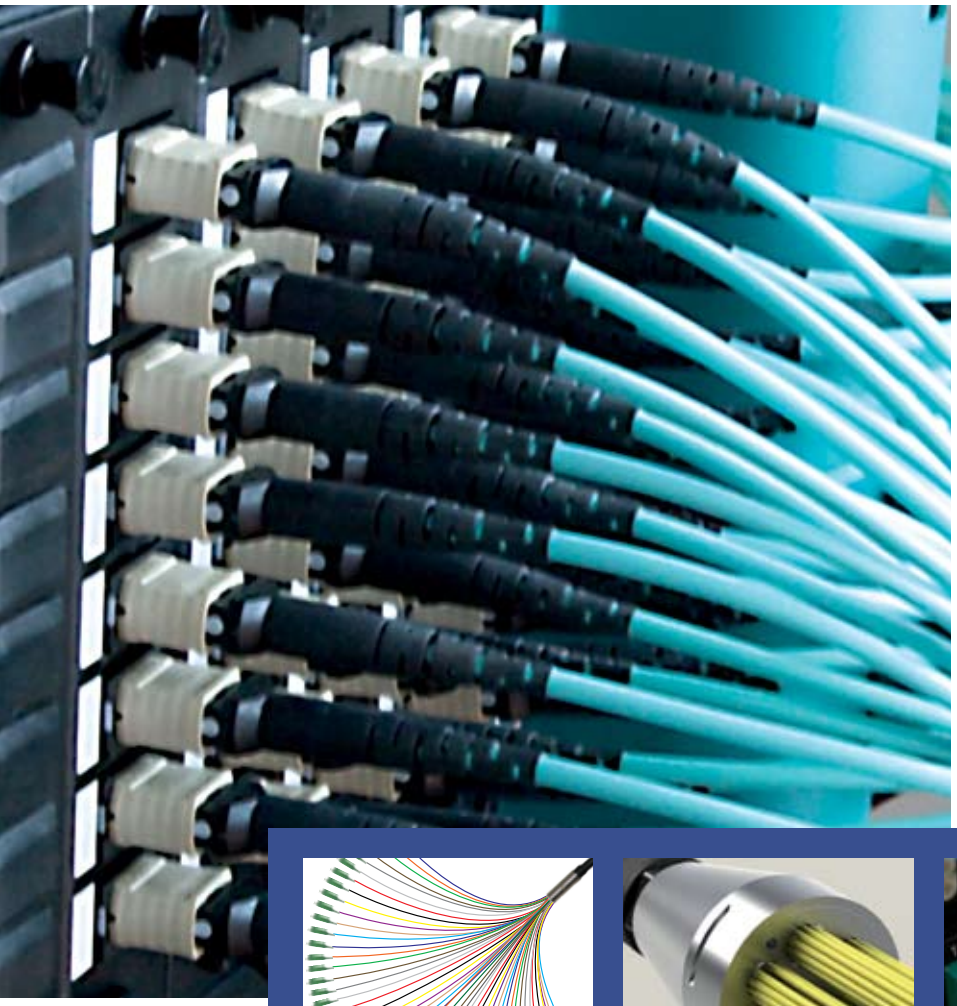
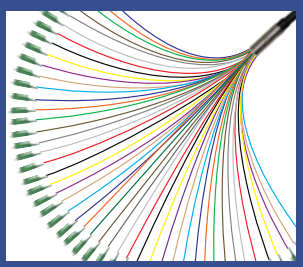
FibreFab™
Fibre Optic & Networking Products





Data Centre Solutions

Catalogue

About FibreFab

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 ISO9001:2000 certified facilities and conform to applicable international standards and 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.

OPTRONICS

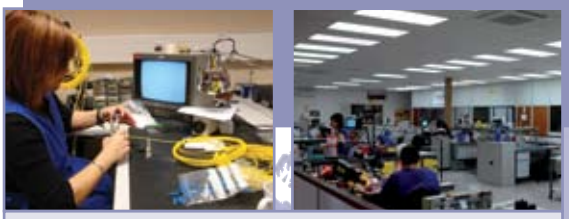
In 1994 FibreFab acquired Optronics, a company with over 20 years experience in fibre optic manufacturing. Optronics products are available directly from FibreFab or from our worldwide distribution partners.

Wide Range

The Optronics fibre-optic cable range includes simplex, duplex and flat ribbon patchcords, tight buffered, single loose tube and multi loose tube distribution cables for internal and external applications as well as many variations of armoured, aerial, rodent resistant and water blocked cables.

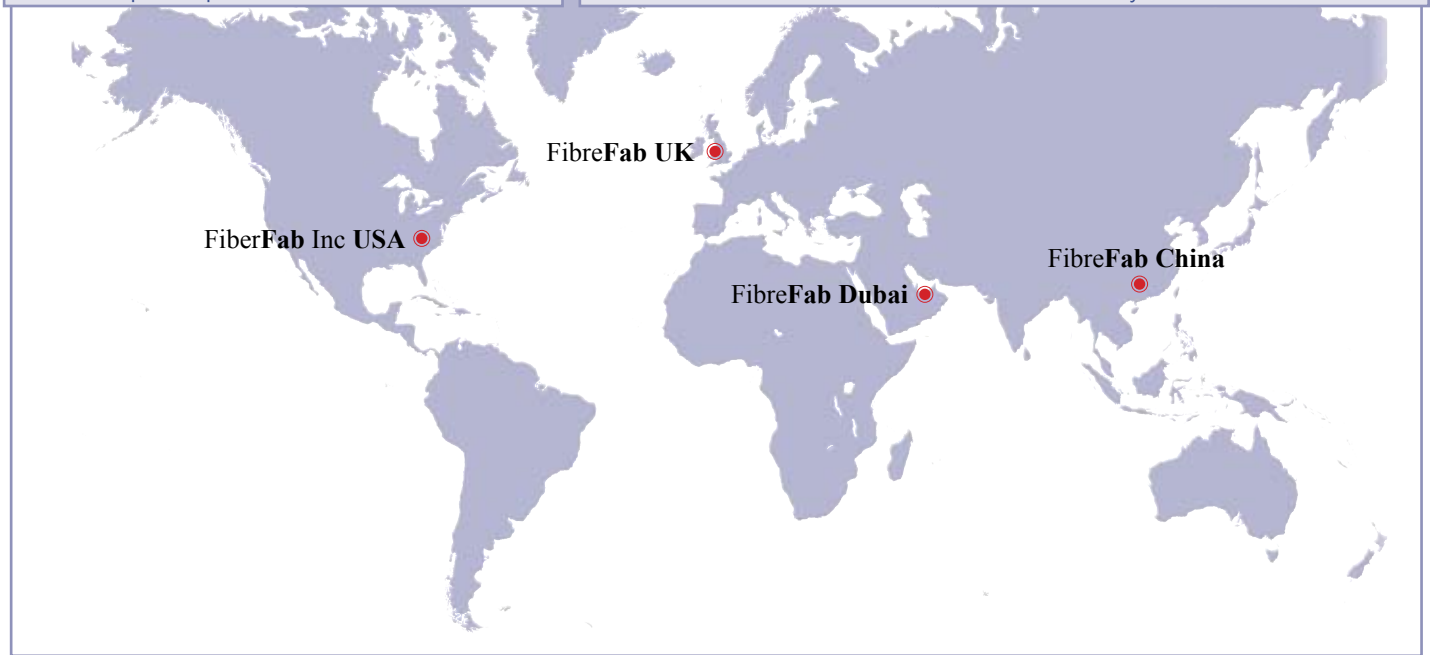
Solutions

The FibreFab Optronics range has the solution for almost any application and can offer a cut to length service for specific fibre optic cables. Please call the sales team for more information.



UK Rapid Response & Production Facilities

Chinese Production Facility



Data Centre Solutions

FibreFab understands the impact that today's crucial technology challenges have on data centres. FibreFab's unrivalled infrastructure solutions, offer the widest range of integrated Data Cabling Solutions to enable high speed, high bandwidth networks.

Balance

At FibreFab we listen to our customers, we leverage new technological innovations and cultivate constructive alliances to fulfil even the most demanding requirement. Experience teaches us that most networks need a varied infrastructure where the ideal cabling solution is a balance between bandwidth, flexibility and scalability.

Innovation

With an innate understanding of data centre and high-density / high speed applications FibreFab's expert research and development teams investigate, analyse and design innovative cabling technologies that deliver the maximum density, reliability and flexibility that underpins the high performance, and integration that our solutions offer.

Pre-terminated

Depending on the application, FibreFab's Fibre Cabling System can be installed independently or in combination with the existing infrastructure providing operational and financial advantages while mitigating risk. FibreFab cabling systems are available in many form factors, including Cat6a copper solutions and pre-terminated fibre assemblies that are designed for rapid deployment, saving the time and cost of field testing. MTP® assemblies provide Ultra High Density solutions for improved data centre cable management. These strong, end-to-end solutions can offer a future-proofed, rapid installation, when constructing new, or modernising existing, data centres.

Optical fibre cabling system

FibreFab's extensive optical fibre system features a comprehensive range of products that are innovative, high performing and created to meet the pressures of today's needs, whilst providing the scope to fulfil tomorrow's applications. Our system offers some of the industry's highest density fibre solutions designed to deliver unequalled net work layout flexibility. Our design experience allows us to deliver reliable and optimal network performance through delivering cost effective fibre solutions.

FibreFab optical fibre cabling is manufactured under strict machine polishing processing control using the highest tolerance ceramic ferrules. FibreFab optical fibre connectors offer enhanced network reliability and low mated pair loss with a extended life. FibreFab's first class engineering and fibre termination processes are central to achieving both mechanical and optical performance which, in turn, delivers repeatable end face geometry and assured optical performance.

MTP®

Our optical fibre cabling system combines single fibre connectivity and low loss, multi-fibre MTP® products with premium grade, laser optimised, high performance multimode fibre to deliver reliable, high performance network infrastructures. The system delivers application speed and availability by leveraging it's unequalled reliability and scalability whilst integrating pioneering fibre technology and extensive pre-testing to supply very high performance and complete integration of 10 Gb/s Ethernet and 8 Gb/s Fibre Channel network capabilities.

The FibreFab Difference

All of FibreFab's solutions comply with industry requirements by meeting or exceeding exacting quality control standards. Our outstanding research and development ethos provides innovative solutions, expected operation, and installation excellence. As leaders in optical fibre cabling systems, FibreFab listens to it's customers, allowing us to provide the most applicable solution for current and future applications in crucial data centre applications. FibreFab's vision provides it's customers with a smooth progression into future high speed, high density, data centre requirements. FibreFab's high density optical fibre solutions dovetail with our cable management solutions, and out test and measurement offerings, to provide a comprehensive data centre solution.

As one of the only suppliers in the industry with such an innovative high density infrastructure solution offering, FibreFab allows it's customers to efficiently and cost effectively connect and manage, data centre structured cabling requirement. This holistic approach to infrastructure design, installation and management allows for benefits to be realized across the entire installation.

Main Index

MTP® The Right Solution

To Reduce deployment time and improve project ROI

Demand for greater processing power, efficient data centre design and high-speed internet access means choosing the right cabling infrastructure is essential.

The Optronics MTP® solution provides a high density, high performance, robust, modular solution, for fast installation of enterprise data centre and other high fibre count cabling implementation.

Cabling infrastructure designed to deliver mission-critical applications to a data network, demands reliability, speed and availability.

Rapid Deployment

A factory terminated optical fibre cabling solution is a simple, yet scalable, reliable method of network deployment. Installation time compared to traditional fibre cabling systems can be reduced by up to 75%. Simply pull, plug and complete installation on time, eliminating all unpredictable field termination variables.

High Performance and Reliability

A combination of high quality branded components and FibreFab's manufacturing quality control guarantees products are of the highest standard. State - of-the-art MTP® manufacturing facilities provide high performance assemblies for the most demanding applications.

Cost Saving

Installation time involving a costly highly qualified workforce can be reduced to a minimum. A customised tailor-made system means that there is no waste of connectors or fibre cable.

Scalability

The ever increasing demand for higher bandwidth rates requires more complex networks. A modular system is the choice to ease future expansion and for quick and easy system reconfiguration.

High Density

Thousands of optical ports can be hosted in a SAN (Storage Area Network) or contemporary data centre. The Optronics MTP® system introduces high density FirstLight Prime. This is an adaptable, unique product offering as many as 144-core trunk assemblies and high density panels for cabling ducts.

Next Generation Network Proof

The evolving future protocols of 40 and 100Gbps Ethernet utilise parallel optics. With MTP® connections in your network the infrastructure will be unchanged and easily fit into the new network standard topologies.

Applications

- Fibre channel - SAN
- Parallel optics
- Infiniband
- Data Centre infrastructure
- Optical backplane connections
- Optical switch and routers
- Emerging 40 and 100Gbs Ethernet
- High density- from 4 up to 144 fibres in single cable

Features

- Available with OM1, OM2, OM3, OM4 and OS1/OS2 fibre
- Compact LSZH cable standard – OFNP cable also available
- Modular solutions
- Low loss MTP® Elite® versions
- Wide range of configuration options

Benefits

- Tailored solutions to meet project specifications
- Lower installation and ownership costs
- Rapid installation
- No link / termination errors
- No cable or connector waste
- High fibre density
- Reduced on site testing required

Environmental Considerations

Environmental concerns affect data centre size and growth, with constant pressure to decrease equipment footprint and save on rack space. Our high density MTP® solutions require much less space than conventional cabling systems, allowing reduction in the racks and cabinets required.

In the current economic climate, operators are particularly concerned about running costs, especially power consumption. Energy efficiency is key. The high density of MTP® systems and small diameter cables mean that ducts and racks are not congested allowing for improved cooling plus, at high speed, fibre channels consume less power than equivalent data rate copper channels.

Multi Fibre
High Density

Unique

The Optronics MTP® cabling solution utilises MTP® branded MPO connectors manufactured by US Conec Ltd. The MTP® connector provides rapid connection of 12 fibres.

US Conec MTP® connector introduces many features which give technical superiority over the standard MPO design providing excellent physical and optical properties. The integrity of the connection is provided by latches within the adaptor which are secured into place on the connector with a spring loaded mechanism. Precision alignment is achieved with specially designed guide pins. MTP® connectors have a unique removable housing which allows for a quick change of gender, ferrule cleaning, interferometric inspection or connector re-work.

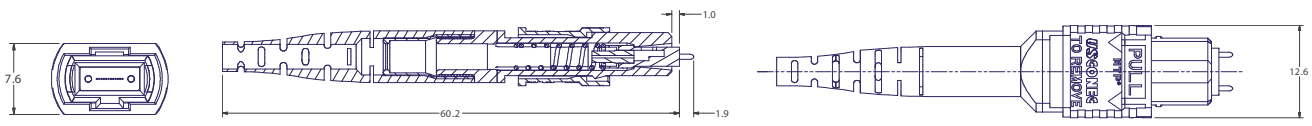
Features

- Patented floating ferrule design ensures fibre contact integrity
- Terminate ribbon fibre or loose individual fibres
- Low loss and standard loss SM and MM versions
- Patented elliptical guide pin tip to Minimise ferrule debris
- Ruggedised round cable, oval cable and bare ribbon options available
- Housing is removable for quick change of pin clamps and easy ferrule cleaning / re-polishing
- Alignment achieved with high precision guide pins
- Family of bulkhead adapters available

Patented Floating Ferrule

Applications & Associated Standards

- Array trunk cables
- Array fiber to single fiber fan-outs and cassettes
- High fiber density card edge access
- Optical switching inter-frame connections
- Meets IEC Standard 61754-7
- Meets TIA/EIA 604-5 Type MPO
- Structured cabling per TIA-568-C
- Parallel Optics
  - Optical Internetworking Forum (OIF) Compliant
  - Infiniband Compliant
  - 10G Fiber Channel Compliant
  - 40G and 100G IEEE 802.3
  - SNAP 12
  - POP 4
  - QSFP

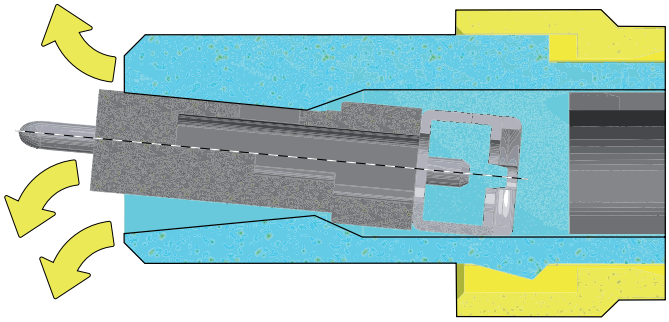


MTP® The Next Generation MPO

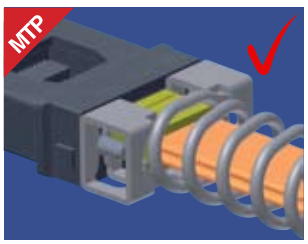
Innovative design features

Floating Ferrule

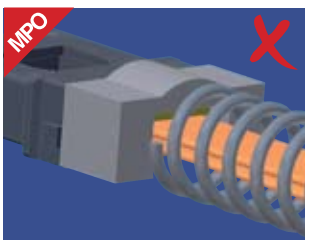
The MT ferrule can move freely inside the MTP® housing while mated. This protects it from strain during side load.



Optimised Internal Components

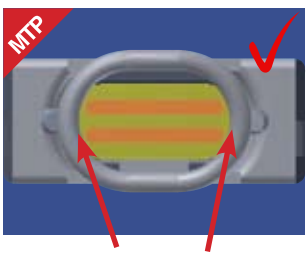


MTP® recessed metal pin clamp and oval spring

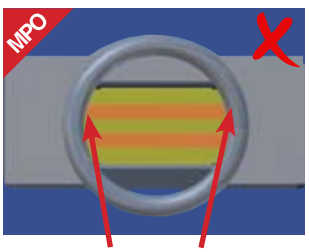


MPO plastic pin clamp and round spring The spring is not constrained and may damage the ribbon.

Oval Spring



MTP® oval spring provides more ribbon clearance; enhances mechanical performance.

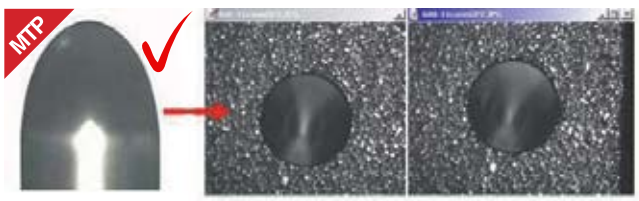


MPO round spring allows less ribbon clearance; limits mechanical performance.

Improved MTP® Pin Clamp

MTP® Recessed Pin Clamp
Makes pin transfer impossible

Elliptical Guide Pin



MTP® Guide Pin

MPO Guide Pin

Sharp edged pins, cause damage, reducing durability

Removable Housing

Allows easy transition from male to female and vice versa
Allows re-polishing

Connector Performance Specifications

	12 Fibre				24 Fibre
					
	OPTRONICS MTP® Elite® Singlemode MT Ferrule	OPTRONICS Standard Singlemode MT Ferrule	OPTRONICS MTP® Elite® Multimode MT Ferrule	OPTRONICS Standard Multimode MT Ferrule	OPTRONICS MTP® Elite® Singlemode MT Ferrule
Insertion Loss	BEST IN CLASS 0.10dB Typical 0.35dB Max	0.25dB Typical 0.75dB Max	BEST IN CLASS 0.10dB Typical 0.35dB Max	0.20dB Typical 0.6dB Max	0.20dB Typical 0.6dB Max
Return Loss	>55dB (Angle Polish)	>55dB (Angle Polish)	>20dB	>20dB	>20dB
Operational Temperature	- 40˚C to + 70˚C	- 40˚C to + 70˚C	- 40˚C to + 70˚C	- 40˚C to + 70˚C	- 40˚C to + 70˚C

Key features

- MTP® connectors offer high precision and robust connectivity
- Connectors click into their adaptors and are reverse polarity protected
- Easy to use cable management solutions
- Installation is simple and fast
- Immune to EMI/RFI

High density

- Highest fibre density of any standard connector
- 12 fibres per connector as standard
- Less cable yields more space in cabinets and cable raceways, giving better airflow
- Up to 15,000 fibres connections per rack

Reliability

- Cable assemblies are factory terminated and tested
- State of the art termination processes
- Tightly managed manufacturing procedures ensure quality control

Low cost of ownership

- Reduces labour cost and saves time on installation and testing
- Reduces cost of consumables and space requirements for cabinets

Scalability

- Future proof network infrastructure, to protect your investment
- Supports 10G Ethernet and 8G Fibre Channel standards
- Singlemode capability beyond 10Gbps

Simplicity

- Modular system designed for rapid moves, adds and changes (MACs)
- Designed for simple and easy handling, installation and testing

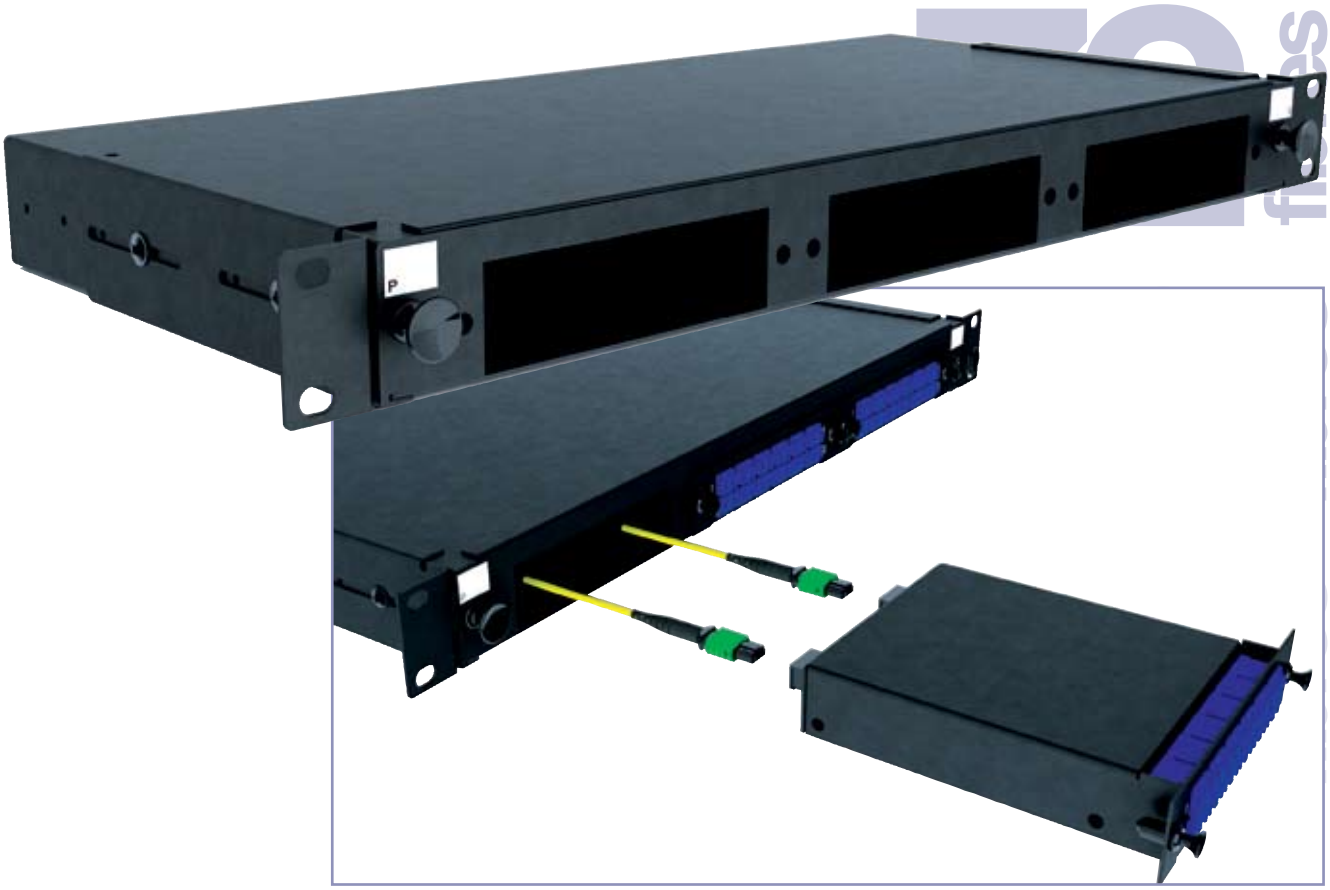
Fibre Management and Patching

Patch Panels

Patchcords

S13
1U 3 Port
Sliding Patch Panel

72 fibres



Description

FibreFab offers an innovative, robust 1U sliding patch panel. This panel has been designed to accept up to 3 LGX Modules or MTP® cassettes within a 1U space. With the ability to use a full array of Adaptor types offering a flexible solution to the end user, enabling them to incorporate a multi functional panel which allow easy access during installation or re-work with no disturbance of the existing cable or fibres. In the addition to the array of adaptors the panel also offers multiple cable entry solutions, up to 6 standard cable entry points for, loose tube, tight buffer, pre terminated and steel tape armoured cable.

