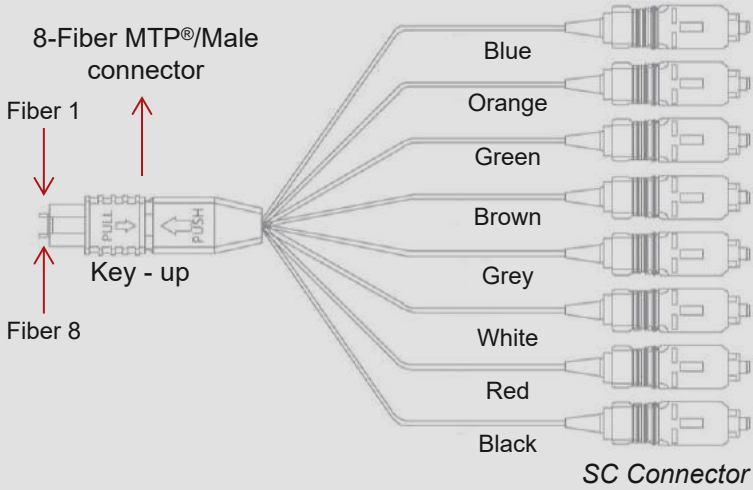
- High Performance in IL & RL;
- 8, 12 and 24 fiber connector terminations and assemblies;
- Ruggedized round cable, oval cable and bare ribbon options available;
- Economical solution for mass-termination of fiber;
- Color coded housings available to differentiate fiber type, polish type and/or connector grade;
- 100 % house tested;
- Support higher speed ethernet and fibre channel applications for OM3 ,OM4 & SM fibers.

## Use / Application:

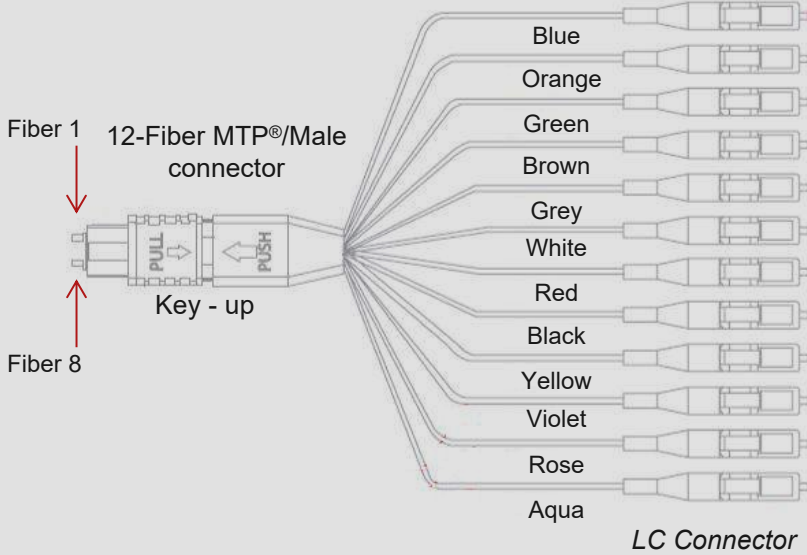
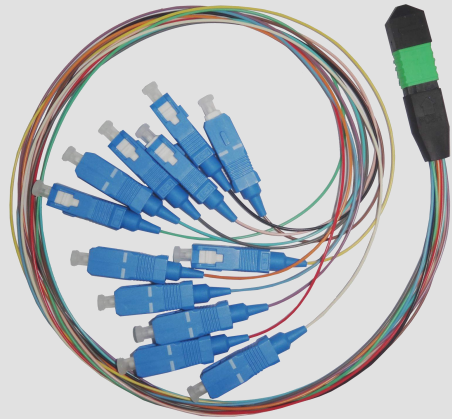
- Optical switching inter frame connections;
- High fiber density card edge access;
- Array trunk cables;
- Data center cabling.



