

# PRESTON<sup>®</sup>

*the fibre connectivity specialists*





## About Us

An ISO 9001 14001 45001  
Certified Company

Multiple suppliers often mean multiple quotations, a confusing assortment of order formats, doubled with a number of long-drawn meetings and myriad follow-ups. As a seasoned professional you've probably gone through all this, waiting for that one supplier to meet all the needs of your unique business situation. Your wait is over. . . .

After all we have spent over 25 years preparing for just this opportunity and we are ready when you are !!

Founded in 1980, Preston has been committed to provide quality solutions to the basic needs of the industry. Starting with the manufacture of PVC insulated copper wires & cables, we diversified in 1995 and Preston is now a leading manufacturer of Fibre Optic Cable Jumpers (Patchcords & Pigtails), Adapters, Attenuators, Patch Panels, Splitters etc.

Our products are currently being employed in a wide range of applications spanning Telecommunications, Energy & Automation, Data Centres, Enterprise Networking, WAN, LAN & SAN, Cable TV & IPTV, FTTx etc. We also manufacture for MNC's under private labelling contracts for their domestic and export business.

We are one of the largest manufacturers of optical fibre cable assemblies in India, with facilities to terminate a wide range of connectors on to different types of cables. All our cable assemblies are individually tested with a unique system of providing test results for each connector with complete supply chain traceability. Backed by committed professionals, we deliver in the most demanding of schedules for orders however small or large.

Time and again Preston has proved itself to be the trendsetter in the industry, which is why, we at Preston believe in raising the bar ourselves. We are our own competition and try and outperform ourselves so as to be exactly where we yearn to be – at the top! The Preston philosophy is quite simple – delivering quality products at competitive costs and strictly on schedule.

The quest to be at par, internationally, has seen Preston employing sophisticated state-of-the-art production & test equipments at its facility in Udyog Vihar, Gurgaon. Moreover, Preston also sources the best quality raw materials and continuously upgrades the knowledge and skill component of its workforce, all of which are critical components for manufacturing optic fibre cable jumpers synonymous with international benchmarks.

Inspired by the vision of a technocrat and determined to maintain the lead, Preston will continue to be on the cutting edge through its policy of performance and improvement-par-excellence.

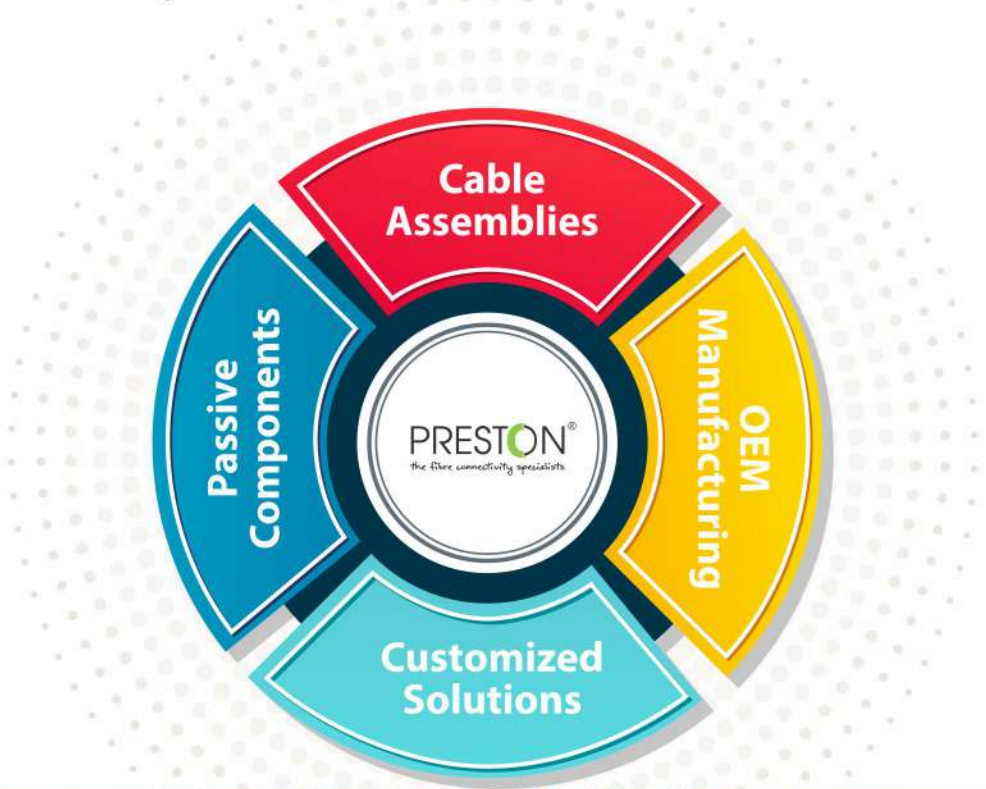
Preston is centrally located in Gurgaon, Haryana and is only a 15 minute drive from Indira Gandhi International Airport, New Delhi. We are a green initiative company spread over an area of 4000 square metres .





# The Right Solution for Every Requirement

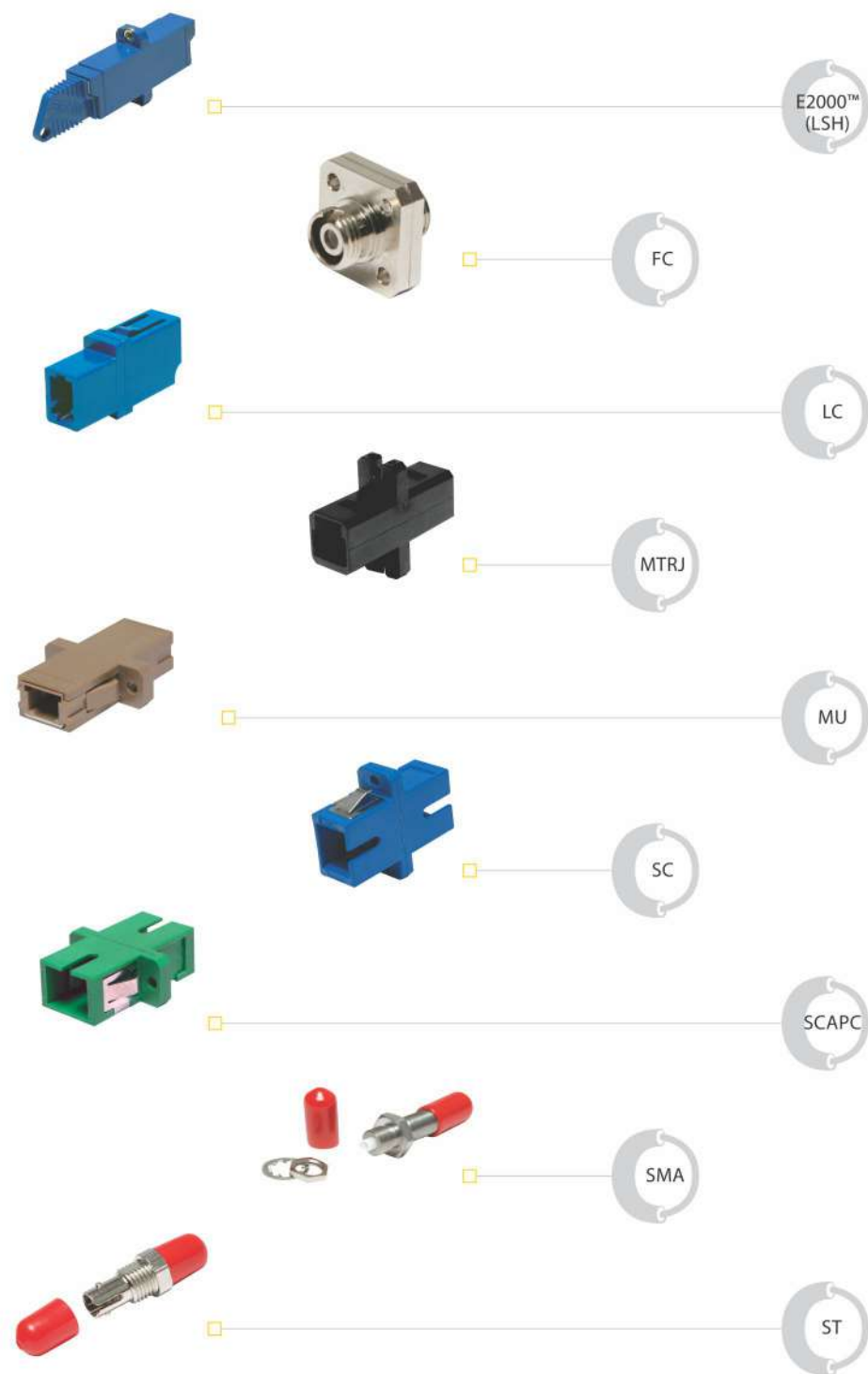
All products in our portfolio were developed to transfer data and signals safely and reliably. Our extensive catalogue covers a wide range of applications. Every application makes its own demands on the product, thus, it is sometimes necessary to adapt individual products or modules. Preston offers numerous products and solutions, both for connecting components and networking infrastructures.