Loaded LGX Style MTP® Modules Available
See Page 23 for Ordering Information

Also suitable for use with 3U Chassis

Applications

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

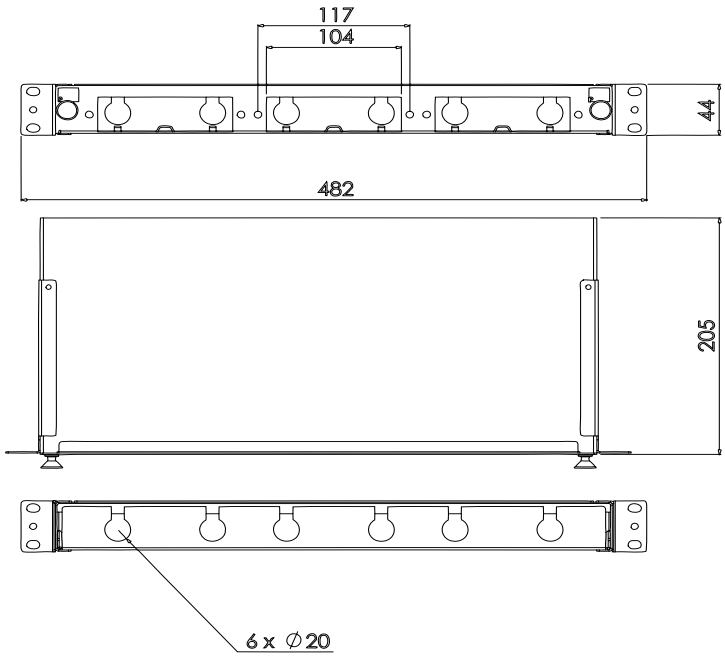
Features/Benefits

- Up to 3 LGX/MTP® modules in 1U
- Multiple Adaptor options available
- 24 Adaptor positions
- Individually labelled ports
- 45° open working angle
- Accepts loose tube, distribution and pre terminated cables
- ROHS, REACH SvHC and UL rated
- Fits standard 19”

Technical information

Technical Specification

Element	Characteristic
U Size	1U (44.4mm)
Width	482mm
Depth	205mm
Net weight	2.5 kgs
Packaged weight	3 kgs
Packaged dimensions	450mm W X 55mm H x 260mm D
IP rating	IP20
Suitable for Adaptor type	LGX / MTP®
Number of ports	3
Cable Entry 20mm	6
Mounting Adjustment range	50mm
Material	Cold- rolled steel
Material thickness	1.2mm
Material coating	Powder coating
Colour	RAL 9004
Operating temperature	-40°c to +50°c
Designed in accordance with	TIA/EIA 568.C, ISO/IEC 11801, EN50173, IEC60304, IEC61754,EN297-1
Compliant to	RoHS, Reach/SVHC



Unloaded Panel Part Number: S13XXX00

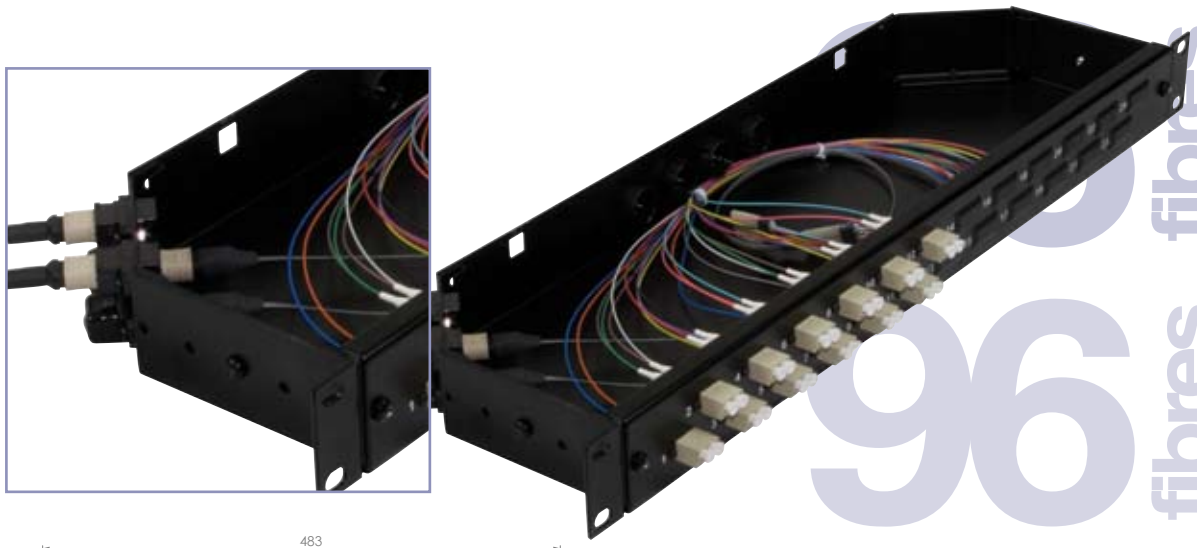
Adaptor Plate Options

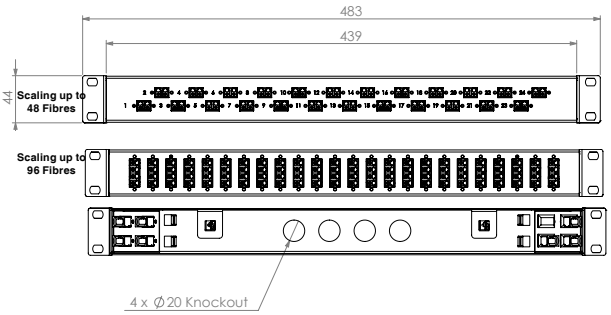
SC Multimode Simplex			***L01***
	8 adapter		L01SCM08
SC Singlemode Simplex			***L01***
	8 adapter		L01SCS08
SCA Singlemode Simplex			***L01***
	8 adapter		L01SCA08
SC Multimode Duplex			***L03***
	6 adapter		L03SCM06
SC Singlemode Duplex			***L03***
	6 adapter		L03SCS06
SCA Singlemode Duplex			***L03***
	6 adapter		L03SCA06
ST Multimode			***L02***
	8 adapter		L02STM08
ST Singlemode			***L02***
	8 adapter		L02STS08

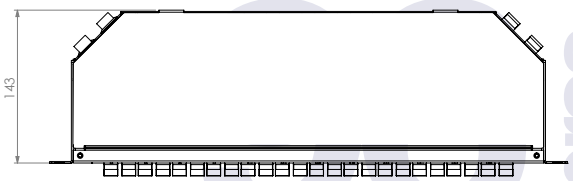
FC Multimode			***L02***
	8 adapter		L02FCM08
FC Singlemode			***L02***
	8 adapter		L02FCS08
LC Multimode Duplex			***L01***
	8 adapter		L01LCM08
LC Singlemode Duplex			***L01***
	8 adapter		L01LCS08
LC-APC Duplex			***L01***
	8 adapter		L01SCA08
LC QUAD Multimode			***L03***
	6 adapter		L03LQM06
LC QUAD Singlemode			***L03***
	6 adapter		L03LQS06

Other Adaptor Types Available

High Density MTP® Slimline Panel







Description

FibreFab MTP® Slimline Panels provide secure transitions between MTP® and LC or SC discreet connector interfaces. They are used to interface MTP® backbones with LC or SC patching and active equipment connection.
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 Slimline Panel makes it suitable for copper racking systems. Scaling up to 96 fibres panel is available for server rack in data centre environment.
MTP® Slimline Panels contain factory controlled and tested MTP®-LC fan-outs to deliver optical performance and reliability. Low loss MTP® Elite and LC Premium versions are offered featuring improved low insertion losses for demanding low power budget high speed networks.

Benefits

- **Rapid Deployment- factory terminated modular system saves installation and reconfiguration time during moves, ads and changes**
- **Easy Installation- open rear entry MTP® ports guarantee easy cabling access and facilitate connection to MTP® backbone trunks system.**
- **Compact 1U Size- short depth make panel compatible with low dimension copper racking system.**
- **MTP® Interface- MTP® US Conec brand components feature superior optical and mechanical properties.**
- **Optimised Performance- low loss MTP® Elite, discreet Premium connectors and OM4 fibre assures low insertion losses and power penalties in tight power budget high speed network environment .**
- **High Density- 1U panel can scale up to 96 discreet LC connectors and up to 8 MTP® rear interfaces**
- **Reliability- 100% Tested- combination of high quality components and FibreFab manufacturing quality control guarantees product to the highest standards.**

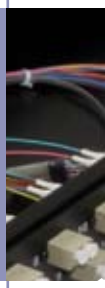
FOR MORE INFORMATION CALL +44 (0)870 127 3330

Features

- Up to 8 MTP® (US Conec) brand MPO standard compliant multifibre connector rear entry ports
- Front LC (SFF Data Centre standard), SC discreet interface
- OS1/2, OM3, OM4 Versions (OM1 and OM2 available)
- Up to 48 (LC DX) or 96 (LC Quad) fibres panel capacity
- Factory Terminated and Tested

Applications

- Data Centre Infrastructure
- Storage Area Network- Fibre Channel
- Parallel Optics
- Infiniband
- Emerging 40 and 100Gbps Protocols



Technical information

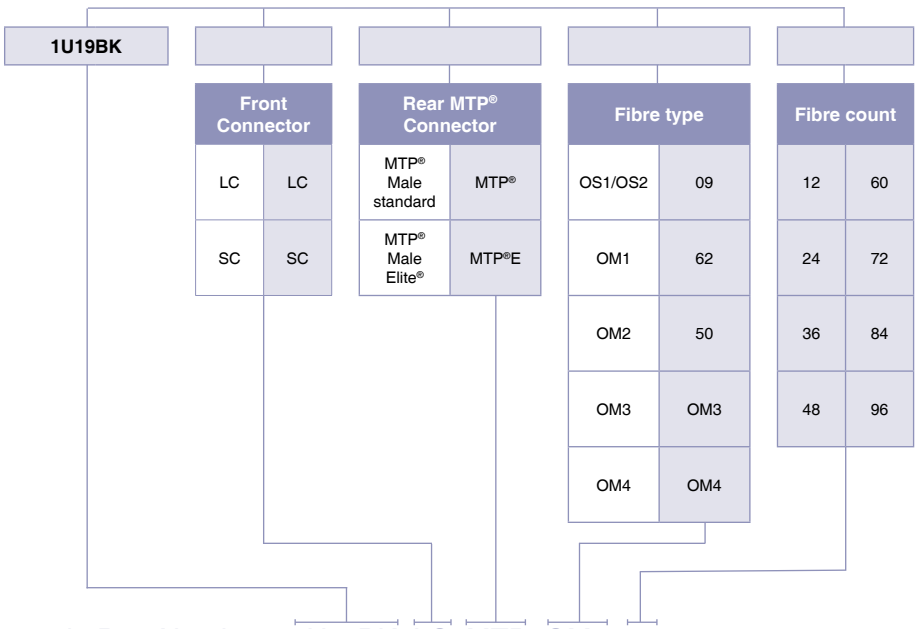
Connector Performance

CONNECTOR MATING	IL AVERAGE	IL MAX	RETURN LOSS	CONNECTOR MATING	IL AVERAGE	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® (MM)	0.35 dB	0.60 dB	NA	MTP® (SM)	0.25 dB	0.75 dB	>60dB
LC, SC Elite (MM)	0.08dB	0.15dB	NA	LC, SC Elite (MM)	0.12dB	0.15dB	>55/65dB*
LC, SC (MM)	0.15dB	0.30dB	NA	LC, SC (SM)	0.18dB	0.25dB	>55/65dB*

Technical Specification

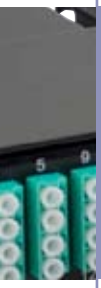
Element	Characteristic
Fibre	OS1/OS2, OM1*, OM2*, OM3, OM4 (ISO/IEC 60793)
Adaptors	MTP® US Conec (IEC-61754-7 & EIA/TIA-604-5) Body Colour: Black Polarity: Key-way up- Key-way down, Key-way up- Key-way up LC Duplex, LC Quad (IEC 61754-20) Body Colour: Beige (MM), Aqua (MM), Blue (SM/UPC), Green (SM/APC)
Connectors	MTP® US Conec (IEC-61754-7 & EIA/TIA-604-5) Boot Colour: Black Body Sleeve Colour: MM (Beige), MM Elite (Aqua), SM (Green), SM Elite (Yellow) LC (IEC 61754-20) Boot Colour: White (MM and SM/UPC), Green (SM /APC) Housing Colour: Beige (MM), Blue (SM), Green (SM/APC)
Operating Temperature	-10 ~ +60°C
Storage Temperature	-40 ~ +70°C

Part Number Generator



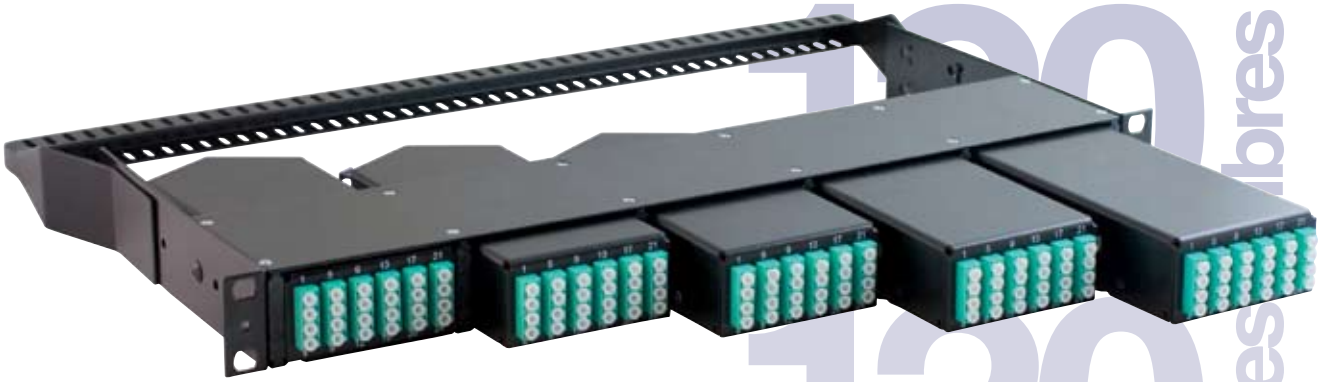
Example Part Number: 1U19BK LC MTP OM3 48

1U19BKLCMTPOM348 has created a MTP® slimline panel with 48 OM3 fibres and LC front interface.



Ultra High Density 1U Modular Patch Panel

120 fibres



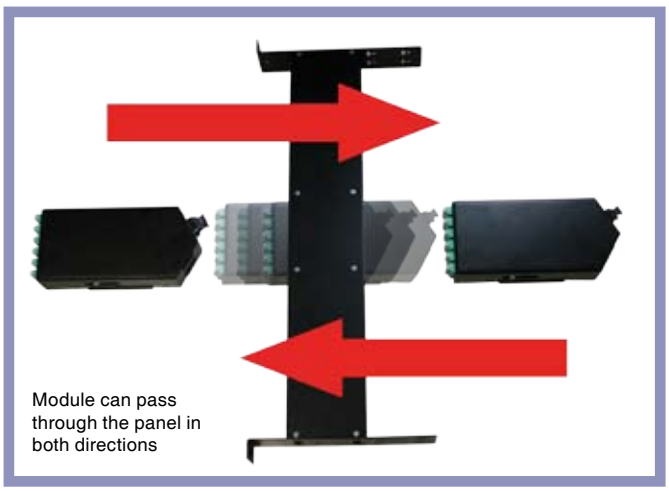
Description

FibreFab offers an innovative, high density patch panel. Designed to accommodate up to 120 connections within a 1U panel. These are split between 5 individual modules with up to 24 fibres within each. Each module accepts incoming fibre from either MTP® trunk cables or via pre-terminated assemblies. Pre-terminated cables are available as either ruggedised breakout cable or distribution cable.

Another alternative for cable entry is the patented Optronics FirstLight Prime breakout, capable of being pulled over long distances and connecting directly to equipment. Incoming cable can also be supplied un-terminated for splicing within a standard patch panel. Modules can enter the panel from the front or the rear. Each is supplied with a separate labelling card for ease of channel identification.

Cable entry is managed via a retrofit management bar allowing entry from either the left or the right hand side. Exiting patch cords are managed by a retrofit bracket allowing cables to be routed in any direction. Also available is a 3U system incorporating all of the above but with the addition of a removable door allowing complete access to all relevant components.

Second to this FibreFab is pleased to offer a 0U solution designed to accommodate sufficient MTP® connectivity to support an individual blade per module. This is managed via a 96 fibre trunk cable directly terminated to 8 MTP® connectors within the module and the choice of MTP® or discrete connectors at the opposing end.



Module can pass through the panel in both directions

Features

- Modular Connection System
- High Density- scaling up to 120 discreet connectors and up to 720 fibres within MTP® interface
- Up to 24 discrete or 120 (MTP®) fibres connections a single module
- Cable entry via either MTP® connection or pre-terminated assemblies
- Pre-loaded in the factory to guarantee performance
- Can be supplied with pre-terminated pigtails for splicing on the opposite end
- Can be supplied with a module at one end and ruggedised tails for direct connection to equipment at the opposing end
- Can be supplied with a module at one end and 900µm tails for connection within a standard patch panel at the opposing end
- 5 individual modules per panel
- Module entry from front or rear
- Rear cable management
- Retrofit patchcord exit management
- Separate labelling cards
- ROHS, REACH SvHC and UL rated
- Fits standard 19" or ETSI rack

Applications

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

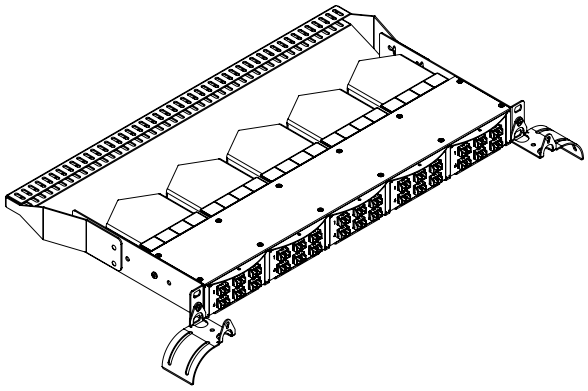
Technical information

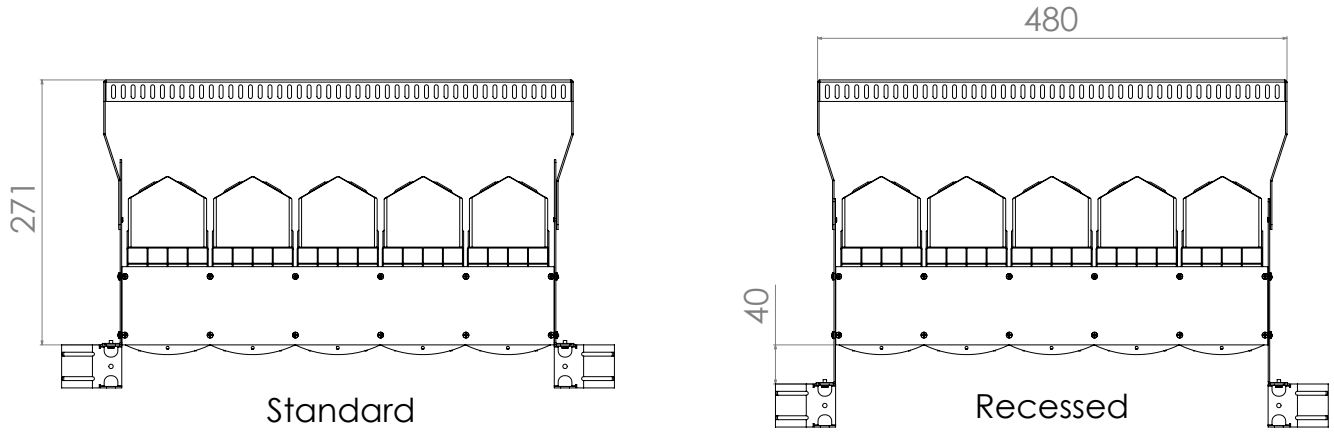
Technical Specification

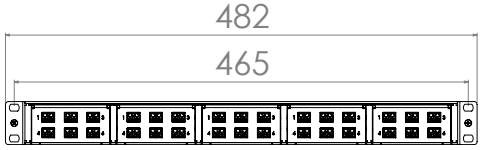
Parameter	Measurement	Conformance
Dimensions (Nominal)	482 x 311 x 44 (recessed)	
Weight	3.0 Kg	
Operating Temperature	-25 to +70, 12 cycles	IEC 61300-2-22