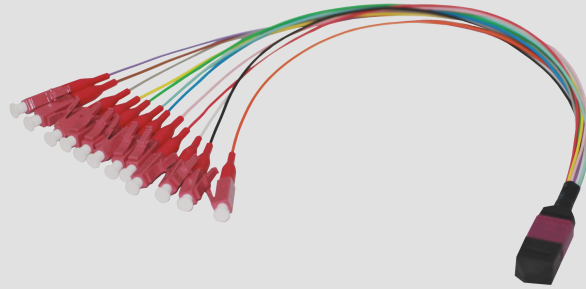
# Assembly Structure Illustration



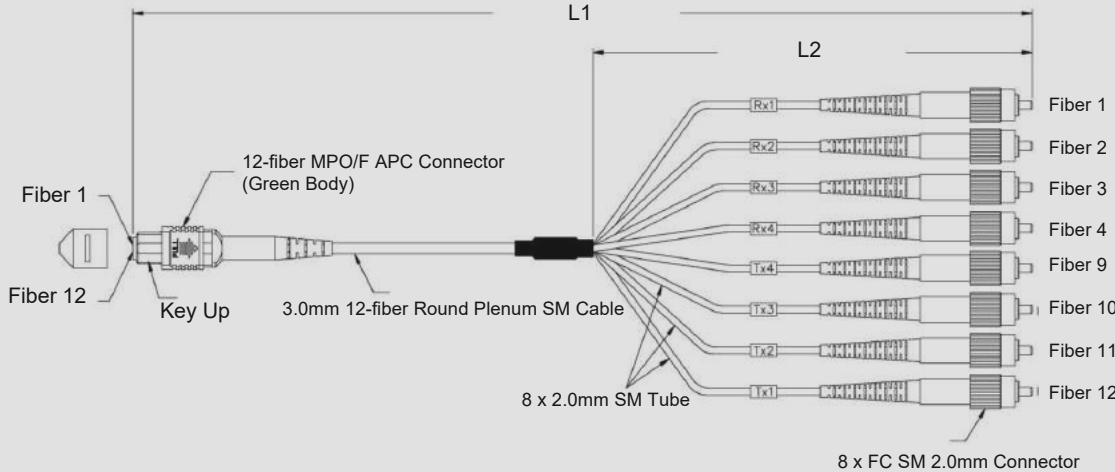
8\*SC Connector 0.9mm



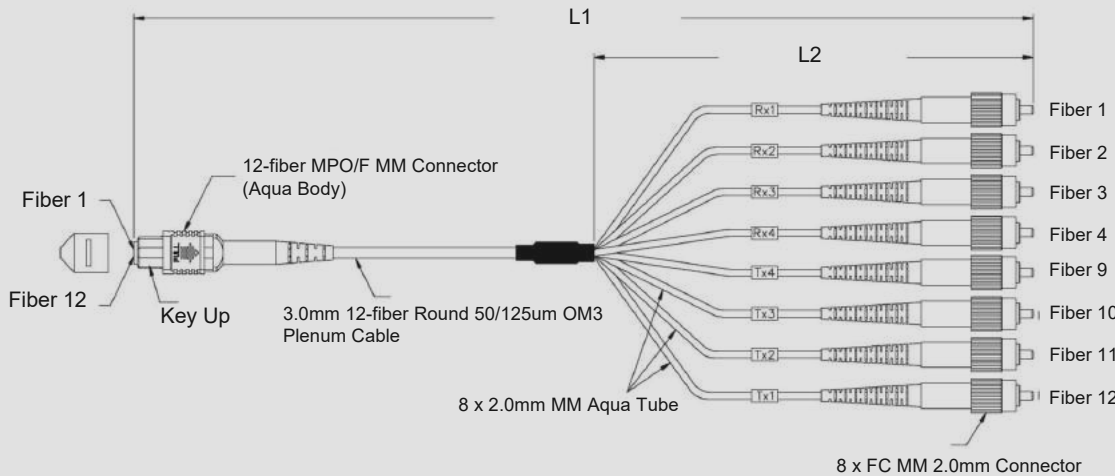
12\*LC Connector 0.9mm



# Assembly Structure Illustration

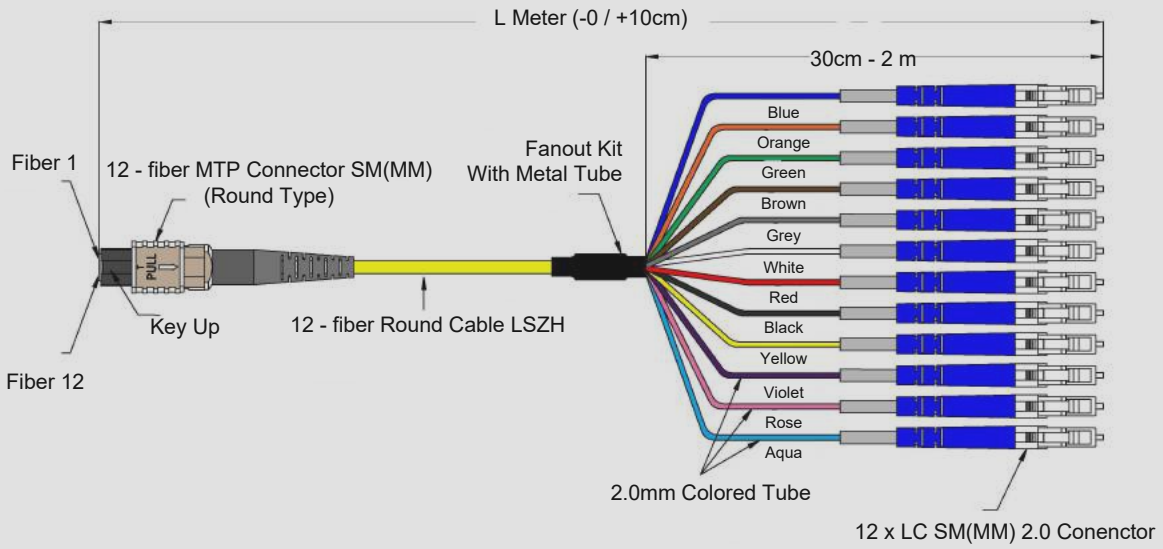


Fiber Number	Buffer Color
Fiber 1	Blue
Fiber 2	Orange
Fiber 3	Green
Fiber 4	Brown
Fiber 5	Unused
Fiber 6	Unused
Fiber 7	Unused
Fiber 8	Unused
Fiber 9	Yellow
Fiber 10	Violet
Fiber 11	Rose
Fiber 12	Aqua



Fiber Number	Buffer Color
Fiber 1	Blue
Fiber 2	Orange
Fiber 3	Green
Fiber 4	Brown
Fiber 5	Unused
Fiber 6	Unused
Fiber 7	Unused
Fiber 8	Unused
Fiber 9	Yellow
Fiber 10	Violet
Fiber 11	Rose
Fiber 12	Aqua

# Assembly Structure Illustration



CONN 1 Fiber Number	Buffer Color	CONN 2 Fiber Number
Fiber 1	Blue	Fiber 1
Fiber 2	Orange	Fiber 2
Fiber 3	Green	Fiber 3
Fiber 4	Brown	Fiber 4
Fiber 5	Grey	Fiber 5
Fiber 6	White	Fiber 6
Fiber 7	Red	Fiber 7
Fiber 8	Black	Fiber 8
Fiber 9	Yellow	Fiber 9
Fiber 10	Violet	Fiber 10
Fiber 11	Rose	Fiber 11
Fiber 12	Aqua	Fiber 12



# High Density Fiber Optic Patch Panel

## Products Overview:

MTP® Patch Panels are scalable modular which are designed for high density Gigabit Ethernet Applications. They are used for terminating backbone cables at the Main Distribution Area (MDA) and Horizontal Distribution Area (HDA). MTP® Patch Panels are available with 1U and 4U, suitable for standard 19" racks. 1U MTP® Patch Panel can accommodate up to three MTP® Cassettes, giving a high connectivity of 72 LC fiber terminations in it. 4U MTP® Patch Panel can accommodate up to 12 MTP® Cassettes, resulting in a maximum of 288 LC terminations per panel.

## Keyed Characteristics:

- Up to 12 x 24 fiber MTP® Cassettes;
- Multiple adaptor options available;
- Ruggedized round cable, oval cable and bare ribbon options available;
- Suitable for loose tube, distribution cable and MTP® Trunk Cable;
- Fits standard 19" rack.

## Use / Application:

- Data Center Infrastructure;
- Ethernet, fiber channel, ATM, LAN, MAN and WAN.