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Preston's fibre optic adapters offer superior performance with very high repeatability and deliver long-term stability under a wide range of applications & conditions. Manufactured to demanding specifications, utilizing precision zirconia ceramic split sleeves to ensure consistent mechanical and optical performance. Our adapters are available in a wide range of styles to fit almost any application or panel requirement.



E-2000™ is registered trademark of Diamond SA, CH LOSONE

Performance Parameters

Mode Type	Singlemode / Multimode
Typical Insertion Loss	0.1 dB (1310 & 1550 nm) / 0.30 dB (850nm)
Sleeve Material	Zirconia Ceramic

Ordering Information

PE - AD - [ ] [ ] [ ] [ ] & [ ] [ ] [ ] [ ] [ ]

Mode Type	Adapter Type	Configuration
<b>M</b> Multimode	<b>E2A</b> E-2000™ (LSH)/APC	<b>LCA</b> LC/APC
<b>S</b> Singlemode	<b>E2P</b> E-2000™ (LSH)/PC	<b>LCP</b> LC/PC
	<b>FCA</b> FC/APC	<b>MTP</b> MT-RJ/PC
	<b>FCP</b> FC/PC	<b>MUP</b> MU/PC
		<b>SCA</b> SC/APC
		<b>SCP</b> SC/PC
		<b>SMA</b> SMA/PC
		<b>STP</b> ST/PC
		<b>S</b> Simplex
		<b>D</b> Duplex
		<b>Q</b> Quad



Preston's fibre optic attenuators employ technology that minimizes reflectance, attenuation tolerance, and PDL while maximizing reliability, environmental stability and power handling. There are no filters, air gaps or core mismatches. Designed to reduce the amplitude of a light signal without significantly changing the wave form itself and manufactured to precise industry specifications, our attenuators feature stable wavelength distribution making them perfect for DWDM or EDFA systems.



Performance Parameters

Operating Wavelength	1310/1550nm (dual wavelength)	
Attenuation Value	1-10dB	15, 20, 25 dB
Attenuation Accuracy (typical)	±1.0 dB	±1.5 dB
Back Reflection	PC	APC
	≥ -40dB	≥ -60dB

Ordering Information

PE - AT - SM - [ ] - [ ] - [ ] - [ ] - [ ]

Configuration

- F** Female to Female (Bulkhead) @ 1310nm
- M** Male to Female (Build-out) @ 1310/1550nm (Dual wavelength)

Note: Only FC attenuator is available in Female to Female

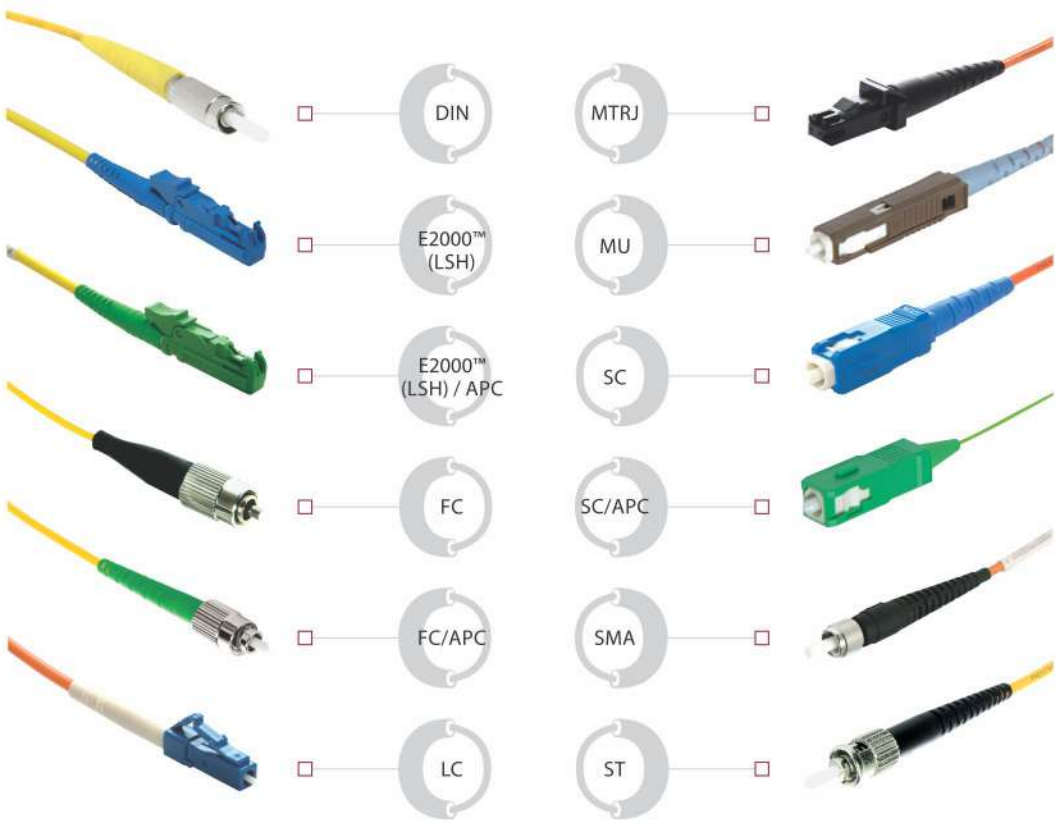
Attenuation Value

Please state attenuation value for e.g. **05** for 5 dB or **20** for 20 dB.  
Note: Attenuator available between 1-25 dB values

Attenuator Type

- |            |                   |            |        |
|------------|-------------------|------------|--------|
| <b>E2A</b> | E-2000™ (LSH)/APC | <b>LCP</b> | LC/PC  |
| <b>E2P</b> | E-2000™ (LSH)/PC  | <b>MUP</b> | MU/PC  |
| <b>FCA</b> | FC/APC            | <b>SCA</b> | SC/APC |
| <b>FCP</b> | FC/PC             | <b>SCP</b> | SC/PC  |
| <b>LCA</b> | LC/APC            | <b>STP</b> | ST/PC  |

The ferrule is the heart of the fibre optic connector. The better the tolerance and concentricity of the ferrule, the lower the insertion loss, which in turn results in a better quality of the optical signal transmission. Preston's extensive fibre optic connector product line is made with precision and high quality components to provide a reliable connection ensuring long-term mechanical and optical performance.



Performance Parameters

Mode Type	Singlemode (@1310 & 1550nm)	Multimode (@850nm)
Typical Insertion Loss	0.15 dB	0.30 dB
Typical Return Loss PC/APC	-50 dB / -65dB	-

Ordering Information

PE - CN - [ ] - [ ] - [ ] - [ ]

Mode Type

- M** Multimode 127 microns dia
- S** Singlemode 125 microns dia

Connector Type

- |            |                   |            |          |            |        |
|------------|-------------------|------------|----------|------------|--------|
| <b>DIN</b> | DIN/PC            | <b>LCA</b> | LC/APC   | <b>SCA</b> | SC/APC |
| <b>E2A</b> | E-2000™ (LSH)/APC | <b>LCP</b> | LC/PC    | <b>SCP</b> | SC/PC  |
| <b>E2P</b> | E-2000™ (LSH)/PC  | <b>MTR</b> | MT-RJ/PC | <b>SMA</b> | SMA/PC |
| <b>FCA</b> | FC/APC            | <b>MUP</b> | MU/PC    | <b>STP</b> | ST/PC  |
| <b>FCP</b> | FC/PC             |            |          |            |        |



# Patchcords & Pigtails



Preston Fibre Optic Patchcords & Pigtails are available in Singlemode G652D, G657A1/2 or Multimode OM1 – OM5 fibre types to meet the demands of gigabit ethernet, 10 gigabit ethernet and high speed fibre channel. Factory terminated connectors are designed to meet stringent mechanical and environmental specifications for most interconnect applications.