Ordering Information

Description	Part Number
High Density Modular Panel (unloaded)	HD1UCHASSIS

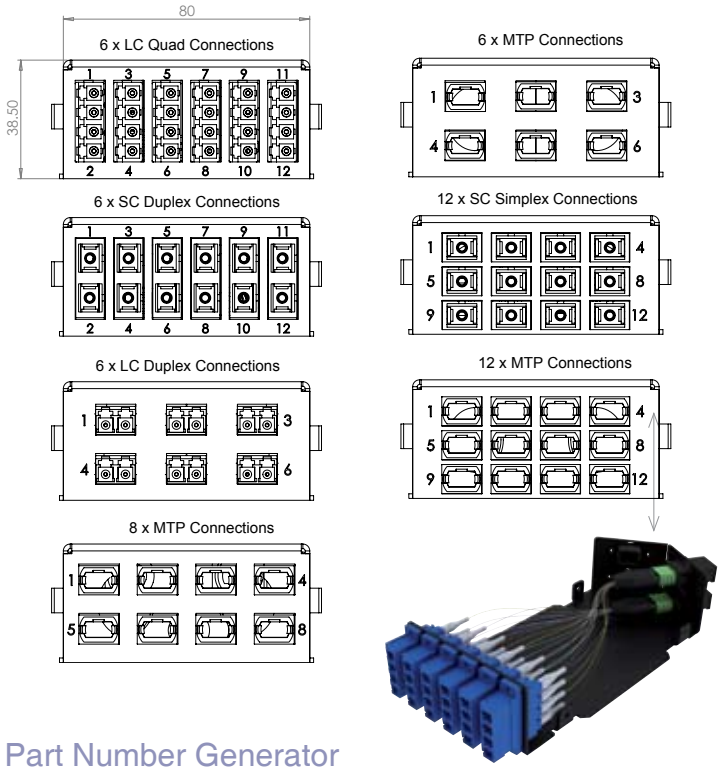




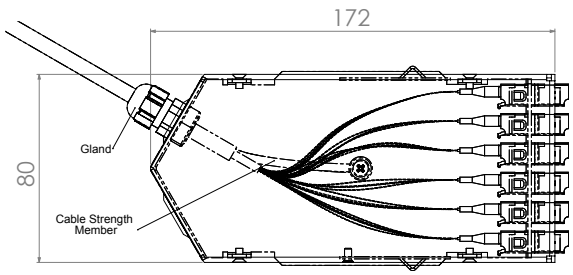


Ultra High Density MTP® Pluggable Modules

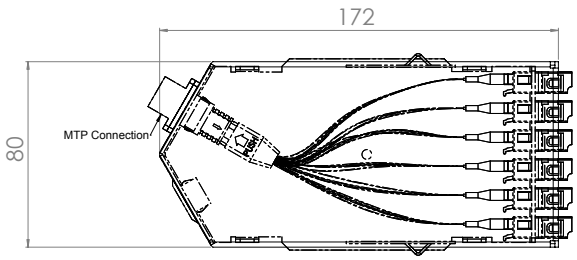
Pluggable Module Options



Pre-terminated Pluggable Module Version



Disconnectable Pluggable Module Version



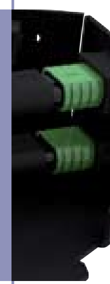
Part Number Generator

HD	Rear Connector		Fibre Count	Front Connector		Front Adaptor Type		Fibre type		Cass	Polarity
	MTP® Male (standard)	MTP®M	12	LC	LC	Simplex	SX	OS1/OS2	09		A
	MTP® Male Elite®	MTP®EM	24	LC/APC	LCA	Duplex	DX	OM1	62		B1
	Female available on request		Up to 144 (MTP®)	SC	SC	Quad	Q	OM2	50		B2
				SC/APC	SCA			OM3	OM3		C
				MTP®	MTP®			OM4	OM4		

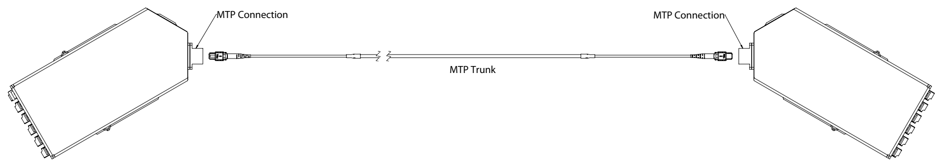
Example Part Number: HD MTPM 24 LC DX OM3 CASS A

*HDMTPM24LCDXOM3CASS*A has created a High Density MTP® Cassette with 24 OM3 fibres, Duplex LC front interface, polarity method A.

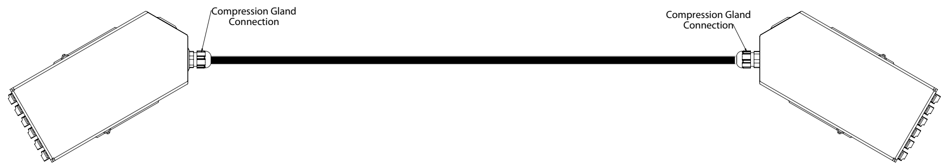
Ultra High Density Modular Multifibre Assembly

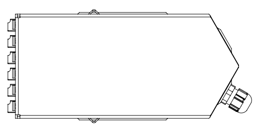


Disconnectable Pluggable Module Options

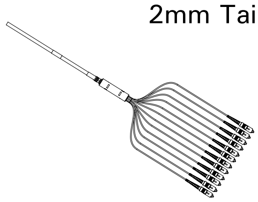


Pre-terminated Pluggable Modules

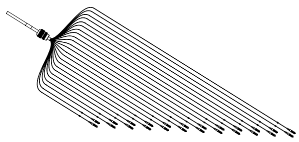




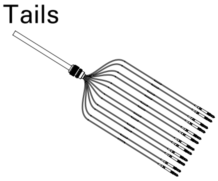
Loose Tube - Ruggedised 2mm Tails



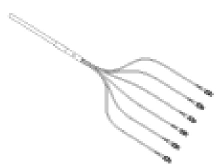
Tight Buffer - 900µm Tails



Breakout - 2mm Ruggedised Tails



Microcable - MTP® Ruggedised Tails



Product Configurator

HDMA	Fibre Count	End A Module Interface		END B Style		END B Interface		Connector Style		Fibre type		Cable Construction		Assembly length (mtr)
	2	LC	LC	Module	M	LC	LC	Simplex	SX	OS1/OS2	09	Tight Buffer	TB	1 to 200m
	4	LC/APC	LCA	900µm Tails	09	LC/ APC	LCA	Duplex	DX	OM1	62	Breakout	BO	
	6	SC	SC	2mm Tails	2	SC	SC	Quad	Q	OM2	50	Micro cable	MC	
	8	SC/APC	SCA			SC/ APC	SCA			OM3	OM3	Loose Tube	LT	
	12	MTP®	MTP®			MTP®	MTP®			OM4	OM4			
	16	Simplex	SX			ST	ST							
	24	Duplex	DX			FC	FC							
	Up to 144 MTP®	Quad	Q			FC/ APC	FCA							

Ultra High Density 3U LGX Style Chassis

336 fibres

Also suitable for use with 1U Chassis

Suitable for use with 3U Chassis only

Description

FibreFab offers an innovative, robust, high density 3U Chassis. This panel has been designed to accept up to 14 LGX style assemblies.

With the ability to use a full array of adapter types offering a flexible solution to the end user, enabling them to incorporate a multi functional chassis which allow easy access during installation or re-work with no disturbance of the existing cable or fibres.

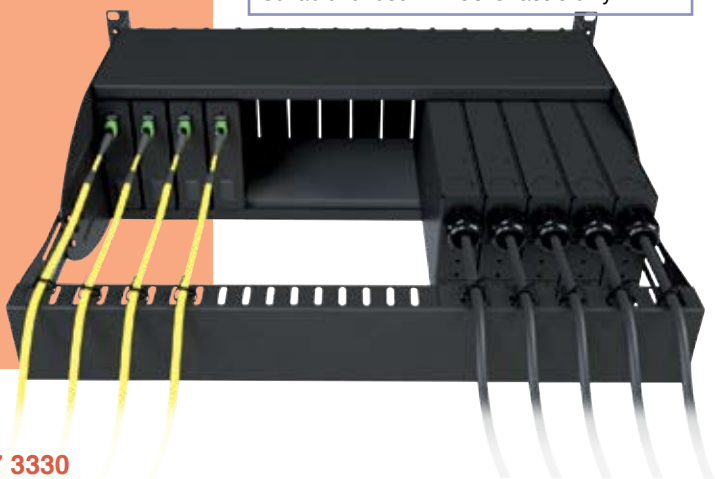
In the addition to the array of adaptors the chassis also offers multiple cable entry solutions, MTP® trunk cables connected to 14 individual MTP® cassettes with up to 24 fibres in each, loose tube cable connecting to 14 Individual extended cassettes to allow standard splicing or 14 LGX style modules for pre terminated solutions, making this chassis one of the most flexible on the market.

Features

- Up to 14 LGX style assemblies
- Up to 14 x 24 fibre MTP® cassettes
- Multiple adapter options available
- Fully integrated fibre management
- Splicing option available
- Flat pack for easy shipment
- Patch cord exit retrofit cable management available
- 30mm bend radius maintained throughout
- Individually labelled ports
- Accepts loose tube, distribution cable and MTP® trunk cable
- ROHS, REACH SvHC and UL rated
- Fits standard 19”
- Rear cable management bar as standard

Applications

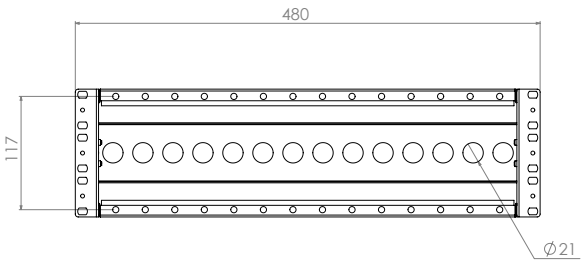
- Data centres, premise installations, telecommunication networks
- Ethernet, Fibre Channel, ATM, LAN, MAN and WAN
- Data communication and telecommunication networks
- Indoor applications

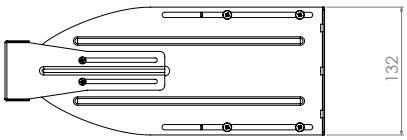


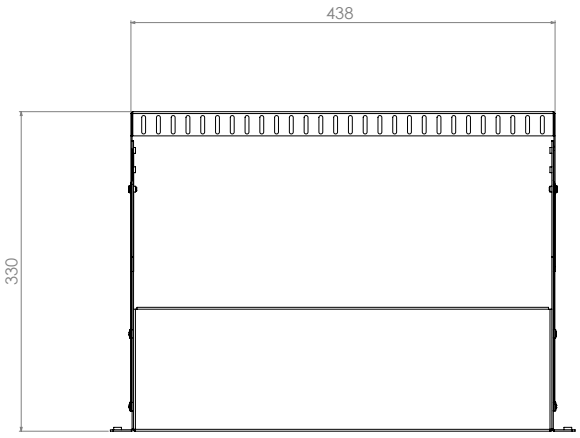
Technical information

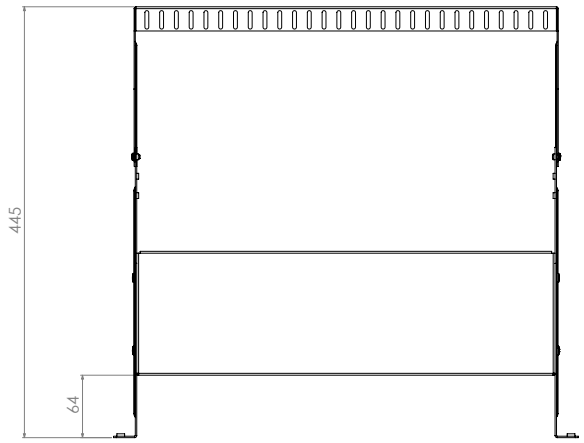
Technical Specification

U Size	3U (133.2mm)
Width	480mm
Depth	335mm
Net weight	2.76 kgs
Packaged weight	3.24 kgs
Packaged dimensions	490mm W x 110mm H X 240mm D
IP rating	N/A
Suitable for Adaptor type	LGX / MTP® Cassettes
Number of Module Positions	14
Mounting Adjustment range	64mm
Material	Cold- rolled steel
Material thickness	1.5mm
Material coating	Powder coating
Colour	RAL 9004 / RAL 7035
Operating temperature	-40°c to +50°c
Designed in accordance with	TIA/EIA 568.C, ISO/IEC 11801, EN50173, IEC60304, IEC61754,EN297-1
Compliant to	RoHS, Reach/SVHC







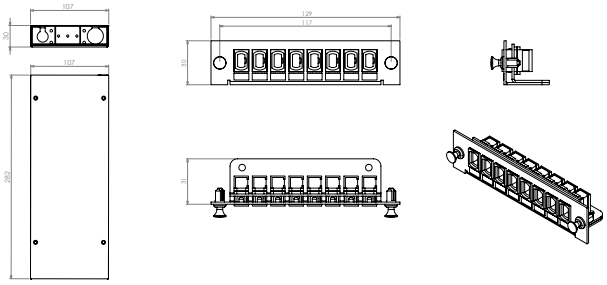


LGX Style Cassettes for Ultra High Density 3U LGX Style Chassis

LGX Splice Module

Suitable for use with:

3U LGX Style Chassis



Ordering Information

SC Multimode Simplex			***L01***
	8 adapter		L01SCM08/CAS
SC Singlemode Simplex			***L01***
	8 adapter		L01SCS08/CAS
SCA Singlemode Simplex			***L01***
	8 adapter		L01SCA08/CAS
SC Multimode Duplex			***L03***
	6 adapter		L03SCM06/CAS
SC Singlemode Duplex			***L03***
	6 adapter		L03SCS06/CAS
SCA Singlemode Duplex			***L03***
	6 adapter		L03SCA06/CAS
ST Multimode			***L02***
	8 adapter		L02STM08/CAS
ST Singlemode			***L02***
	8 adapter		L02STS08/CAS
FC Multimode			***L02***
	8 adapter		L02FCM08/CAS
FC Singlemode			***L02***
	8 adapter		L02FCS08/CAS

LC Multimode Duplex			***L01***
	8 adapter		L01LCM08/CAS
LC Singlemode Duplex			***L01***
	8 adapter		L01LCS08/CAS
LC-APC Duplex			***L01***
	8 adapter		L01SCA08/CAS
LC QUAD Multimode			***L03***
	6 adapter		L03LQM06/CAS
LC QUAD Singlemode			***L03***
	6 adapter		L03LQS06/CAS
MTRJ			***L01***
	8 adapter		L01MTM08/CAS
E2000 Multimode			***L01***
	8 adapter		L01E2M08/CAS
E2000 Singlemode			***L01***
	8 adapter		L01E2S08/CAS
E2000-APC Singlemode			***L01***
	8 adapter		L02FCM08/CAS
Blank Plate			***L04***
	8 adapter		L04

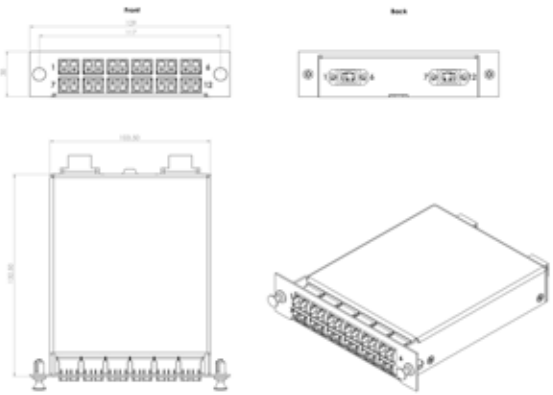
MTP® Module

Suitable for use with:

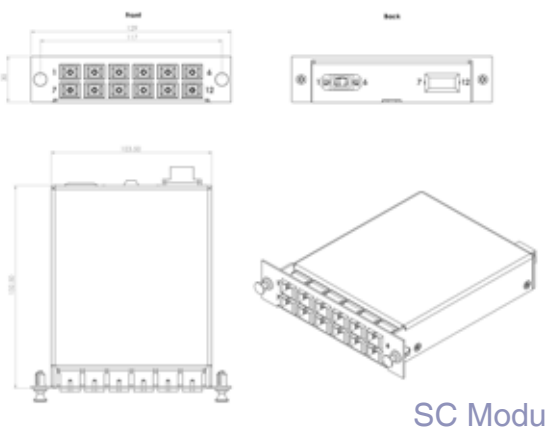
3U LGX Style Chassis

or

1U Chassis



LC Module



SC Module

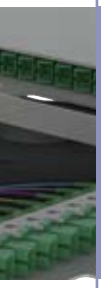
Ordering Information

MTP® Connector		Fibre Count	Discreet Connector		Fibre type		Cass	Polarity	
MTP® Male (standard)	MTP®M	12	LC	LC	OS1/OS2	09		A or C	Leave Blank
MTP® Male Elite®	MTP®EM	24	SC	SC	OM1	62		B1	B1
					OM2	50		B2	B2
					OM3	OM3			
					OM4	OM4			

Female available on request

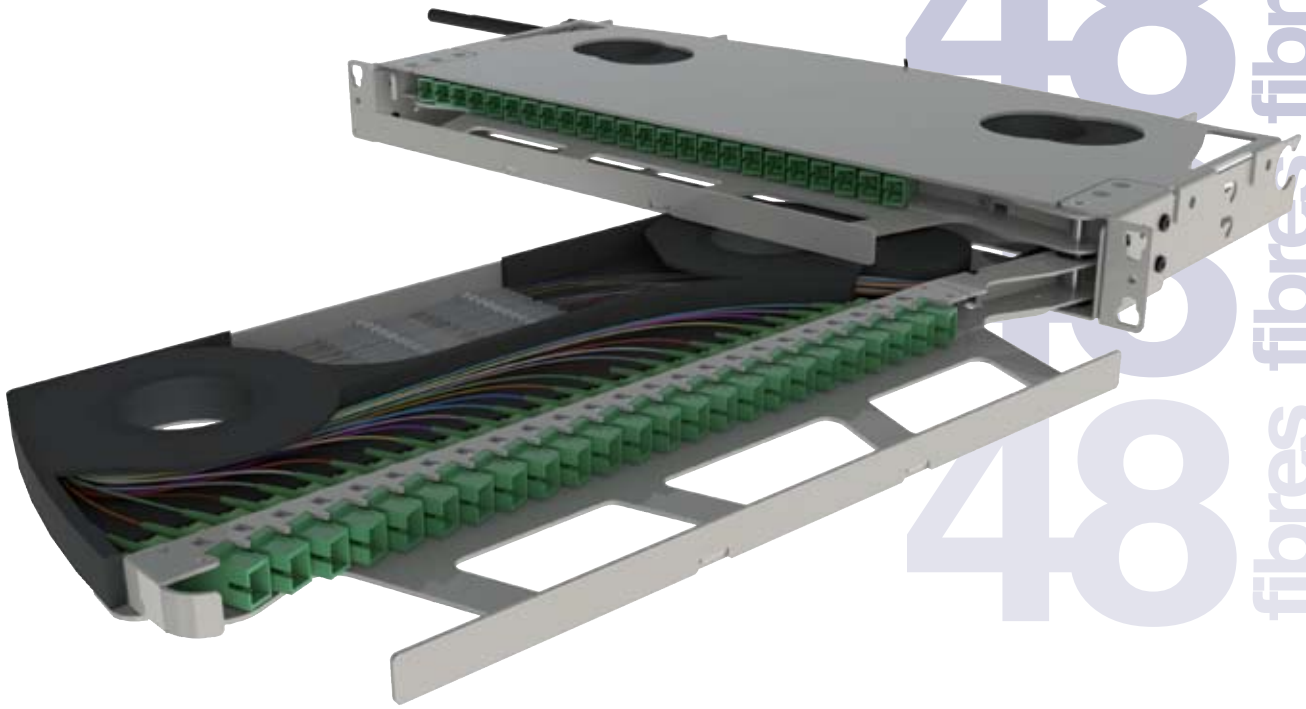
Example Part Number: MTPM 24 LC OM3 CASS B1

MTPM24LCOM3CASS This part number has created 24 fibres OM3 cassette with MTP® male rear and LC front interface, polarity method B1



High Density Pivot Panel with maximum “Cooling Airflow” capability

48 fibres

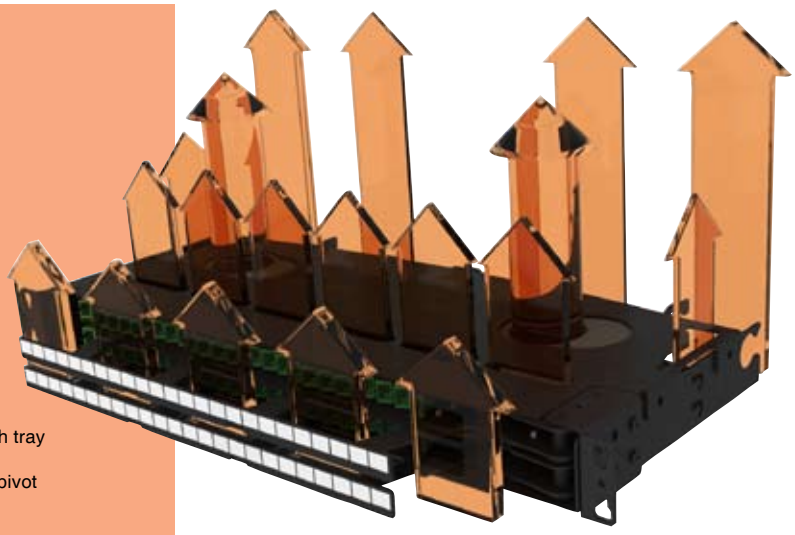


Description

Optronics offers an innovative, high density pivot panel designed to accept 24 SC simplex footprint Adaptors within each of two ½ U trays. Each tray fully manages the incoming fibres, pigtails and splices. The panel can pivot by up to 116° to allow easy access during installation or re-work with no disturbance of the existing cable or fibres. Angled Adaptors route exiting patchcords directly into the cabinet side management. An optional bracket maintains the minimum bend radius in any direction. The panel can be assembled to pivot in either direction, facilitating cable entry from either side. Ventilation tracts allow free flow of air through the panel, providing highly efficient cooling for active equipment.