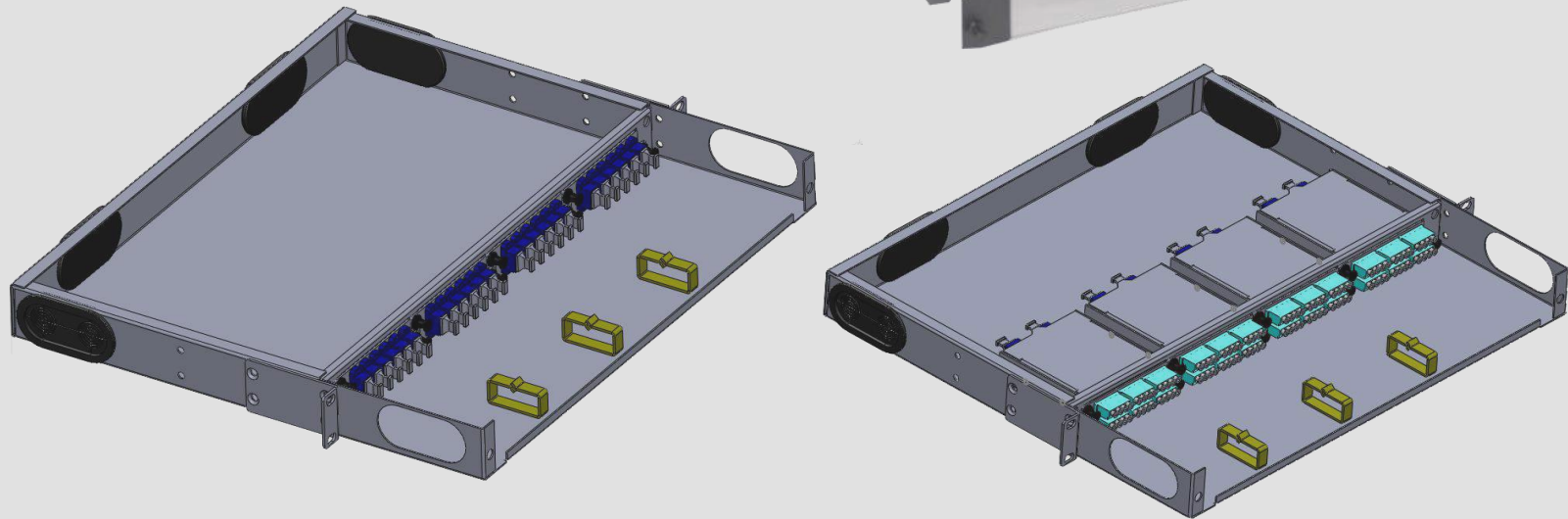
# 1U Pre-terminated Fiber Optic Patch Panel

## General Specification:

Color	Black
Material	Cold-rolled steel
Material Thickness	1.2mm
Material Coating	Powder coating
Dimension(H*W*D)	482(Including side bracket)*400*44.45
Max Capacity	4 x 6 Port MTP



## Structure Illustration:



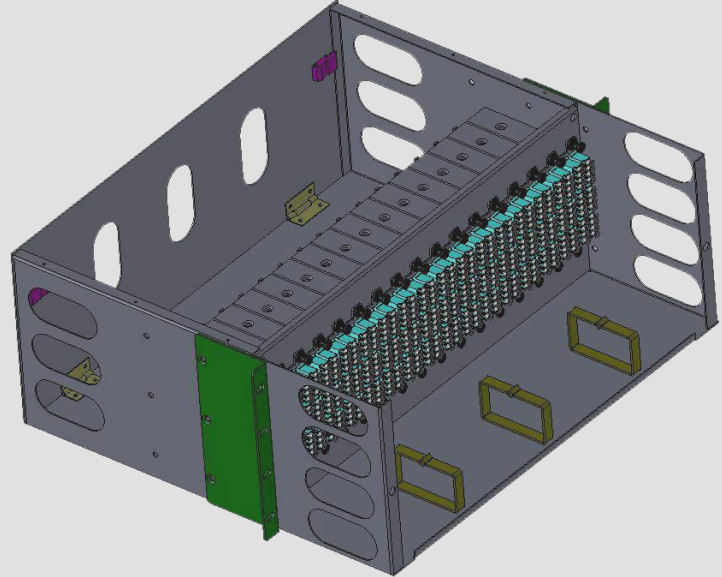
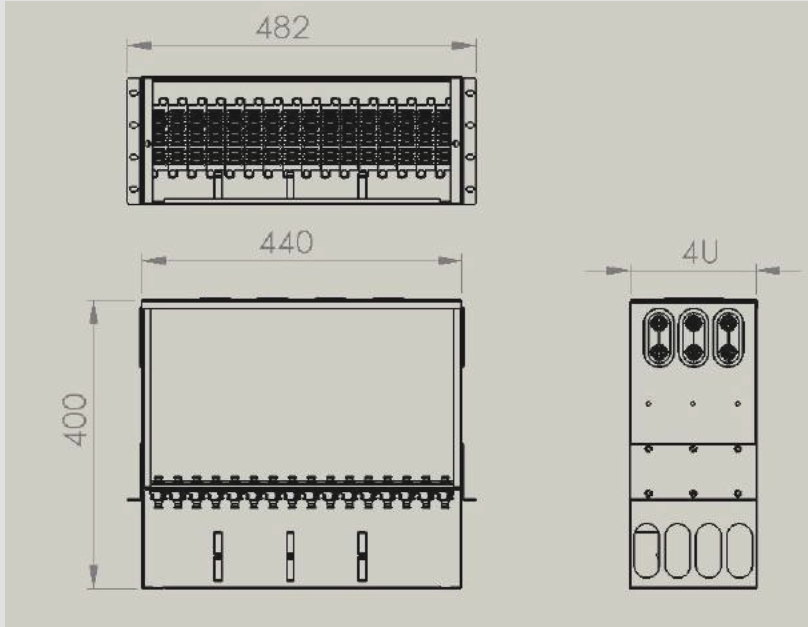
# 4U Pre-terminated Fiber Optic Patch Panel

### General Specification:

Color	Black
Material	Cold-rolled steel
Material Thickness	1.2mm
Material Coating	Powder coating
Dimension(H*W*D)	482(Including side bracket)*400*175.1
Max Capacity	16 x 6 - Port MTP



### Structure Illustration:



# MTP® / MPO Plug-N-Play Cassette

## Products Overview:

MTP® and SC to MTP® Fiber modules provide a quick and efficient way to deploy up to 24 LC or 12 SC fiber ports in a single module. These factory terminated and tested ports are protected within the housing for reliably high performance and simply connected via 12-strand MTP® ports. Modules are available in OM3 ,OM4 & SM fibre. Modular fiber cassettes are enclosed units that contain 12 or 24-fiber factory terminated fan-outs inside. These cassettes serve to “transition” small diameter ribbon cables terminated with a MTP® connector to the more common LC or SC interface used on the transceiver terminal equipment. The fan-outs typically incorporate SC, LC connectors plugged into adapters on the front side of the cassette and a MTP® connector plugged into a MTP® adapter mounted at the rear of the cassette. One or more MTP® fan-out assemblies may be installed inside the cassette to connect up to two 12-fiber ribbon cables for a total of 24 fibers. Alignment pins are pre-installed in the MTP® connector located inside the cassette.