Automatic process of component preparation as well as connector polishing influences the final product parameters. Preston patchcords are manufactured and tested against a stringent quality and measurement verification process that is based on:

- 100% visual inspection of connectors through a 400x microscope
- 100% attenuation measurement of Insertion Loss (IL) and Return Loss (RL)
- Batch testing of geometrical parameters of connectors through an Interferometer
- Other physical, environmental, routine and type tests against a documented QA regimen

### Applications:

Provides interconnect and cross-connect of applications in entrance facilities, data centres, telecommunication rooms, at the desk, main, horizontal and equipment distribution areas.

### Multimode Patchcords



### Singlemode Patchcords



Features	Physical & Environmental Properties	Standards
Available in simplex, duplex & pigtail configuration Wide variety of connector options Advanced polishing and assembly techniques Insertion Loss and Return Loss tested to industry-leading standards	Repeatability (SM & MM): <0.10db Durability: 500 Matings Storage temperature: -25°C to 70°C Operating temperature: -20°C to 70°C	Meets or exceeds ISO/IEC 11801, TIA/EIA-568, IEC-61754 & Telcordia GR-326 EU CPR rated available upon request

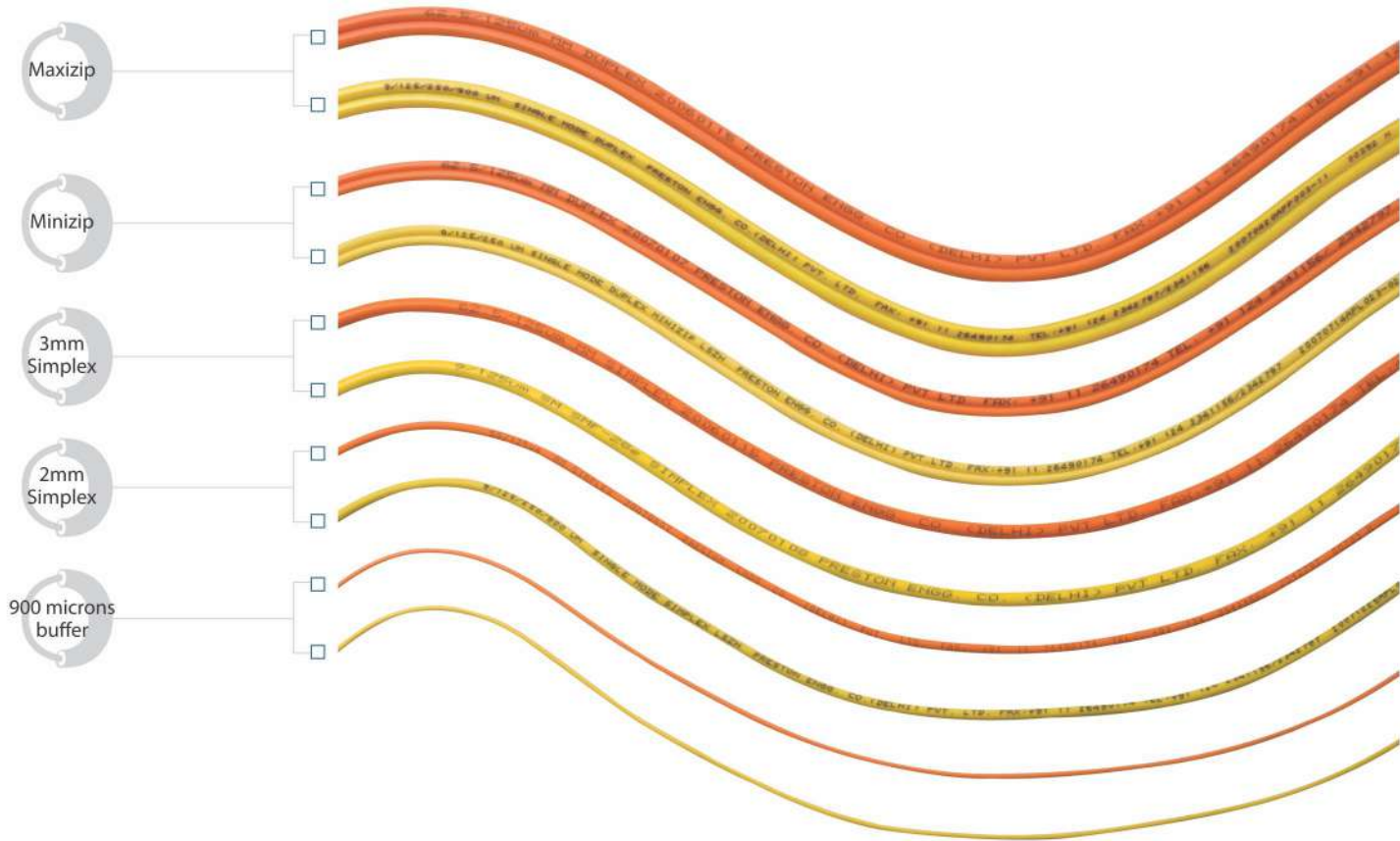
### Optical Properties

<b>Insertion Loss:</b> SM (1310 & 1550nm) <0.30db (Max) <0.20db (Typical) <0.12db (Ultra IL*)	MM (850 & 1300nm) <0.30db (Max) <0.25db (Typical) <0.15db (Ultra IL*)
<b>Return Loss:</b> SM (1310 & 1550nm) >50db (Min) >55db (Typical) >65db (APC)	MM (850 & 1300nm) >20db (Min) >25db (Typical)

- Singlemode
- Multimode OM1 OM2
- Aqua OM3
- Violet OM4
- Lime Green OM5

\*Ultra IL available upon request





Ordering Information

**PE - J -**   -    -  -   -  -    &    -

**Configuration**

**PC** Patchcord

**PT** Pigtail

**Fibre Type** ☐

**OM1** Multimode 62.5/125 microns

**OM2** Multimode 50/125 microns

**OM3** Multimode 50/125 microns

**OM4** Multimode 50/125 microns

**OM5** Multimode 50/125 microns (Laser Optimized)

**SMG** Singlemode 9/125 microns G.652 D

**SM1** Singlemode 9/125 microns G.657 A1

**SM2** Singlemode 9/125 microns G.657 A2

**OTH** Please specify if any other

**Cable Diameter**

**09** 0.9 mm dia Buffer (Tight coated fibre)

**12** 1.2 mm dia Jacket

**16** 1.6 mm dia Jacket

**20** 2.0 mm dia Jacket

**30** 3.0 mm dia Jacket

**Cable Sheath Material**

**L** LSZH (low smoke zero halogen)

**P** Flame Retardant PVC

**O** Please specify if any other

**Connector Type** (for both ends)

**E2A** E-2000™ (LSH)/APC

**E2P** E-2000™ (LSH)/PC

**FCA** FC/APC

**FCP** FC/PC

**LCA** LC/APC

**LCP** LC/PC

**MTR** MT-RJ/PC

**MUP** MU/PC

**SCA** SC/APC

**SCP** SC/PC

**SMA** SMA/PC

**STP** ST/PC

**Cable Length** (Please specify in metres, for e.g.)

**001** for 1 metre

**010** for 10 metres

**100** for 100 metres

**X05** for 0.5 metre

**X95** for 9.5 metres

**Cable Type** ☐

**D** Duplex

**S** Simplex

Note: Leave last 3 boxes empty in case of pigtail

Bandwidth Chart : OM1, OM2, OM3, OM4, OM5 and OS1a, OS2 fibre

Minimum Modal Bandwidth MHz-km		Overfilled* launch bandwidth		Effective* laser launch bandwidth
Wavelength				
Fibre Type	Core diameter	850 nm	1300 nm	850 nm
OM1	62.5 µm	200	500	Not specified
OM2	50 µm	500	500	Not specified
OM3	50 µm	1,500	500	2,000
OM4	50 µm	3,500	500	4,700
OM5	50 µm	3,500	500	4,700

\*Overfilled is with an LED source, effective is with a VCSEL. Loss length testing to ISO/IEC or TIA must be done with an LED compliant with an encircled flux launch.

What it really means to you

	1000BASE-SX	10GBASE-SR	40GBASE-SR4	100GBASE-SR4
OM1	275 m	33 m	Not specified	Not specified
OM2	550 m	82 m	Not specified	Not specified
OM3	550 m	300 m	100 m	70 m
OM4	550 m	400 m*	150 m	100 m
OM5	550 m	400 m*	150 m	100 m

\* The IEEE in conjunction with the TIA is supporting 10GBASE-SR to 400 m over OM4.