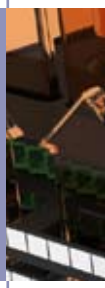
Features/Benefits

- 48 SC Simplex or LC Duplex connections
- Angled Adaptors for reduced bend losses
- Fully integrated fibre management
- 1U overall with ½ U individual trays
- High flow ventilation
- Side cable entry
- Patch cord exit retrofit cable management available.
- 30mm bend radius maintained throughout.
- Single layer interleaved splicing area
- Individually labelled ports
- ROHS, REACH SvHC and UL rated.
- Available in standard colours and standard packaging
- Fits standard 19” or ETSI rack with adjustable positioning
- Adjustable position with respect to frame
- Individual cable tie and strength member tie points in each tray
- Individual PG13.5 gland entry point for each tray
- Cable entry from both sides dependant upon direction of pivot



Optimised airflow

Patent Pending



Technical information

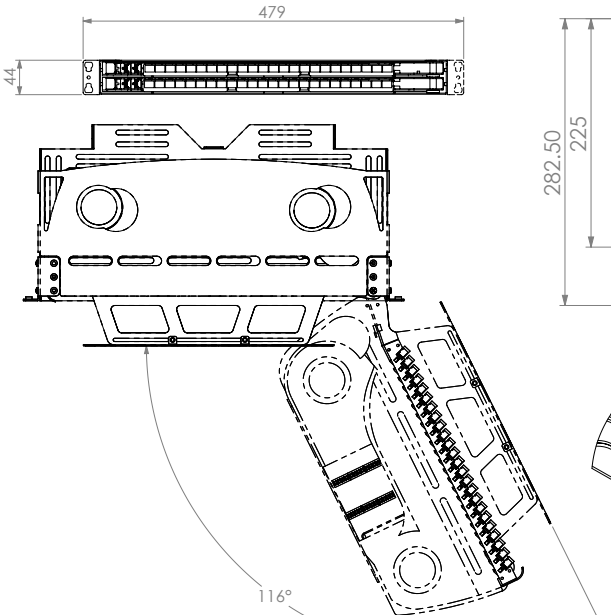
Technical Specification

Parameter	*Measurement*	*Conformance*
Dimensions (Nominal)	479 x 283 x 44	-
Weight	3.0 Kg	-
Operating Temperature	-25 to +70, 12 cycles	IEC 61300-2-22

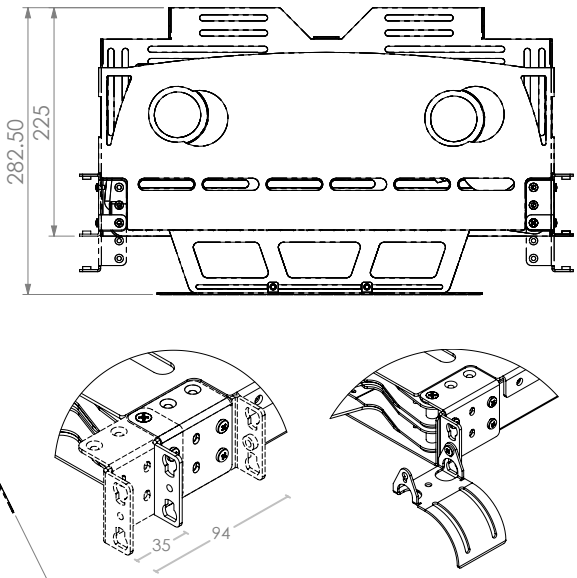
Ordering Information

DESCRIPTION	Part No.
1U Pivoting Panel - Loaded with 48 x SC/APC Simplex Adaptors - Right Hand Pivot Assembly	**P05SCA48RH**
1U Pivoting Panel - Loaded with 48 x SC/APC Simplex Adaptors - Left Hand Pivot Assembly	**P05SCA48LH**
1U Pivoting Panel - Loaded with 24 x LC Duplex Singlemode Adaptors - Left Hand Pivot Assembly	**P05LCS24LH**
1U Pivoting Panel - Loaded with 24 x LC Duplex Singlemode Adaptors – Right Hand Pivot Assembly	**P05LCS24RH**
Optional cable management bracket	**CMBRACKET**

Available loaded with pigtails - Call for details



Opening angle allowing complete easy access to management area



Range of adjustment to accommodate a variety of applications

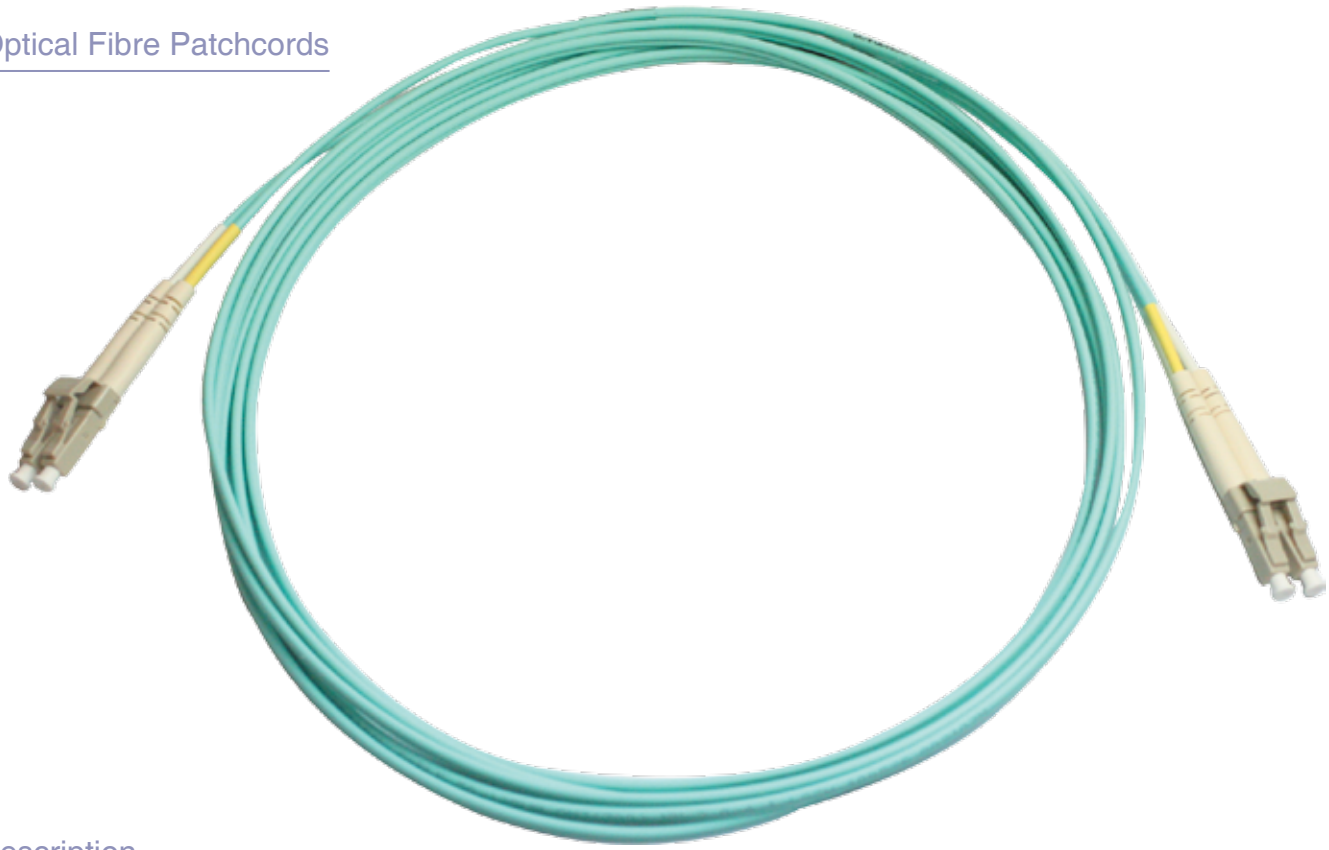
Optional management bracket

Patent Pending

Patchcords

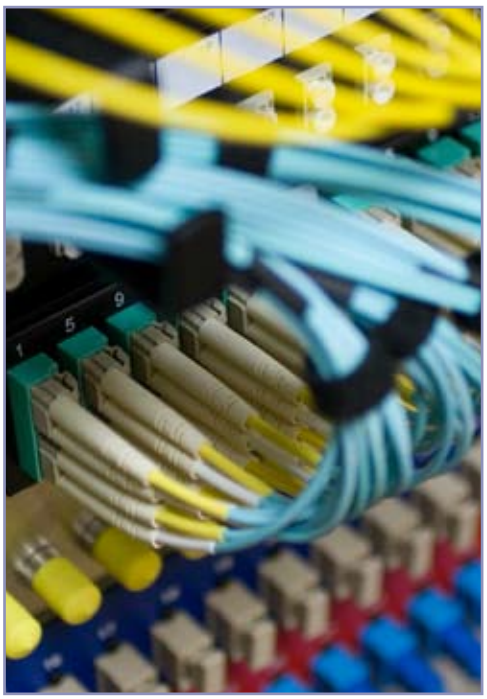
OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1/2 9/125 | OS1/2 G.657.A1 | OS1/2 G.657.A2

Optical Fibre Patchcords



Description

FibreFab multimode patchcords are used to connect high speed and legacy networks like Gigabit Ethernet, Fast Ethernet and Ethernet. The multimode patchcords are manufactured using LSZH cables which conform to IEC, EIA TIA and Telecordia standards. The OM4 patchcords are terminated with standard FibreFab connector which gives optimum optical performance.



Features

- SC, LC connectors
- Low smoke zero halogen (LSZH) cable in aqua colour
- 900µm tight buffer
- OM4 fibre conforms to ITU-651, TIA/EIA 492AAAD
- Simplex and duplex assemblies
- Duplex assemblies available with clips (SC and LC)
- Different connector performance range for specific application

Applications

- For use in 10 Gb/s high speed LAN networks over a 300 m indicative link length at 850 nm (SX) wavelength using a laser launch
- For use in 1 Gb/s high speed LAN networks over a 1000 m indicative link length at 850 nm (SX) wavelength using a laser launch
- High speed and legacy networks including Gigabit Ethernet, Fast Ethernet and Ethernet
- Data centres
- Premises cabling in data networks including backbone, riser and horizontal
- Supports video, data and voice services

Technical information

Connector Specification

Optical Performance	*Multimode*	*Conformance*
Insertion loss (Typ)	0.30 dB	IEC 61300-3-4
Ave/Master*	0.15 dB	IEC 61300-3-4
Ave/Random*	0.20 dB	IEC 61300-3-34

Standards Compliance

TIA/EIA 568C
TIA/EIA 492AAAP
IEC19801

Cable Specification

Characteristics	*Simplex*	*Duplex*
Cable Material	LSZH or PVC	LSZH or PVC
Strength Member	Aramid	Aramid
Crush (N)	1000	1000
Operating Temperature (˚C)	-20 to 60	-20 to 60
Fire Specification	IEC 60332-1 / IEC 60332-3	

Fibre Specification

Characteristics	
Attenuation (dB)	2.8 @ 850nm / 0.8 @ 1310nm
Bandwidth OFL (MHz x km)	3500 @ 850nm / 500 @ 1310nm 4700 @ 850nm
Max Ethernet Transmittable Distance	Please refer to Fibre Comparison Chart

Part Number Generator

Connectors End 1[1]		Connectors End 2[1]		Cable Type		Cable Configuration		Cable Colour		Length (m)
FC	FC	FC	FC	OS1/2	09	Simplex	S	Yellow	YE	1
SC	SC	SC	SC	OM1	62	Duplex	D	Orange	OR	2
ST	ST	ST	ST	OM2	50			Aqua	AQ	3
LC	LC	LC	LC	OM3	OM3			Purple	PU	5
MTRJ[2]	MTRJ[2]	MTRJ[2]	MTRJ[2]	OM4	OM4			Erika Violet[4]	EV[4]	10
E2000	E2000	E2000	E2000	G.657.A1	A1					
				G.657.A2	A2					

Example Part Number: SC ST OM4 D AQ 2

SCSTOM4DAQ2 has created a 2 meter SC to ST OM4 Duplex patchcord in aqua.

[1]Other Connectors Available on Request
[2]MTRJ is only available in MiniZip
[4]OM4 Only

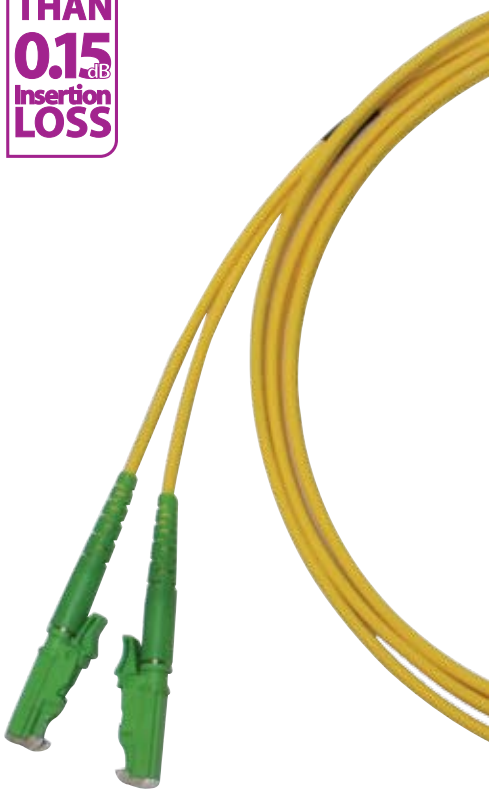
Premium Patchcords

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1/2 9/125 | OS1/2 G.657.A1 | OS1/2 G.657.A2

Description

FibreFab Premium range patchcords are suitable for low loss telecom, datacom, data centre and some critical applications. The patchcords provide flexible interconnection to active equipment, passive optical devices and cross-connects. The patchcords are terminated with Premium range physical contact (singlemode & multimode) and angled physical contact (singlemode) zirconia ferrule connectors which are manufactured with precision factory mounting and polishing techniques which helps assure high transmission quality.

LESS THAN 0.15dB Insertion LOSS



Features / Benefits

- **Conform to IEC, EIA-TIA, and Telecordia performance requirements**
- **Available in different fibre types**
- **Available with different connector types**
- **Available in standard and custom lengths**
- **RoHS, REACH & SvHC compliant**

Applications

- **Data centre**
- **Telecommunication networks**
- **CATV**
- **LAN and WAN**
- **FTTX**
- **Broadband network**

Part Number Generator

						P

Connector End 1	
FC	FC
FC/APC	FCA
SC	SC
SC/APC	SCA
LC	LC
LC/APC	LCA
E2000	E2
E2000/APC	E2A

Connector End 2	
FC	FC
FC/APC	FCA
SC	SC
SC/APC	SCA
LC	LC
LC/APC	LCA
E2000	E2
E2000/APC	E2A

Cable Type	
OS1/2	09
OM1	62
OM2	50
OM3	OM3
OM4	OM4
G.657.A1	A1
G.657.A2	A2

Cable Configuration	
Simplex	S
Duplex	D

Cable Colour	
Yellow	YE
Orange	OR
Aqua	AQ
Purple	PU
Erika Violet[1]	EV[1]

Length (m)
1
2
3
5
10

Example Part Number: SC ST OM4 D AQ 2 P

SCSTOM4DAQ2P has created a 2 meter SC to ST OM4 Duplex Premium patchcord in aqua.

[1]OM4 Only

Technical information

Connector Specification

Optical Performance	Singlemode	Multimode	Conformance
Insertion loss (Typ)	0.15 dB	0.15 dB	IEC 61300-3-4
Insertion loss (97%)	0.30 dB	0.25 dB	IEC 61300-3-4
Ave/Master*	0.12 dB	0.08 dB	IEC 61300-3-4
Ave/Random*	0.12 dB	0.10 dB	IEC 61300-3-34
Return Loss	55/65 dB	-	IEC 61300-3-6
MECHANICAL PROPERTIES	CRITERIA*		CONFORMANCE
Mechanical endurance	500 matings		IEC 61300-2-2
Vibration	10-55 Hz, 0.75 amplitude		IEC 61300-2-1
Drop	Drop height 1m, 5 drops		IEC 61300-2-12
Cable retention	Magnitude 90 N		IEC 61300-2-4
Cable torsion	1.5 kg - 2.5 kg for 2mm-3mm cable diameter		IEC 61300-2-5

Standards Compliance

TIA/EIA 568C
TIA/EIA 492AAAP
IEC19801

*** The change in attenuation for all the above listed criteria shall be a maximum of 0.20dB**

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 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 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- Blue boot APC-Green boot	MM PC- Black boot

IMP: Please note that the LC 2mm connectors will have heat shrinks to serve the purpose of cable retention. C clips will be provided for channel identification of duplex FC and ST patchcords.

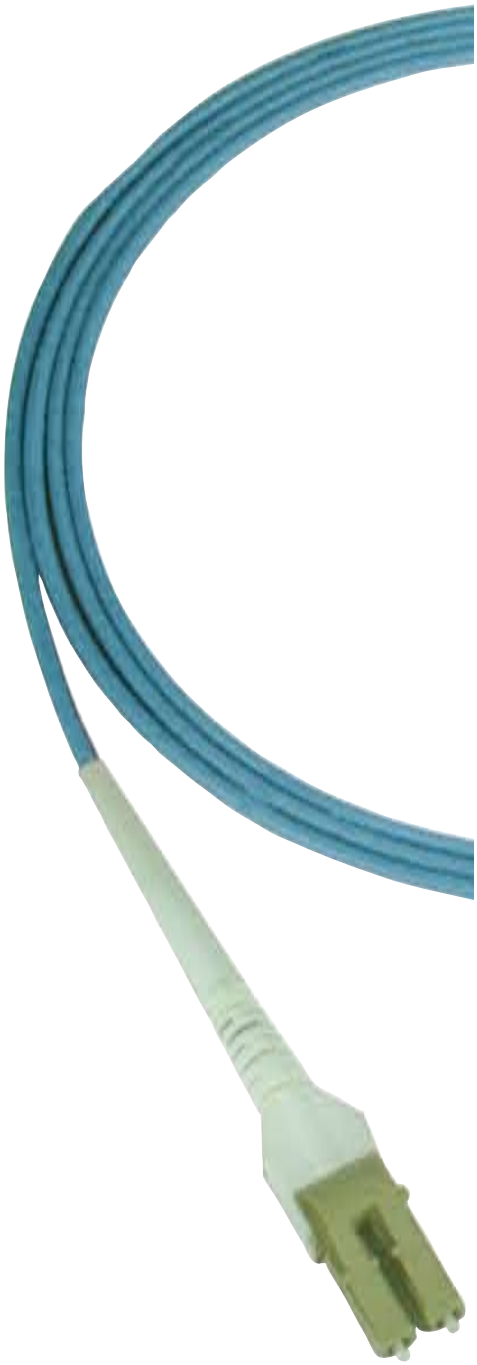
Cable Specification

Characteristics	Units	Simplex	Duplex
Cable Material		LSZH or PVC	LSZH or PVC
Strength Member		Aramid	Aramid
Crush	N	1000	1000
Operating Temperature	˚C	-20 to +60	-20 to +60
Secondary Buffer Diameter (2.0mm, 2.4mm and 3.0mm)	µm	900±50	900±50
Secondary Buffer Diameter (1.6mm and 1.8mm)	µm	600±50	600±50
Minimum Bending Radius	mm	10D (installed) 20D (loaded)	10D (installed) 20D (loaded)

IMP: The patchcords are available in standard length of 1m, 2m, 3m, 5m, and 10m. For other lengths please contact FibreFab for the actual lead times.

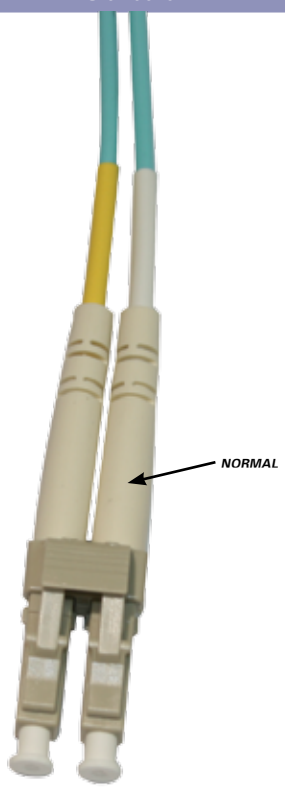
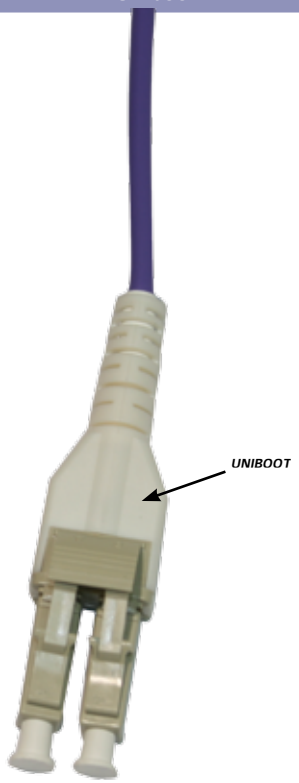
Unibody Patchcords

As the networking environment of today becomes increasingly dependent on high speed and high density solutions, effective cable management is a real issue. The key concern is how to manage more cable in a smaller amount of space.
The Optronics Unibody fibre patchcord reduces cable management space by 50% compared to standard patchcords. The body of the connector also prevents users from altering the polarity of the patchcord. The patchcord utilises a special “round duplex” cable that allows duplex transmission within a single 3mm cable. As a result of these unique features the Optronics Unibody patchcord offers improved airflow and visibility of equipment within a high density network environment.
The Optronics Unibody patchcord is available in a wide variety of cable styles including LSZH, Plenum and Riser.



Features & Benefits

- LC or SC connectors available
- Full duplex in a single 3mm cable
- Available in OM1, OM2, OM3, OM4 and OS1/OS2 cabled fibre types
- Available with LSZH, Plenum and riser rated cable
- Cost effective
- Save 50% of space in cabinets and cable ways
- Protects network polarity

Standard	*Uniboot*
	

Technical information

Connector Specification

Optical Performance Multimode	Premium**	Standard	Conformance
Insertion loss (Typ)	0.15 dB	0.30 dB	IEC 61300-34
Insertion loss (97%)	0.25 dB	0.40 dB	IEC 61300-34
Ave/Master	0.08 dB	0.15 dB	IEC 61300-34
Ave/Random	0.10 dB	0.20 dB	IEC 61300-34

** Recommended for high performance and low loss connection for efficient data transmission

Standards Compliance

TIA/EIA 568C
TIA/EIA 492AAAP
IEC19801

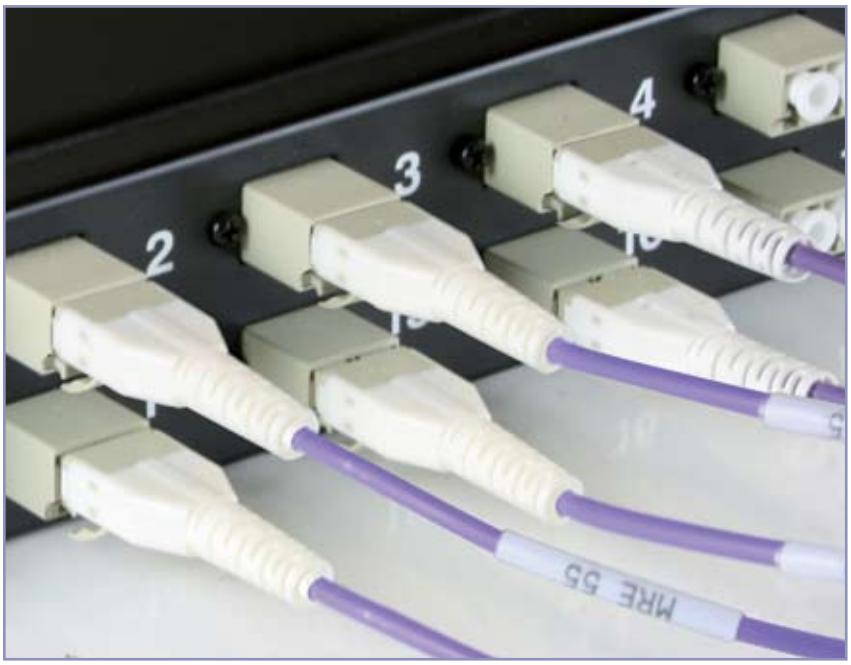
Cable Specification

Characteristics	UNITS	ROUND DUPLEX
Cable Material		LSZH
Strength Member		Aramid
Crush	N100mm	1000
Operating Temperature	˚C	-20 to 60
Secondary Buffer Diameter	µm	900+50
Minimum Bending Radius	mm	10D (installed) 20D (loaded)

Part Numbers

Description	Part No.
LCLC Unibody OM3 Round Duplex 3MM Purple XM-PREMIUM	**LCLCOM3UB3AQX-P**
LCLC Unibody OM3 Round Duplex 3MM Purple XM-STANDARD	**LCLCOM3UB3AQX**
LCLC Unibody OM4 Round DUPLEX 3MM Aqua XM-PREMIUM*	**LCLCOM4UB3AQX-P**
LCLC Unibody OM4 Round DUPLEX 3MM Aqua XM-STANDARD*	**LCLCOM4UB3AQX**

X – Length in meters, standard length is 1m, 2m, 5m and 10m
X – Also available in different colours. Please contact sales at sales@fibrefab.com+



Armoured Patchcords

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1|2 9/125

Description

FibreFab armoured patchcord are used in outdoor applications in customer premises, central offices and in harsh environments. The patchcords provide flexible interconnection to active equipment, passive optical devices and cross-connects. Armoured patchcords are constructed with a stainless steel tube over a standard patchcord surrounded by a stainless steel mesh with an outer jacket. FibreFab patchcords are terminated with our standard range or connectors, all quality tested to meet FibreFab and international standards.