## Keyed Characteristics:

- Easy and fast installation;
- High-density and small design;
- Metallic shell with high strength protect the inner fibers effectively;
- Factory-terminated and tested cable and apparatus for instant field connections with guaranteed quality and performance;
- 12-fiber MTP® connector-based modular design enables simple connections;
- Support easy reconfiguration for moves, adds, and changes;
- Dimension: Height x Width x Depth(mm) : 30 x 130 x 140.

## Use / Application:

- Data Centre Infrastructure;
- Storage Area Network;
- Fibre Channel.

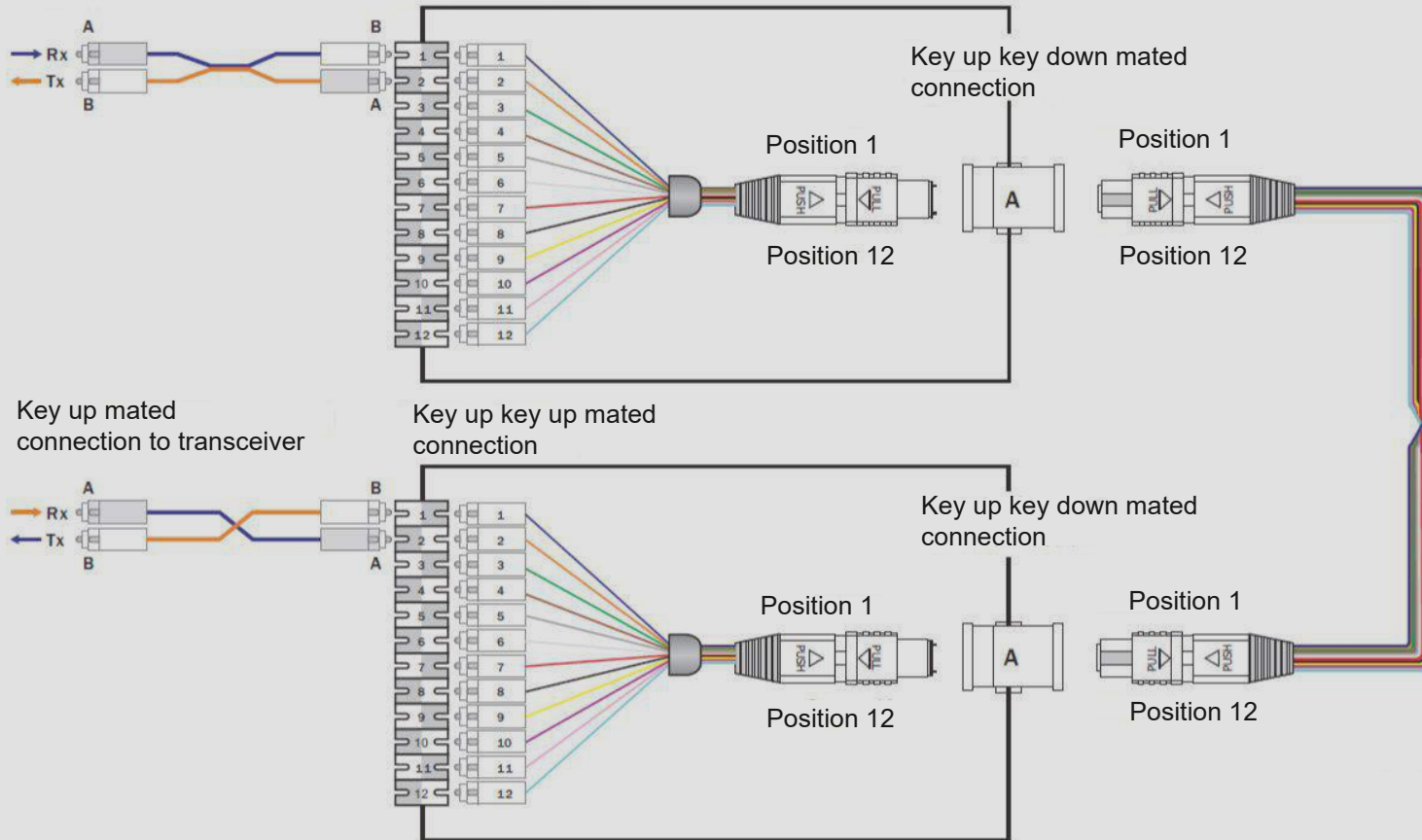


# Module Cassette Polarity

## Polarity A

Key up mated connection to transceiver

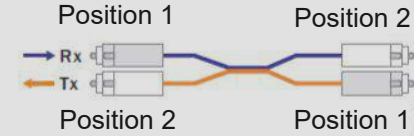
Key up key up mated connection



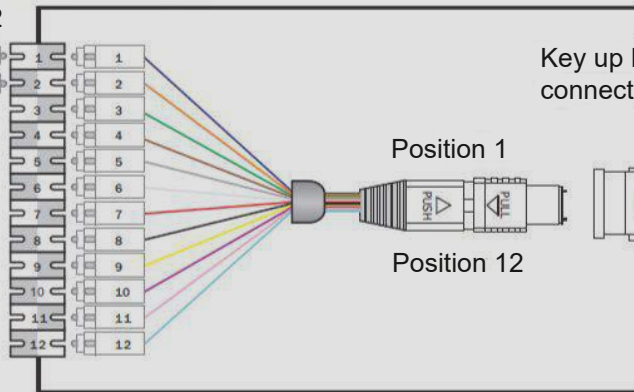
# Module Cassette Polarity

## Polarity B

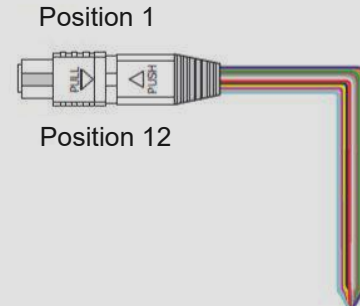
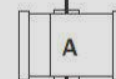
Key up mated connection to transceiver