**Cautionary note:** In ANSI/TIA-568-B.3, the modal bandwidth of 62.5 µm fibre was 160 MHz-km, not the 200 MHz-km found in the current ANSI/TIA-568.3-D. This change was done to harmonize with ISO/IEC 11801-1. That would reduce the distance for 1000BASE-SX to 220 m and 10GBASE-SR to 26 m.

A loss limit associated with these distances:

	1000BASE-SX	10GBASE-SR	40GBASE-SR4	100GBASE-SR4
OM1	2.60 dB	2.4 dB	Not supported	Not supported
OM2	3.56 dB	2.3 dB	Not supported	Not supported
OM3	3.56 dB	2.6 dB	1.9 dB	1.9 dB
OM4	Not specified	2.9 dB	1.5 dB	1.5 dB
OM5	Not specified	2.9 dB	1.5 dB	1.5 dB

In your design, you have to take into account BOTH distance and loss to ensure your application will work. OM4 fibre needs a reduced fibre loss in order to support 100GBASE-SR4 to 100 m.

	850 nm	1300 nm	1310 nm	1550 nm
OM1 / OM2	3.5 dB/km	1.5 dB/km		
OM3 / OM4 / OM5	3.0 dB/km	1.5 dB/km		
OS1a / OS2 ISP			1.0 dB/km	1.0 dB/km
OS1a OSP / OS2 OSP			0.5 dB/km	0.5 dB/km

ISP = Inside plant, OSP = Outside plant (Applicable to TIA only)  
While OM5 has similar performance values to OM4 for Insertion Loss and Distances supported, it has a special characteristic that differentiates it. OM5 fibre is designed to be used at wavelengths beyond 850 nm, specifically, 880 nm, 910 nm, and 940 nm. This means that it can support four simultaneous transmissions with Wave Division Multiplexing and is the first approved WBMMF (Wide Band Multimode Fibre). This multiplexing design allows OM5 to dramatically reduce parallel fibre counts. Operating in the 850 to 950 nm range, OM5 can provide 100 GB data streams with just one pair of parallel fibres.



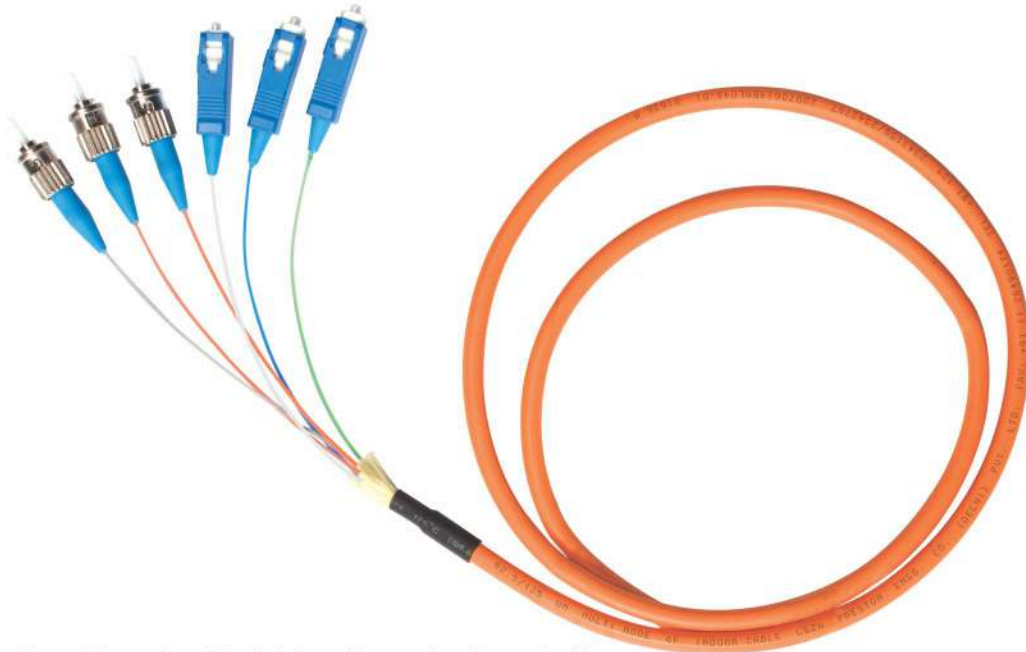


Ribbon Systems



A **Ribbon Fan-Out** cable comes in 4, 6, 8 & 12 fibre variants. It is a space saving feature which allows the usage of the application with a single cable.

Distribution



A **Distribution cable** consists of dry/lubricated loose tubes that can hold anywhere between 4 - 96 fibres of 900 microns diameter. The outer jacket comes in LSZH (low smoke zero halogen) or FR-PVC.

Breakout



A **Breakout cable** consists of 2mm diameter simplex cables between 2-24 fibres with a strength member in the centre. The simplex cables are sheathed with an outer jacket in either LSZH (low smoke zero halogen) or FR-PVC (flame retardant PVC).

