

FirstLight™ Ultra High Density

Solutions Guide

What is the FirstLight™ Ultra High Density Solution?

Today's data centre and telecommunications environments heavily depend on the foundations of the optical network – communicating, transmitting, and protecting the data upon which your business relies.

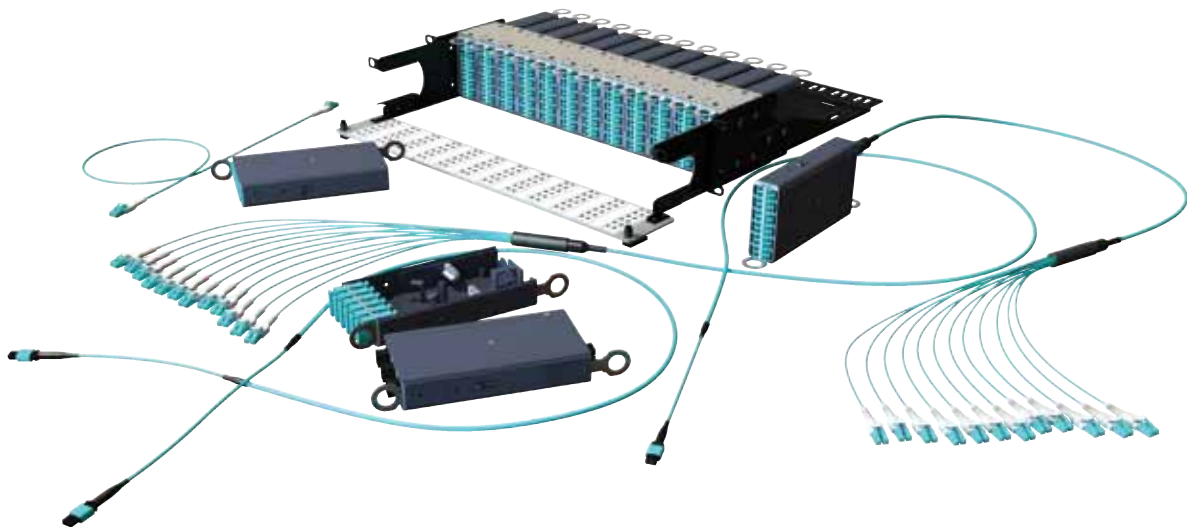
So what makes your optical network different to your competitor's network? How can the design and performance of your data / telecom environment contribute more to the bottom-line, while at the same time be mindful of reliability and uptime.

It's achievable with FibreFab's FirstLight™ Ultra High Density Solutions, industry engineered pre-terminated optical cabling systems that take your data/telecommunications environments beyond the next level.

**FIRSTLIGHT™
ULTRA HIGH
DENSITY SOLUTIONS
PERFORMANCE
AND DESIGN
THAT GOES BEYOND THE
NEXT LEVEL**



FirstLight™ Ultra High Density Solution



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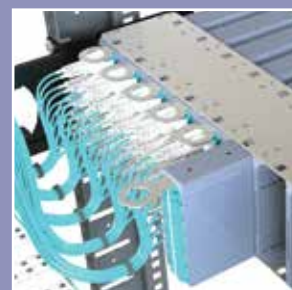
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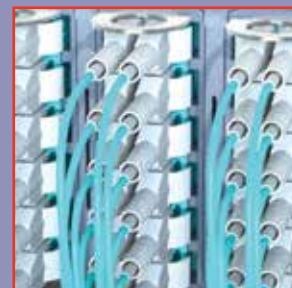
INSTALLATION
TIME
REDUCED



QUICK
MOVES,
ADDITIONS
AND
CHANGES



HIGHER AND
IMPROVED
DENSITY



FirstLight™ Ultra High Density System Overview

Improved Density

1 FirstLight™ UHD 1U 5 Slot Modular Chassis



2 FirstLight™ UHD 2U 12 Slot Modular Chassis



3 FirstLight™ UHD 1U Sliding/Storage Management



Flexible Configuration

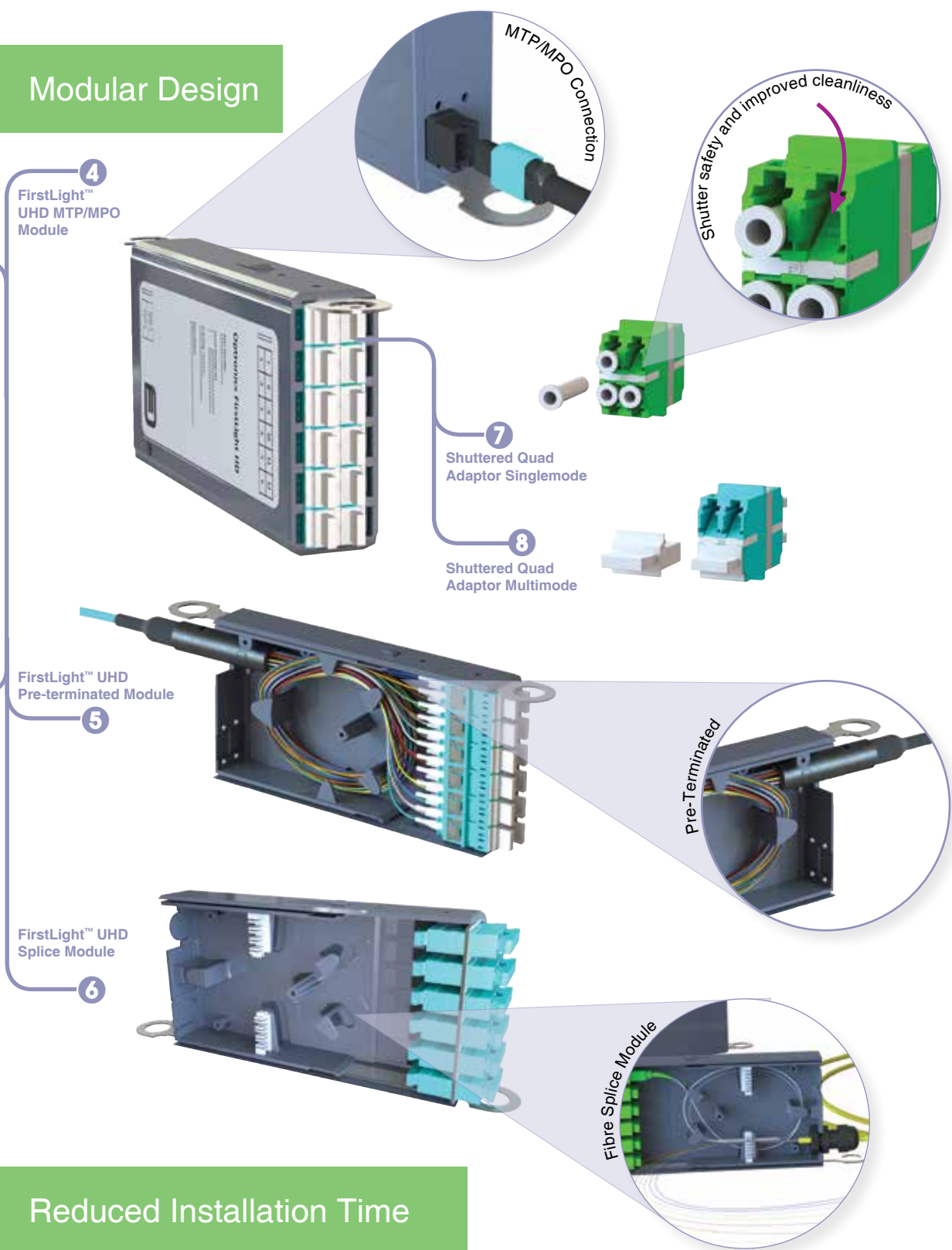
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- 1 FirstLight™ Ultra High Density 1U Chassis
- 2 FirstLight™ Ultra High Density 2U Chassis
- 3 FirstLight™ Ultra High Density 1U Sliding/Storage Management

- 4 FirstLight™ Ultra High Density MTP/MPO Module
- 5 FirstLight™ Ultra High Density Pre-Terminated Module
- 6 FirstLight™ Ultra High Density Splice Module

- 7 Shuttered Quad Adaptor Singlemode
- 8 Shuttered Quad Adaptor Multimode

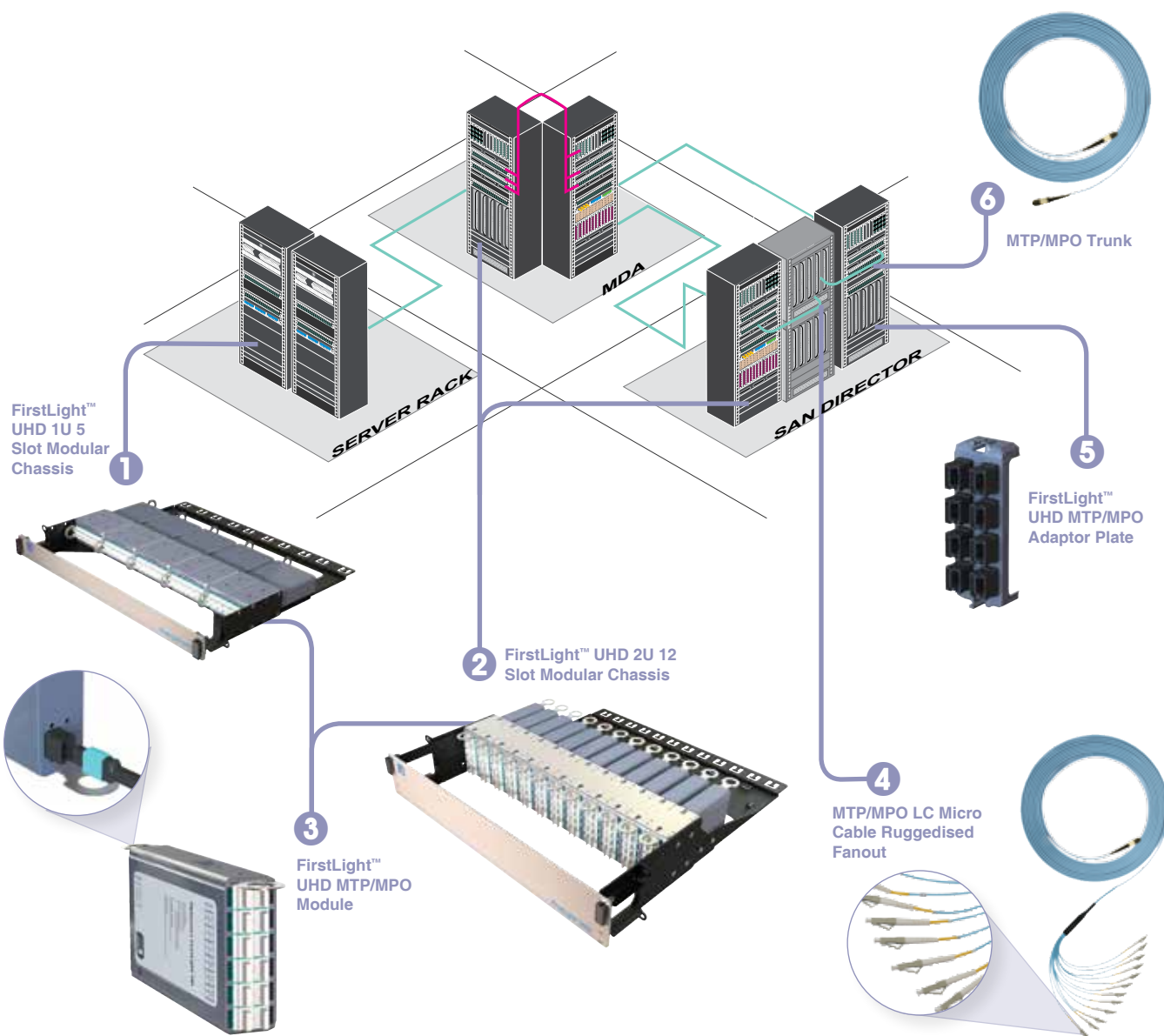
Modular Design



Reduced Installation Time

1 Typical Application Scenario Data Centre SAN

Data centre backbone products, like SAN directors, support hundreds of optical ports, therefore, single cabinets must host thousands of optical interconnections and patch cords. SAN require high density and modularity for easy reconfiguration of cabling. MTP/MPO plug and play modules are perfect for addressing these requirement infrastructures.



1 FirstLight™ UHD 1U 5 Slot Modular Chassis

4 MTP/MPO - LC Micro Cable Ruggedised Fanout

2 FirstLight™ UHD 2U 12 Slot Modular Chassis

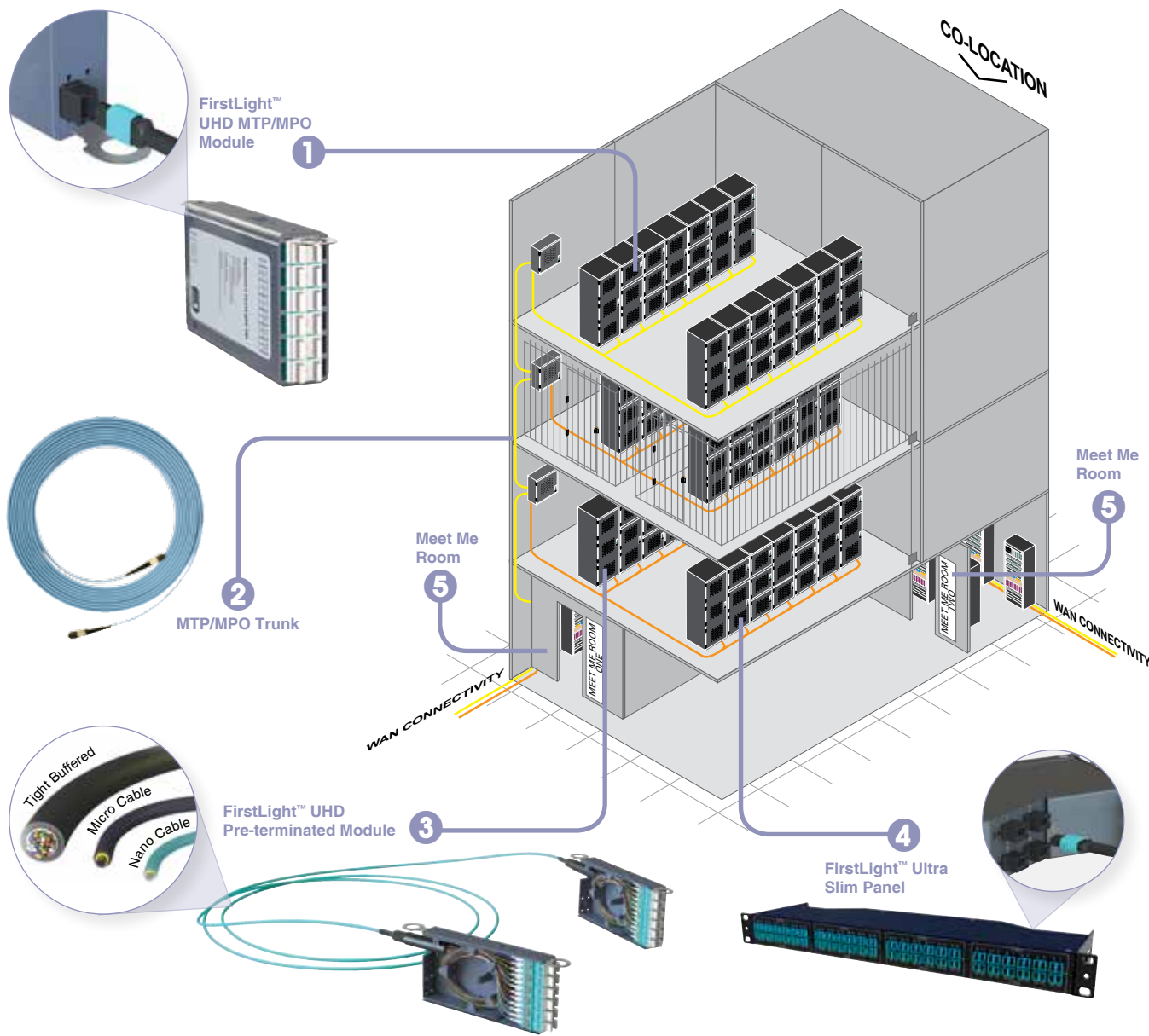
5 FirstLight™ UHD MTP/MPO Adaptor Plate

3 FirstLight™ UHD MTP/MPO Module

6 MTP/MPO Trunk

2 Typical Application Scenario Data Centre Co-location

Co-location data centers require flexibility of network expansions for new customers or new services. The pre-assembled FirstLight™ UHD system is ideal for fast and rapid networks deployment or expansions.