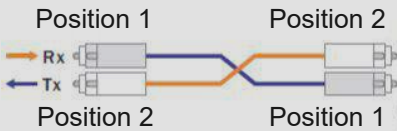
Key up key up mated connection



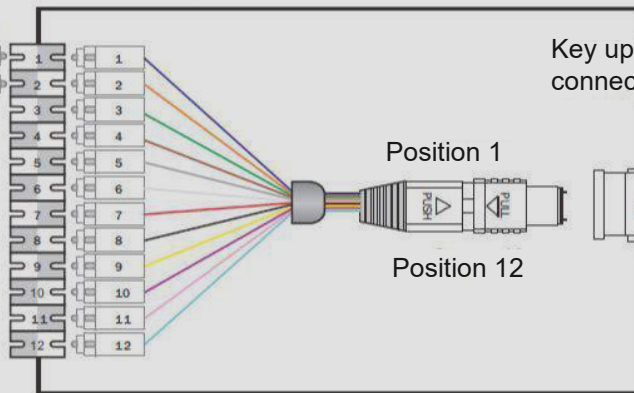
Key up key down mated connection



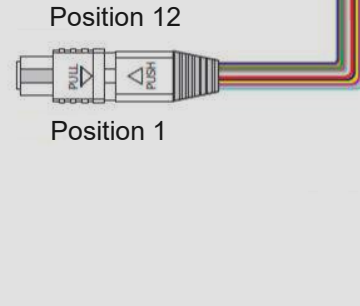
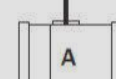
Key up mated connection to transceiver