Features

- Conform to IEC, EIA-TIA, and Telecordia performance requirements
- Easy installation
- Available in different fibre types
- Available in standard and custom lengths
- RoHS, REACH & SvHC compliant

Applications

- Telecommunication Networks
- CATV
- LAN and WAN
- FTTX
- Broadband network
- Military application

FC-UPC / SC-UPC 9/125
Simplex patchcord Armoured

SC-PC / LC-PC 50/125
Duplex Patchcord Armoured

Technical Specification

Item	*Simplex*	*Duplex*	*Description*
Fibre count	1	2	
Tight buffer	OD 0.6mm ± 0.05mm	OD 0.6mm ± 0.05mm	Blue / Yellow
Kevlar	2*1110 dtex *2	2*1110 dtex *2	Yellow
Outer Jacket	OD 3.0 +0/-0.2mm	OD 3.3+ 0.1mm	Blue-singlemode / Gray-multimode PVC & LSZH

Fibre Type	*Multimode*	*Singlemode*
Operating wavelength (nm)	850 / 1300	1310 / 1550
Mode field diameter (µm)	62.5 ± 2.5	9.0 ± 0.2
Max Attenuation (dB/km)	3.0 / 1.0	0.4 / 0.3

Mechanical and Environmental Characteristics		
Operating Temp (˚C)	-40 to +75 LSZH / -40 to +70 PVC	
Max Tensile load (N)	Short term	300
	Long term	200
Max Crush resistance (N/100mm)	Short term	3000
	Long term	200
Cable weight (kg/km)	17.3	

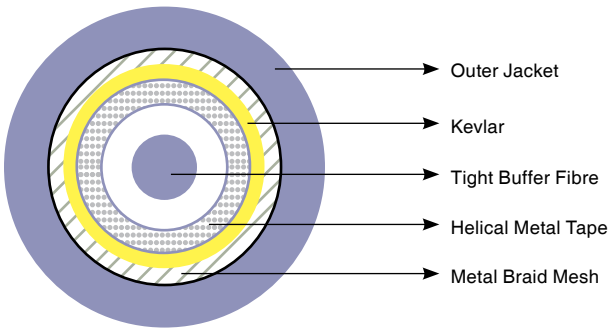
Connector Performance

	Multimode	*Singlemode*
Insertion loss (Typ)	0.25 dB	0.30 dB
Ave/Master	0.18 dB	0.15 dB
Ave/Random	0.18 dB	0.20 dB
Return loss	55dB / 65dB	-

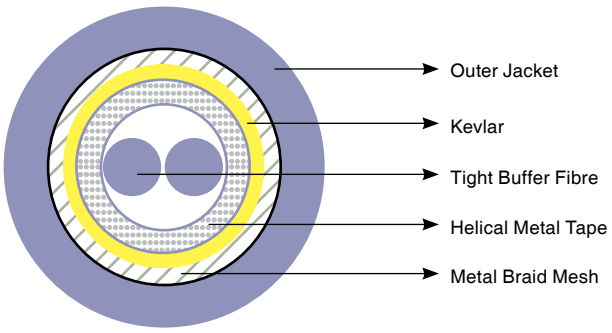
Technical information

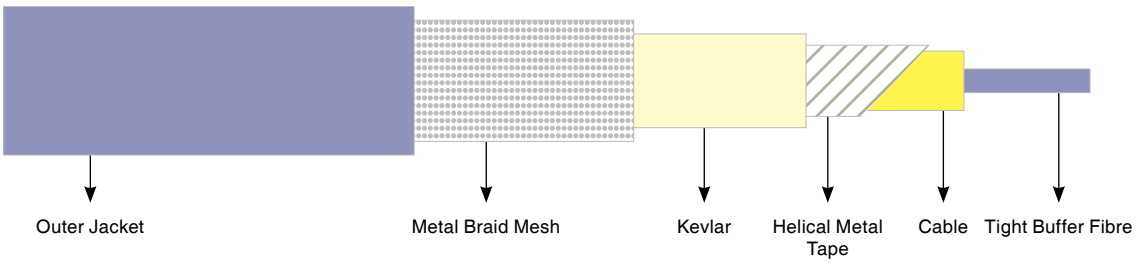
Standards Compliance
TIA/EIA 568C
TIA/EIA 492AAAP
IEC19801

Simplex Patchcord Armoured



Duplex Patchcord Armoured





Part Number Generator

Connector End A		Connector End B		Cable type		Cable Configuration		Cable Material		Cable Colour		Cable length (m)	Fibre Type		SA
FC	FC	FC	FC	OS1/ OS2	09	Duplex 3.3mm	D1	LSZH	L	Blue	BL	XX	652D	D	
FCAPC	FCA	FCAPC	FCA	OM1	62	Simplex 3mm	S1			Grey	GR		657A	A	
SC	SC	SC	SC	OM2	50										
SCAPC	SCA	SCAPC	SCA	OM3	OM3										
ST	ST	ST	ST	OM4	OM4										
LC	LC	LC	LC												

Example Part Number: SC ST 09 D1 L BL 10 D SA

SCST09D1LBL10SA has created a 10 meter SC to ST OS1 duplex armoured patchcord in blue.

Reduced Bend Sensitivity

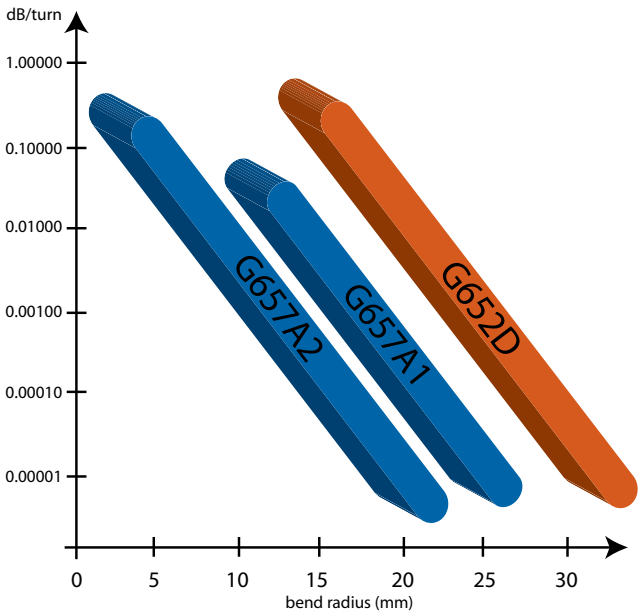
Optronics patchcords and pigtails are available in both singlemode and multimode classes based on reduced bend sensitivity (RBS) fibre cable.

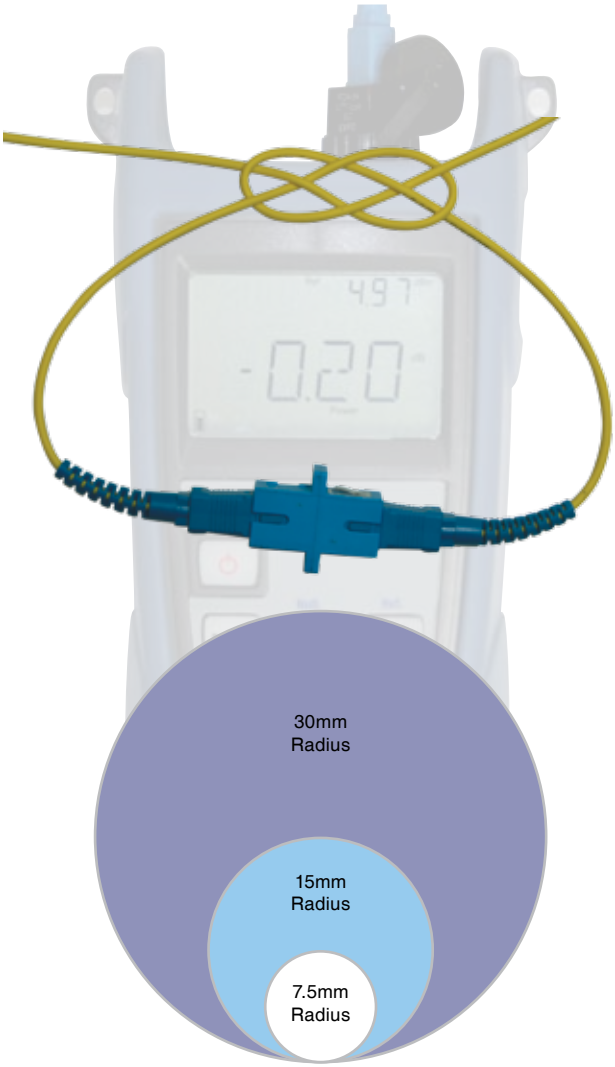
RBS patchcords exhibit much lower optical power loss under bend conditions while remaining compatible with conventional cabling.

RBS patchcords are made with solid trench assisted optical fibre that is designed to reduce optical loss when the cable is bent.

RBS patchcords provide the same high quality, mechanical features and optical performance as our standard patchcords with the added capability of maintaining optical performance when bent or flexed.

RBS patchcords are available for multimode (OM3 and OM4) and singlemode (OS2/ G.657A1 and G.657A2) networks.





Actual Size

Applications

RBS patchcords and pigtails are used in applications for which low loss in tight radius routing is important:

- When routing cable around corners and in tight spaces is required, for example in FTTH installations in existing buildings.
- FTTH cabling in POPs, MDU distribution points and subscriber connections.
- Data Centres where network up time is critical. For example, OM4 RBS patchcords will continue to provide data service when pinched by a cabinet door, whereas service would be lost with conventional OM4 patchcords.
- Generally, when small radius installation is needed or the cabling may be subjected to occasional small radius events.

Tight Radius Routing

Termination Specification

General mechanical and optical specifications of RBS patchcords are as per corresponding standard products including IEC and TIA/EIA standards conformance.

Fibre Class	*Fibre Standard*	*Guideline Radius*	*Bend Performance*			
Standard Multimode and Singlemode		30mm	-			
Reduced Bend Sensitivity Multimode			***RADIUS***	***turns***	***Loss at 850 nm***	***Loss at 1300 nm***
OM3 RBS	OM3	10mm	15mm	2	≤ 0.1 dB	≤ 0.3 dB
OM4 RBS	OM4		7.5mm	2	≤ 0.2 dB	≤ 0.4 dB
Reduced Bend Sensitivity Singlemode			***15mm Radius 10 Turns***	***Loss at 1550 nm 10mm Radius 1 Turn***		***7.5mm Radius 1 Turn***
657A1	ITU-T G.657A1 / OS1 / OS2	10mm	≤ 0.25 dB	≤ 0.75 dB		-
657A2	ITU-T G.657A2 / OS1 / OS2	7.5mm	≤ 0.03 dB	≤ 0.1 dB		≤ 0.5 dB

Straight fibre as reference

G.652.D > 15.10dB

RBS > 0.21dB

Master Test Leads

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS 1|2 9/125

FibreFab Zenith range of test leads is suitable for general optical performance test applications. The test leads are terminated with Zenith range physical contact (singlemode) and angled physical contact (singlemode) zirconia ferrule connectors. The connectors manufactured with precision factory mounting and polishing techniques which help assure high transmission quality.

LESS THAN 0.10dB Insertion LOSS

Features

- Conform to IEC, EIA-TIA, and Telecordia performance requirements
- Supplied with ultra tight geometry singlemode and multimode optical fibre
- Available with different connector types
- Available in standard lengths
- RoHS, REACH & SvHC compliant
- Precision glass geometry
- Concentricity, End Face Geometry, IL, RL Certificate

Application

- Testing Labs
- Critical telecom and data centre application
- Instrumentation

Connector Specification

Optical Performance	*Singlemode*	*Multimode*	*Conformance*
Insertion loss (Typ)	0.10 dB	0.15 dB	IEC 61300-3-4
Insertion loss (97%)	0.20 dB	0.25 dB	IEC 61300-3-4
Ave/Master*	0.08 dB	0.08 dB	IEC 61300-3-4
Ave/Random*	0.08 dB	0.10 dB	IEC 61300-3-34
Return Loss	55/70 dB	-	IEC 61300-3-6
Mechanical Properties	*Criteria**		*Conformance*
Mechanical endurance	500 matings		IEC 61300-2-2
Vibration	10-55 Hz, 0.75 amplitude		IEC 61300-2-1
Drop	Drop height 1m, 5 drops		IEC 61300-2-12
Cable retention	Magnitude 90 N		IEC 61300-2-4
Cable torsion	1.5 kg - 2.5 kg for 2mm-3mm cable diameter		IEC 61300-2-5

* The change in attenuation for all the above listed criteria shall be a maximum of 0.10dB

Technical information

Cable Specification

Characteristics	*Units*	*Simplex*
Cable Material		LSZH
Strength Member		Aramid
Crush	N	1000
Operating Temperature	˚C	-20 to 60
Secondary Buffer Diameter (2.0mm, 2.4mm and 3.0mm)	µm	900±50
Secondary Buffer Diameter (1.6mm and 1.8mm)	µm	600±50
Colour	µm	SM – Blue MM – Orange (OM1, OM2) MM – Aqua (OM3, OM4)

Standards Compliance

TIA/EIA 568C
TIA/EIA 492AAAP
IEC19801

Fibre Bend Specification

Characteristics	*Units*	*Singlemode*	*Multimode*
Cladding Diameter	µm	124±0.4	125+2
Core Diameter	µm	-	50+2.5
Core/Cladding Concentricity Error	µm	≤0.3	< 1.5
Cladding Non Circularity	%	≤0.3	< 1.0
Numerical Aperture	µm	-	0.2+0.015
Polarization Mode Dispersion (PMD)	Ps/(km) ½	≤0.05	-
Mode Field Diameter (mfd) @ 1310nm	µm	9.0±0.4	-
Mode Field Diameter (mfd) @ 1550nm	µm	10.1±0.5	-

Part Number Generator

			S		L			TL
Master Side	**Equipment side**	**Cable type**	**Fibre Construction**	**Cable Diameter**	**Jacket Type**	**Colour**	**Length (m)**	**Test Lead**
FC FC	FC FC	OS1/OS2 9	Simplex S	2mm 2	LSZH L	Orange OM1 O	1m 1	
FCAPC FCA	FCAPC FCA	OM1 1		3mm 3		Aqua OM3 A	1.5m 1.5	
SC SC	SC SC	OM2 50				Blue OS1/2 B	2m 2	
SCAPC SCA		OM3 3R						
LC LC		OM4 OM4						
LCAPC LCA								
ST ST								

Example Part Number: SC SC 3R S 3 L A 1 TL

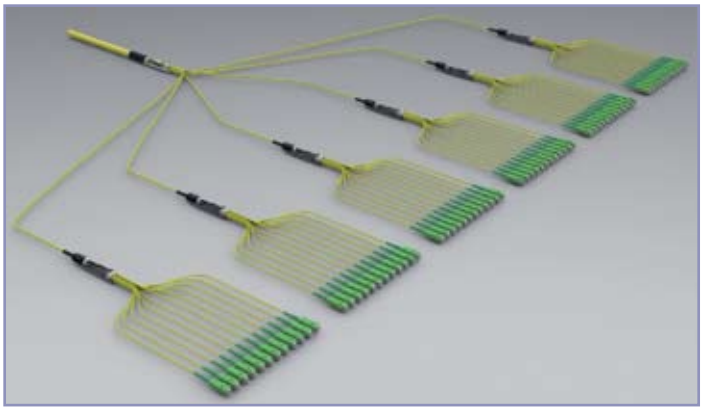
SCSC3RS3LA1TL has created a 1 meter SC to SC OM3 3mm test lead in aqua.

Trunk Components

What's the difference with FirstLight Prime®?

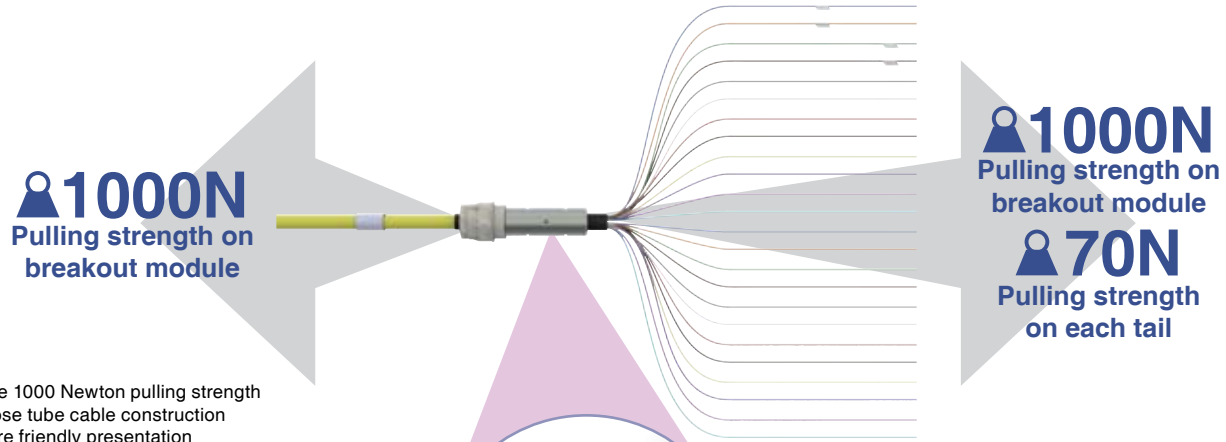
The Optronics FirstLight Prime is the family of premium optical fibre assemblies, utilising the patented FirstLight Prime transition module. The design can offer assemblies from 4 to 144 core fibre cables and guaranteed superior tensile strength and crush resistance (true 1000 Newton pulling strength). This technology platform is the ideal choice for long trunks requiring improved physical properties or high core count trunk assemblies. These cables can be assembled with both MTP® and discreet connectors. FirstLight Prime can also be used as trunk ruggedised MTP® fan outs, providing cabinet to cabinet connections without the need of fibre jumpers. Innovative dry loose tube cable construction offers superior physical and optical performance.

- 4-144 fibre counts
- Modular design
- Can be secured to cabinet mounting profile for saving space zero-U solutions
- High tensile strength and crush resistance
- Compact cable and module dimension easing duct and rack congestions
- Reduced interconnection topology improves power budget

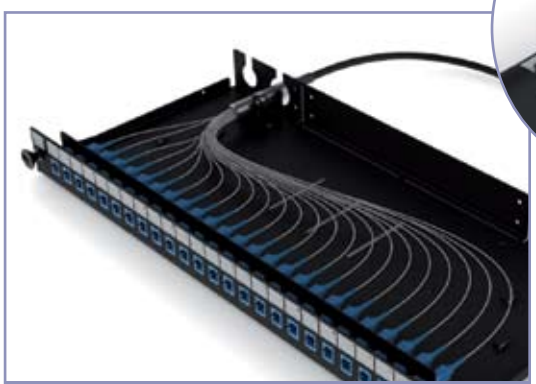


FirstLight Prime® Module

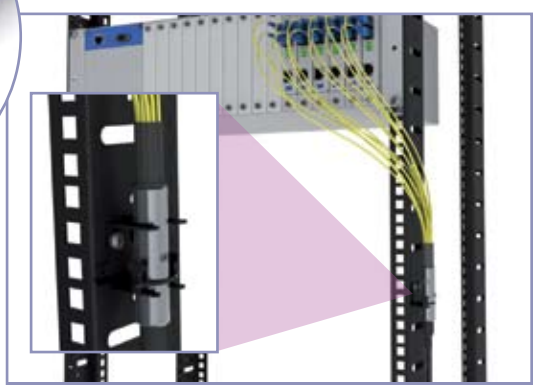
The Optronics MTP® high density solution utilises the patented FirstLight Prime transition module. This cutting edge cable transition unit has been meticulously designed and rigorously tested to ensure it can stand up to a wide range of applications and environments. It is manufactured using aluminium and glass reinforced polymer components which gives the module great strength and weight performance. Using this solution we are able to produce cable assemblies from 4 fibres to 144 fibres.