Application Scenario Two

1 FirstLight™ UHD MTP/MPO Module

4 FirstLight™ Ultra Slim Panel

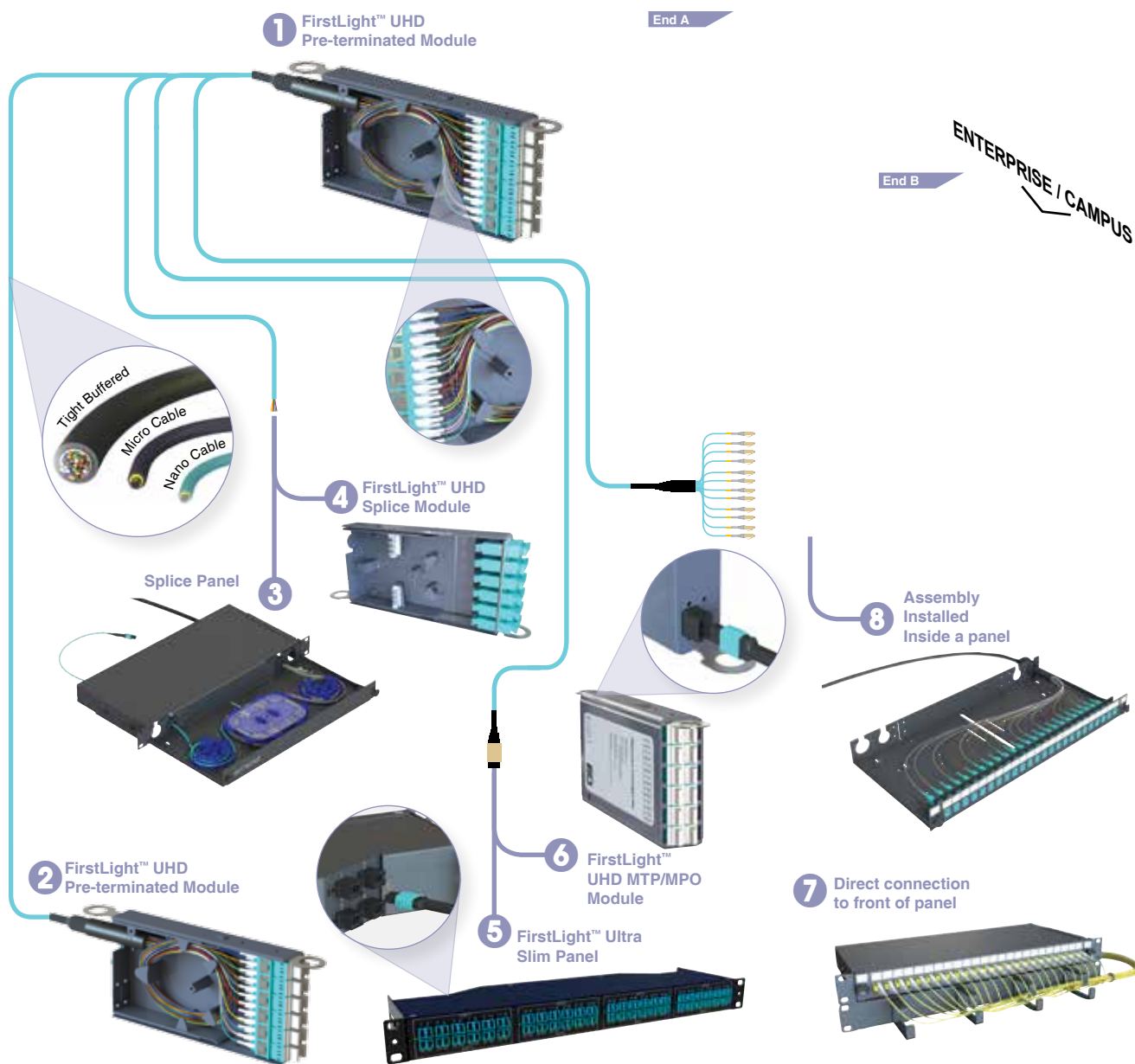
2 MTP/MPO Trunk

5 Meet Me Room (MEM)

3 FirstLight™ UHD Pre-terminated Module

3 Typical Application Scenario Enterprise/Campus

Ultra High Density System Modules can be installed in Enterprise/Campus networks utilising “Plug and Play” MTP/MPO or “Just Play” Pre-terminated Modules. Installation is fast and easy requiring no in-depth fibre optics knowledge. Traditional splicing installation techniques can be applied. There is a wide selection of cable types including tight buffer, loose tube, micro cable or nano cable which can be utilised.



End A

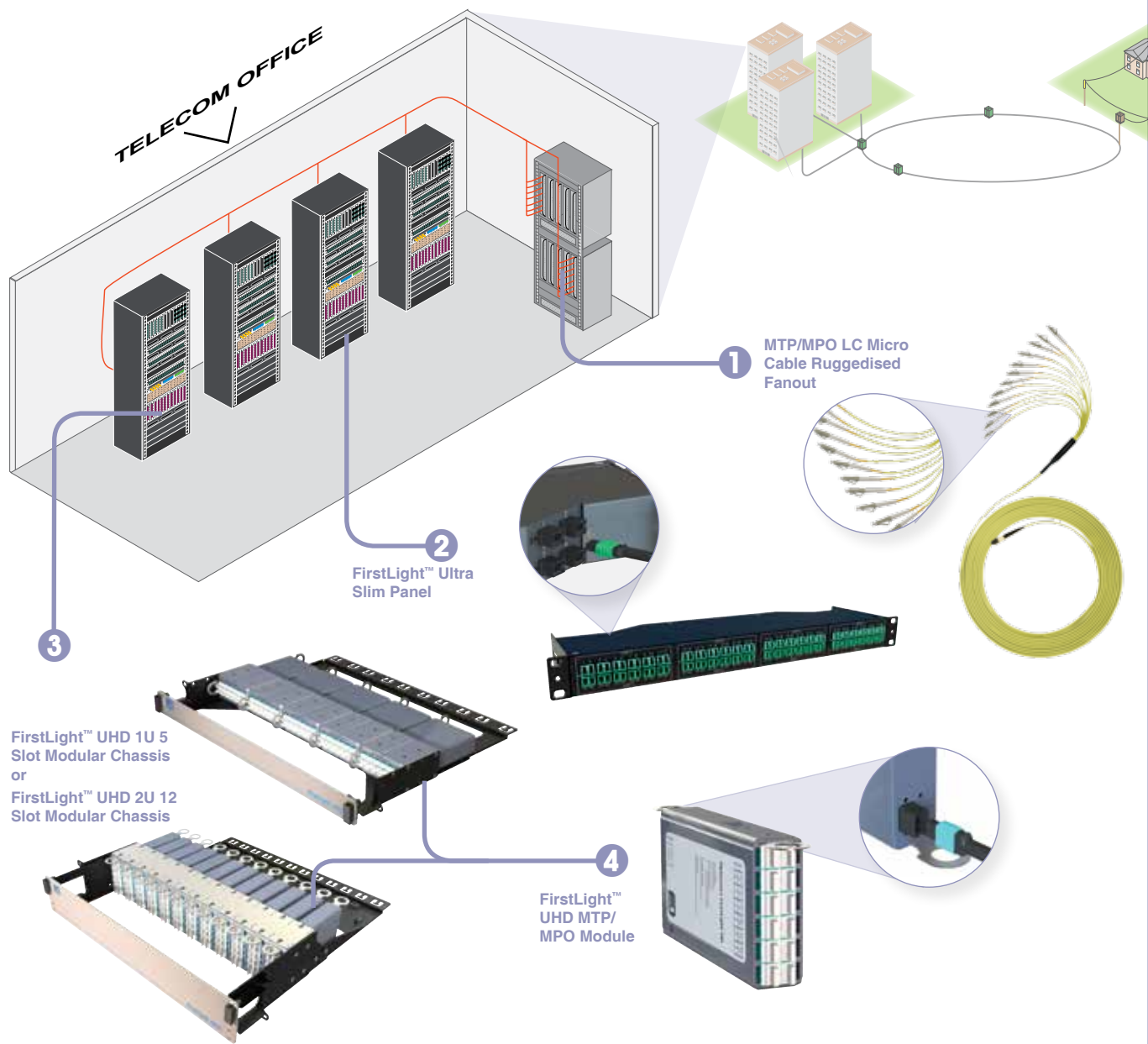
- 1 FirstLight™ UHD Pre-Terminated Module
 - ▶ Tight Buffered Cable
 - ▶ Nano Cable
 - ▶ Micro Cable
 - ▶ Loose Tube Cable

End B Options

- 2 FirstLight™ UHD Pre-Terminated Module
- 3 Splicing Panel
- 4 FirstLight™ UHD Splicing Module
- 5 FirstLight™ Ultra Slim Panel
- 6 FirstLight™ UHD MTP/MPO Module
- 7 Direct connection to front of panel
- 8 Assembly installed inside a panel

4 Typical Application Scenario Telecom Central Office

FirstLight™ Ultra High Density System is a small footprint and is perfect for reduced space in high fibre density rack environments. Modules can be pre-terminated or feature MTP/MPO ports for improved reconfiguration. Modules can be fitted with splice management for traditional installation techniques.



Application Scenario Four

- 1** MTP/MPO - LC Micro Cable Ruggedised Fanout
- 3** FirstLight™ UHD 1U 5 Slot or 2U 12 Slot Modular Chassis
- 2** FirstLight™ Ultra Slim Panel
- 4** FirstLight™ UHD MTP/MPO Module

1U

FirstLight™ Ultra High Density 1U Chassis Feature Overview

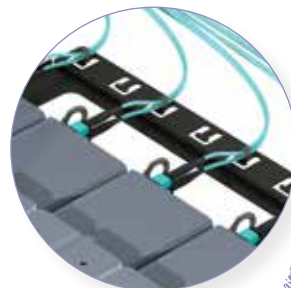
Easy Fibre Handling

Extremely high density fibre port design with new fibre management options provide easy port access



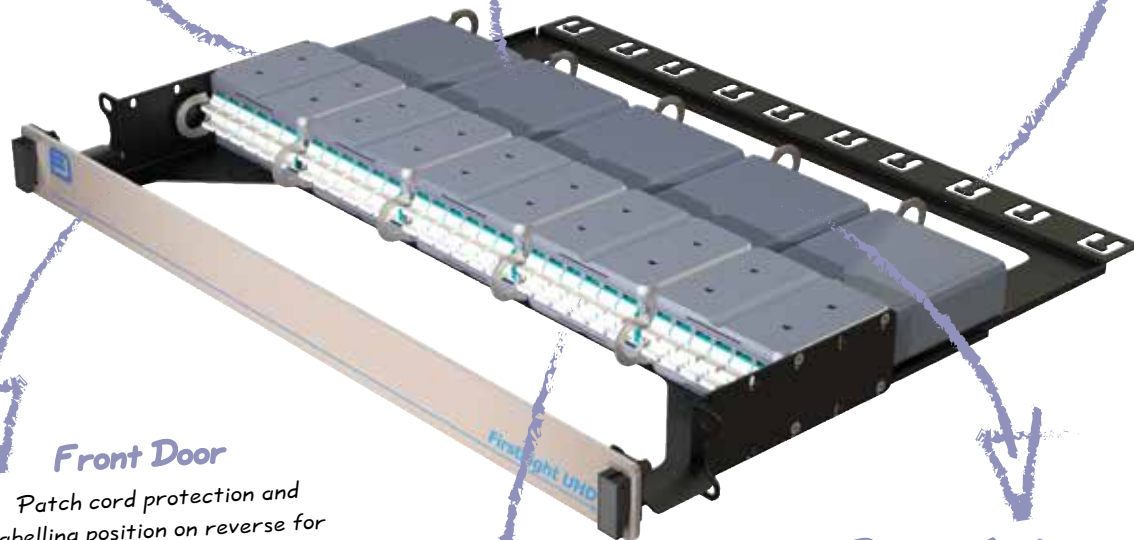
Rear Management

Optional accessory of rear cable management makes cable attachment easy and secure



High Density

Up to 5 modules in 1U - 120 LC Ports



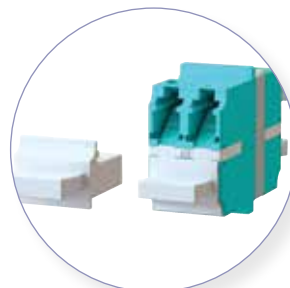
Front Door

Patch cord protection and labelling position on reverse for clear port identification. Labelling card included if no front door is required



Diverse Applications

Ultra high density architecture ideal for data centres or telecommunication applications



Innovative Design

Modules provide ultra high density fibre capacity – up to 120 LC ports in 1U space. PLUS utilising the new design of LC Quad adaptors means there is no need for additional extraction tooling

2U FirstLight™ Ultra High Density 2U Chassis Feature Overview

Ultra High Density Components

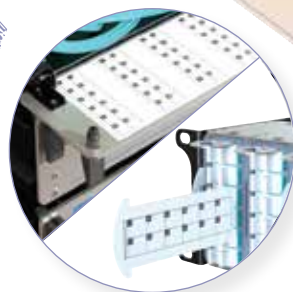
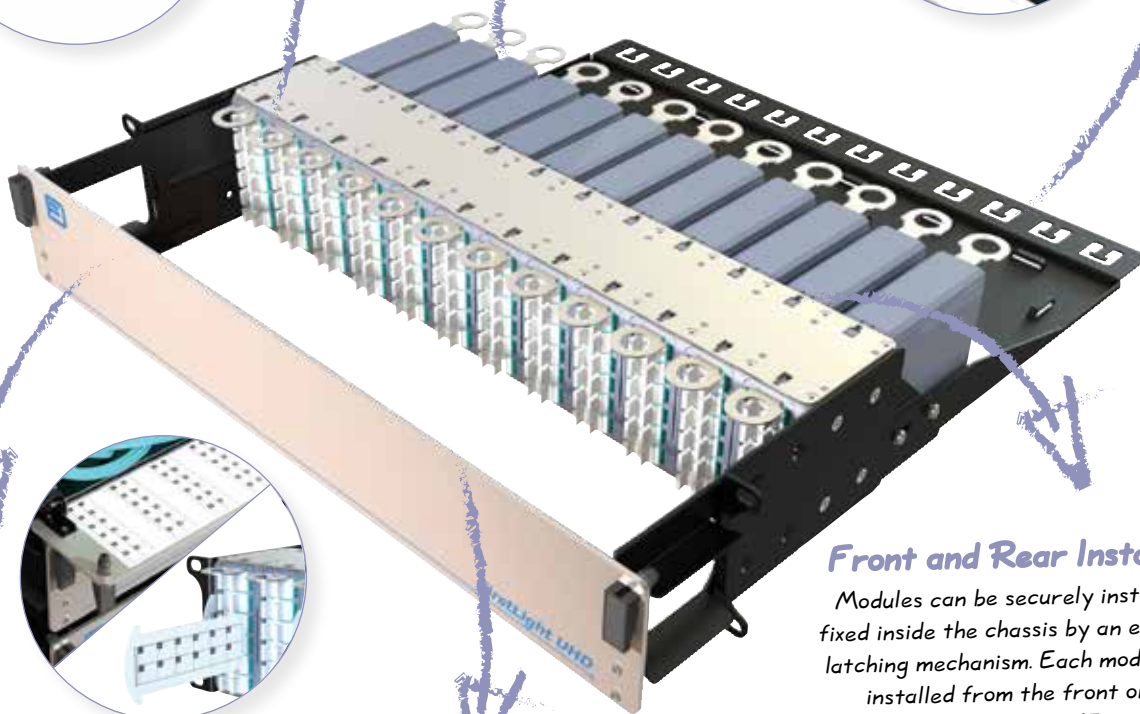
Consisting of new high density chassis, panels, modules, fanouts, trunks, patch cords and fibre management products addressing modern fibre infrastructure in high density environment

Rear Management

Optional accessory for sliding management allows front and rear management, ie. trunks and patch cords
Part no: UHD2URMBA See page 15

High Density

Up to 12 modules in 2U - 288 LC Ports

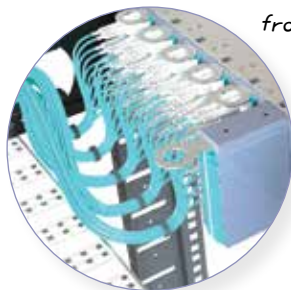


Front Door

Patch cord protection and labelling position on reverse for clear port identification. Labelling card included if no front door is required

Front Management

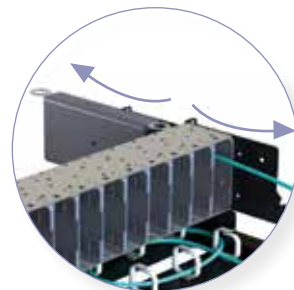
Velcro ties for front management allows easier patch cord routing to the front of adaptors



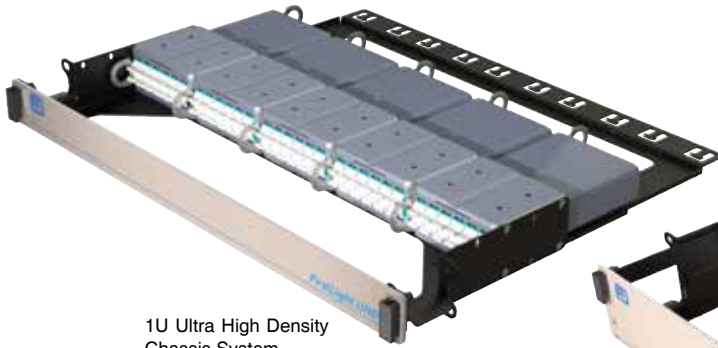
Front and Rear Installation

Modules can be securely installed and fixed inside the chassis by an easy access latching mechanism. Each module can be installed from the front or rear.

See page 17

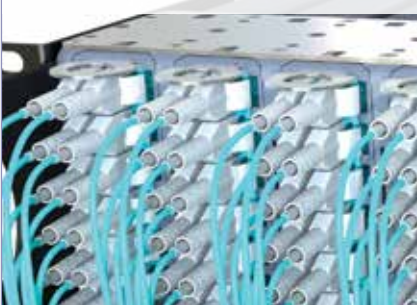


FirstLight™ Ultra High Density 1U/2U Chassis System



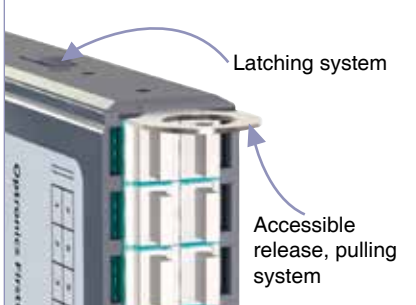
FirstLight™ Ultra High Density Chassis are available in 1U, 2U or Zero U options. The system density is industry leading with capacity to house up to 288 LC ports and 1152 fibres using 12 fibre MTP/MPO interface in a 2U space. FirstLight™ Ultra High Density chassis are designed together with the fibre management products to perform a core installation platform for the Ultra High Density modular system.