Ordering Information

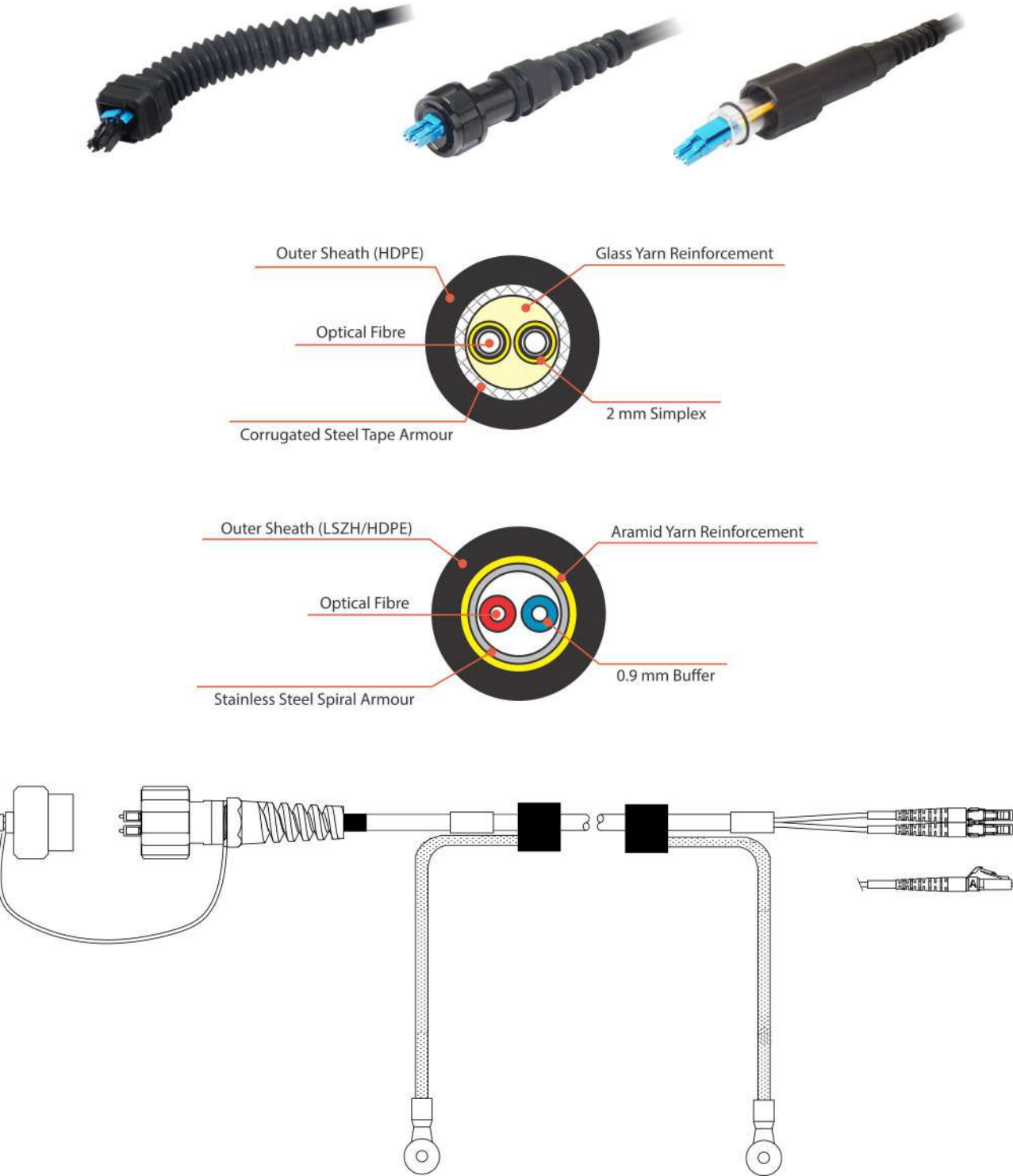
PE - MF -  -  -  -  -  &  -

Cable Type	Fibre Count	Connector Type	Cable Length
<b>BK</b> Breakout	For Breakout/distribution/ ribbon cables state, for e.g.	(for both ends)	(Including fan out length) Please specify in metres, for e.g.
<b>DB</b> Distribution	<b>04</b> for 4 fibre	<b>E2A</b> E-2000™ (LSH)/APC	<b>001</b> for 1 metre
<b>RS</b> Ribbon System	<b>06</b> for 6 fibre	<b>E2P</b> E-2000™ (LSH)/PC	<b>010</b> for 10 metres
	<b>12</b> for 12 fibre	<b>FCA</b> FC/APC	<b>100</b> for 100 metres
	<b>24</b> for 24 fibre	<b>FCP</b> FC/PC	<b>X05</b> for 0.5 metre
	<b>48</b> for 48 fibre	<b>LCA</b> LC/APC	<b>X95</b> for 9.5 metres
	<b>96</b> for 96 fibre	<b>LCP</b> LC/PC	
		<b>MTR</b> MT-RJ/PC	Note: Please state fan-out length for each end separately
		<b>MUP</b> MU/PC	
		<b>SCA</b> SC/APC	
		<b>SCP</b> SC/PC	
		<b>SMA</b> SMA/PC	
		<b>STP</b> ST/PC	
			Note: Leave last 3 boxes empty in case of pigtail



# FTTA Assemblies

With ever-increasing bandwidth requirements and the evolution and deployment of 4G and 5G networks Fibre-to-the-antenna (FTTA) is an obvious choice over the traditional coaxial-based systems for communication from the base station to the remote radio head (RRH). Telecom service providers and equipment manufacturers are widely using FTTA assemblies taking fibre to the cell towers to minimise footprint, reduce energy consumption and building future-proof networks. Preston's FTTA assemblies are available with various rugged connector and outdoor cable designs that are designed to withstand the elements.



Features	Applications
Robust outdoor fibre optic solution	Fibre-To-The-Antenna (FTTA)
Compatible with various RRH equipment	Common Public Radio Interface (CPRI)
Salt, Mist and Dust-proof and IP67 designs	Next generation WIMAX and Long Term Evolution (LTE) Base Stations
High shock, vibration, tensile and mechanical resistance	Fibre optic link between Remote Radio Unit to Base Band Unit (RRU - BBU)
Rodent resistant and monkey bite protected on request	Industrial, outdoor and harsh environment applications
All cable assemblies are factory terminated and tested	Aerospace & Defence

The diagram illustrates the FTTA system architecture. It shows a tower with an Antenna at the top, connected to a Remote Radio Head (RRH). The RRH is connected to a Remote Radio Cable Assembly, which runs down the tower. At the base of the tower, the cable connects to a Base Transceiver Station (BTS). A MultiPort Fibre Terminal is also shown, connected to the cable. A Vertical Fibre Cable runs from the BTS to the RRH. The diagram also shows a Passive Antenna connected to the RRH. A Fibre Optic Cable runs from the RRH to the Base Transceiver Station. The diagram is labeled with FTTA and FxDS Panel.

The network block diagram shows the following components in sequence: Network -> FxDS Panel -> Base Band Unit (BBU) -> CPRI Test Panel -> Tower Access Panel. The Tower Access Panel is connected to the tower structure.

Apart from the assemblies and connectors depicted here, we also provide custom assemblies and solutions. Please contact us for your custom requirements.



## MTP/MPO Assemblies

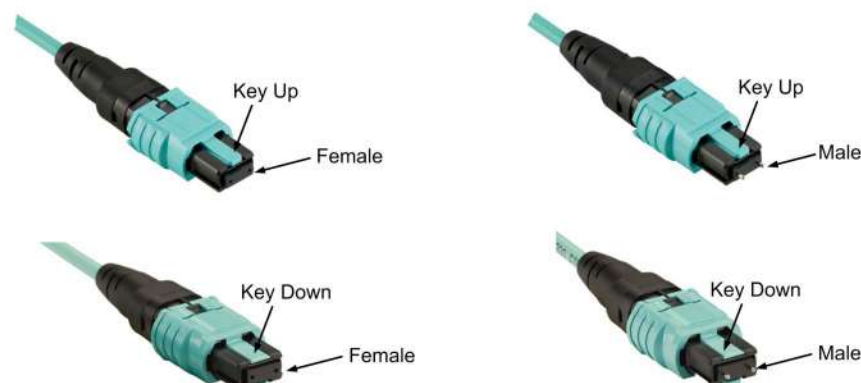
Preston's MPO fibre optic cable assemblies are available in Singlemode or Multimode OM3, OM4, OM5 fibre types and are custom made to order with fast delivery for any 10G or 40G/100G-ready system installation. Quality, performance and reliable delivery define Preston's reputation for supplying pre-terminated cabling infrastructure.

Automatic process of component preparation as well as connector polishing influences the final product parameters. Preston patchcords are manufactured and tested against a stringent quality and measurement verification process that is based on:

100% visual inspection of connectors through a 400x microscope	100% attenuation measurement of Insertion Loss (IL) and Return Loss (RL)	Batch testing of geometrical parameters of connectors through an Interferometer	Other physical, environmental, routine and type tests against a documented QA regimen
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**Applications:**

Provide interconnect and cross-connect for trunk backbone to rack, high density architectures, enterprise storage area networking, parallel optics, inifiband and to interconnect pre terminated cassettes in main distribution, horizontal distribution, and equipment distribution areas.



Features	Physical & Environmental Properties	Standards
<p>Available in wide range of breakout styles and fibre options</p> <p>Available in 8, 12, 16 &amp; 24 Fibres</p> <p>Advanced polishing and assembly techniques</p> <p>Insertion Loss and Return Loss tested to industry-leading standards</p>	<p>Repeatability (SM &amp; MM): &lt;0.20dB</p> <p>Durability: 500 Matings Cycles</p> <p>Storage temperature: -25°C to 70°C</p> <p>Operating temperature: -20°C to 70°C</p>	<p>Meets or exceeds TIA/EIA 604-5 and IEC 61754-7 industry standards</p> <p>Restriction of Hazardous Substances (RoHS) Compliant</p> <p>Cable Jacket Rating: Low Smoke Zero Halogen (LSZH) as per IEC 60332</p> <p>EU CPR rated available upon request</p>

### Optical properties

<b>Insertion Loss:</b>	
SM (1310 & 1550nm)	MM (850nm)
<0.60db	<0.60db
<0.25db (Elite*)	<0.25db (Elite*)
<b>Return Loss:</b>	
SM (1310 & 1550nm)	MM (850nm)
>50db	>25db
>60db (Elite*)	>30db (Elite*)