Key up key up mated connection



Key up key down mated connection

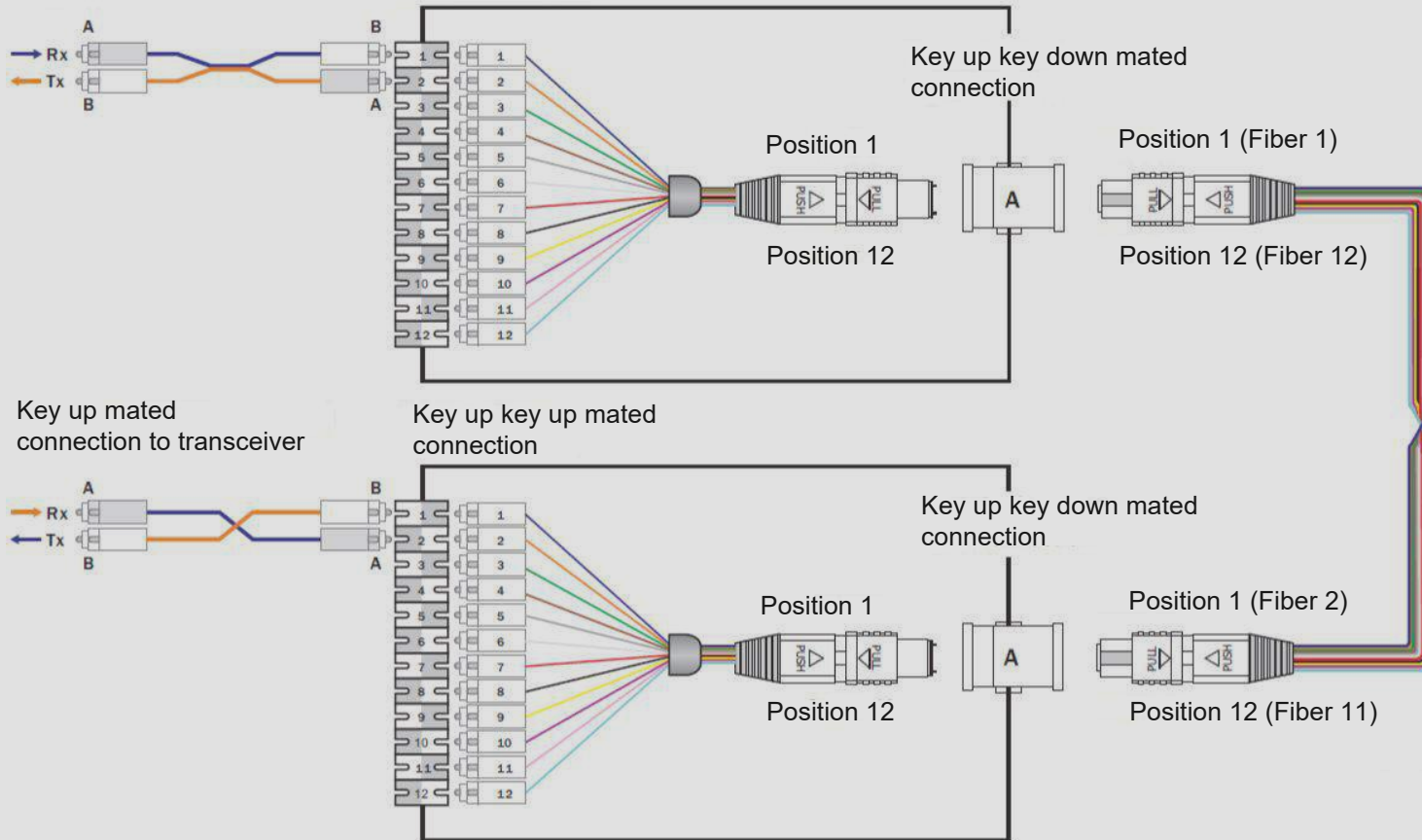


# Module Cassette Polarity

## Polarity C

Key up mated connection to transceiver

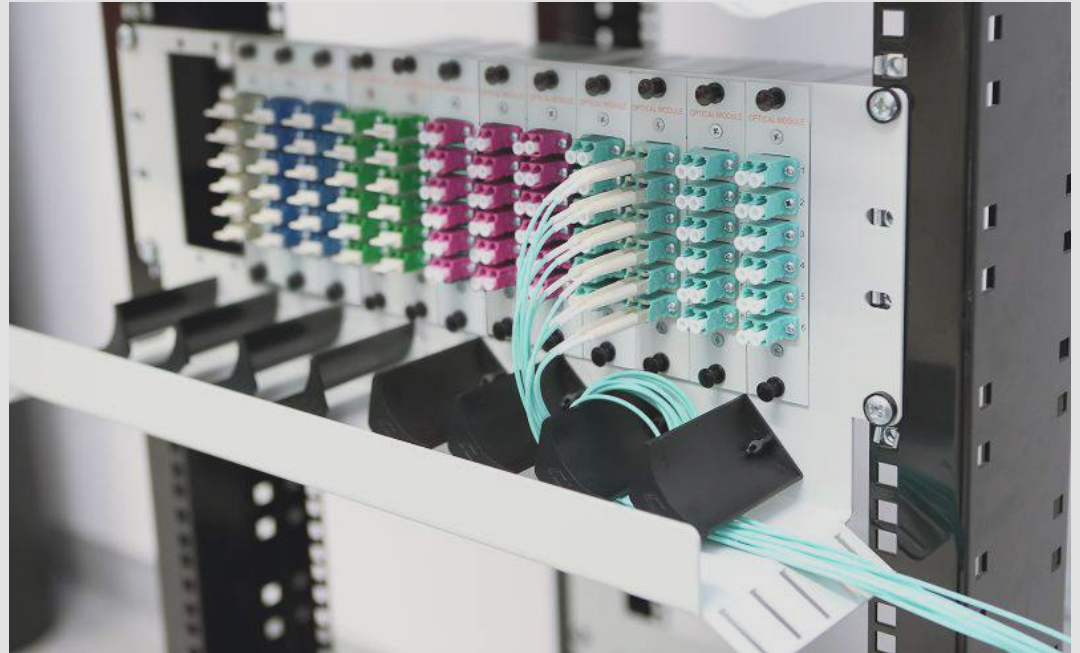
Key up key up mated connection



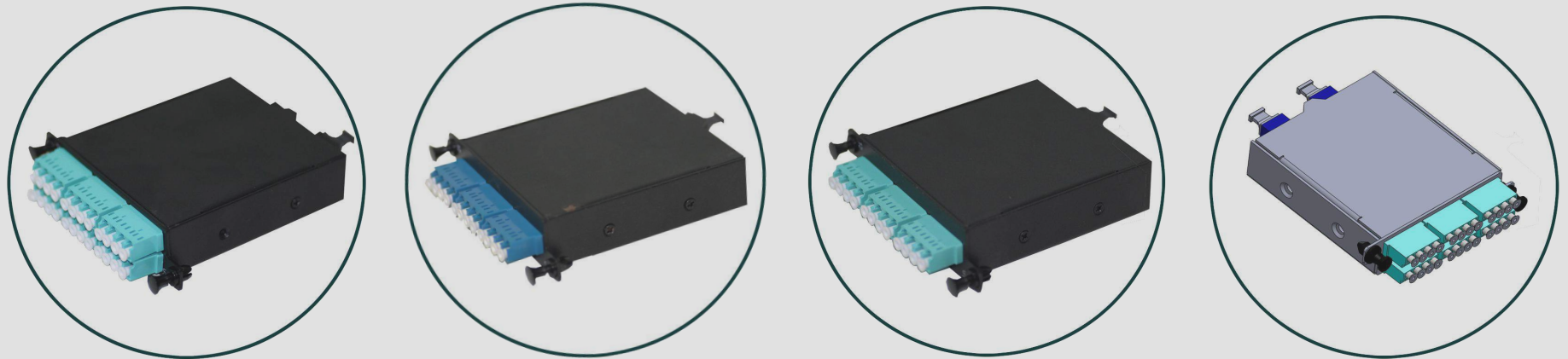
# MPO / MTP® - LC LGX Module Cassette

## General Specification:

Color	Black
Material	SPCC(cold rolled steel sheet)
(Front)Adapter Type	LC Quad (MM & SM)
(Front)Adapter Color	Aqua: OM3/OM4 ; Beige: OM1/OM2 Blue: SM/UPC ; Green: SM/APC
(Rear)Adapter Type	MPO / MTP® (Full flange / Opposed)
Connector A	SM: LC/UPC,0.9mm or LC/APC,0.9mm MM: LC/UPC,0.9mm
Connector B	SM : MPO/MTP(male)-APC MM: MPO/MTP(male)-PC
Patch cord polarity	Type A
Weight	0.22kg
Dimension H*W*D(mm)	26*110*100