Ultra High Density



Up to 5 modules - 1U space (120 fibres)
Up to 12 modules - 2U space (288 fibres)

Secure Module Installation



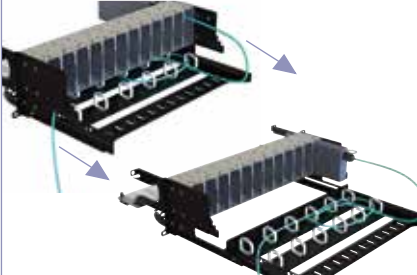
Latching system secures module. Release/pulling system makes it easy to remove.

Simplified Patch Cord / Installation Position



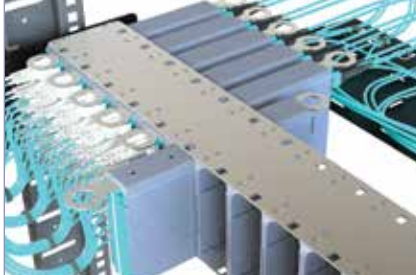
Fixed mid module position for easy patch cord installation

1U Sliding Management Tray



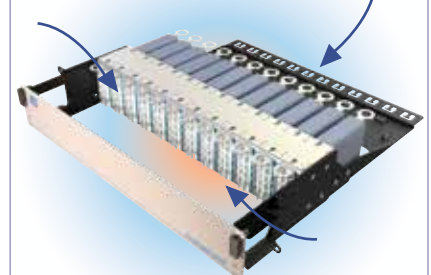
Improves fibre management by handling and storing the excess cable. 1U option

Front and Rear Cable Management



Front and rear module installation

Compact Size for Shallow Depth Racks



Designed to improve airflow through the panel

Technical Information

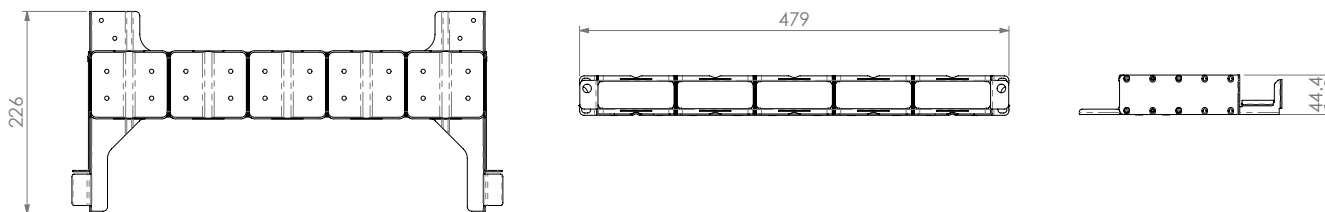
Features

- ▶ Ultra High Density
- ▶ Up to 288 LC ports in 2U and 120 ports in 1U
- ▶ Compact size for installation inside shallow depth racks
- ▶ Easy module installation
- ▶ Secure easy access lock/release mechanism
- ▶ Open chassis for front and rear module access
- ▶ Facilitated patch cord installation
- ▶ Front and rear cable management

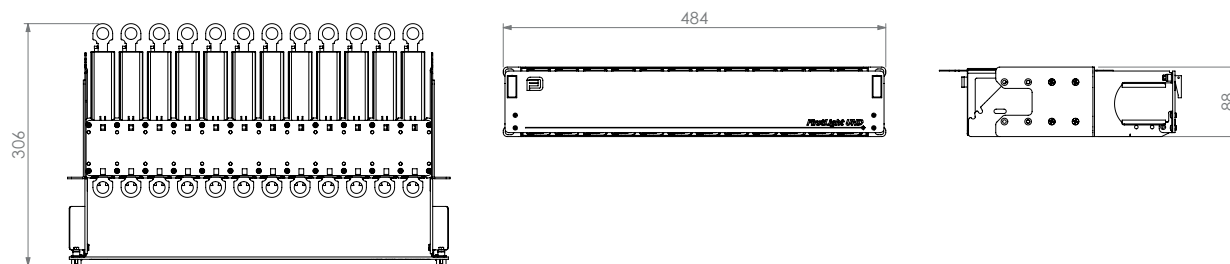
Applications

- ▶ Data centre storage area networks
- ▶ Central office, POP
- ▶ LAN
- ▶ Enterprise campus

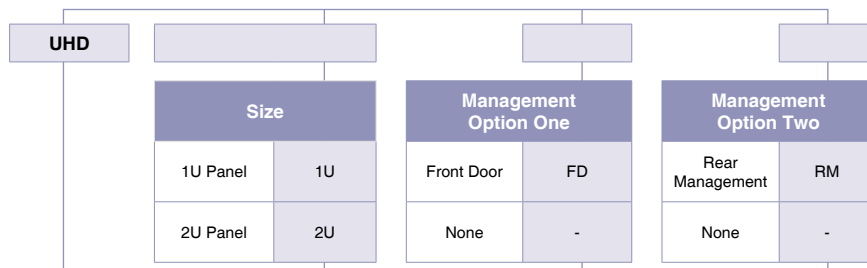
Technical Drawing 1U Chassis



Technical Drawing 2U Chassis



Part Number Generator



Example Part Number: **UHD 2U FD RM**

UHD2UFDRM has created an Ultra High Density 2U Panel with front door and rear management

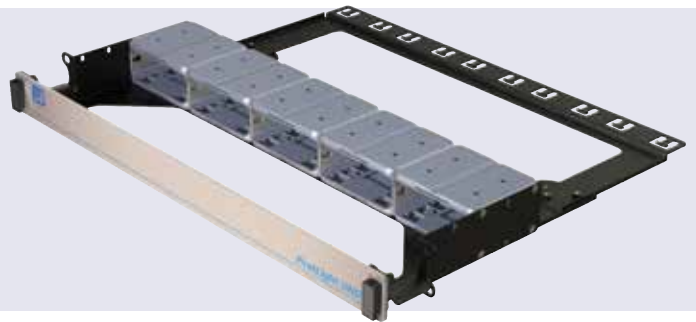
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1U

FirstLight™ Ultra High Density Chassis System and Accessories

FirstLight™ Ultra High Density 5 Module Chassis 19" 1U with Front Door and Rear Management

Part Number: UHD1UFDRM



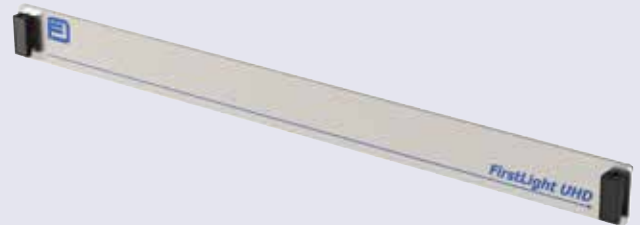
FirstLight™ Ultra High Density 5 Module Chassis 19" 1U

Part Number: UHD1U



1U Front Door Accessory

Part Number: UHDDR03



FirstLight™ Ultra High Density 1U Front Management Bar

Part Number: 1UCABLEBAR01



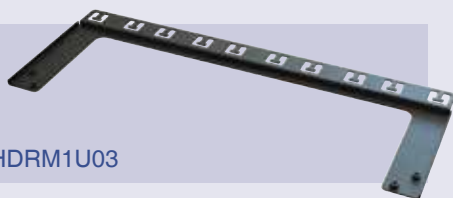
2U Door Mounting Bracket

Part Number: DDM03



1U Rear Management Bar Accessory

Part Number: UHDRM1U03



FirstLight™ Ultra High Density Blank Module

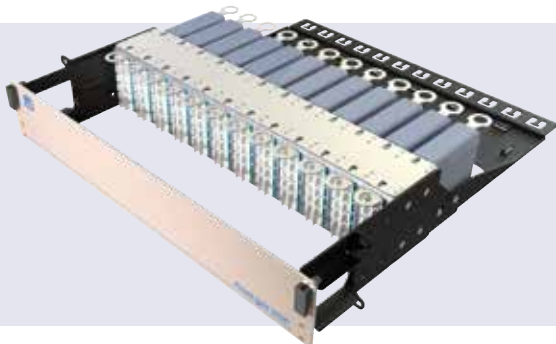
Part Number: UHDBL01



2U FirstLight™ Ultra High Density Chassis System and Accessories

FirstLight™ Ultra High Density 12 Module Chassis 19" 2U with Front Door and Rear Management

Part Number: UHD2UFDRM



FirstLight™ Ultra High Density 12 Module Chassis 19" 2U

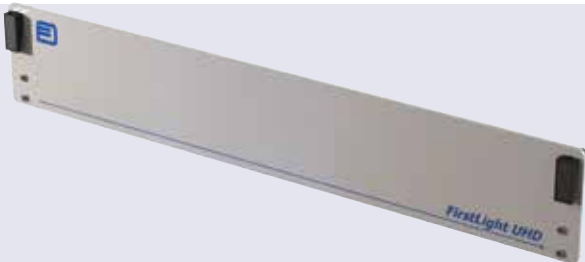
Part Number: UHD2U



2U Front Door Accessory side brackets included only when purchased without a chassis

Part Number: UHDDR01

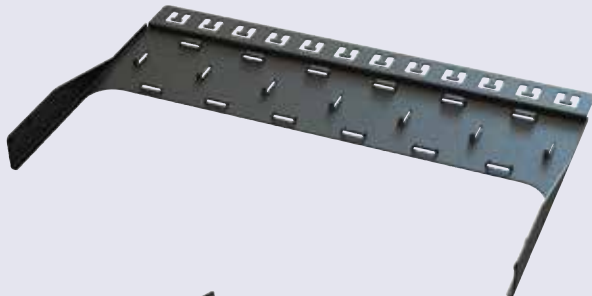
Requires DDM03



2U Rear Management Bar Accessory side brackets included only when purchased without a chassis

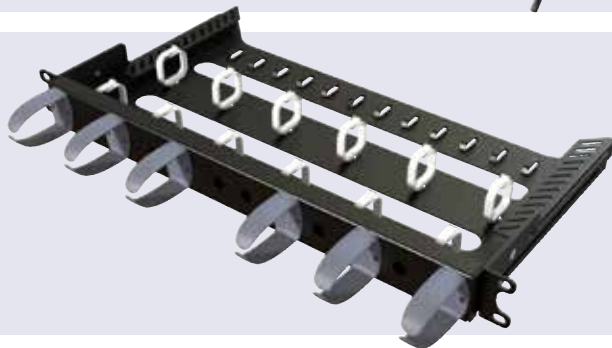
Part Number: UHDIM2U03

Requires DDM03



FirstLight™ Ultra High Density 1U Sliding Management Tray

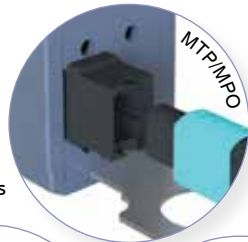
Part Number: SLM1U03



FirstLight™ Ultra High Density Modules Feature Overview

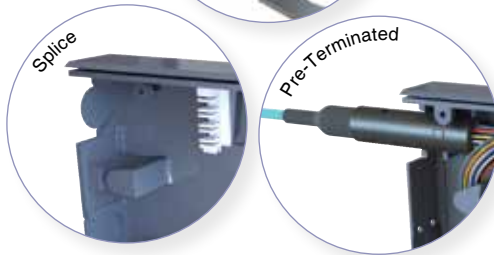
Ultra High Density

Up to 5 Modules in 1U
Up to 12 Modules in 2U
12 & 24 fibre module versions



MTP/MPO

Secure Mounting Mechanism
Module is securely fixed inside the panel to install patch cords



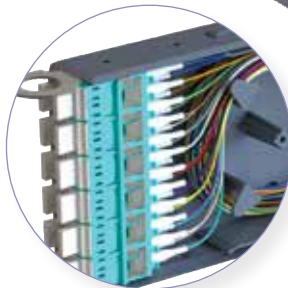
Splice

Pre-Terminated



Simplified Module Access

Convenient pull hook fixes or removes single module from chassis



Also Available

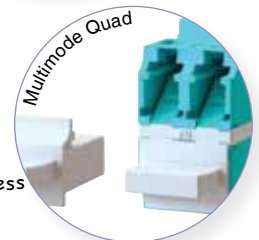
MTP/MPO Modules - See page 18
Pre-Terminated Modules - See page 20
Splice Modules - See page 22

New LC Quad Adaptor Footprint

No extraction tool needed during patch cord installation.
Internal shutter for improved cleanliness and laser safety

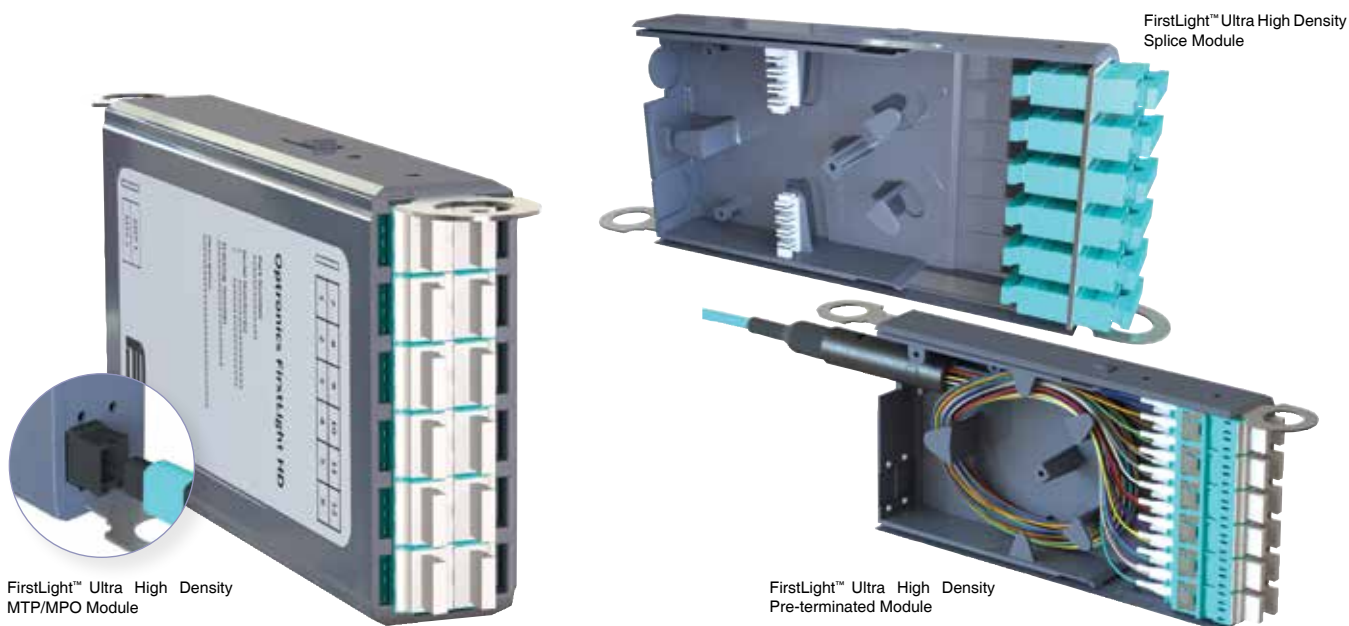


Singlemode Quad



Multimode Quad

FirstLight™ Ultra High Density Modules Feature Overview



FirstLight™ Ultra High Density System is a flexible platform which can be applied to various network application scenarios. The Ultra High Density platform can contain pre-populated MTP/MPO modules with LC front interface, modules can be assembled with pre-terminated multifibre cable assemblies or become a platform for traditional splicing installation. Modules are compact improving space management in a high fibre density environment. Modules are easy to install and access. Intermediate installation position allows easy patch cord connections. New adaptor footprint improves front space management greatly improving port access.

Secure Module Installation

Latching system

Release element

Latching system secures module in chassis
Release element makes it easy to remove

Simplified Module Access

Pull hook at front and rear of module, no tools required to install or remove module

Simplified Patch Cord Access

Intermediate module lock position allows easy patch cord installation and port access

Available in multiple applications. Pre-terminated, MTP/MPO and splice.
See page 20 for applications

Internal Adaptor Shutter

Laser Safety and Improved Cleanliness

Provides laser safety and dust protection

FirstLight™ Ultra High Density MTP/MPO Module 'Plug and Play'



FirstLight™ Ultra High Density Modules provide an interface between MTP/MPO Trunks and LC interface of active equipment. Pre-assembled MTP/MPO modules improve the speed of installation. Modules with external MTP/MPO ports can be easily connected to trunks. Single MTP/MPO port connection provides mating typically for 12 or 24 fibres at one time. Modules are compact improving space management in a high fibre density environment. Modular systems can be easily disconnected and reconfigured for fast add ons or system change reconfigurations. New design of adaptor footprint is implemented for the handling of ultra high density infrastructure.

MTP/MPO Module

MTP/MPO Interface

40Gbps / 100Gbps ready. The multifibre connector, supporting 12/24 fibres, is compatible with parallel optics.