\*Elite available upon request

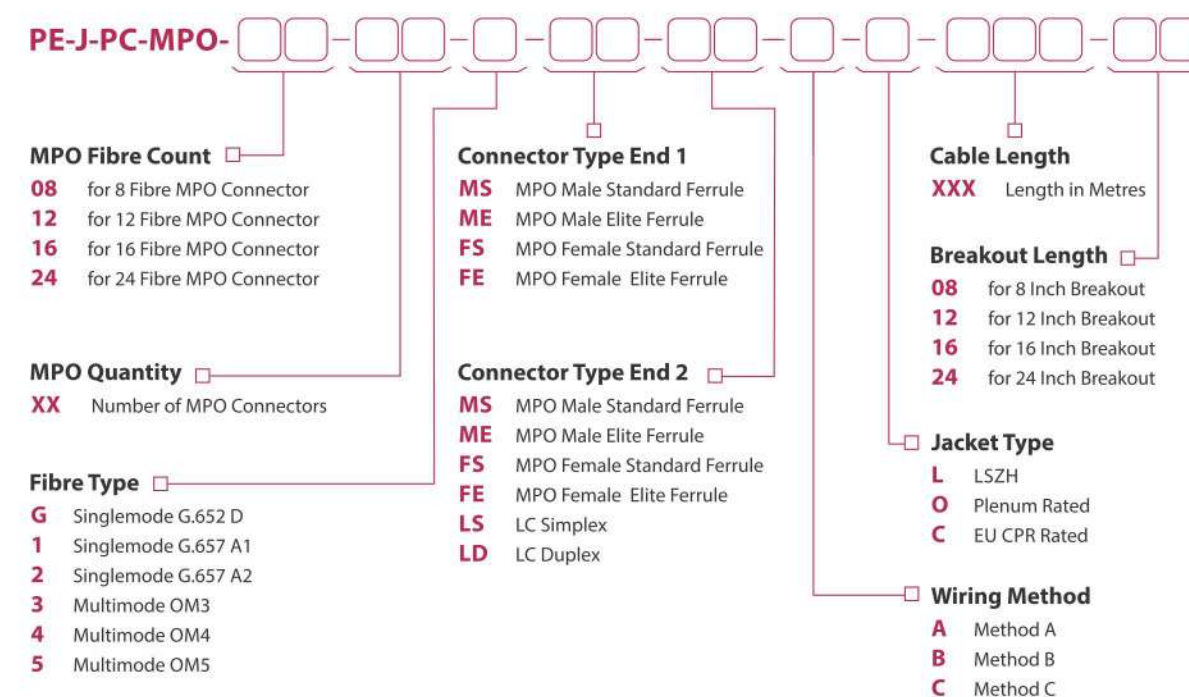
Singlemode

 Aqua OM3

 Violet  
OM4

 Lime Green  
OM5

## Ordering Information









Today's networking environment is increasingly dependent on high density solutions making effective cable management a challenge and the key concern being how to manage more cables in a smaller amount of space. Preston's Uniboot Patch Cords reduces cable management space by up to 50% compared to standard patch cords by utilizing a "round duplex" cable that allows duplex transmission within a single cable.

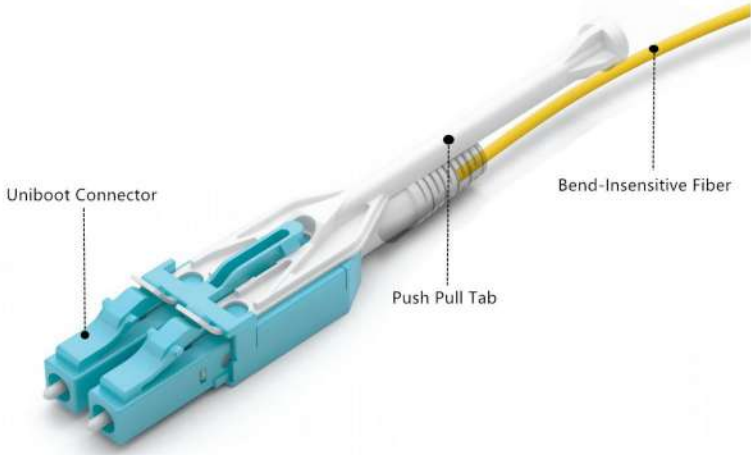
Features	Physical & Environmental Properties	Standards
Uniboot with single housing Available in Singlemode & Multimode Advanced polishing and assembly techniques Insertion Loss and Return Loss tested to industry-leading standards	Repeatability (SM & MM): <0.10dB Durability: 500 Matings Storage temperature: -25°C to 70°C Operating temperature: -20°C to 70°C	Meets or exceeds ISO/IEC 11801, TIA/EIA-568, IEC-61754 & Telcordia GR-326 Restriction of Hazardous Substances (RoHS) Compliant Cable Jacket Rating: Low Smoke Zero Halogen (LSZH) per: IEC 60332 EU CPR rated available upon request

Optical properties

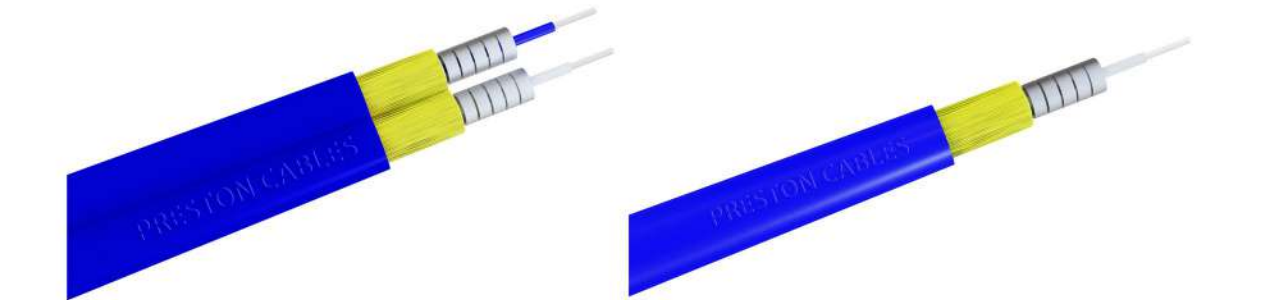
<b>Insertion Loss:</b> SM (1310 & 1550nm) <0.30db (Max) <0.25db (Typical) <0.15db (Ultra IL*)	MM (850nm) <0.30db (Max) <0.25db (Typical) <0.15db (Ultra IL*)
<b>Return Loss:</b> SM (1310 & 1550nm) >50db (Min) >55db (Typical) >65db (APC)	MM (850nm) >20db (Min) >25db (Typical)

\*Ultra IL available upon request

Singlemode	Multimode OM1 OM2	Aqua OM3
Violet OM4	Lime Green OM5	



Preston's flexible armoured fibre optic patchcords are used in customer premises, central offices and in indoor harsh environments enabling flexible interconnection to active equipment, passive optical devices and cross-connects. Our armoured patchcords feature a spiral stainless steel tube wrapped around the buffered fibre(s) surrounded by a layer of aramid yarn with an outer jacket. Excellent mechanical strength makes them ideal for intrabuilding applications that require long-term, reliable protection. Our flexible armoured patchcords are moisture, crush and rodent-resistant while maintaining the flexibility found in standard unarmoured patchcords.



Features	Physical & Environmental Properties	Applications
Low Insertion Loss / high Return Loss Available in 2 mm & 3 mm simplex/duplex Easy installation Good mechanical properties	Repeatability (SM & MM): <0.20dB Durability: 500 Matings Storage temperature: -25°C to 70°C Operating temperature: -20°C to 70°C	Telecommunications Local area network Fibre to the home Data centres

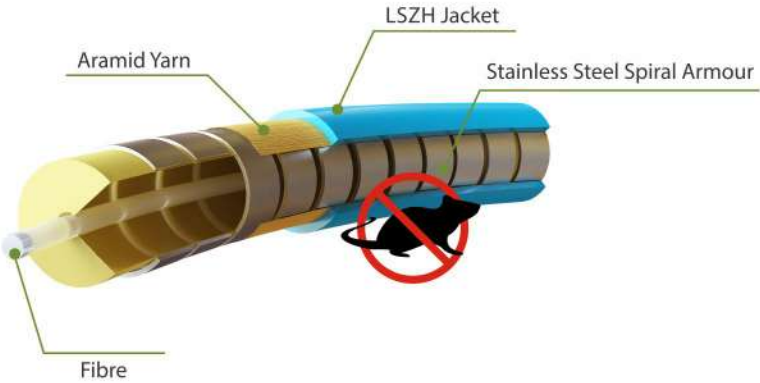
Optical properties

<b>Insertion Loss:</b> SM (1310 & 1550nm) <0.30db (Max) <0.20db (Typical) <0.12db (Ultra IL*)	MM (850 & 1300nm) <0.30db (Max) <0.25db (Typical) <0.15db (Ultra IL*)
<b>Return Loss:</b> SM (1310 & 1550nm) >50db (Min) >55db (Typical) >65db (APC)	MM (850 & 1300nm) >20db (Min) >25db (Typical)

\*Ultra IL available upon request

Singlemode	Multimode OM1 OM2	Aqua OM3
Violet OM4	Lime Green OM5	

- ✓ Cost effective
- ✓ Flexible & lightweight
- ✓ Safe & secure
- ✓ Rodent resistant