- True 1000 Newton pulling strength
- Loose tube cable construction
- Fibre friendly presentation
- High fibre count, with MTP® to legacy connectivity
- Bespoke solutions available
- Modular solutions available



Direct Mounting to Patch Panel

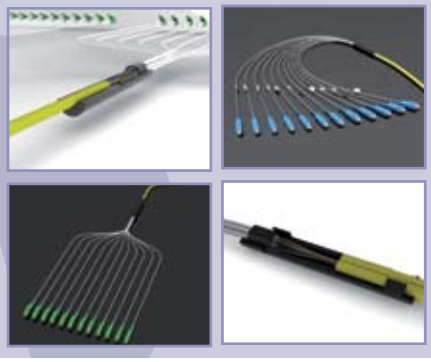


Space saving 0U

Four Innovative building blocks for multifibre assemblies

Micro Breakout Module

- Up to 24 fibres
- Small 9mm Diameter
- Plastic Bodied



Mini Breakout Module

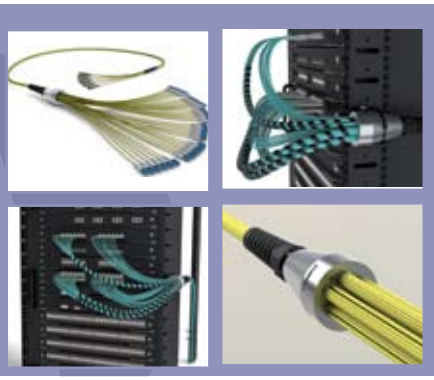
- Up to 24 fibres
- 15mm Diameter
- Plastic Bodied

Maxi Breakout Module

- Up to 48 fibres
- 21mm Diameter
- Rugged Metal Body

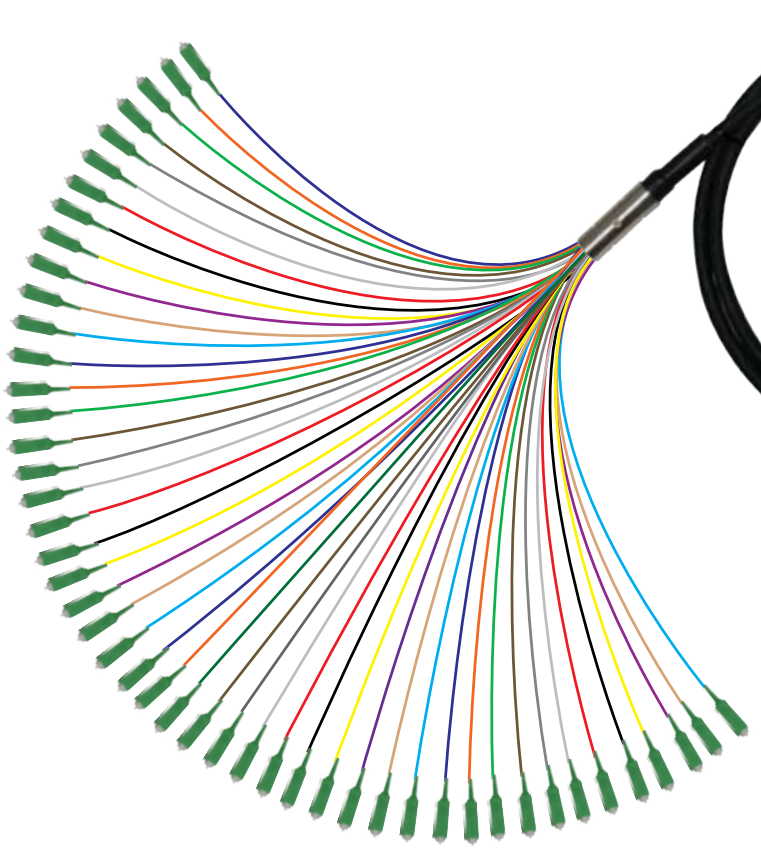
Mega Breakout Module

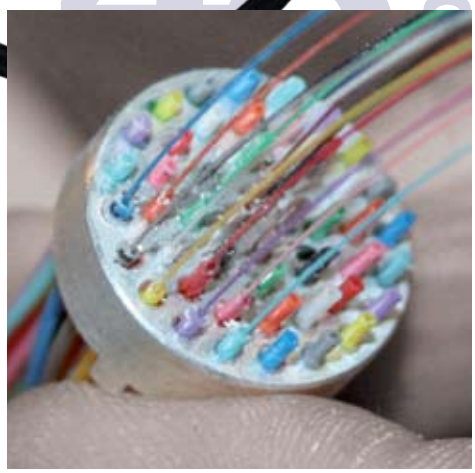
- Up to 144 fibres
- 50mm Diameter
- Rugged Metal Body



Ultra High Density Pre-Terminated Multifibre Loose Tube Cable Assembly

48 fibres





Description

FibreFab multicore loose tube cable assembly features with improved mechanical and optical properties in external environment. Assembly tails are protected by reinforced tube and cable strength members are connected directly to the pulling element assuring safe and effective installation. 900µm presentation is ideal for installation inside patch panel, ODF or distribution boxes.

Factory terminated system assures rapid network deployment contributing vastly to cost savings and eliminating field installation variables. FibreFab factory quality control guarantee product featuring highest performance and reliability.

Rapid Easy Deployment

Factory terminated cabling saves installation and reconfiguration time eliminating field termination/splicing variables

High Performance and Reliability

100% tested- combination of high quality components and FibreFab manufacturing quality control guarantees product to the highest standards

Cost Savings

Installation time involving costly highly qualified workforce is reduced to the minimum

Features

- Available in OM1, OM2, OM3, OM4 and OS1/OS2 fibre types
- 2 - 24 core loose tube cable
- 900µm presentation tails
- Universal LSZH & external PE cable jacket
- Available with all standard connectivity
- Steel Tape Armoured (STA) version available
- Factory Terminated and Tested

Applications

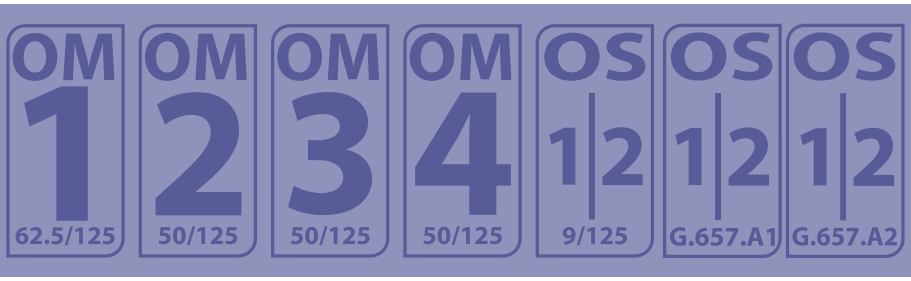
- Universal Internal/External Optical Links
- Long Backbone Interconnections

Standards Compliance

TIA/EIA-568-C.3 and ISO/IEC 11801
IEC-61754-7 & EIA/TIA-604-5
NFPA 262 (OFNP) or IEC 60332
(LSZH) TIA/EIA 568-B.1-7

Many Configurations Available Call For Details

Technical information



Connector Performance

Connector Mating	IL Average Standard	IL MAX Standard	IL Average Premium	IL MAX Premium	Return Loss
MM	0.15 dB	0.30 dB	0.08 dB	0.15 dB	NA
SM	0.18dB	0.25dB	0.12dB	0.15dB	>55/65dB

Cable Performance

Fibre Type (ISO/IEC 11801)	OS1/OS2	OM1	OM2	OM3	OM4
Attenuation Coefficient [dB/km]	≤ 0.38 Max (1300nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)
	≤ 0.25 Max (1300nm)	≤ 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]		≥ 200 (850nm)	≥ 500 (850nm)	≥ 1500 (850nm)	≥ 3500 (850nm)
	NA	≥ 500 (1300nm)	≥ 500 (1300nm)	≥ 500 (1300nm)	≥ 500 (1300nm
Minimum Bandwidth: Laser Effective Modal Bandwidth [Mhz-km]	NA	NA	NA	≥ 2000 (850nm)	≥ 4700 (850nm)

Technical Specification

Element	Characteristic
Fibre	OS1/OS2, OM1*, OM2*, OM3, OM4 (ISO/IEC 60793)
Cable	Loose Tube 2- 24 cores (ISO/IEC 60794), OD MAX 24 cores 6.7 ± 0.3mm, OD MAX 24 cores (Steel Tape Armoured), 10.7 ± 0.3mm, Jacket material: LSZH, PE, OFNP* Jacket color: Black
Connectors	IEC 61753, IEC 61754, IEC 61755
Packaging	Length <50mtr: HD PE Bag Length >50mtr: Drum
Operating Temperature	-10 ~ +60°C
Storage Temperature	-40 ~ +70°C

Part Number Generator

PRE

Fibre Count	Connector END A				Connector END B*				Cable Type		Cable Construction		Cable length (Mtr)
2	LC	LC	FC	FC	LC	LC	FC	FC	OS1/2	09	Loose Tube	LT	XX
4	LC/APC	LCA	FC/APC	FCA	LC/APC	LCA	FC/APC	FCA	OM1	62	Loose Tube Steel Tape Armoured	STA	
6	SC	SC	E2000	E2	SC	SC	E2000	E2	OM2	50			
8	SC/APC	SCA	E2000/APC	E2A	SC/APC	SCA	E2000/APC	E2A	OM3	OM3			
12	ST	ST			ST	ST			OM4	OM4			
16									G.657.A1	A1			
24									G.657.A2	A2			

*If end B differs from end A

Example Part Number: PRE 12 SC OM3 LT 50

PRE12SCOM3LT50 has created 12 cores OM3 SC to SC loose tube multifibre cable assembly.

High Density Pre-Terminated Multifibre Tight Buffered FirstLight Classix Cable Assembly

1000N
Pulling strength on breakout module

Description

The FirstLight Classix factory made, quality controlled fibre optic assembly is specified for short internal optical links. The 900µm tight buffer presentation lends itself to installation within a patch panel, wall box or Optical Distribution Frame (ODF).

Crush resistant protective tubing assures secure transportation and installation.

The high strength pulling element allows fast, safe and effective pulling.

The overall assembly and packing are light and compact, reducing transport cost and storage space. Installation waste is also reduced.

A unique FibreFab link loss certificate accompanies all FirstLight Classix Pre-Terms.

Protective Corrugated Tubing for safer transport and installation

Benefits

- High crush resistance robust protection tube
- High tensile strength pulling element
- Economical, light and compact assembly
- Low waste packaging
- User friendly link loss test certificate
- Installation guide supplied

Features

- Available in OM1, OM2, OM3, OM4 and OS1/OS2 fibre types
- Available with SC, LC, FC, ST, and E2000 connector types
- 2 - 24 core tight buffer cable with standard connectivity
- Fast installation plug and play system
- No splicing or connector termination required

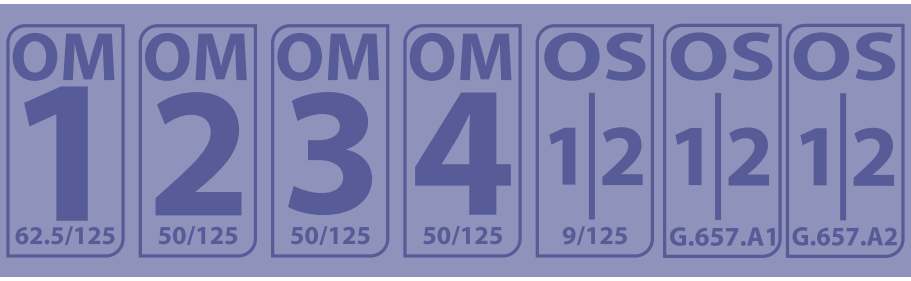
Applications

- Internal horizontal and backbone cabling
- Ideal for data centre use

Standards Compliance

TIA/EIA-568-C.3 and ISO/IEC 11801
IEC-61754-7 & EIA/TIA-604-5
NFPA 262 (OFNP) or IEC 60332 (LSZH) TIA/EIA 568-B.1-7

Technical information



Technical Specification

Specification	*Value*	
Fibre grade	OS1/OS2, G.657A*, OM1, OM2, OM3, OM4* (ISO/IEC 60793)	
Cable specification	Tight buffer 4, 8, 12 and 24 cores* (ISO/IEC 60794)	
	Max OD 24 cores 8.5 ± 0.3 mm	
Connectors	IEC 61753, IEC 61754, IEC 61755	
Pulling element	a) No pulling element: length < 20mtr	b) A side pulling element: 20< length < 100mtr
Packaging	Coil in heavy duty polymer bag	EU pallet compatible box
Operating Temperature	-10 ~ +60°C	
Storage Temperature	-40 ~ +70°C	

Part Number Generator

PX

Connector A (pulling eye)	
Open end	X-X
SC	SC
SC/A	SA
LC	LC
LC/A*	LA
FC	FC
FC/A*	FA
ST	ST
E2000*	E2
E2000 APC*	EA

Connector B	
Open end	X-X
SC	SC
SC/A	SA
LC	LC
LC/A*	LA
FC	FC
FC/A*	FA
ST	ST
E2000*	E2
E2000 APC*	EA

Cable Type	
Tight Buffer	TB

Terminated Fibre Count
02
04
06
08
12
16
24
48*

Fibre Type	
OM1	M1
OM2	M2
OM3	M3
OM4*	M4
OS1/2	SM
G657A*	SM

Jacket Material	
LSZH	LS
PE*	PE
OFNP*	PL

Length (Mtr)
XX

Example Part Number: PX SC SC TB 12 SM LS 50

PXSCSCTB12SMLS50 has created a 50m, 12 fibre, OS1 SC to SC tight buffered multifibre cable assembly with a LSZH jacket.

*Non standard options are available outside the “Fast Flow” service

High Density Pre-Terminated Multifibre Full Breakout Cable Assembly

24 fibres

Description

FibreFab multicore full breakout cable assembly is ideal for short internal links where direct connection to active equipment or patch panel is required. 2mm cable sub-units are ruggedized and protect fibre in environment outside patch panel or ODF. Network topology can be reduced and simplified by direct connection to active equipment bypassing wall boxes, ODF or fibre patch panels easing fibre management.

Benefits

- Rapid Deployment- factory terminated cabling saves installation and reconfiguration time eliminating field termination variables
- High Performance and Reliability- 100% tested- combination of high quality components and FibreFab manufacturing quality control guarantees product to the highest standards
- Cost Savings- Installation time involving costly highly qualified workforce is reduced to the minimum
- Direct Connection to Equipment/Panel- direct connection to active equipment is possible bypassing wall boxes, ODFs and panels reducing fibre management and easing racking space

Features

- Available in OM1, OM2, OM3, OM4 and OS1/OS2 fibre types
- 2 - 24 core full breakout cable
- 2mm ruggedized tails
- Internal LSZH cable jacket
- Available with all standard connectivity
- Factory Terminated and Tested

Applications

- Internal Short Links
- Front Panel/Equipment Connections
- Data Centre Infrastructure

Standards Compliance

TIA/EIA-568-C.3 and ISO/IEC 11801
ISO/IEC 60793 & ISO/IEC 60794
ISO/IEC 61754

Technical information

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1|2 9/125 | OS1|2 G.657.A1 | OS1|2 G.657.A2

Connector Performance

Connector Mating	IL Average Standard	IL MAX Standard	IL Average Premium	IL MAX Premium	Return Loss
LC, SC MM	0.15 dB	0.30 dB	0.08 dB	0.15 dB	NA
LC, SC SM	0.18dB	0.25dB	0.12dB	0.15dB	>55/65dB

Cable Performance

Fibre Type (ISO/IEC 11801)	OS1/OS2	OM1	OM2	OM3	OM4
Attenuation Coefficient [dB/km]	≤ 0.38 Max (1300nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)
	≤ 0.25 Max (1300nm)	≤ 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]		≥ 200 (850nm)	≥ 500 (850nm)	≥ 1500 (850nm)	≥ 3500 (850nm)
	NA	≥ 500 (1300nm)	≥ 500 (1300nm)	≥ 500 (1300nm)	≥ 500 (1300nm
Minimum Bandwidth: Laser Effective Modal Bandwidth [Mhz-km]	NA	NA	NA	≥ 2000 (850nm)	≥ 4700 (850nm)

Technical Specification

Element	Characteristic
Fibre	OS1/OS2, OM1*, OM2*, OM3, OM4 (ISO/IEC 60793)
Cable	Full Breakout 2- 24 cores (ISO/IEC 60794), OD 12 cores 11.8 ± 0.3mm, OD 24 cores 14.1 ± 0.3mm, Jacket material: LSZH, OFNP*, Jacket color: Orange (OM1 & OM2), Aqua (OM3 & OM4), Yellow (OS1/2)
Connectors	IEC 61753, IEC 61754, IEC 61755
Packaging	Length <50mtr: HD PE Bag Length >50mtr: Drum
Operating Temperature	-10 ~ +60°C
Storage Temperature	-40 ~ +70°C

Part Number Generator

PRE

Fibre Count
2
4
6
8
12
16
24

Connector END A			
LC	LC	FC	FC
LC/APC	LCA	FC/APC	FCA
SC	SC	E2000	E2
SC/APC	SCA	E2000/APC	E2A
ST	ST		

Connector END B*			
LC	LC	FC	FC
LC/APC	LCA	FC/APC	FCA
SC	SC	E2000	E2
SC/APC	SCA	E2000/APC	E2A
ST	ST		

Cable Type	
OS1/2	09
OM1	62
OM2	50
OM3	OM3
OM4	OM4
G.657.A1	A1
G.657.A2	A2

Cable Construction	
Breakout	BO

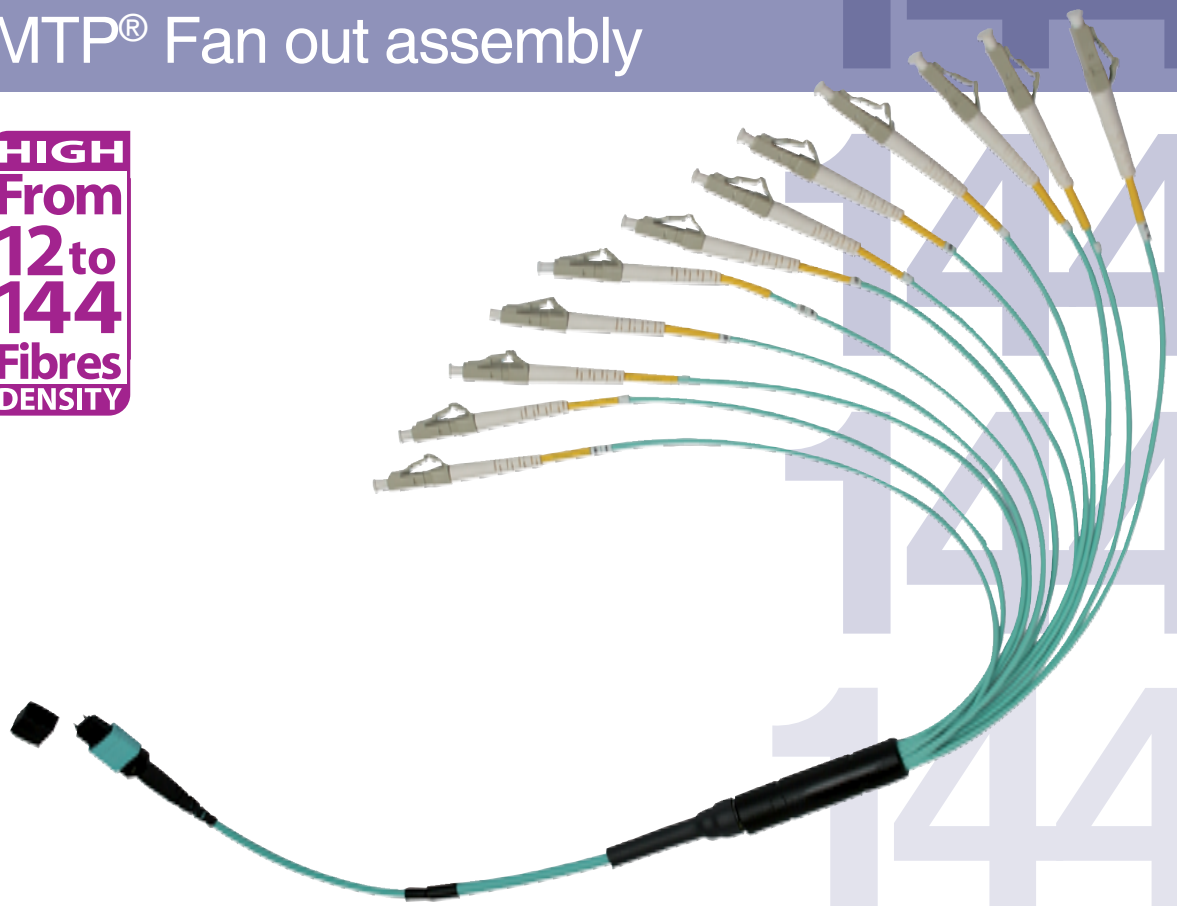
Cable length (Mtr)
XX

Example Part Number: PRE 24 SC SC 09 BO 50

PRE24SCSC09BO50 has created a 50m, 12 fibre, OS1 SC to SC tight buffered multifibre cable assembly with a LSZH jacket.

Ultra High Density Pre-Terminated MTP® Fan out assembly

HIGH From 12 to 144 Fibres DENSITY



Description

FibreFab MTP® ruggedized fan-out assemblies route multifibre MTP® connection into discreet connectors. They are used to directly interconnect MTP® cassettes, panels or backbone MTP® assemblies with the active equipment, saving costly data centre rack space and easing fibre management.

MTP® fan-out assemblies are offered in fibre types in standard 12 to 144 core versions using a compact and rugged microcable structure. The compact cables optimise cable-way use and improve airflow.

FibreFab MTP® fan-out are built with highest quality components. Standard MTP® as well low loss Elite versions are offered featuring low insertion loss for demanding high speed networks where power budgets are critical.

Benefits

- MTP® Interface- MTP® US Conec brand components feature superior optical and mechanical properties.
- Optimised Performance - low loss MTP® Elite, discreet Premium connectors and OM4 fibre assures low insertion losses and power penalties in tight power budget high speed network environment.
- High Density- ruggedized fan-out allows for direct connection between backbone and active equipment eliminating rack space usage
- Rapid Deployment- factory terminated modular system saves installation and reconfiguration time during moves, ads and changes.
- Reliability- 100% tested- combination of high quality components and FibreFab manufacturing quality control guarantees product to the highest standards.