12 fibre

24 fibre

Rapid Installation

One single connection to connect 12/24 fibres instantly

Simplified Module Access

Pull hook at front and rear of module, no tools required to install or remove module

Optimised Performance

Standard Insertion Loss

Lower Insertion Loss Elite/Premium

100% Tested

Reliable and factory controlled

Up to 12 Modules in 2U

x5

x12

Up to 5 modules and 120 fibres in 1U
Up to 12 modules and 288 fibres in 2U

Technical Information



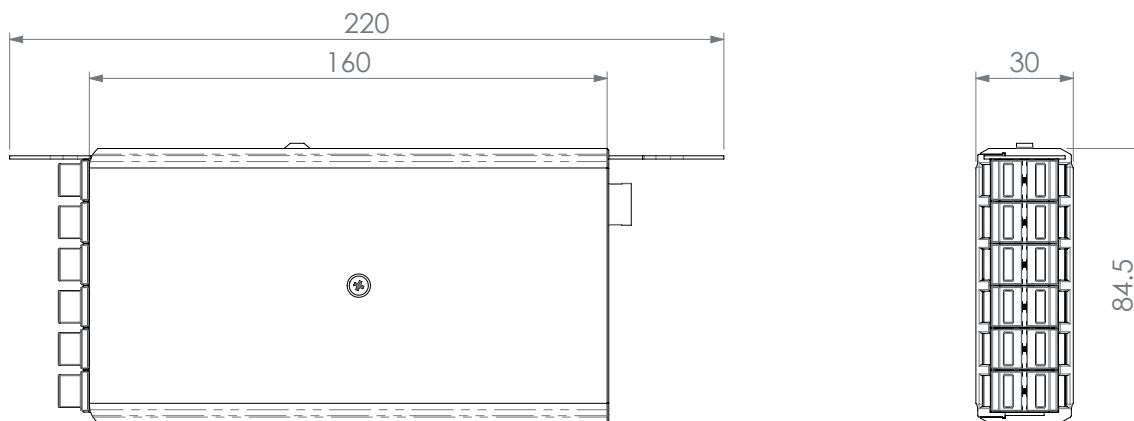
Features

- ▶ 12 and 24 fibres modules
- ▶ Compatible with 1U 5 x Modules Chassis and 2U 12 x Modules Chassis
- ▶ High Performance LC, SC premium interface
- ▶ High Performance MPO/ MTP ELITE interface
- ▶ Polarity A, B or C

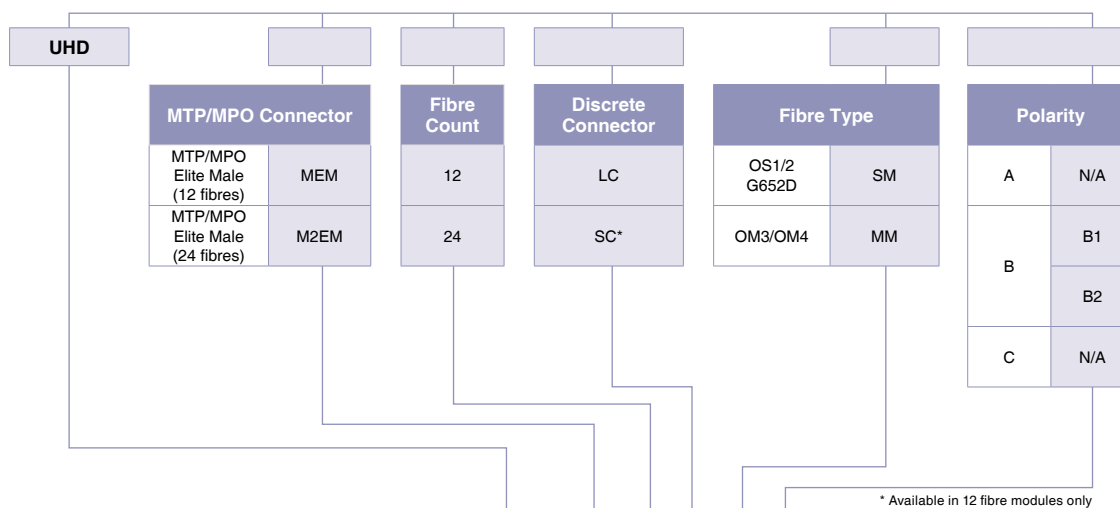
Applications

- ▶ Data centre
- ▶ Storage area network

Technical Drawing



Part Number Generator

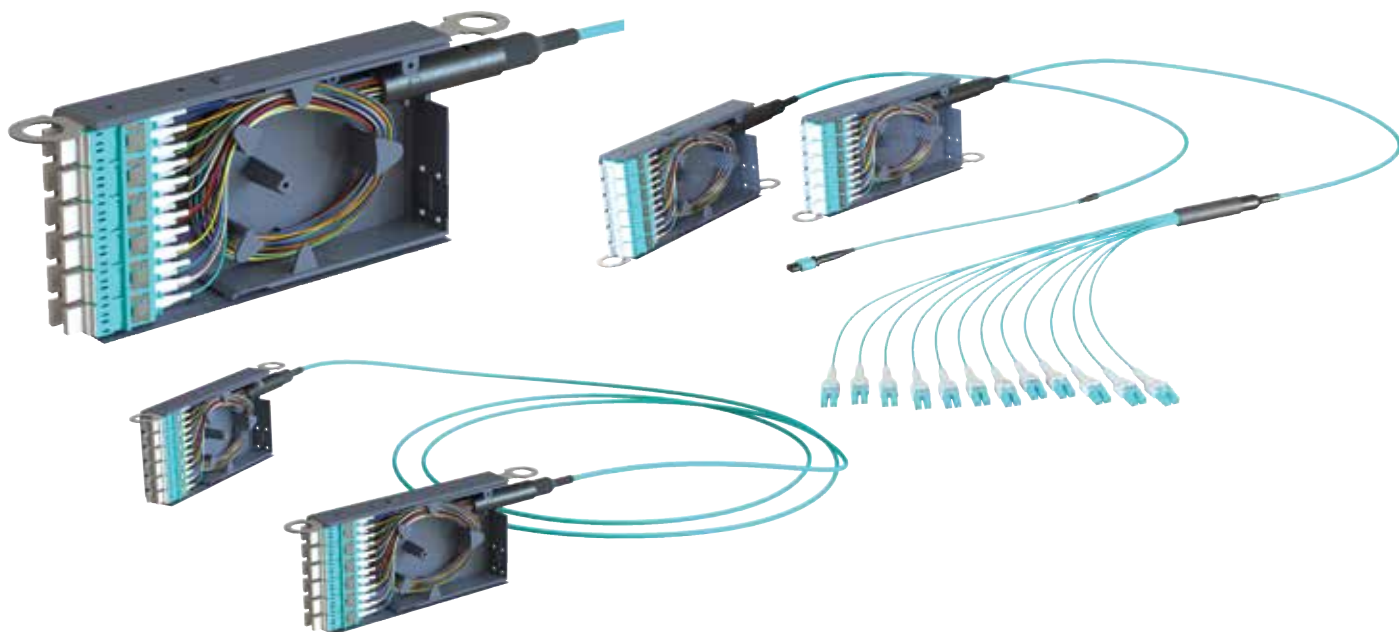


Example Part Number: **UHD MEM 12 LC SM**

UHDMEM12LCSM has created an Ultra High Density 12 fibre singlemode MTP/MPO elite to LC module

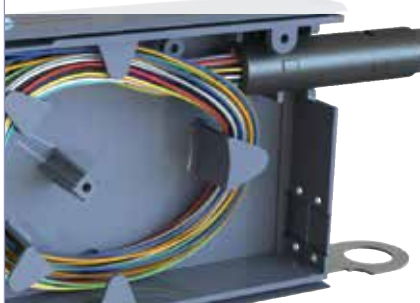
FirstLight™ Ultra High Density Pre-Terminated Module

‘No Plug, Just Play’



Modules can contain directly terminated cable assemblies installed inside without the rear MTP/MPO interface. A lower number of interconnections within the link diminishes the link losses and improves power budget management. Please see below for more details.

Pre-Assembled Module



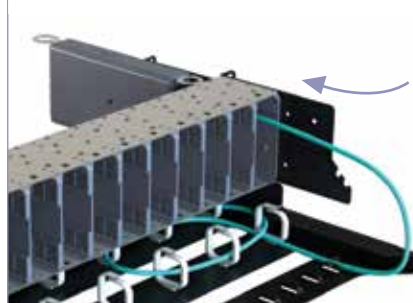
Pre-installed module houses the fibre. No termination required

Selection of Cables



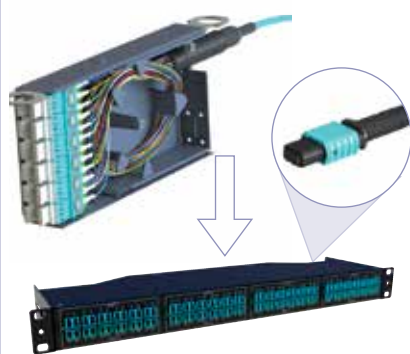
Modular Assembly can be made utilising a variety of cables

Ready to Install

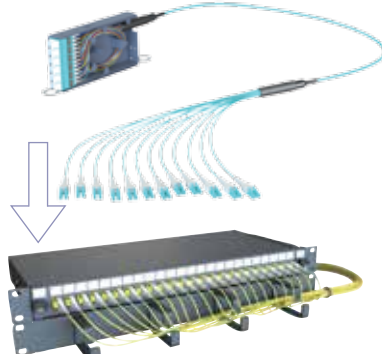


Modules with rear cable must be loaded from the rear.

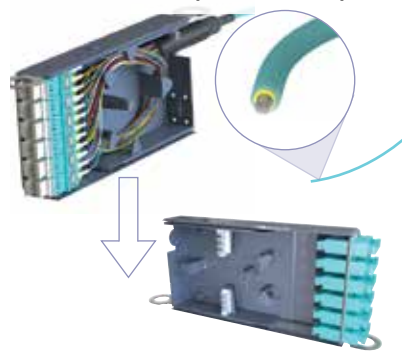
Module to MTP/MPO



Module to Tails



Module to Open Tail/Splice



Modules with rear cable must be loaded from the rear.

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Technical Information



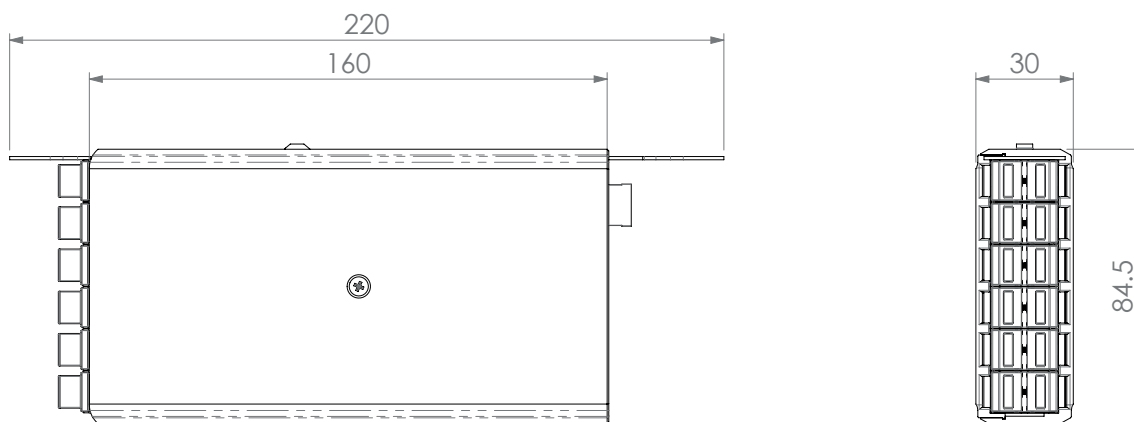
Features

- ▶ Factory made and tested modules
- ▶ Up to 24 fibres
- ▶ High performance
- ▶ Reduced amount of interconnections
- ▶ Improved power budget

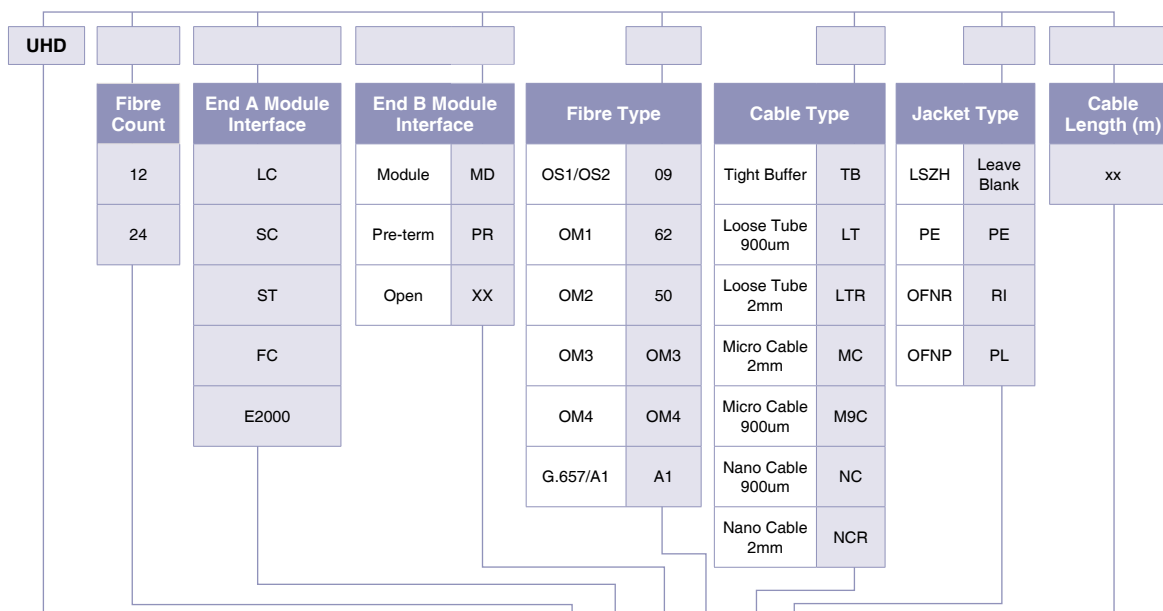
Applications

- ▶ Data centre
- ▶ Storage area network
- ▶ Enterprise/Campus
- ▶ Central office/ POP

Technical Drawing



Part Number Generator

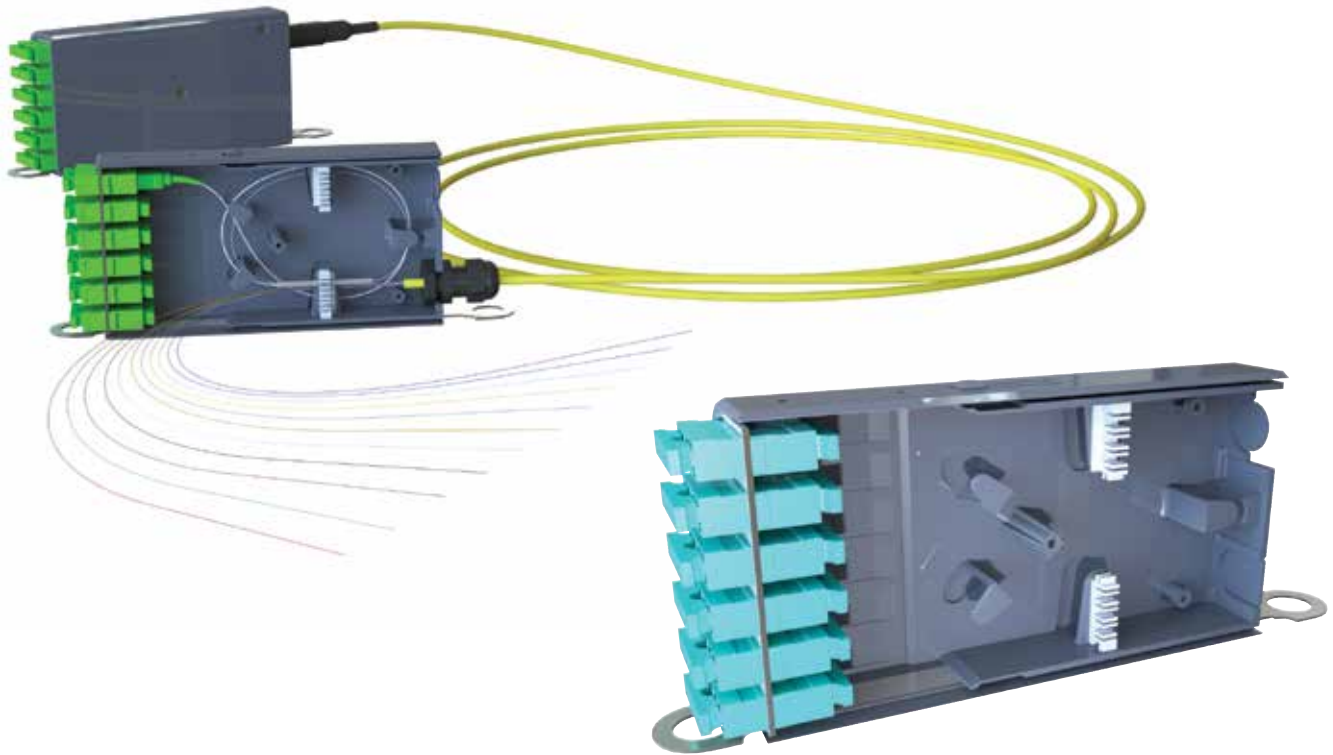


Example Part Number: **UHD 12 LC MD 09 TB - 10**

UH12LCMD09PRE10TB has created an Ultra High Density 12 fibre LC module OS1/OS2 pre-terminated 10 metre tight buffer with LSZH jacket.

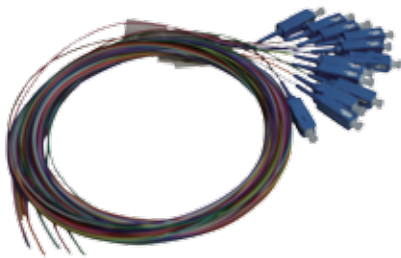
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FirstLight™ Ultra High Density Splice Module



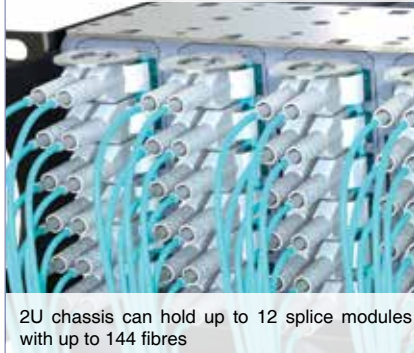
FirstLight™ High Density modules can feature internal splice management. Modules can be used as splice modules for utilisation of traditional splicing techniques and at the same time benefiting from the Ultra High Density feature of this system.