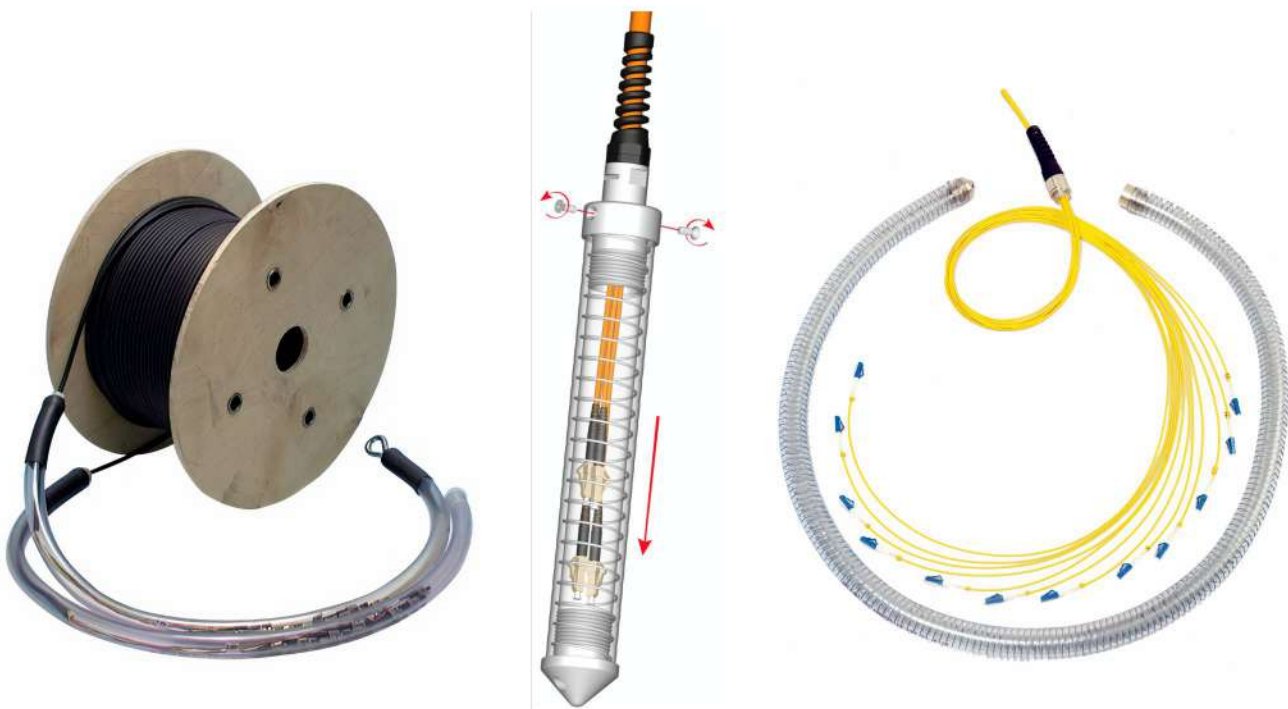


Preston's pre-terminated assemblies are designed to make life simpler and save precious time and resources. As the name itself suggests, our pre-terminated assemblies are fitted with connectors on one or both ends of the cable and can be ordered in either indoor (unarmoured) or outdoor (armoured) cable designs. These are also available in various fibre counts starting from 2-24 pre-terminated fibres in Singlemode or Multimode.

Our pre-terminated assemblies are also supplied with protective tubes for superior crush resistance and mechanical strength and to safeguard the connectors from any damage. The protective tube is fitted with a cable-pulling eye, which means that the pre-terminated cable can be directly pulled through ducts without causing any damage to the delicate fibres or connectors inside. These can be then taken directly from one patch panel / FMS / LIU to another reducing installation time.

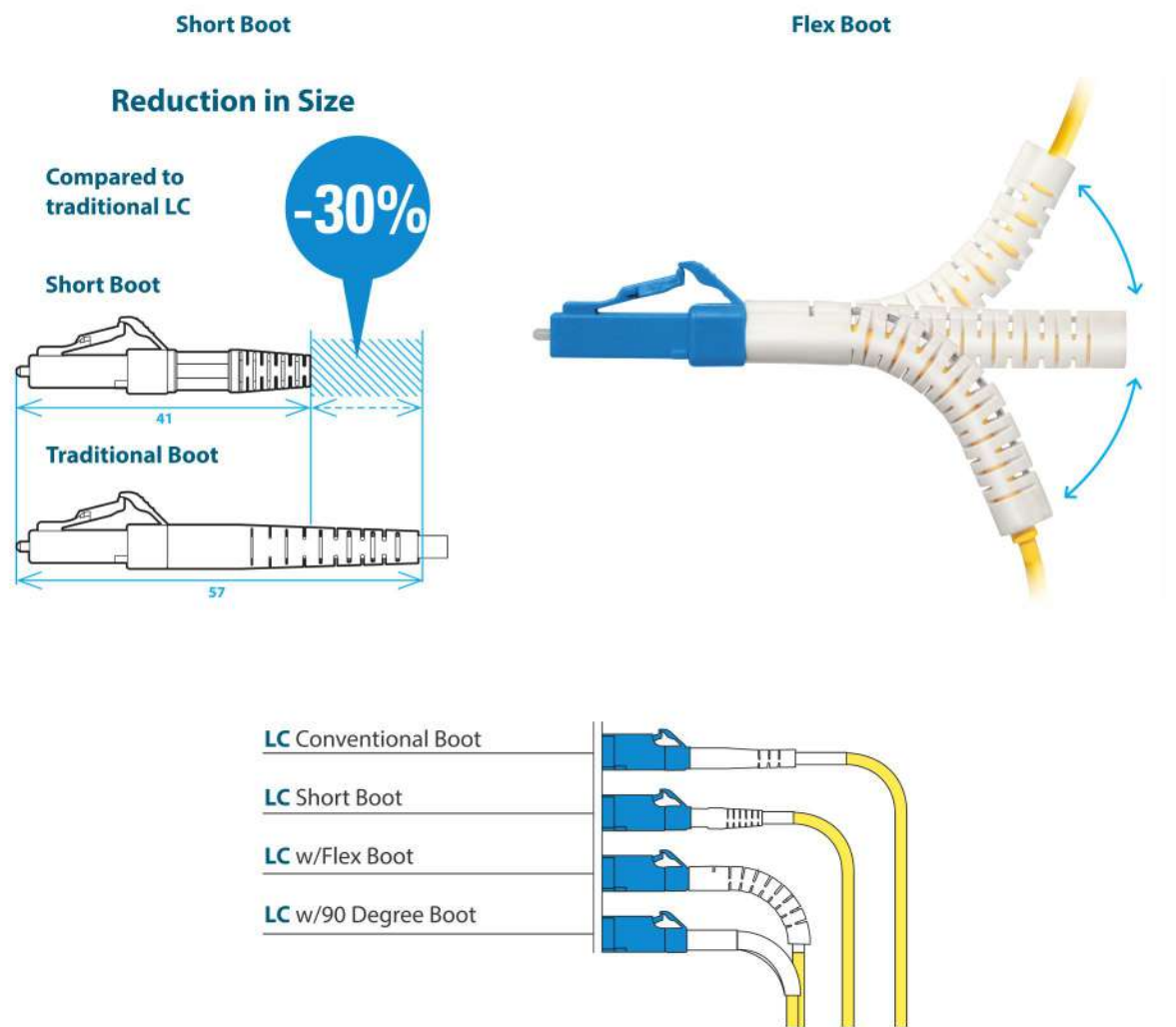
Preston's pre-terminated assemblies are an excellent choice for direct site installations and aid in avoiding expensive and time consuming splicing. Most importantly, these assemblies are factory tested and highly reliable.

Features	Applications
Ready to install & use	Indoor or Outdoor
Time saving installation and bypass splicing completely	Singlemode or Multimode
Crush resistant pulling tube and various cable types available	Inter building links through ducts
Lower cost than splicing on-site	Direct installation to FMS / LIU without splicing
Direct installation through ducts	



Today's networking environment is increasingly dependent on high density solutions making effective cable management a challenge and the key concern being how to manage more cable in a lesser amount of space. Preston's Short & Flex boots solve the congestion problem when hundreds of fibres terminate in a patch panel. Our short boots reduce overall connector length by 30% while maintaining superior cable support and bend radius as compared to the standard boot design. Our flex boots enable installers and technicians to bend the boot at any angle desired after connector insertion for proper cable management.

Features	Applications
Flexible in any direction	Passive optical networks (PON)
Reduces fibre congestion	FTTx
Reduction of overall length	Data centres
Controls force & bend radius	LAN & WAN
RoHS compliant	High density applications





Patch Panels



Rack Mount

Preston's Fibre Optic Patch Panels provide interconnect / cross-connect capabilities between the outside plant, riser, or distribution cables which are spliced with cables from the equipment end. Our patch panels house, organise, manage and protect fibre optic cable, terminations, splices, connectors and patchcords, while ensuring integral cable management and optimal bend radius control. We offer a wide range of patch panels to meet most applications such as Rack Mount, Lockable Wall Mount, Mini Wall Mount, DIN Rail Mount and custom systems. All our patch panels are fully powder coated in a durable CRCA construction.