Features

- OS1/2, OM3, OM4 Fibre Versions (OM1 and OM2 available)
- 12, 24 and 48 Core Microcable Trunk Assemblies
- LSZH, OFNP Cable Jacket
- Female or Male MTP® connectors
- Factory Terminated and Tested

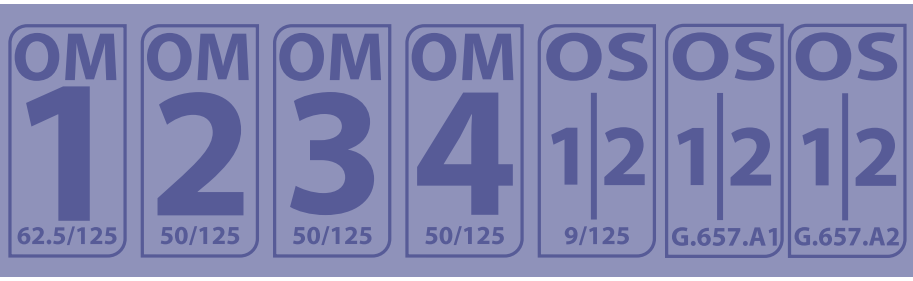
Technical Specification

- Data Centre Infrastructure
- Storage Area Network- Fibre Channel
- Parallel Optics & Infiniband
- Emerging 40 and 100Gbps Protocols

Standards Compliance

TIA/EIA-568-C.3 and ISO/IEC 11801
IEC-61754-7 & EIA/TIA-604-5
NFPA 262 (OFNP) or IEC 60332 (LSZH)
TIA/EIA 568-B.1-7

Technical information



Connector Performance

Connector Mating	IL Average Standard	IL MAX Standard	IL Average Premium	IL MAX Premium	Return Loss	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® (MM)	0.35 dB	0.60 dB	NA	MTP® (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*

Cable Performance

Fibre Type (ISO/IEC 11801)	OS1/OS2	OM1	OM2	OM3	OM4
Attenuation Coefficient [dB/km]	≤ 0.38 Max (1300nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)
	≤ 0.25 Max (1300nm)	≤ 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)

Technical Specification

Element	Characteristic
Fibre	OS1/OS2, OM1*, OM2*, OM3, OM4 (ISO/IEC 60793)
Cable	Microcable- 12, 24, 48 cores (ISO/IEC 60794), MAX OD 12 cores 4.5 ± 0.3mm / Max OD 24 cores 4.5 x 7.4 ± 0.3mm, Jacket material: LSZH, OFNP Jacket colour: Violet (OM3), Aqua (OM3, OM4), Yellow (OS1/OS2)
Connectors	MTP® US Conec (IEC-61754-7 & EIA/TIA-604-5) Boot Colour: Black Body Sleeve Colour: MM (Beige), MM Elite (Aqua), SM (Green), SM Elite (Yellow) LC or SC (IEC 61754-20) Boot Colour: White Housing Color: Beige (MM), Blue (SM), Green (SM/APC)
Packaging	Length <50mtr: HD PE Bag Length >50mtr: Drum
Operating Temperature	-10 ~ +60°C
Storage Temperature	-40 ~ +70°C

Part Number Generator

					DF				
Connector END A		Gender A		Connector END B		Cable Type		Fibre count	Length (m)	Colour		Jacket Type	
MTP® standard	MTP®	Female	F	LC	LC	OS1/2	09	12 - 144	XX	Aqua	AQ	LSZH	LS
MTP® Elite®	MTP®E	Male	M	SC	SC	OM1	62			Purple	PU	OFNP	PL
						OM2	50			Orange	OR		
						OM3	OM3						
						OM4	OM4						
						G.657.A1	A1						
						G.657.A2	A2						

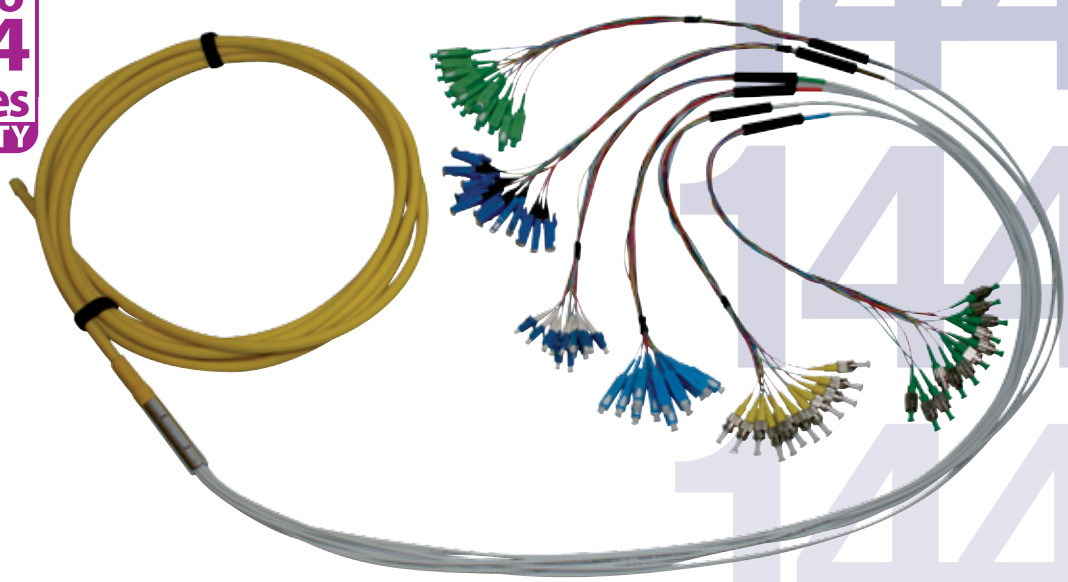
Example Part Number: MTP F LC OM3 12 DF 16 AQ LS

MTPFLCOM312DF16AQLS has created a 16 metres 12 core MTP® female to LC OM3, Aqua LSZH ruggedized fan-out.

Ultra High Density Pre-Terminated Multifibre FirstLight Prime Cable Assembly

144 fibres

HIGH From 12 to 144 Fibres DENSITY



Description

First Light Prime is special design platform for multifibre optical cable assemblies. It utilises patented First Light Prime transition module which guarantee superior tensile strength and crushing resistance (the 1000N pulling strength). High density design can scale from 12 to 144 fibres. It can feature both 900µm as well as ruggedized 2mm interface. Assemblies can comprise both multifibre MTP® and discreet connectors making FirstLight Prime flexible hybrid solution for diverse application.

Benefits

- Very High Density- First Light Prime can scale up to 144 fibres for very high density Data Centre or Central Office application.
- Hybrid MTP® and Discreet Connector Interface- FirstLight Prime can be used as high density multifibre MTP® ruggedized trunk or ruggedized MTP® to LC or SC fan-outs.
- Tails Selection- 2mm ruggedized tails can be used for a direct front panel or equipment connections whereas 900µm tails can be used for installation inside fibre management.
- Rapid Deployment- factory terminated cabling saves installation and reconfiguration time eliminating field deployment variables.
- Optimised Performance- low loss MTP® Elite, discreet 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 breakout module and multifibre assemblies improves space management in high density application.

Features

- OS1/2, OM1, OM2, OM3, OM4 Fibre Grade
- Up to 144 Fibres Core Count
- Available with Multi-channel MTP® and Discreet Connectors
- Ruggedized 2mm or 900µm Tails
- Internal/External Application
- Factory Terminated and Tested

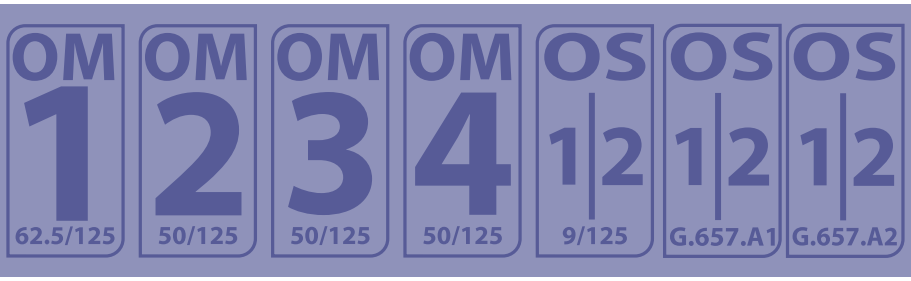
Applications

- Data Centre Infrastructure
- Central Office, Access Points or CATV hubs
- Internal and Backbone Application

Standards Compliance

TIA/EIA-568-C.3 and ISO/IEC 11801
ISO/IEC 60793 & ISO/IEC 60794
ISO/IEC 61754
2002/95/EC (RoHS)
REACH SvHC

Technical information



Connector Performance

Connector Mating	IL Average Standard	IL MAX Standard	IL Average Premium	IL MAX Premium	Return Loss	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® (MM)	0.35 dB	0.60 dB	NA	MTP® (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*

Cable Performance

Fibre Type (ISO/IEC 11801)	OS1/OS2	OM1	OM2	OM3	OM4
Attenuation Coefficient [dB/km]	≤ 0.38 Max (1300nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)
	≤ 0.25 Max (1300nm)	≤ 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)

Technical Specification

Element	Characteristic
Fibre	OS1/OS2, OM1*, OM2*, OM3, OM4 (ISO/IEC 60793)
Cable	Loose Tube 2-144 cores (ISO/IEC 60794), OD MAX 24 cores 6.4 ± 0.3mm / OD MAX 144 cores 14.2 ± 0.3mm, Jacket material: LSZH, PE, OFNP* Jacket color: Black
Connectors	MTP® US Conec (IEC-61754-7 & EIA/TIA-604-5) Boot Colour: Black Body Sleeve Colour: MM (Beige), MM Elite (Aqua), SM (Green), SM Elite (Yellow) LC or SC (IEC 61754-20) Boot Colour: White Housing Color: Beige (MM), Blue (SM), Green (SM/APC)
Packaging	Length< 50m– Heavy Duty PE bag / Length> 50m– Drum
Operating Temperature	-10 ~ +60°C
Storage Temperature	-40 ~ +70°C

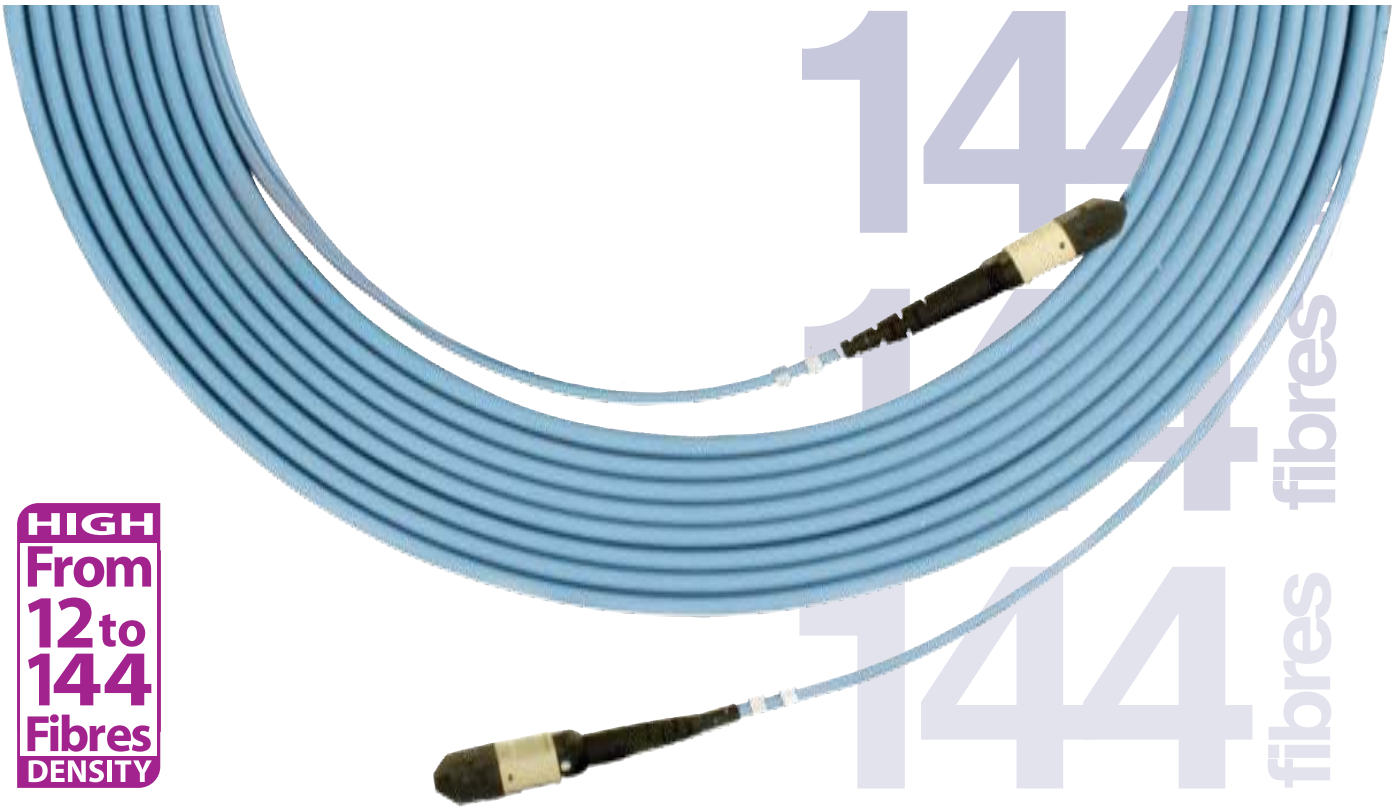
Product Configurator

FLP

Connector END A		Connector Class A	Tail A	Cable Type		Fibre Count	Jacket Type	Cable length	Connector END B		Connector Class B
LC	FC	Standard	900µm	OS1/2	09	12 to 144	LSZH	Mtrs	LC	FC	Standard
LC/ APC	FC/ APC	Premium/Elite	2/3mm	OM1	62		PE		LC/APC	FC/APC	Premium/Elite
SC	SC/ APC			OM2	50		OFNP		SC	SC/APC	
E2000	E2000/ APC			OM3	OM3				E2000	E2000/ APC	
ST	MTP® Male			OM4	OM4				ST	MTP® Male	
MTP® Female				G.657. A1	A1				MTP® Female		
				G.657. A2	A2						

Ultra High Density Pre-Terminated MTP® Trunk cables

144 fibres



HIGH DENSITY From 12 to 144 Fibres

Description

FibreFab MTP® 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 cassettes, panels or ruggedized MTP® fan-outs, spanning MDA, HDA and EDA zones.

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

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

Benefits

- MTP® Interface- MTP® US Conec brand components feature superior optical and mechanical properties.
- Optimised Performance- low loss MTP® 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 ruggedized Microcable ease space in costly data centre environments.
- Rapid Deployment- factory terminated modular system saves installation and reconfiguration time during moves, ads and changes.
- Reliability- 100% tested- combination of high quality components and FibreFab manufacturing quality control guarantees product to the highest standards.
- Next Generation Network Proof- emerging high speed protocol are going to use MTP® interface- your cabling infrastructure remains unchanged.

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

Features

- OS1/2, OM3, OM4 Fibre Grades (OM1 and OM2 available)
- 12, 24 and 48 Core Microcable Trunk
- LSZH, OFNP Cable Jacket
- Female (standard) and Male MTP® connectors
- Polarity A (standard), B or C
- Factory Terminated and Tested

Application

- Data Centre Infrastructure
- Storage Area Network- Fibre Channel
- Parallel Optics
- Infiniband
- Emerging 40 and 100Gbps Protocols

Standards Compliance

TIA/EIA-568-C.3 and ISO/IEC 11801
IEC-61754-7 & EIA/TIA-604-5
NFPA 262 (OFNP) or IEC 60332 (LSZH)
TIA/EIA 568-B.1-7
Compliant to Directive 2002/95/EC (RoHS) and REACH SvHC

Technical information

OM1 62.5/125 | OM2 50/125 | OM3 50/125 | OM4 50/125 | OS1|2 9/125 | OS1|2 G.657.A1 | OS1|2 G.657.A2

Connector Performance

Connector Mating	IL Average	IL Max	Return Loss
MTP® Elite (MM)	0.20 dB	0.35 dB	NA
MTP® (MM)	0.35 dB	0.60 dB	NA
MTP® Elite (SM)	0.18dB	0.25dB	>60dB
MTP® (SM)	0.25dB	0.75dB	>60dB

Cable Performance

Fibre Type (ISO/IEC 11801)	OS1/OS2	OM1	OM2	OM3	OM4
Attenuation Coefficient [dB/km]	≤ 0.38 Max (1300nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)	≤ 3.5 Max (850nm)
	≤ 0.25 Max (1300nm)	≤ 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)

Technical Specification

Element	Characteristic
Fibre	OS1/OS2, OM1*, OM2*, OM3, OM4 (ISO/IEC 60793)
Cable	Microcable- 12, 24, 48 cores (ISO/IEC 60794), Max OD 12 cores 4.5 ± 0.3mm / Max OD 24 cores 4.5 x 7.4 ± 0.3mm, Jacket material: LSZH (IEC 60332), OFNP (NFPA 262) Jacket colour: Violet (OM3), Aqua (OM3, OM4), Yellow (OS1/OS2), Orange (OM1, OM2)
Connectors	MTP® US Conec (IEC-61754-7 & EIA/TIA-604-5) Boot Colour: Black Body Sleeve Colour: MM (Beige), MM Elite (Aqua), SM (Green), SM Elite (Yellow)
Packaging	Length< 50m– PE bag / Length> 50m– Drum
Operating Temperature	-10 ~ +60°C
Storage Temperature	-40 ~ +70°C

Part Number Generator

Connector END A		Gender A		Connector END B		Gender B		Cable Type		Fibre count	Cable length (m)	Polarity	Colour		Jacket Type	
MTP® standard	MTP®	Female	F	MTP® standard	MTP®	Female	F	OS1/2	09	12		A	Aqua	AQ	LSZH standard	LS
MTP® Elite®	MTP®E	Male	M	MTP® Elite®	MTP®E	Male	M	OM1	62	24		B	Purple	PU	OFNP	PL
								OM2	50	48		C	Orange	OR		
								OM3	OM3							
								OM4	OM4							
								G.657.A1	A1							
								G.657.A2	A2							

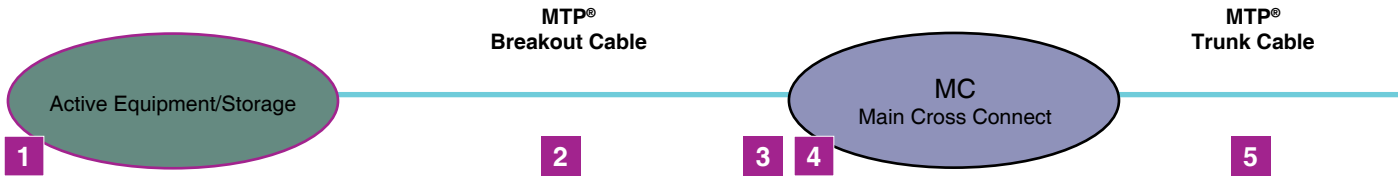
Example Part Number MTP F MTP F OM3 12 16 A AQ LS

MTPFMTPFOM31216AAQLS has created a 16 metre 12 Core MTP® female to MTP® female OM3 polarity method A, Jacket colour Aqua LSZH trunk assembly.

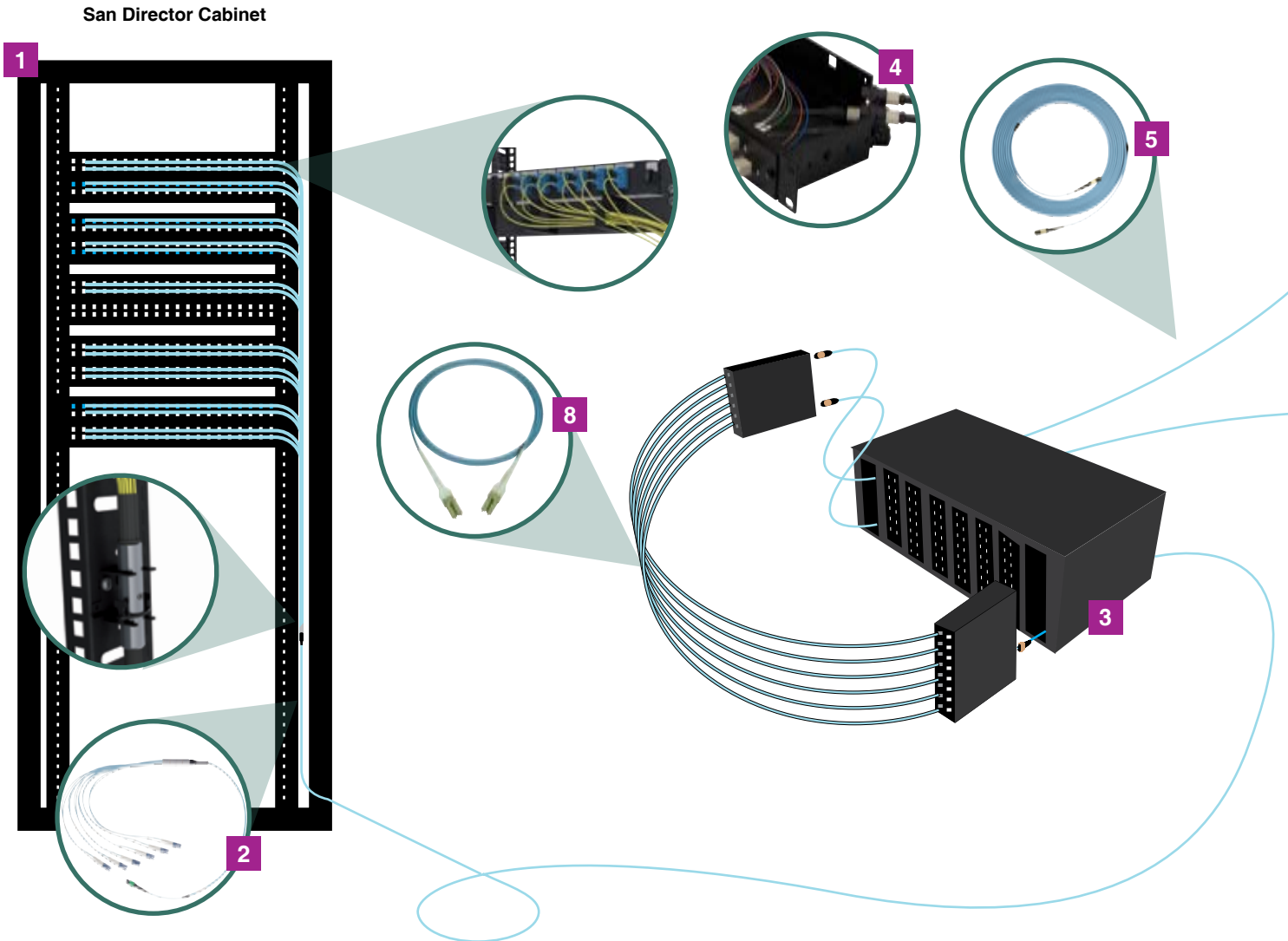
Multifibre Solutions

High Density Flexible Architecture Advanced Technology

The Data Centre Topology



Example Architecture



1 SAN Director Cabinet

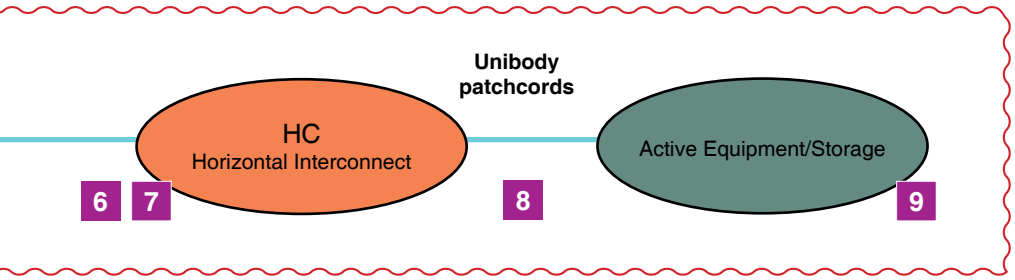
2 MTP® Breakout Cable

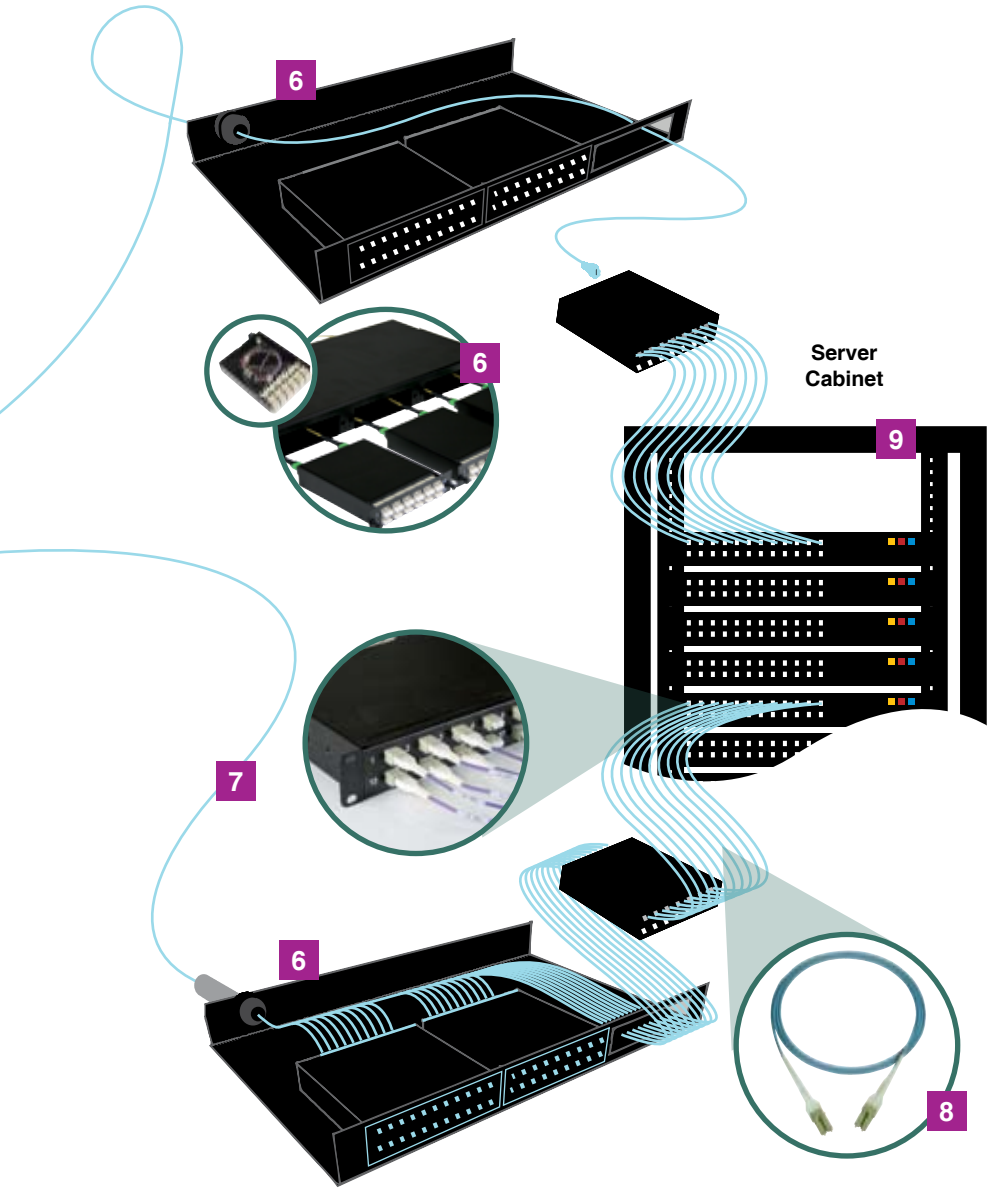
3 MTP® Modular Patch Panel

4 MTP® Slimline Patch Panel

The Problem

In the enterprise environment all data must be stored and archived by SAN. Data centre backbone products like SAN directors support hundreds of optical ports therefore single cabinets must host thousands of optical interconnections and patchcords. Storage area networks must feature high density and modularity for easy reconfiguration of cabling infrastructure. The Implementation of high bandwidth SAN protocols like 8 and 10Gb Fibre Channel (FC) products yields a reduced power budget.