Splice Compatible



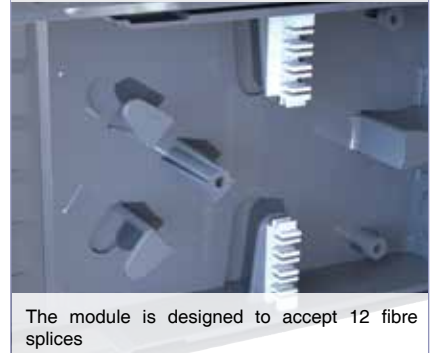
Module can house up to 12 splice positions. Cable can spliced to factory prepared pigtailed.

Ultra High Density



2U chassis can hold up to 12 splice modules with up to 144 fibres

Up to 12 Splice Positions



The module is designed to accept 12 fibre splices

Features

- ▶ SC/LC interface
- ▶ Up to 12 splices per module

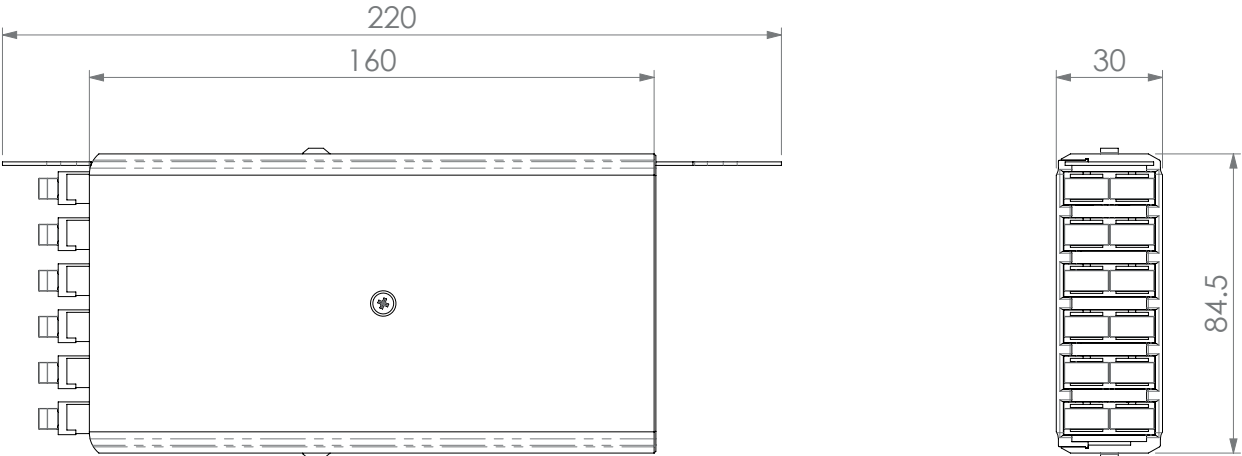
Applications

- ▶ Enterprise/ Campus networks
- ▶ LAN
- ▶ Central office/ POP

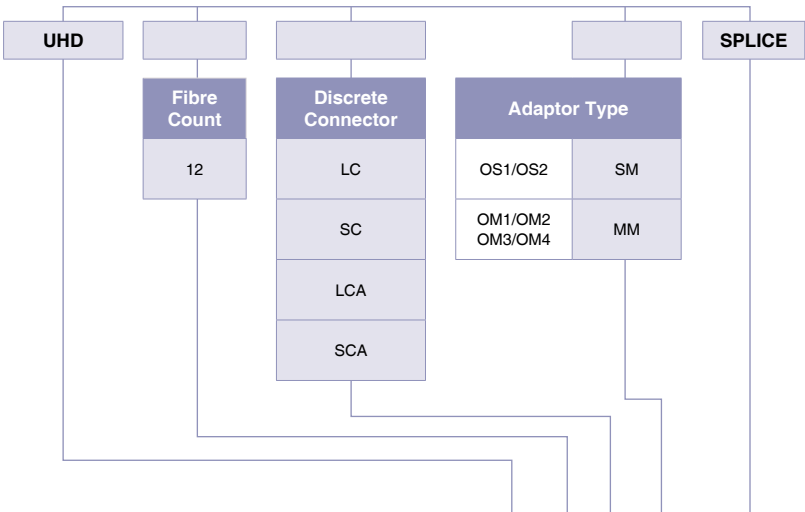
FOR MORE INFORMATION CALL **+44 (0)870 127 3330**

Technical Information

Technical Drawing



Part Number Generator



Example Part Number: **UHD 12 SC SM SPLICE**
UHD12SCSMSPLICE has created an Ultra High Density 12 fibre with SC singlemode splice

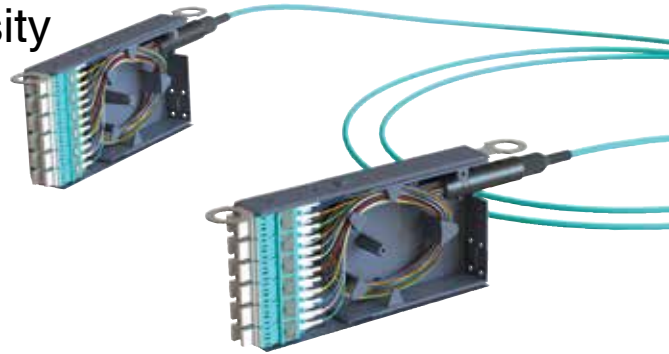
The Evolution of Fibre Optic Installations



A

UltraHigh Density System

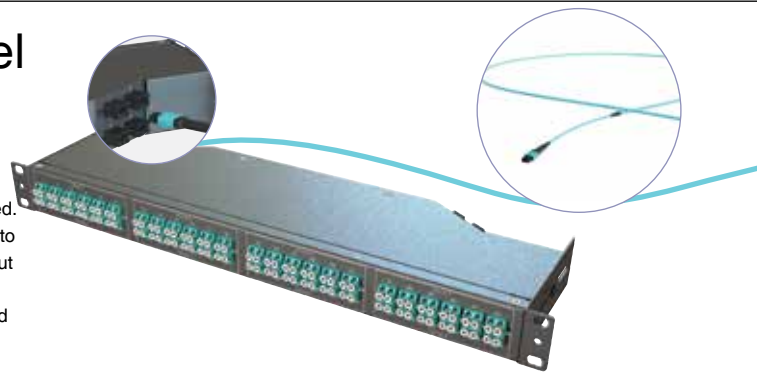
Pre-assembled and pre-populated modules are ready for installation. The amount of time spent on interconnections is reduced.



B

Quick Panel System

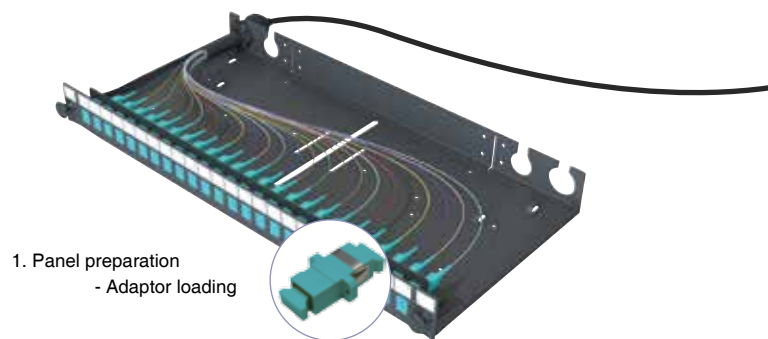
System is ready made. Panels are fully populated and trunks are pre-terminated. The amount of time needed to install the fibre optic link is cut to a minimum. Trunks need to be connected to the panel.



C

Multifibre Assembly

Installing ready made multifibre assemblies reduces time at installation.



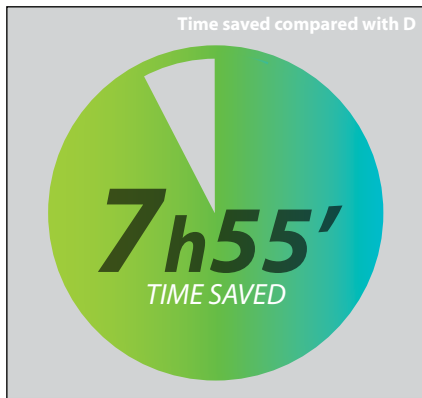
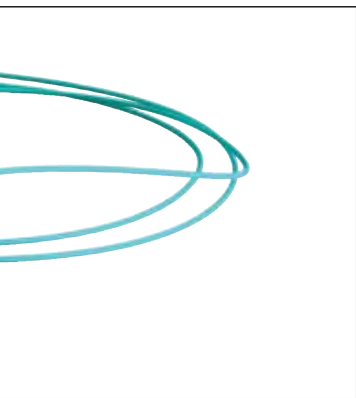
D

Traditional Installation

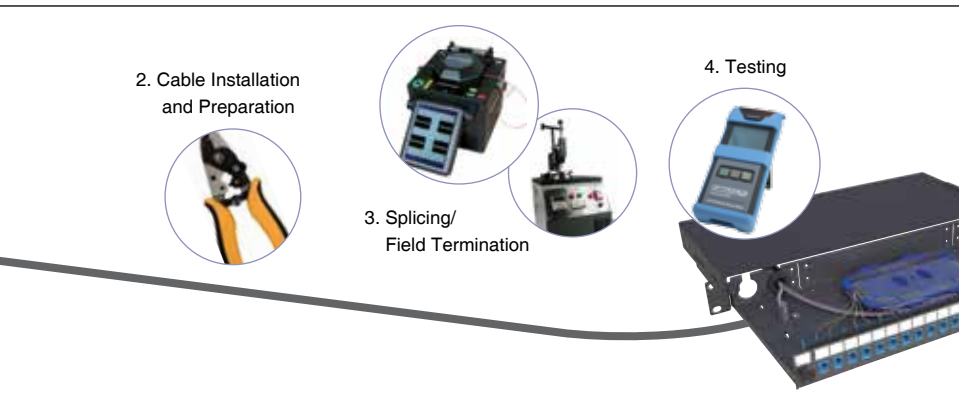
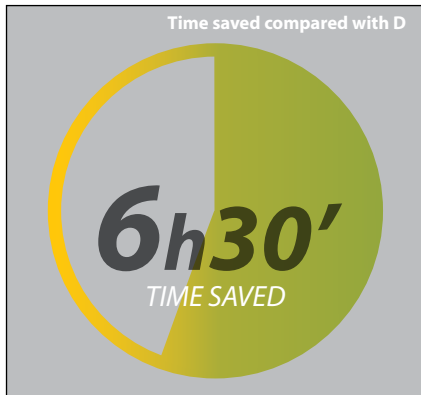
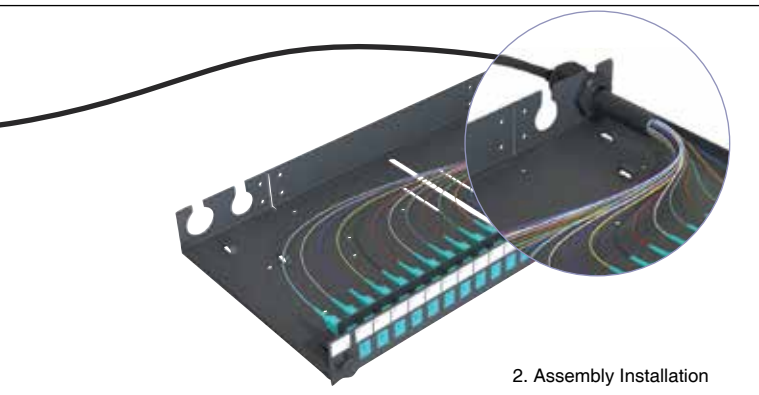
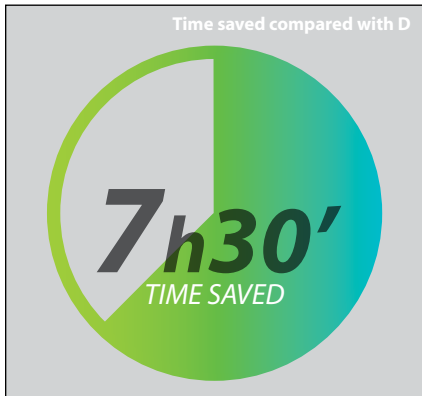
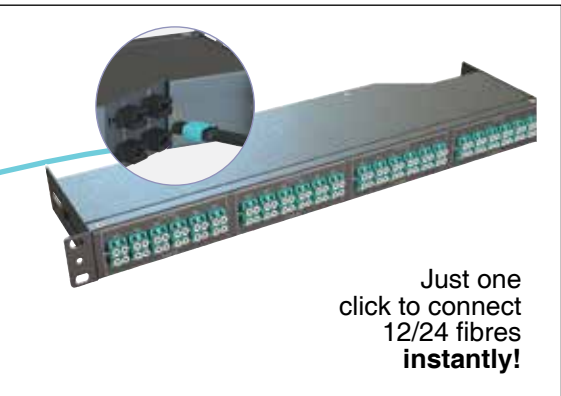
Field Splicing / Field Termination

1. Panel preparation
 - Adaptor loading
 - Splice management installation
 - Pigtail loading





Up to date information is also available at www.fibrefab.com



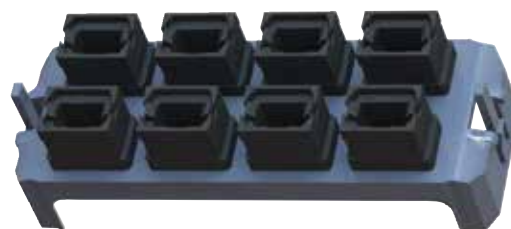
VISIT US ONLINE NOW WWW.FIBREFAB.COM

Pre-Terminated Module

FirstLight™ Ultra High Density Adaptor Plate



Blank Plate
Part No. UHDBL01

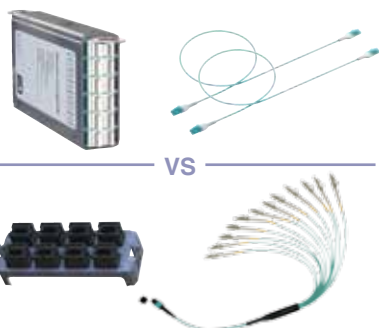


MTP/MPO Adaptor Plate

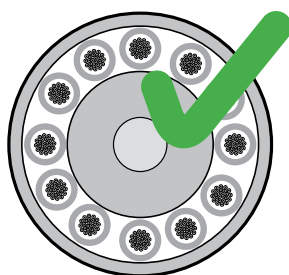


MTP/MPO adaptor plates are used to connect MTP/MPO trunks or pigtailed with either MTP/MPO, LC ruggedised fanouts or for direct connection to active equipment, MTP/MPO extender trunks or MTP/MPO patch cords.

Improved Economics / Power Budget

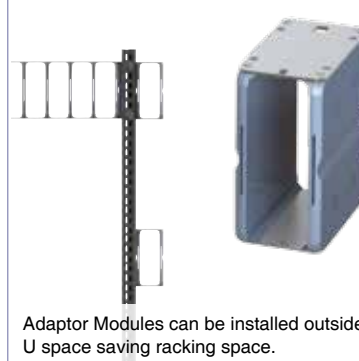


High Fibre Density



MTP/MPO multifibre interface saves costly racking space. 2U chassis can host 2304 fibres using MTP interface vs 288 LC ports.

Zero U Solution



Adaptor Modules can be installed outside U space saving racking space.

Features

- ▶ MTP/ MPO adaptor plates
- ▶ Up to 8 MTP/MPO adaptor per plate
- ▶ Key-Up Key-Down adaptors option (Standard)
- ▶ Key-Up Key-Up adaptors option

Applications

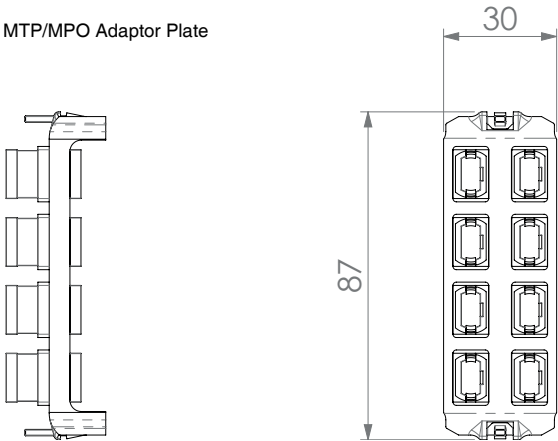
- ▶ Data centre
- ▶ Storage area network
- ▶ Director switch cabling solution

FOR MORE INFORMATION CALL **+44 (0)870 127 3330**

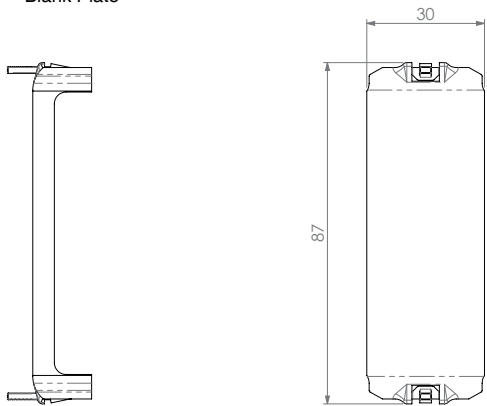
Technical Information

Technical Drawing

MTP/MPO Adaptor Plate

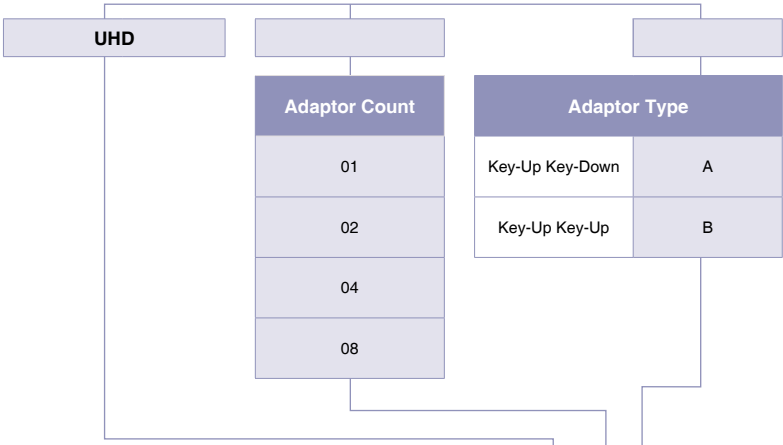


Blank Plate



Part Number Generator

MTP/MPO Adaptor Plate

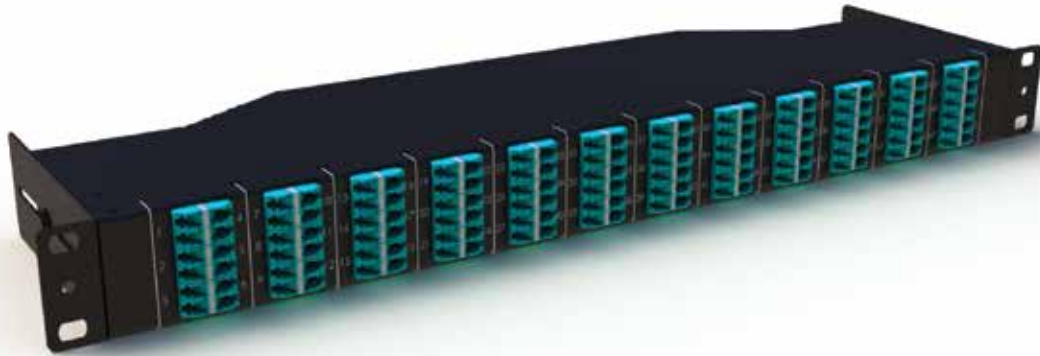


Example Part Number: **UHD 01 A**

UHD01B has created an Ultra High Density one adaptor Key-Up Key-Down module

FirstLight™ Ultra High Density MTP/MPO UltraSlim Panel

144 fibres



The MTP/MPO UltraSlim Panel provides secure transitions between MTP/MPO and LC or SC discreet connector interfaces. They are used to connect MTP/MPO backbones with LC or SC patching and active equipment.