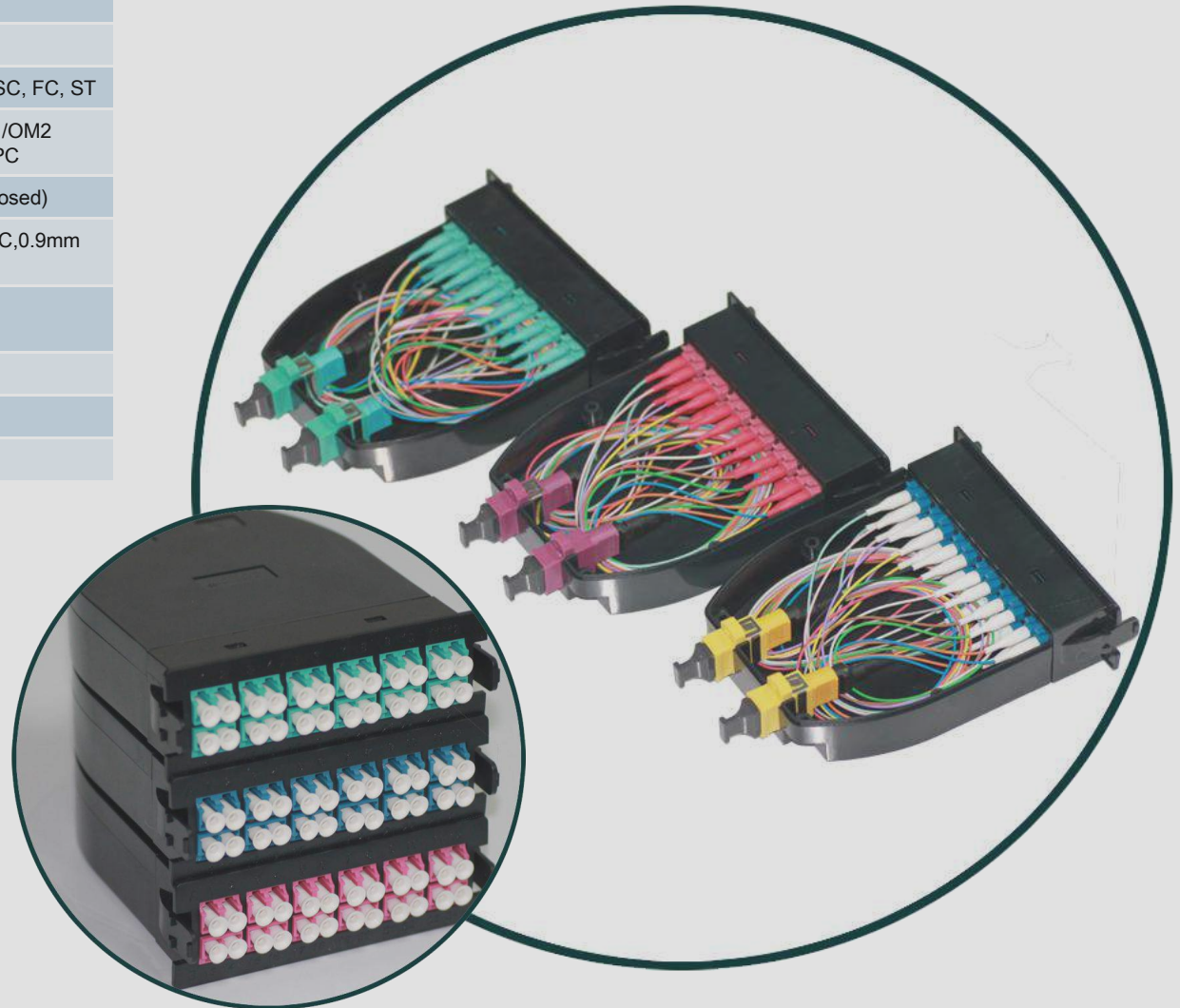
## LGX Cassette Family:



# MPO / MTP® - LC Classic Module Cassette

## General Specification:

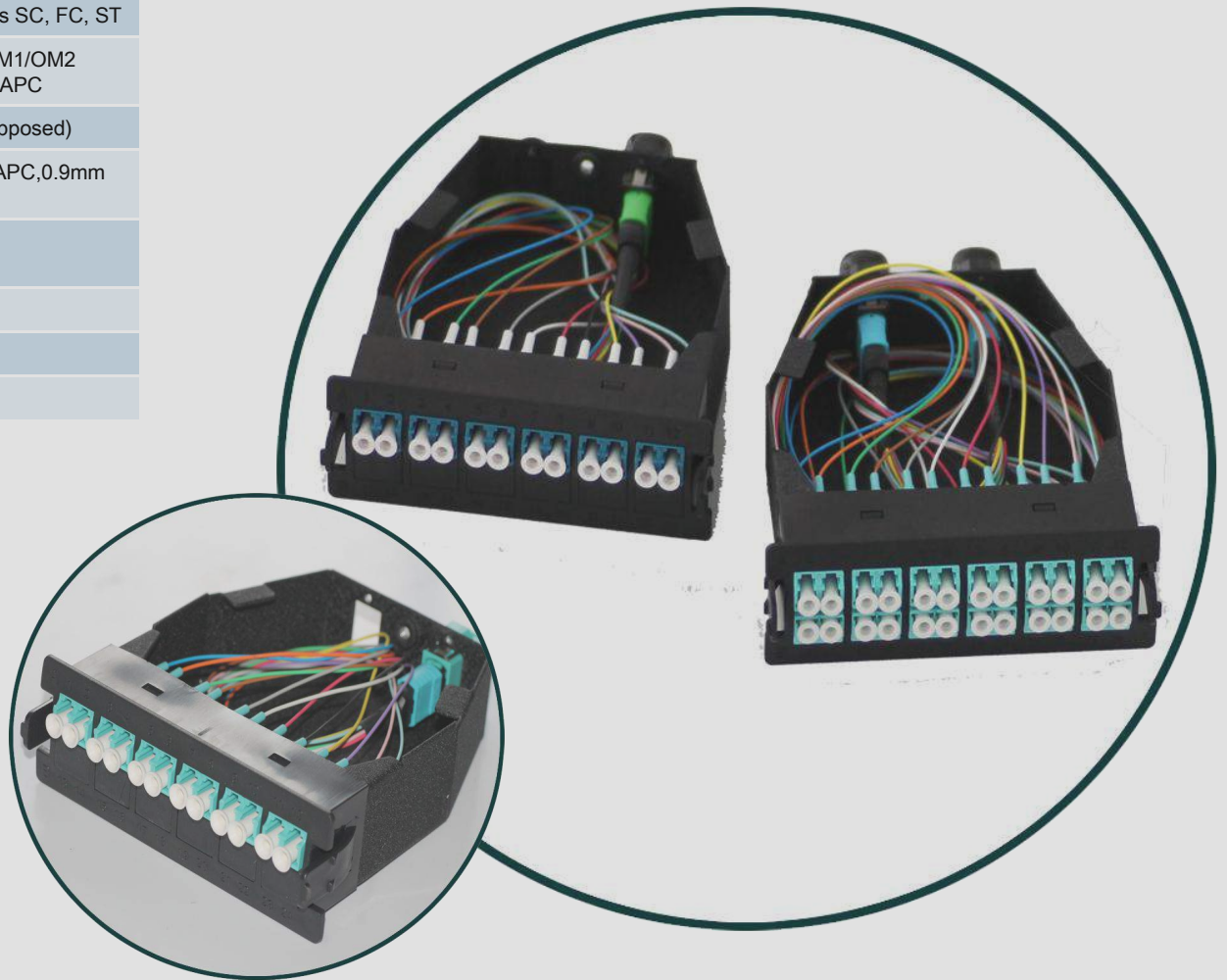
Color	Black
Material	Plastic
(Front)Adapter Type	LC Duplex or Changeable as SC, FC, ST
(Front)Adapter Color	Aqua: OM3/OM4 ; Beige: OM1/OM2 Blue: SM/UPC ; Green: SM/APC
(Rear)Adapter Type	MPO / MTP®(Full flange / Opposed)
Connector A	SM: LC/UPC,0.9mm or LC/APC,0.9mm MM: LC/UPC,0.9mm
Connector B	SM : MPO/MTP(male)-APC MM: MPO/MTP(male)-PC
Patch cord polarity	Type A
Weight	0.11kg
Dimension H*W*D(mm)	117.6*100*27.8