5 MTP® Trunk Cable
6 Modular Patch Panel
7 MTP® Fan out Cable
8 Unibody Patchcord
9 Server Cabinet

The Solution

FibreFab next generation networks solution includes low loss connectors, OM4 fibre and collapsed network infrastructure products plus MTP® fan outs and trunks which can be directly connected to active equipment.

Low loss Elite® family components can reallocate power to cover losses of longer cabling infrastructure. The reduction of interconnection through direct connection to active equipment saves valuable power budgets thereby contributing to an efficient network operation.

Cassette modules

Cassette modules are typically used in lower fibre count break out applications such as server cabinets and can also be used to build up high fibre count interconnects.

Direct Harness / SAN Director Cabinet

The Director cabinet interconnects servers with storage. One Director can host as many high optical ports as 768 in a single rack. Ruggedised fan outs provide a connection between blade switch and MTP® interface located in director cabinet or in main cross connect point. The FirstLight Prime design allows up to 144 core ruggedised fan out trunks to be routed directly from main distribution point resulting in SAN Director cabinet patching and power budget improvement.

Main Distribution Area

The MDA must scale a huge number of optical interconnections providing demarcation between storage, servers and switching area. The MTP® modular patch panel can scale up to 1344 fibres in 3U dimension using the MTP® cassettes. The modular system enables infrastructures to be easily expanded or reconfigured. The FirstLight Prime MTP® backbone trunks (up to 144 cores) can be easily interconnected to up to 10,000s of optical ports between MDA, HDA or EDA.

Equipment Distribution Area

The EDA hosts patching management for active equipment or storage. 1U fixed or modular MTP® panels are the choice for lower density fibre infrastructures. The MTP® to LC cassettes modules can be typically used in lower fibre count applications like server cabinets.

Channel Link Performance

We know that every network is different. FibreFab tailor made systems guarantee best efficient and cost effective solutions.

High bandwidth protocols such as 8/10Gbps Fibre Channel (FC) and 10Gbps Ethernet require precise insertion loss budgets. When considering insertion loss budgets particular attention must be paid to the number of connections in the link.

FibreFab's in house technical expertise and software enable us to approach network design and performance with proven experience, to accommodate any network topology, protocols and quality of interconnection

FibreFab low loss connectors

The Elite® MTP® family of premium grade MM connectors with reduced insertion losses can reallocate power to cover longer cabling runs.

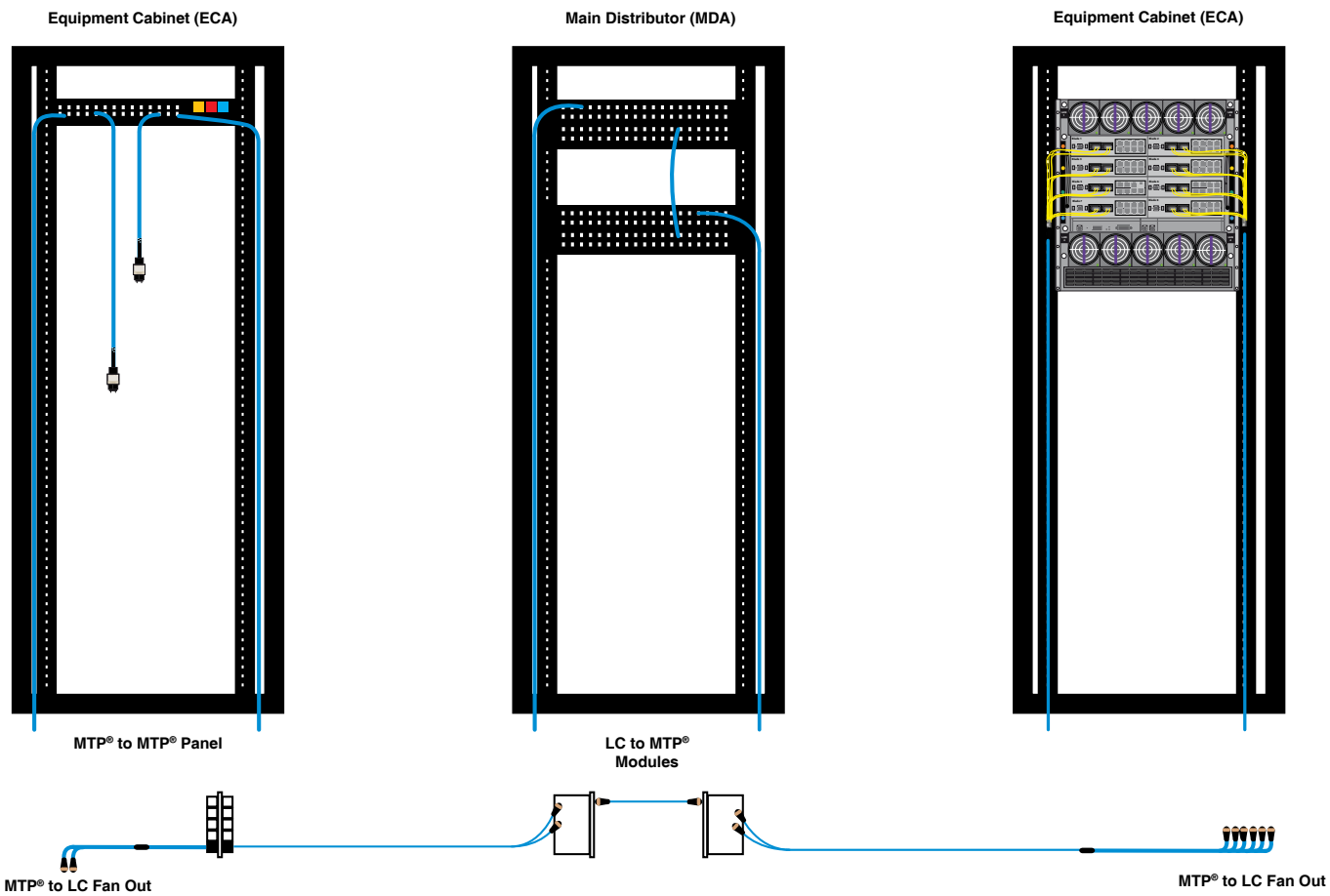
High Bandwidth Fibre - OM4

Using high bandwidth fibre, dispersion is lowered and it is possible to reduce the ISI penalty and reallocate power the resulting power loss.

Reduced Topology – MTP® to active equipment

The reduction of interconnections from direct connection to active equipment saves valuable power budgets which also contributes to an efficient network operation. The MTP® fan out assembly is ideal for use between active equipment like blade servers and HDA (Horizontal Distribution Area) reducing MTP® to LC cassette components.

"In a complex enterprise data centre environment the total number of interconnections can be high. The FibreFab low loss connectors and high bandwidth bre cable can enhance the overall network performance and ef ciency.



Polarity methods

Multi-fibre connectivity for duplex channels

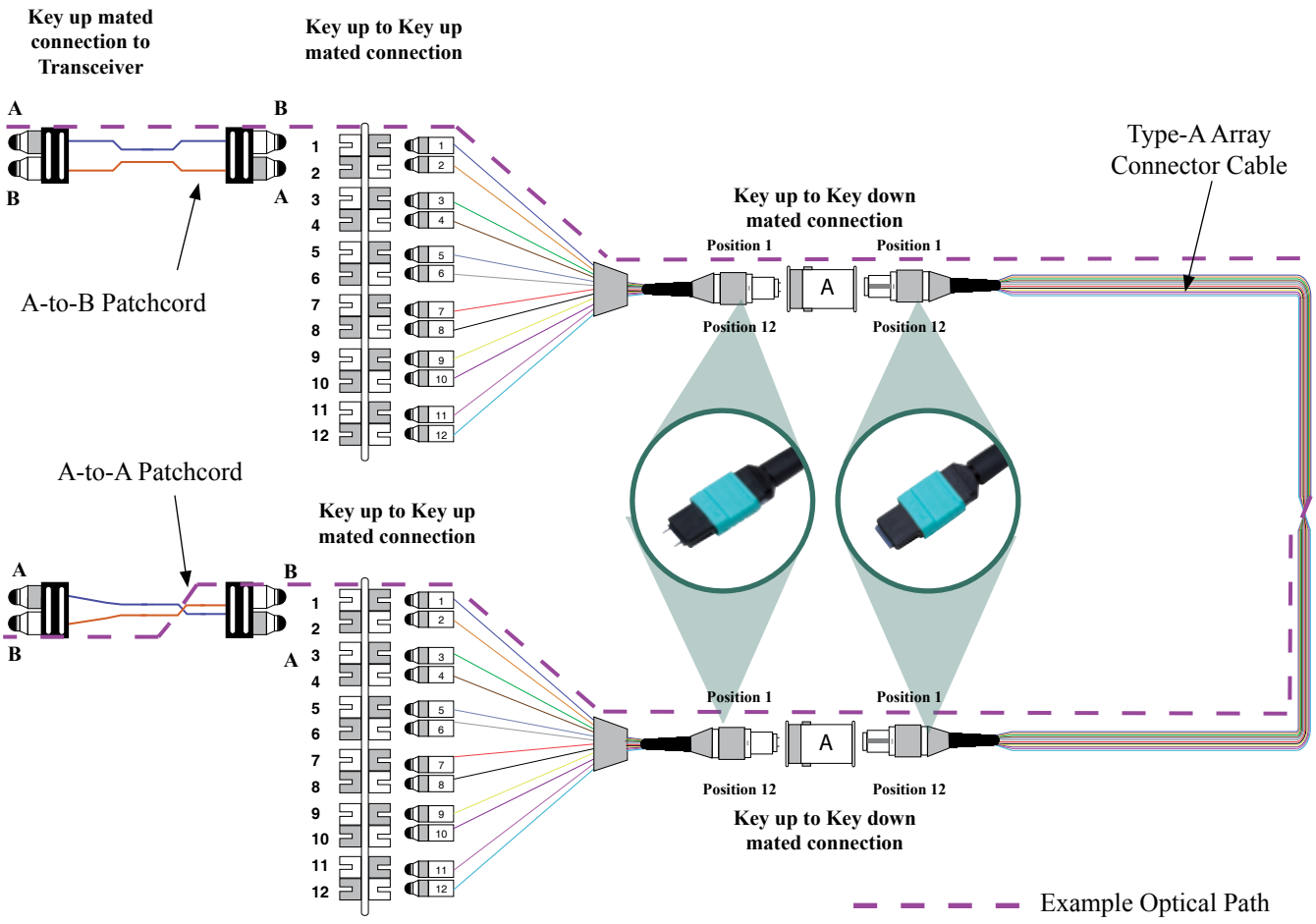
In order to successfully implement multi-fibre connectivity for duplex channels, it is important to maintain bi-directional transmission paths. The cabling must provide the correct signal polarity; the transmitter at one end must connect to the receiver at the other end. These methods of maintaining polarity have been standardised. See TIA/EIA 568-B.1-7 (guidelines for maintaining polarity using array connectors) for more detail. The guidelines cover typical system configurations containing the following:

- Multi-fibre trunks with 12 fibre MTP® connectors at either end
- Cassettes or modules where there is an MTP® to duplex connector transition
- Duplex patchcords used to connect the active equipment to the cabling system

All of the connectors and adaptors in this system are keyed to make sure the connectors mate with the correct orientation. Keying deals with MPO orientation but it does not ensure fibre pair polarity.

Optronics MTP® components are supplied to Method A as a standard. Method B and Method C components are also available. Please refer to the standards and select the correct polarity method to suit your network.

Illustration - Connectivity method A for duplex Channels



For ease of illustration the type -A cable is shown with a twist

FibreFab UK MTP® Manufacturing and R&D Facility

FibreFab UK manufacturing facility means fast service for standard and non standard products. In data centre environment every project is different. A UK manufacturing and R&D centre means that even customised and tailored made products can be efficiently configured.

24 Fibre MTP® connector

FibreFab is at forefront of cutting edge MTP® technology taking active part in introduction of 24 fibre MTP® connector. Emerging next generation network standards like Infiniband and 100Gbps Ethernet utilises parallel optics- 24 fibre MTP® is due to come into mainstream MTP® connector family. 24 Fibre MTP® will make backbone cabling to be even more space and cost efficient.

Multi-grade Connector Families –Elite and Premium

In high speed application power budget becomes challenging to control. FibreFab development effort is to provide ultra low loss MTP® and discreet assemblies for multi and singlemode operation. For most demanding applications, MTP® Elite and discreet Premium connector's families are the tight choice.

Channel Test Software Development

Putting together all components in contemporary networks can be demanding and challenging especially in low power budget environment. FibreFab facilitates the design and specification stage by development of channel performance analysis software. You can easily check the performance of your link and check probability of disruptions while creating layout of your network preventing any surprises and potential deployment delays.

FAQs

What is an MT ferrule?

MT stands for mechanical transfer. The MT ferrule is a multi-fibre ferrule in which fibre alignment is dependent on the eccentricity and pitch of the fibre and alignment pin holes. The alignment is dictated by the alignment pins during mating.
The critical elements for fibre alignment are:
1. The ability to hold extreme tolerances for precision during the moulding process
2. The shape, tolerances and material composition of the alignment pins

What is an MPO connector?

MPO is the industry acronym for "multi-fibre push on". The MPO-style connectors are most commonly defined by two different documents:

- IEC-61754-7 is the commonly cited standard for MPO connectors internationally
- EIA/TIA-604-5, also known as FOCIS 5, is the most common standard cited for in the US

What is a MTP® connector?

The MTP® connector is a high performance MPO connector with multiple engineered product enhancements to improve optical and mechanical performance when compared to generic MPO connectors. MTP® connectors and designed and manufactured by US Conec, a joint venture company of Corning, NTT and Furukawa. US Conec is recognised as a leader in the field of multi-fibre connectivity.

The MTP® connector is in compliance with all MPO connector standards including EIA/TIA-604-5 FOCIS 5 and IEC-61754-7. The MTP® connector is intermatable with all generic MPO-style connectors that are compliant to these industry standards. Generic MPO connectors are limited in performance and are not able to offer the high performance levels of the MTP® connector.

Is the MTP® connector an MPO connector?

Yes. The MTP® connector is a high performance MPO connector engineered for better mechanical and optical performance.

What makes the MTP® connector superior to generic MPO connectors?

The MTP® connector has features and benefits that are not available on generic MPO connectors. Some of the key distinctions include:

1. The MTP® connector housing is removable. This feature allows the customer to:
   - Re-work and re-polish the MT ferrule
   - Change the gender after assembly or even in the field
   - Scan the ferrule interferometrically after assembly
2. The MTP® connector offers ferrule float to improve mechanical performance. This allows two mated ferruled to maintain physical contact while under an applied load. (US Patent 6,085,003)
3. The MTP® connector uses tightly held tolerance stainless steel guide pin tips with an elliptical shape. The elliptical shaped guide pin tips improves guidance and reduces guide hole wear. (US Patent 6,886,988)
4. The MTP® connector has a metal pin clamp with features for centering the push spring. This feature:
   - Eliminates lost pins
   - Centres spring force
   - Eliminates fibre damage from spring
5. The MTP® connector spring design maximizes ribbon clearance for twelve fibre and multifibre ribbon applications to prevent fibre damage.
6. The MTP® connector is offered with four standard variations of strain relief boots to meet a wide array of applications.
   - Round, loose fibre cable constructions
   - Oval jacketed cable
   - Bare ribbon fibre
   - Short boot which reduces the footprint by 45%. Ideal for use in space limited applications.

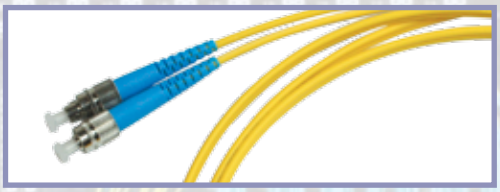
Traditional Infrastructure Products

Whilst fibreFab continues to champion new and innovative fibre optic network infrastructure solutions, we continue to offer unrivalled traditional fibre optic components, tooling and test equipment.

All of FibreFab's solutions comply with industry requirements by meeting or exceeding exacting quality control standards. Our outstanding research and development ethos provides innovative solutions, expected operation, and installation excellence. As leaders in optical fibre cabling systems, FibreFab listens to it's customers, allowing us to provide the most applicable solution for current and future applications in crucial data centre applications. FibreFab's vision provides it's customers with a smooth progression into future high speed, high density, data centre requirements. FibreFab's high density optical fibre solutions dovetail with our cable management solutions, and out test and measurement offerings, to provide a comprehensive data centre solution.

Optical Fibre Assemblies

Our Patchcords are a range of superior quality patchcords employing highest grade components, manufacturing processes and test methods that offer excellent performance for demanding tel-ecommunications and data centre applications. Our high performance Patchcords are used were low loss budgets are essential and may be considered for splice replacement.



Optical Fibre Cables

Our cable ranges provide a complete indoor and outdoor cabling solution, offering the connec-tivity benefits of Buffered, Loose tube and Aerial optical fibres for use in horizontal and vertical applications. If there is an fibre cable requirement we have the ideal product with the very latest high performance optical fibres."

Internal Management

We offer a wide range of Fibre Management products including high quality fixed and sliding patch panels (available with our innovative advanced cable management system) plus a range of lockable and tamper proof wall boxes.

External Management

A comprehensive range of wall boxes and enclosures designed to resist the constant battering of the elements. Water resistant to IP56 the wall boxes are unloaded ready for user installation of adaptors or can be supplied pre-loaded with all the major adaptor types or the pigtails of your choice.

Tools and Test Equipment

Our portfolio of test and measurement products offers all the instrumentation required for test-ing and trouble-shooting enterprise, campus and access networks with complete confidence, as well as all the tooling needed to strip, prepare and terminate optical fibre.

Cleaning and Consumables

We offer a complete range of high-quality, low-cost cleaning products that can ensure every component in a fibre optic network is free from dirt and contamination, helping to avoid unex-pected and costly downtime when increasingly higher data rates are driving decreasingly small loss budgets.

Telecoms Products

We offer its customers a comprehensive range of high quality, value adding, low cost products available for applications including Connectivity, Splitting/distribution, Management, Outside plant, FibreFab offers its customers a comprehensive range of high quality, value adding, low cost products available for applications including Connectivity, Splitting/distribution, Manage-ment, Outside plant, Core/Metro applications

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

Our Investment in Manufacturing

At all of our manufacturing facilities we have the advantage of both expertise and advanced technology. Our manufacturing processes are unique and controlled at every stage.

From our extensive stocks we are able to cut cable to any length and terminate, test and label every connection to suit your requirement.

Equipment

Domaille Engineering HDC-5100 Fibre Polishing Machine

The HDC-5100 is recognised as the industry's leading high-performance, polishing machine. Complemented by precision polishing plates holders designed for MT ferrules.

The result is high throughput, high-performance consistent MTP® polished ferrule end-faces.

Norland Advantage Multi-fibre Array Interferometer

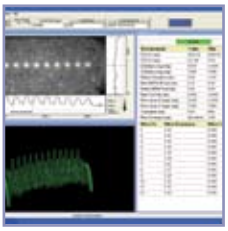
Norland's industry leading equipment provides verification of our MTP® polishing processes. The Interferometer guarantees that all parameters of the polished MT ferrule complies and exceeds the MTP®/MPO industry standards.

EXFO IQS-12001 Optical Test Set

The EXFO multi channel tester sets under wire our ability to provide high-performance optical cable assemblies and optical test data. The flexibility of the tester provides the complete spectrum of optical testing required for complex and high fibre count cable assemblies.

Images courtesy of the FibreFab UK Manufacturing Plant




Method

Quality Control

The FibreFab testing procedure applies to every stage of manufacturing processes. Not only manufactured assemblies are thoroughly tested but stringent testing procedure applies as well to qualifying and constant control of physical and optical parameters of components.

Simulation Tools

Specially developed software applications helps us to predict insertion loss distribution of our assemblies. We are constantly scrutinising how factors like fibre and ferrule specifications, polish process parameters, geometry or testing influence insertion loss distribution of our products.

Random Mating Testing

Master lead testing insertion loss does not refer to real life scenarios as each connector is mated in the field. Therefore for real insertion loss value random mating testing results are applied.

FibreFab™
Fibre Optic & Networking Products

Other catalogues available for download at
http://www.FibreFab.com/downloads.php

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