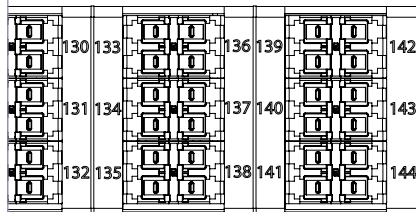
The pre-populated panel allows rapid deployment of high density data centre infrastructure as well as improved trouble shooting and reconfiguration during moves, adds and changes. The shallow depth of the UltraSlim Panel makes it suitable for copper racking systems or telecommunication rack infrastructure.

Next Generation Network Proof

40Gbps / 100Gbps ready. The multifibre connector, supporting 12/24 fibres, is compatible with parallel optics.

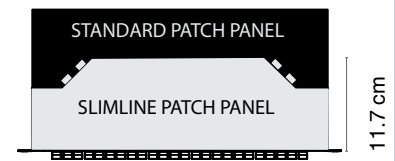


High Density Fibre Count



Up to 144 fibres in 1U space

Ultra Shallow Depth



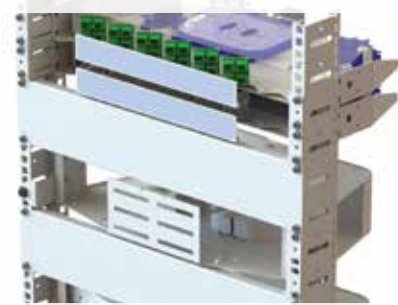
Only 11.7 cm

100% Tested



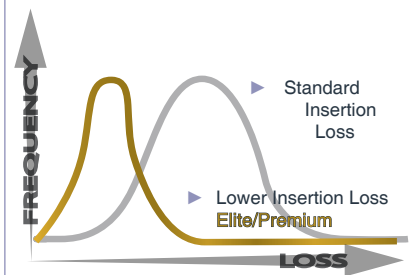
Reliable and factory controlled

Compatible with



Copper and Central Office Telco racks thanks to its shallow depth

Optimised Performance



Technical Information



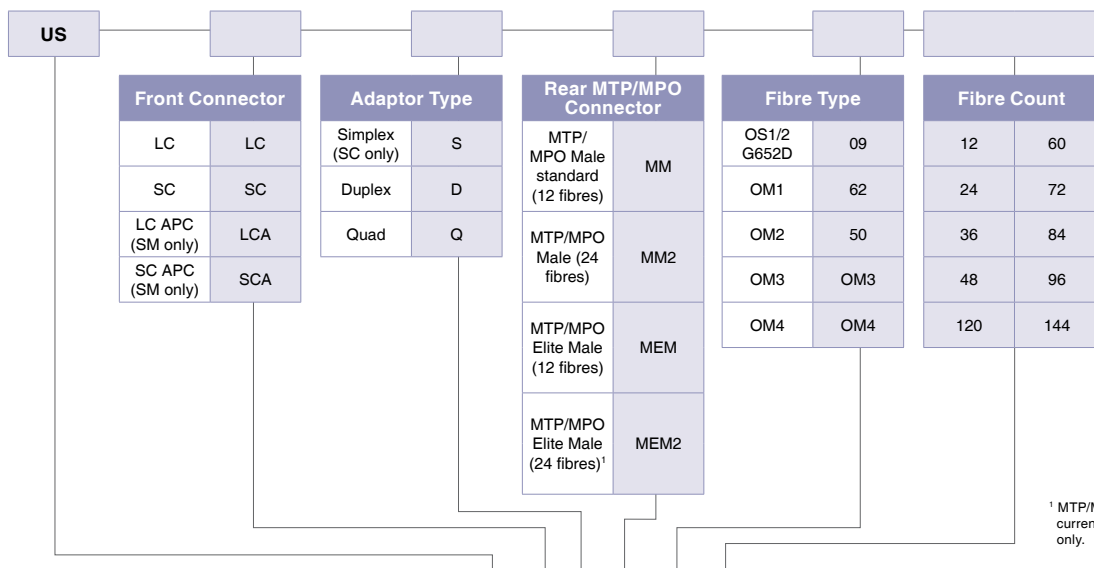
Features

- ▶ Available in OS1/2, OM1, OM2, OM3 and OM4 fibre grades
- ▶ Up to 12 MTP/MPO standard connectors
- ▶ Compliant multifibre connector
- ▶ Rear entry ports
- ▶ Front LC (SFF Data Centre standard), SC discrete interface
- ▶ Up to 144 fibres per 1U
- ▶ Factory terminated and tested
- ▶ Only 11.7cm deep
- ▶ Colour black
- ▶ 19" rack mount

Applications

- ▶ Data communication applications
- ▶ Data centre infrastructure
- ▶ Storage area network - Fibre channel
- ▶ Emerging 40 and 100Gbps protocols compatible

Part Number Generator



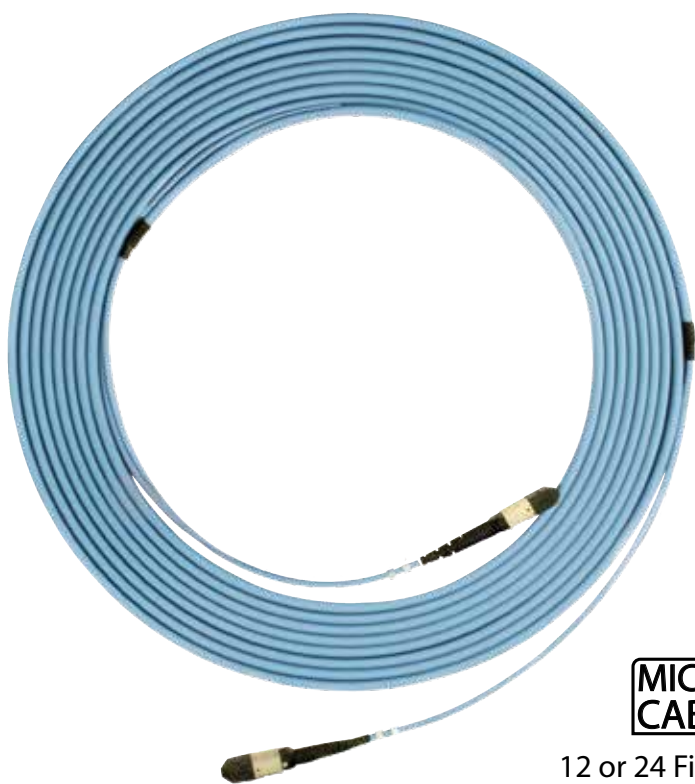
¹ MTP/MPO Elite 24 fibre ferrule is currently available for multimode only.

Example Part Number: **US LC D MM 50 144**

UHD01B has created an UltraSlim panel with LC Duplex connectors, MTP/MPO male standard rear connector, OM2 fibre and 144 fibres.

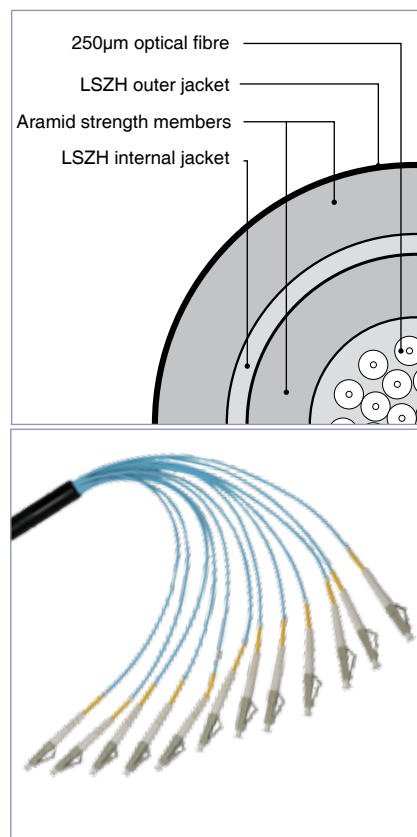
MTP/MPO

Trunk Micro Cable Assemblies



**MICRO
CABLE**

12 or 24 Fibres



The MTP/MPO trunk micro cable assembly facilitates rapid deployment of high density backbone cabling, in data centres and other high-fibre environments, reducing network installation or reconfiguration time and cost. They are used to interconnect modules, panels or ruggedised MTP/MPO Fanouts, spanning MDA, HDA and EDA zones.

MTP/MPO trunk assemblies are offered in most fibre types as standard 12 to 144 core versions using a compact and rugged microcable structure. The compact cables optimise cable-way use and improve airflow.

MTP/MPO trunks are built with highest quality components. Standard MTP/MPO as well low loss Elite versions are offered featuring low insertion loss for demanding high speed networks where power budgets are critical.

Benefits

- ▶ **MTP/MPO Interface-** MTP/MPO components feature superior optical and mechanical properties
- ▶ **Optimised Performance-** low loss MTP/MPO Elite®, discreet premium connectors and OM4 fibre assures low insertion losses and power penalties in tight power budget, high speed network environment
- ▶ **High Density-** multifibre connector and compact dimension of ruggedised micro cable ease space in costly data centre environments
- ▶ **Rapid Deployment-** factory terminated modular system saves installation and reconfiguration time during moves, adds and changes
- ▶ **Reliability-** 100% tested- combination of high quality components and manufacturing quality control guarantees product to the highest standards
- ▶ **Next Generation Network Proof-** emerging high speed protocol are going to use MTP/MPO interface- your cabling infrastructure remains unchanged
- ▶ Please refer to the fibre specification datasheets for OM1, OM2, OM3, OM4, OS1/2 (ITU-T G.652) and ITU-T G.657A1

FOR MORE INFORMATION CALL **+44 (0)870 127 3330**

Quick Glance Key Features



Optimised Performance

MTP/MPO Interface

Instant 12/24 fibres connection

Rapid Installation

One single connection to connect 12/24 fibres instantly

High Density

Up to 288 fibres

Next Generation Network Proof

40Gbps / 100Gbps Ready

100% Tested

Reliable and factory controlled

Small Size

Ideal for high density environments

Flexibility

Ruggedised Double Jacket Structure

Features

- ▶ OS1/2, OM3, OM4 fibre grades (OM1 and OM2 available)
- ▶ 12, 24 and 48 core micro cable trunk
- ▶ LSZH, OFNP cable jacket
- ▶ Female (standard) and Male MTP/MPO connectors
- ▶ Polarity A (standard for Quick Panel System), B or C
- ▶ Factory terminated and tested

Applications

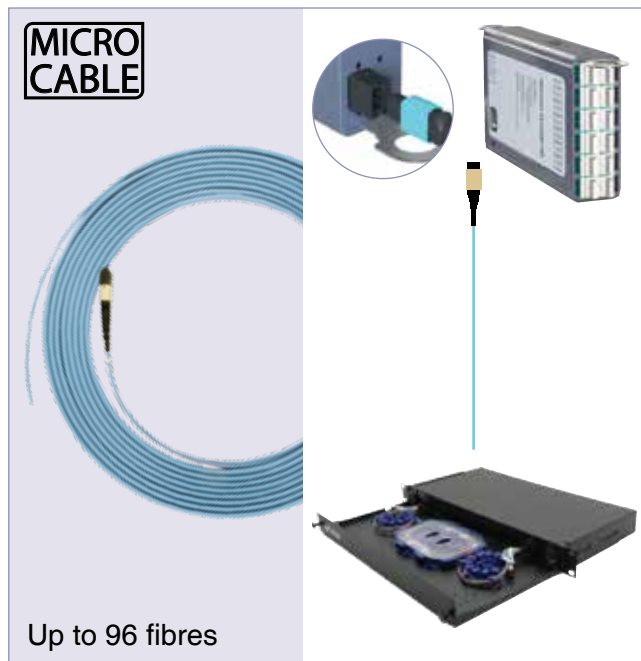
- ▶ Data centre infrastructure
- ▶ Storage area network- Fibre channel
- ▶ Parallel optics
- ▶ Infiniband
- ▶ Emerging 40 and 100Gbps protocols

MTP/MPO

Trunk Micro Cable Configurations

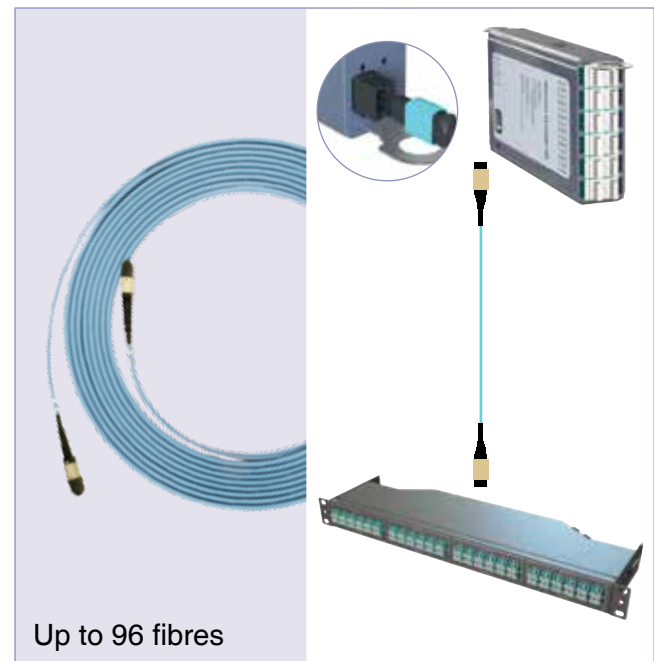
MTP/MPO to Open End

Pre-assembled with an MTP/MPO connector on end A the MTP/MPO to Open End B provides the installer with the convenience of a high performance MTP/MPO connector pre-terminated on one end, tested and polished, ready for splicing.



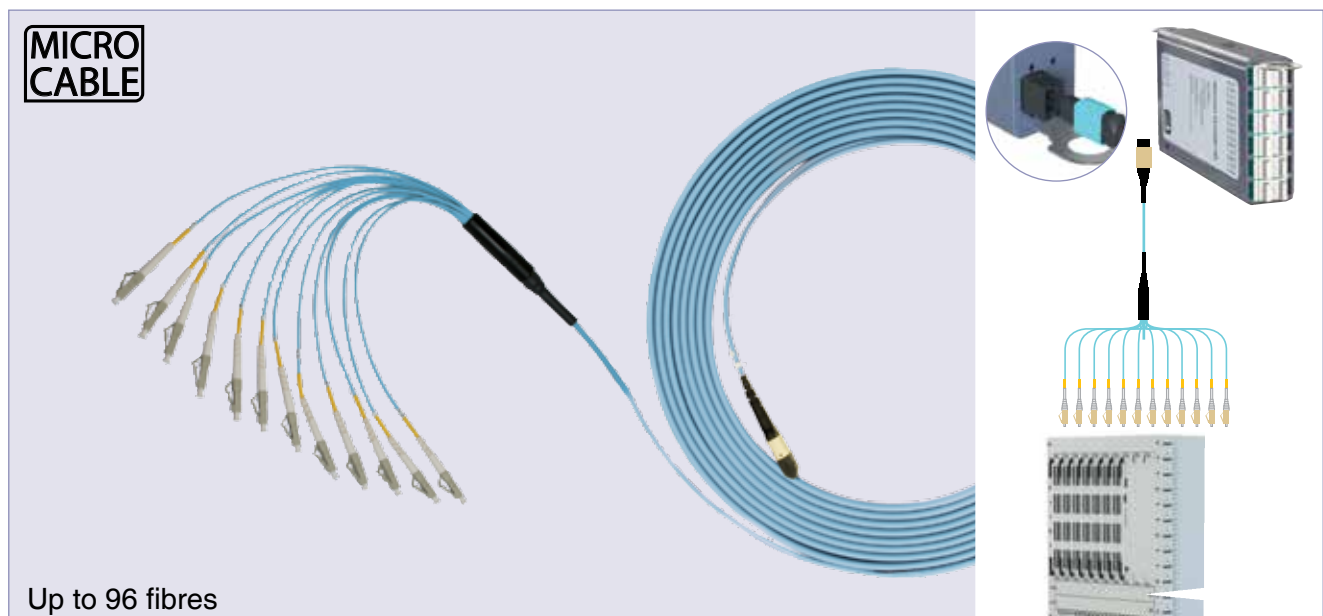
MTP/MPO to MTP/MPO

Pre-terminated with a MTP/MPO connectors at both ends the MTP/MPO to MTP/MPO trunk cable offers a true plug and connect installation. Quick, simple and ideal for fast moves, adds and changes.