# MPO / MTP® - LC Classic Module Cassette

## General Specification:

Color	Black
Material	Plastic
(Front)Adapter Type	LC Duplex or Changeable as SC, FC, ST
(Front)Adapter Color	Aqua: OM3/OM4 ; Beige: OM1/OM2 Blue: SM/UPC ; Green: SM/APC
(Rear)Adapter Type	MPO / MTP®(Full flange / Opposed)
Connector A	SM: LC/UPC,0.9mm or LC/APC,0.9mm MM: LC/UPC,0.9mm
Connector B	SM : MPO/MTP(male)-APC MM: MPO/MTP(male)-PC
Patch cord polarity	Type A
Weight	0.11kg
Dimension H*W*D(mm)	117.6*100*27.8



# MPO / MTP® - Adapter

## Products Overview:

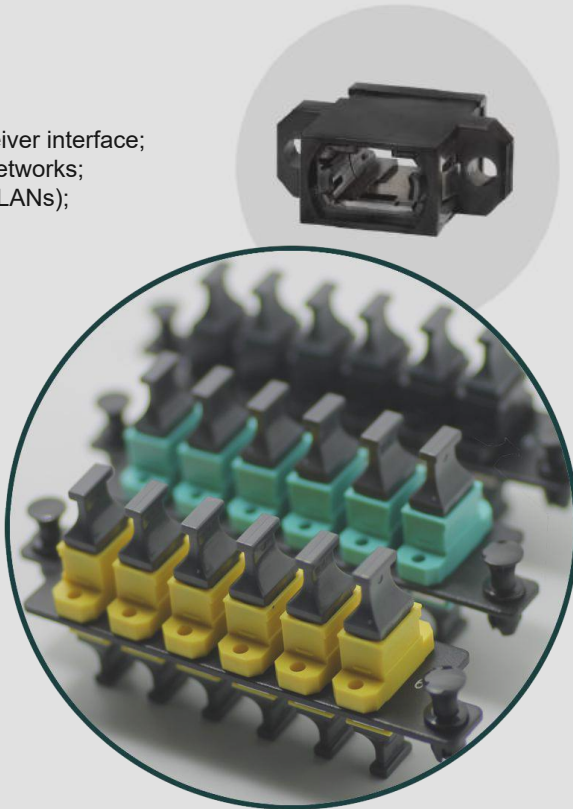
The Singlemode or Multimode MPO / MTP® products available from **KINGTON** are multi fibers connections used in high-density backplanes and Printed Circuit Board (PCB) applications in data and telecommunications systems. They provide up to 12 times the density of standard connectors, offering significant space and cost savings. The MPO / MTP® Adapter comes standard in black, with additional colors available upon request

## Keyed Characteristics:

- 1 Compact design, accommodating 4,8 or 12 fiber ribbons;
- 2 High precision alignment;
- 3 Low insertion and return loss and back reflection.

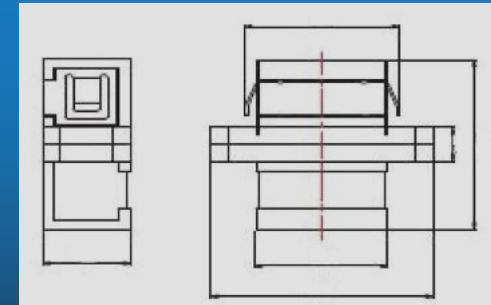
## Use / Application:

- 1 Gigabit ethernet;
- 2 CATV;
- 3 Active device/Transceiver interface;
- 4 Telecommunication networks;
- 5 Local Area Networks(LANs);
- 6 Premise installations;
- 7 Industrial, Military;
- 8 Multimedia.

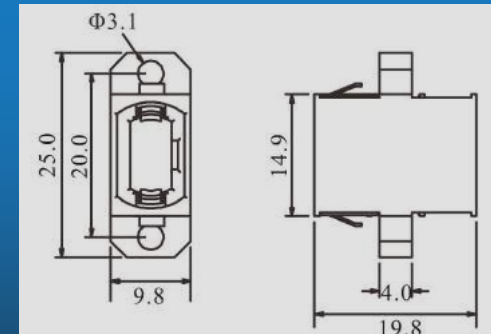


## Appearance & Dimension:

### MPO Adapter



### MTP Adapter



# High Density LC Uniboot Patchcord

## Products Overview:

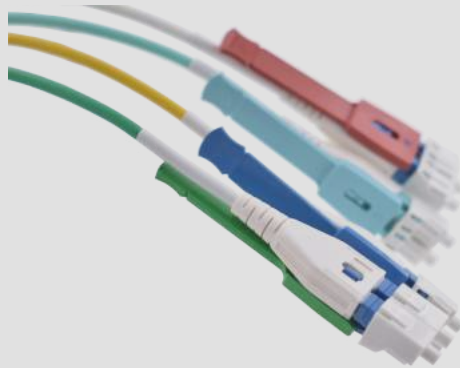
KINGTON's this of LC Duplex Switchable connector' s unique design allows the use of round style 2mm or 3mm jacketed cable instead of the traditional zipcord duplex cable for a more compact design.

## Keyed Characteristics:

- Uniboot connector aids cable management;
- Switchable Connector to change polarity;
- Right Angle Clip for better panel management;
- Flex angle boot ready;
- Red / Black color indication for easy Polarity Check.

## Use / Application:

- Data Centre Infrastructure;
- Storage Area Network;
- Fibre Channel.



LC Uniboot Cable



# 12 Fibers & 24 Fibers Comparing



**12 Fibers Installation**

**24 Fibers Installation**

**50% Less Cable Volume**  
Lower Containment Costs

**50% Fewer Connectors to Install**  
Reduced Installation Time

**50% Less Administration**  
Fewer Errors

# KINGTON

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