MTP/MPO to Fan Out

Pre-terminated with an MTP/MPO connector on one end and an extensive range of connector styles on end B. The MTP/MPO to fan out offers true versatility to connect directly to active equipment ports or the front of panels.



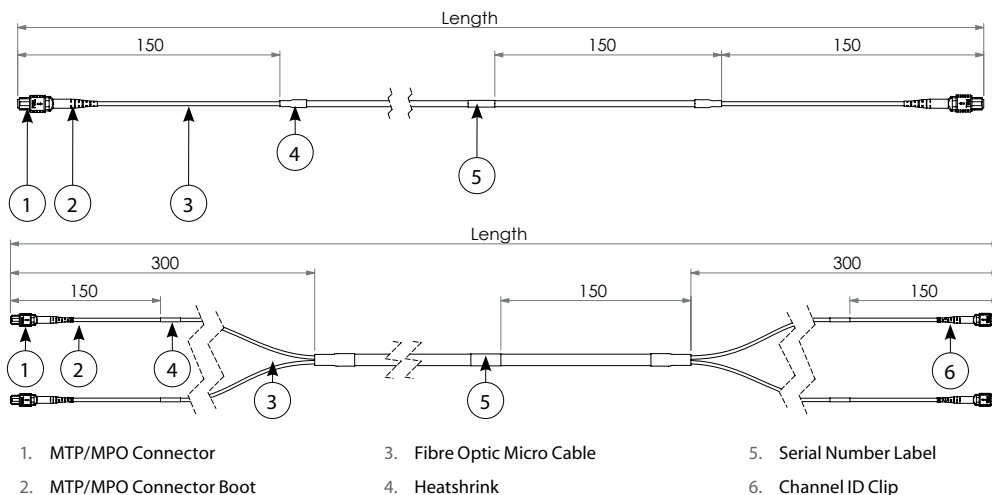
FOR MORE INFORMATION CALL **+44 (0)870 127 3330**

Technical Drawing

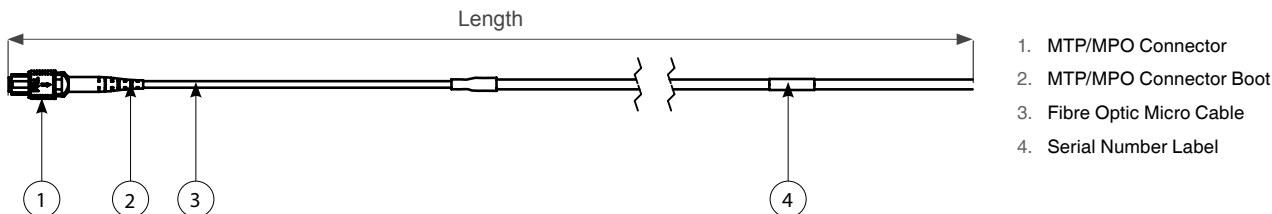


MTP/MPO to MTP/MPO

All dimensions in mm



MTP/MPO to Open End



Part Number Generator

Connector End A			Connector End B			Fibre type		Fibre Count	Cable length (m)	Polarity	Colour		Jacket Type	
MTP/MPO Standard	Male	MTPM	MTP/MPO Standard	Male	MTPM	OS1/2 G652D	09	12	XX	A	Orange (OM1/OM2)	-	LSZH standard	-
	Female	MTPF		Female	MTPF	OM1	62	24		B	Purple (OM3)	-	OFNP	PL
MTP/MPO Elite®	Male	MTPEM	MTP/MPO Elite®	Male	MTPEM	OM2	50	48	XX	C	Aqua (OM3)	AQ	OFNR	RI
	Female	MTPEF		Female	MTPEF	OM3	OM3	72			Aqua (OM4)	-		
MTP/MPO (24 fibre)	Male	M2M	MTP/MPO (24 fibre)	Male	M2M	OM4	OM4	96	XX	XX	Erika Violet (OM4)	EV		
	Female	M2F		Female	M2F			144						
MTP/MPO Elite® (24 fibre)	Male	M2EM	MTP/MPO Elite® (24 fibre)	Male	M2EM									
	Female	M2EF		Female	M2EF									
			Open End	XX										

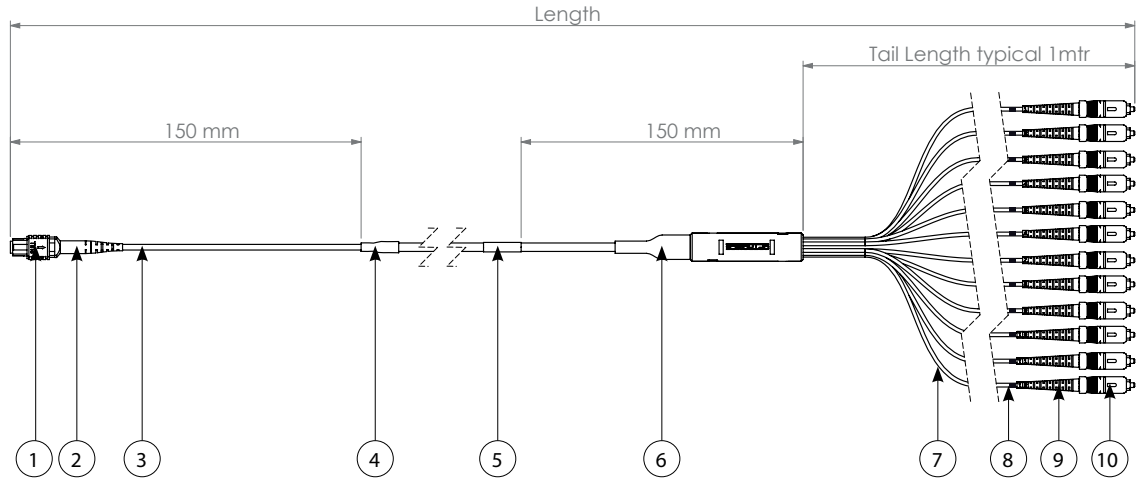
Example Part Number: **MTPF MTPF OM3 12 16 C AQ PL**

MTPFMTPFOM31216CAQPL has created a 16 metre 12 Core MTP/MPO female to MTP/MPO female OM3 polarity method C, OFNP jacket, colour aqua trunk assembly.

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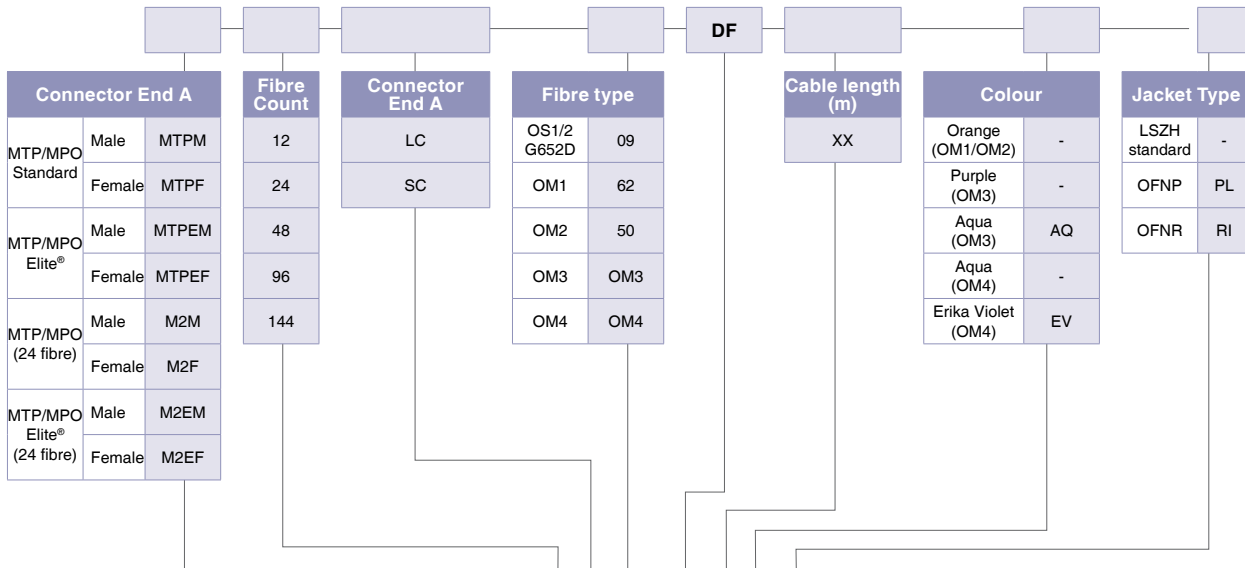
Technical Drawing

MTP/MPO to Fan Out



- 1. MTP/MPO Connector
- 2. MTP/MPO Connector Boot
- 3. Fibre Optic Micro Cable
- 4. Heatshrink
- 5. Serial Number Label
- 6. Break Out Module
- 7. 2 mm Furcating Tubes
- 8. ID Clip
- 9. Discreet Connector Boot
- 10. Discreet Connector

Part Number Generator

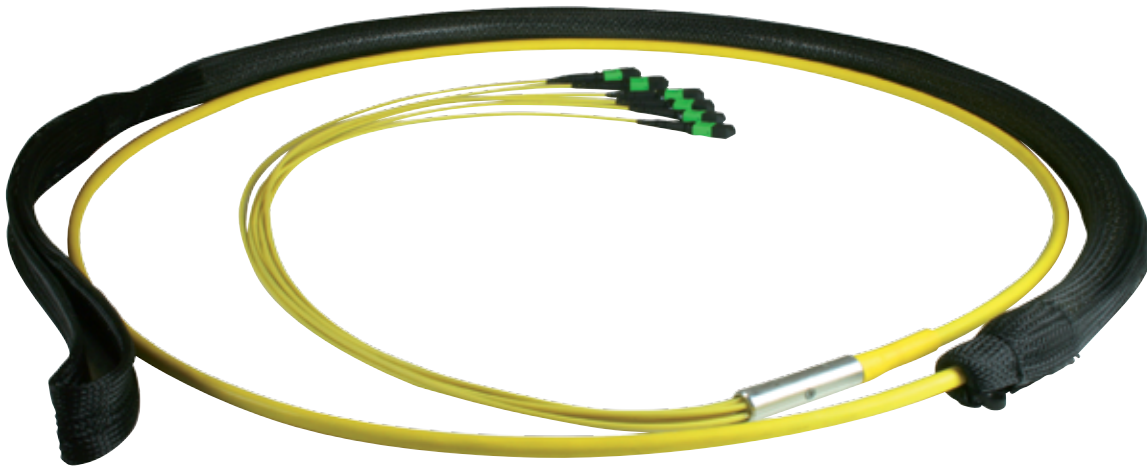


Example Part Number: **MTPF 12 LC OM3 DF 16 AQ PL**
 MTPF12LCOM3DF16AQPL has created a 16 metres 12 core MTP/MPO female to LC OM3, OFNP jacket, colour aqua ruggedised Fan out.

FOR MORE INFORMATION CALL +44 (0)870 127 3330

MTP/MPO Trunk Micro Cable

FirstLight™ Prime MTP/MPO Loose Tube Trunk Cable



The FirstLight™ Prime LT is a special design platform for loose tube multifibre optical cable assemblies. It utilises the patented FirstLight™ Prime transition module which guarantees superior tensile strength and crushing resistance.

The high density design can scale up to 144 fibres and can feature both MTP/MPO and discrete interface.

It is the perfect solution for trunks requiring MTP/MPO interface and universal or external applications.

Features

- ▶ Available in OS1/2, G.657A1, OM1, OM2, OM3, OM4
- ▶ Up to 144 fibre core count
- ▶ Available with multifibre MTP/MPO and discrete connectors
- ▶ Internal/external application - LSZH or PE cable jacket available
- ▶ OFNP, OFNR jacket available
- ▶ Factory terminated and tested
- ▶ Loose Tube (LT), Dry Loose Tube (DLT) or Loose Tube Armoured (LTSTA) cable selection

Applications

- ▶ Data centre infrastructure
- ▶ Central office, access points or CATV hubs
- ▶ Internal and backbone application

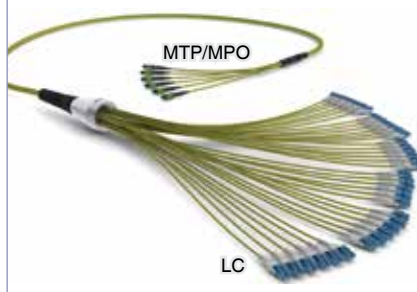
Quick Glance Key Features

High Density

Up to 144 cores



MTP/MPO or Discrete Interface



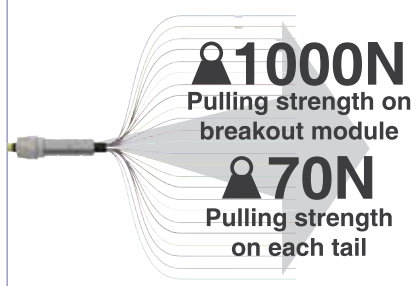
Secure FirstLight™ Prime Break Out Module



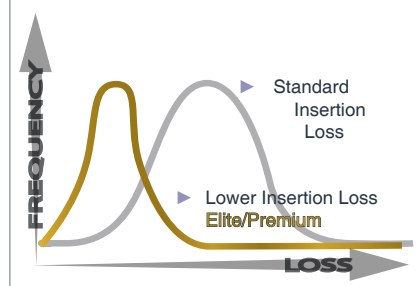
100% Tested



Superior Pulling Strength



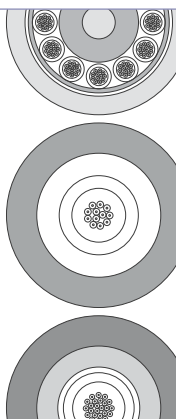
Optimised Performance



Cable Selection

- ▶ Loose Tube
- ▶ Dry Loose Tube
- ▶ Loose Tube Armoured

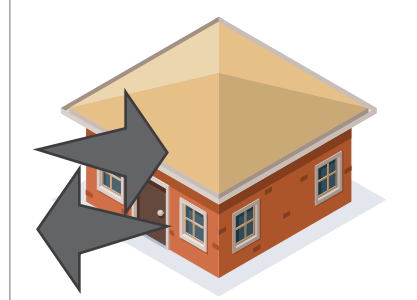
(LSZH or PE Jacket)



Single or Dual Stage Break Out



Internal/External Application



Benefits

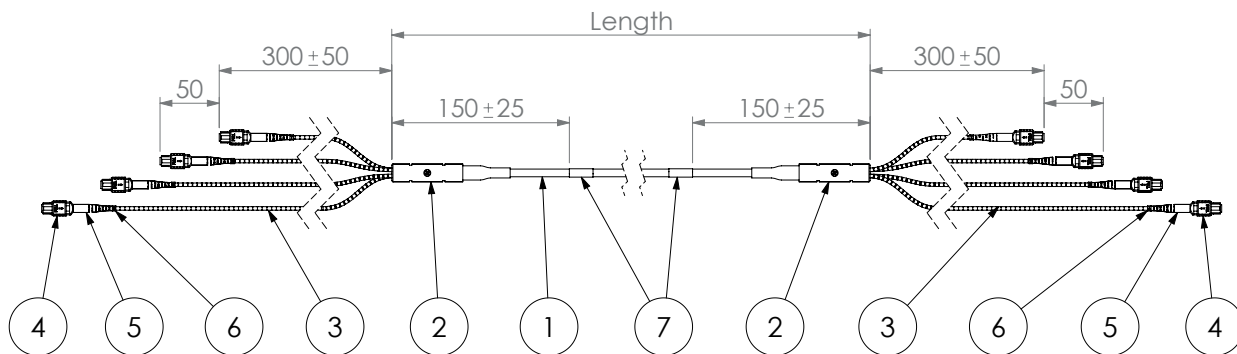
- ▶ Very High Density - FirstLight™ Prime LT can scale up to 144 fibres for very high density Data Centre or Central Office application
- ▶ Hybrid MTP/MPO and Discrete Connector Interface - FirstLight™ Prime LT can be used as high density multifibre MTP/MPO ruggedised trunk or ruggedised MTP/MPO to LC or SC fanouts
- ▶ Rapid Deployment - factory terminated cabling saves installation and reconfiguration time eliminating field deployment variables
- ▶ Optimised Performance - low loss MTP/MPO Elite, discrete Premium connectors and OM4 fibre assures low insertion losses and power penalties in tight power budget high speed network environment
- ▶ Compact Size - small dimension of break out module and multifibre assemblies improves space management in high density applications

FOR MORE INFORMATION CALL **+44 (0)870 127 3330**

Technical Drawing



All dimensions in mm



- 1. Loose tube cable
- 2. Ruggedised break out module
- 3. 3mm ruggedised Nano tubing (white)
- 4. MTP/MPO connector
- 5. MTP/MPO round connector boot (black)
- 6. Tail identification marker (C-clip)
- 7. Serial number label (wrap around)

Part Number Generator

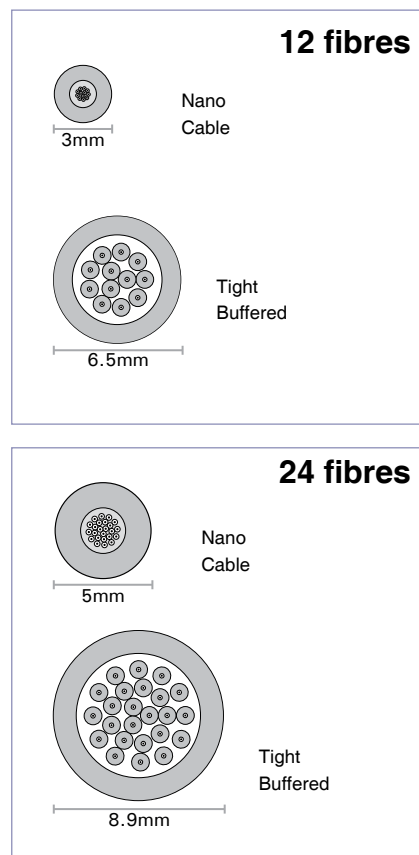
Fibre Count	Connector End A			Connector End B				Fibre type	Cable Construction		Jacket Type		Cable length (m*)	Polarity		
12	MTP/ MPO Female	Standard	MTPF	LC	LC	MTP/ MPO Female	Standard	MTPF	OS1/2	9	Loose Tube	LTR	LSZH standard	-	XX	A
24	MTP/ MPO Male	Elite®	MTPEF	LC APC	LCA	MTP/ MPO Male	Elite®	MTPEF	OM3	OM3	Loose Tube	STAR	PE	PE		B
48	MTP/ MPO Male	Standard	MTPM	SC	SC	MTP/ MPO Male	Standard	MTPM	OM4	OM4			OFNR	RI*		C
72	MTP/ MPO Male	Elite®	MTPEM	SC APC	SCA	MTP/ MPO Male	Elite®	MTPEM	G.657A1	A1			OFNP	PL*		
96	MTP/ MPO Female	Standard	M2F	ST	ST	MTP/ MPO Female	Standard	M2F								
144	24 fibre ferrule MTP/ MPO Male	Elite®	M2EF	FC	FC	24 fibre ferrule MTP/ MPO Male	Elite®	M2EF								
	24 fibre ferrule MTP/ MPO Male	Standard	M2M	FC APC	FCA	MTP/ MPO Male	Standard	M2M								
	24 fibre ferrule	Elite®	M2EM	E2000 APC	E2	24 fibre ferrule	Elite®	M2EM								
				E2000 APC	E2A	Open End		XX								

Example Part Number: **PRE 24 MTFT LC OM4 LTR PE 16 C**

PRE24MTPFLCOM4LTRPE16 has created a 16 metre 24 Core MTP/MPO female to LC OM4 PE jacket, colour aqua MTP/MPO FirstLight™ Prime trunk cable assembly, polarity C

*For riser and plenum length is measured in feet

MTP/MPO Nano Ruggedised Trunk Cable Assemblies



The FirstLight™ Nano MTP/MPO trunk assembly features the small, compact size of Nano Cable providing a flexible yet ruggedised product with the improved optical performance of the Nano Cable structure.

MTP/MPO Nano trunk multicore cable assemblies facilitate rapid deployment of high density backbone cabling in data centres and other high fibre environments reducing network installation or reconfiguration time and cost. They are used to interconnect modules, panels or ruggedised MTP/MPO fanouts, spanning MDA, HDA and EDA zones.

MTP/MPO trunks are built with highest quality components. Standard MTP/MPO and low loss Elite versions are offered featuring low insertion loss for demanding high speed networks where power budgets are critical.

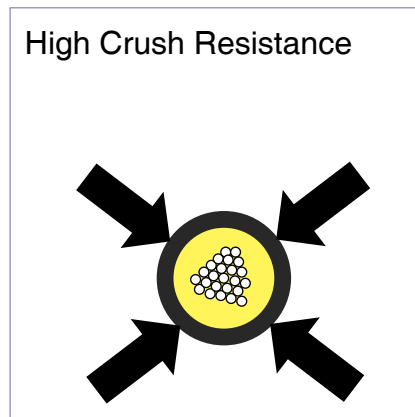
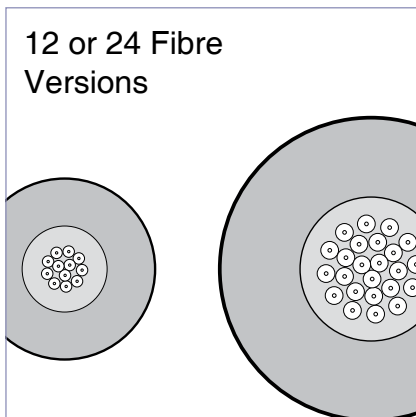
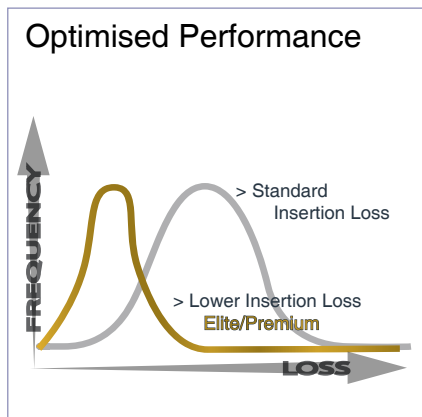
Features

- ▶ OS1/2, OM3, OM4 fibre grades
- ▶ 12 and 24 core trunk
- ▶ LSZH, OFNP cable jacket
- ▶ Female (standard) and Male MTP/MPO connectors
- ▶ Polarity A (standard), B or C
- ▶ Factory terminated and tested

Applications

- ▶ Data centre infrastructure
- ▶ Storage area network- fibre channel
- ▶ Parallel optics
- ▶ Infiniband
- ▶ Emerging 40 and 100Gbps protocols

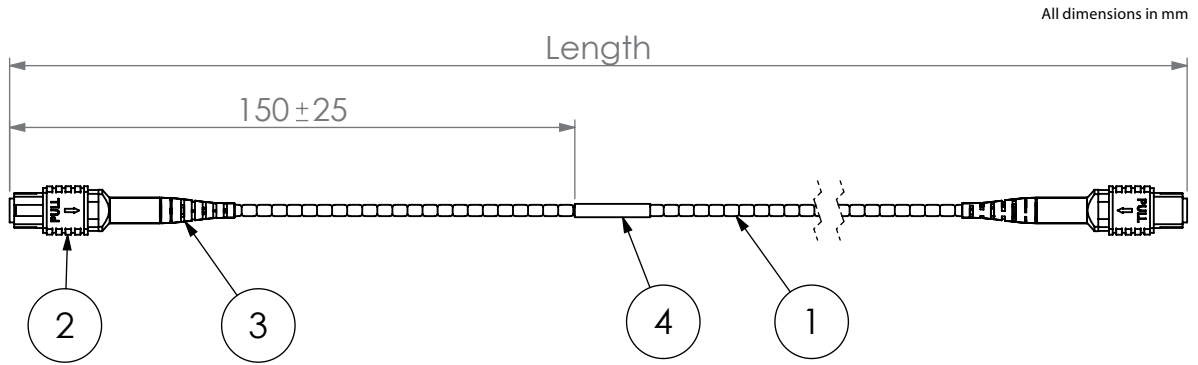
Quick Glance Key Features



Benefits

- ▶ MTP/MPO Interface - MTP/MPO components feature superior optical and mechanical properties
- ▶ Optimised Performance - low loss MTP/MPO Elite, discreet Premium connectors and OM4 fibre assures low insertion losses and power penalties in tight power budget high speed network environment
- ▶ High Density - multifibre connector and compact dimension of ruggedised Nano cable ease space in costly data centre environments
- ▶ Rapid Deployment - factory terminated modular system saves installation and reconfiguration time during moves, adds and changes
- ▶ Reliability - 100% tested - combination of high quality components and manufacturing quality control guarantees product to the highest standards
- ▶ Next Generation Network Proof - emerging high speed protocol are going to use MTP/MPO interface- your cabling infrastructure remains unchanged

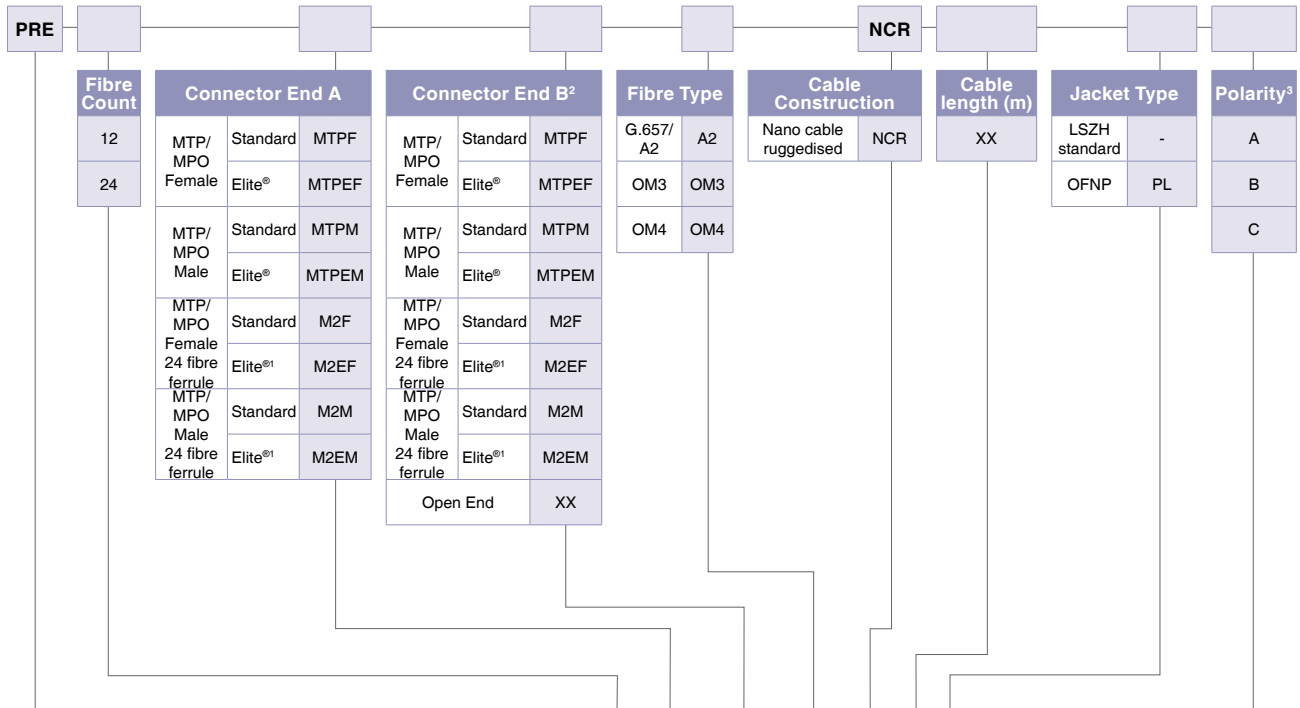
Technical Drawing



All dimensions in mm

1. Nano cable
2. MTP/MPO connector
3. MTP/MPO 3mm connector boot
4. Serial number label (wrap around)

Part Number Generator



Example Part Number: PRE 24 MTPF MTPM OM3 NCR 20 PL C
 PRE24MTPFMTPMOM3NCR20PLC has created a 20 metre 24 core OM3 multifibre MTP/MPO Nano cable ruggedised assembly, MTP/MPO female to MTP/MPO male with OFNP jacket, colour aqua, polarity C.

¹ MTP/MPO Elite 24 fibre ferrule is currently available for multimode only.
² Only if end B differs from end A.
³ Polarity method C is offered as standard.

Technical Specification



Termination Performance

Connector Mating	IL Average	IL Max	Return Loss	Connector Mating	IL Average	IL Max	Return Loss
MTP/MPO Elite (MM)	0.10 dB	0.35 dB	N/A	LC, SC (MM)	0.15 dB	0.30 dB	N/A
MTP/MPO (MM)	0.20 dB	0.60 dB	N/A	LC, SC Premium (MM)	0.08 dB	0.15 dB	N/A
MTP/MPO Elite (SM)	0.10dB	0.35dB	>60dB	LC, SC (SM)	0.18 dB	0.25 dB	>55/65 dB*
MTP/MPO (SM)	0.25dB	0.75dB	>60dB	LC, SC Premium (SM)	0.12 dB	0.30 dB	>55/65 dB*

*UPC/APC

Fibre Performance

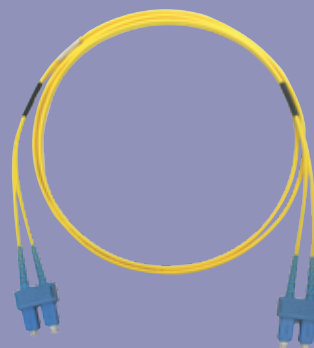
Fibre Type (ISO/IEC 11801)	OS1/OS2	OM1	OM2	OM3	OM4
Attenuation Coefficient [dB/km]	≤ 0.38 max (1310nm)	≤ 3.5 max (850nm)	≤ 3.5 max (850nm)	≤ 3.5 max (850nm)	≤ 3.5 max (850nm)
	≤ 0.25 max (1550nm)	≤ 1.5 max (1300nm)	≤ 1.5 max (1300nm)	≤ 1.5 max (1300nm)	≤ 1.5 max (1300nm)
	≤ 0.34 typ (1310nm)	≤ 2.9 typ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

Complementary Products Patch Cords

Access Network Applications

Singlemode patch cords are used for Telecom networks, plus high speed metropolitan and access networks. Our singlemode patch

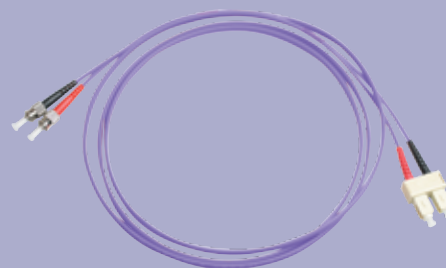
cords are manufactured using LSZH cables and conform to IEC, EIA TIA and Telcordia standards.



Legacy Applications

Multimode patch cords are used to connect high speed and legacy networks including Gigabit Ethernet, Fast Ethernet and Ethernet.

Our multimode patch cords are manufactured using LSZH cables which conform to IEC, EIA and TIA.



Data Centre Applications

Our data centre patch cords are designed for low loss data centre applications. They provide flexible interconnection to active equipment, passive optical devices and cross-connects.

Our patch cords are terminated with premium grade zirconia ferrule connectors which help assure high transmission quality and low optical power loss.



Telecoms Applications

Telecom patch cords are designed for low loss telecommunication applications. Our patch cords provide flexible interconnection to active equipment, passive optical devices

and cross-connects. They are terminated with premium grade zirconia ferrule connectors which help assure high transmission quality and low optical power loss.



FOR MORE INFORMATION CALL **+44 (0)870 127 3330**

FibreFab™

Established in 1992, FibreFab is a leading provider of fibre optic connectivity products used in data communications and telecommunication networks. The company designs, develops, manufactures and sells fibre optic cabling, connectivity, management and systems solutions. It offers a broad range of products directly and through distributors, installers and OEM partners.

Customer Service

FibreFab's growth has been founded on quality products, rapid response and excellent customer service.

Quality

All products are manufactured in ISO9001:2008 certified facilities and conform to applicable international standards. FibreFab is dedicated to value and continuous improvement of all its products and services.

Global Logistics

With headquarters in Milton Keynes (UK), FibreFab has manufacturing activities in the UK, China and US. The Company has both volume and quick response manufacturing capabilities and is able to support the global logistics requirements of its customers. FibreFab provides customised and customer branded products for OEM customers.



Test / QA Statement

To give customers the confidence in a network, product long term reliability is a must. To withstand a variety of environmental factors products used in the access network must provide assurances of long term use.

FibreFab have tested our fibre connectivity products and fibre management products to IEC requirements for shock, vibration, humidity, temperature cycling and side load among a host of other tests.



UK Rapid Response & Production Facilities

Chinese Production Facility





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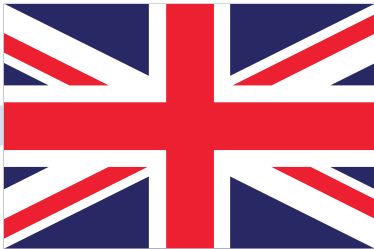


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FibreFab Group and UK Headquarters



FibreFab Ltd
Davy Avenue, Knowlhill,
Milton Keynes, MK5 8ND,
United Kingdom.
Tel: +44 (0) 870 127 3330
Fax: +44 (0) 870 127 3331
E-mail: sales@fibrefab.com
www.fibrefab.com

UK Manufacturing Plant

FibreFab Ltd
Boundary Road, Haverhill
Suffolk, CB9 7YH,
United Kingdom.
Tel: +44 (0) 870 127 3330
Fax: +44 (0) 870 127 3331
E-mail: sales@fibrefab.com
www.fibrefab.com

Dubai



Optronics Ltd
WH #410 Business District
Dubai Maritime City
P.O. Box 378978 – Dubai
United Arab Emirates
Call: +971-55-716-3040
or +971-55-954-1474
Fax: + 971 4 8812435
E-mail: mea@optronicsnet.com
www.optronicsnet.com

United States of America



FiberFab
1589 Sulphur Spring Road,
Suite 111-112, Baltimore,
MD 21227, USA.
Tel: 1-410-242-9026
Fax: 1-410-242-7747
E-mail: sales@fiberfabinc.com
www.fiberfabinc.com

China



FibreFab Asia Pacific
No.2708, Hanggang Fuchun Building.
6031 ShenNan Middle Road. Futian District.
ShenZhen City, China.
Tel: 86-755-2561-3694
Fax: 86-755-2561-3697
E-mail: sales@fibrefab.com
www.fibrefab.com

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