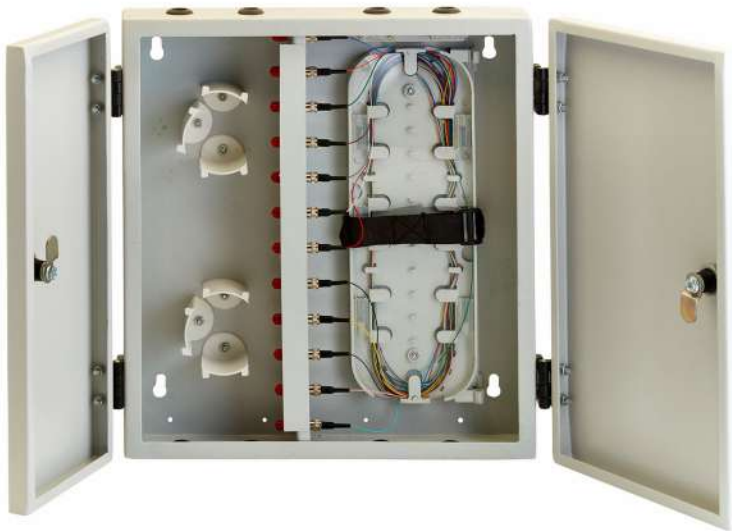
Features	Applications	Dimensions
Universal 19" EIA/TIA rack compatibility	Suitable for direct termination & fusion splicing	Height 1U to 4U
Suitable for loose tube and tight-buffered fibre optic cables	Telecommunication closets	Width 440 mm
Durable textured powder coated finish	Data centers	Depth 350 mm
CRCA construction	Hubs / Cabinets / Remote Terminals	
Interchangeable adapter plate design	FTTx	
Optimized design for field connectorization	Customer premise	



Lockable Wall Mount

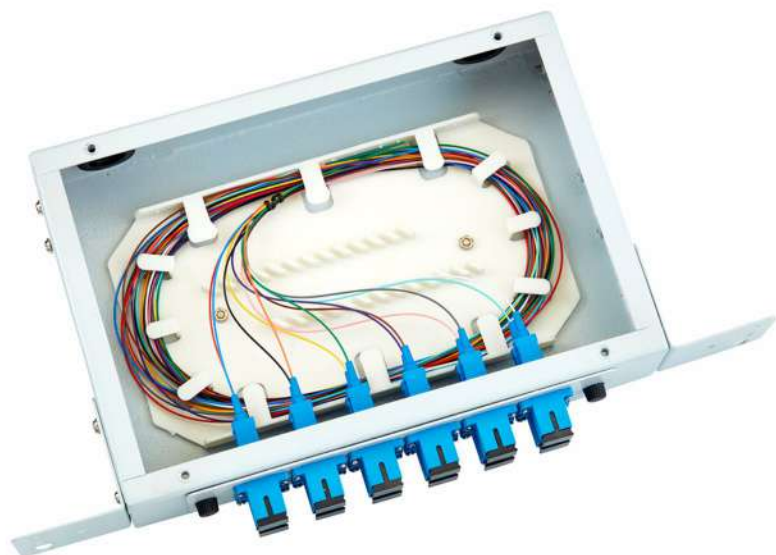


Features	Applications	Dimensions
Dual doors with locking options for security	Suitable for direct termination & fusion splicing	Height 370 mm
Suitable for loose tube and tight-buffered fibre optic cables	Co-Location sites	Width 350 mm
Top or bottom cable entry with dust resistant grommets	Campus / Enterprise environments	Depth 100 mm
Solid CRCA construction	Hubs / OTN sites	
Wall mount design	Substation automation	
Optimized design for field connectorization	Telecommunication closets	





Mini Wall Mount



Features

- Adaptable mounting arrangement
- Compact design
- Fully loaded enclosures available
- CRCA construction
- Interchangeable adapter plate design
- Rear cable entry ports

Applications

- Suitable for direct termination & fusion splicing
- Process automation and control
- Control networks & surveillance
- Indoor premise networks
- SCADA & power systems
- Intelligent transport systems

Dimensions

- Height 44 mm
- Width 222 mm
- Depth 150 mm



DIN Rail



Dimensions

- Width : 35mm
- Height : 133mm
- Depth : 131mm

Dimensions

- Width : 100mm
- Height : 150mm
- Depth : 120mm



Features

- Versatile DIN-Rail mounting
- Space saving installation
- Fully loaded enclosures available
- Available in plastic & CRCA construction
- Optimized design for field connectorization
- Top & bottom cable entry ports architectures

Applications

- Suitable for direct termination & fusion splicing
- Remote cable terminations within buildings
- Railway signalling & control networks
- CCTV & surveillance
- SCADA & power systems
- Industrial Ethernet



Preston's Fast Field Installable Connectors provide a quick, simple and clean solution for field terminating SC or LC connectors. Our mechanical field-installable connectors are factory pre-polished that completely eliminate the need for hand polishing in the field. Proven mechanical splice technology ensuring precision fibre alignment, a factory pre-cleaved fibre stub and a proprietary index-matching gel combine to offer an immediate low loss termination to either singlemode or multimode optical fibres. All primary fibre types are supported and each connector is colour coded as per industry-standards to aide in identification during and after installation.

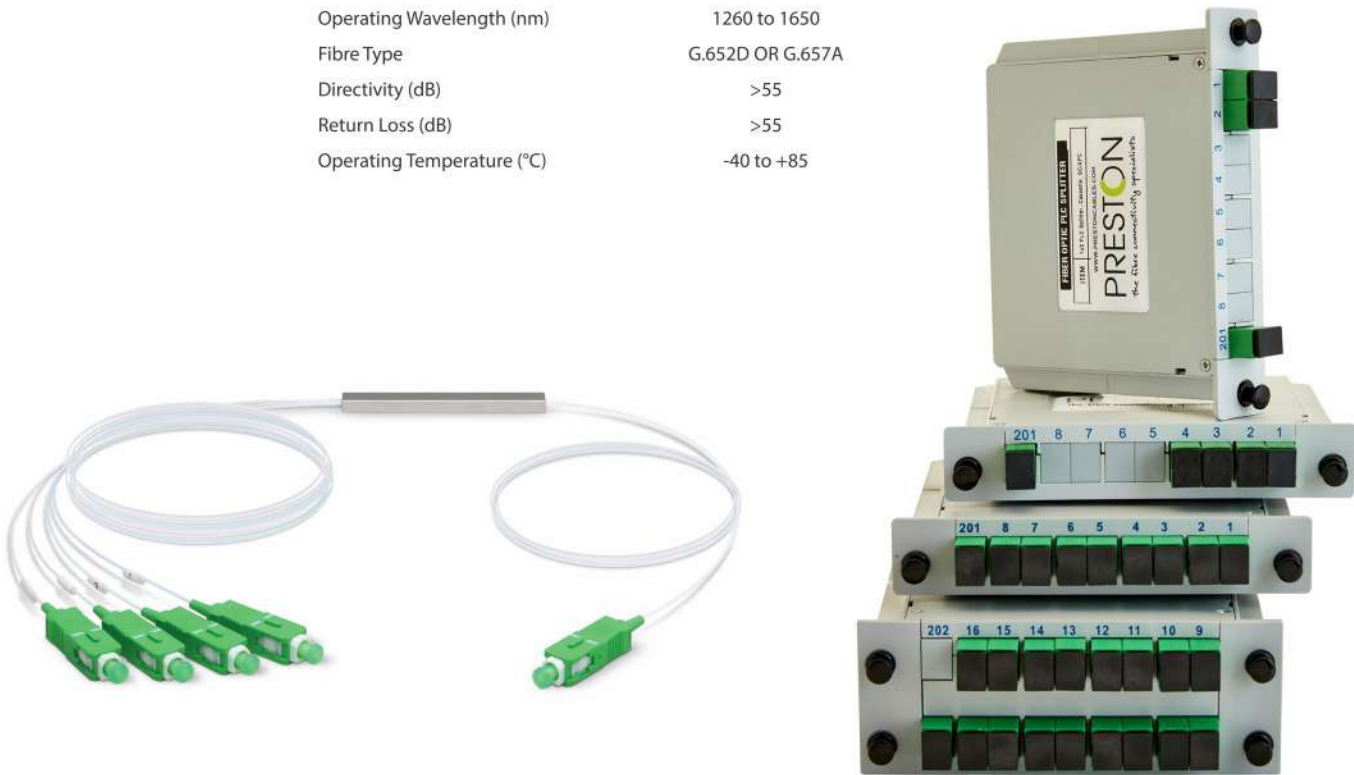
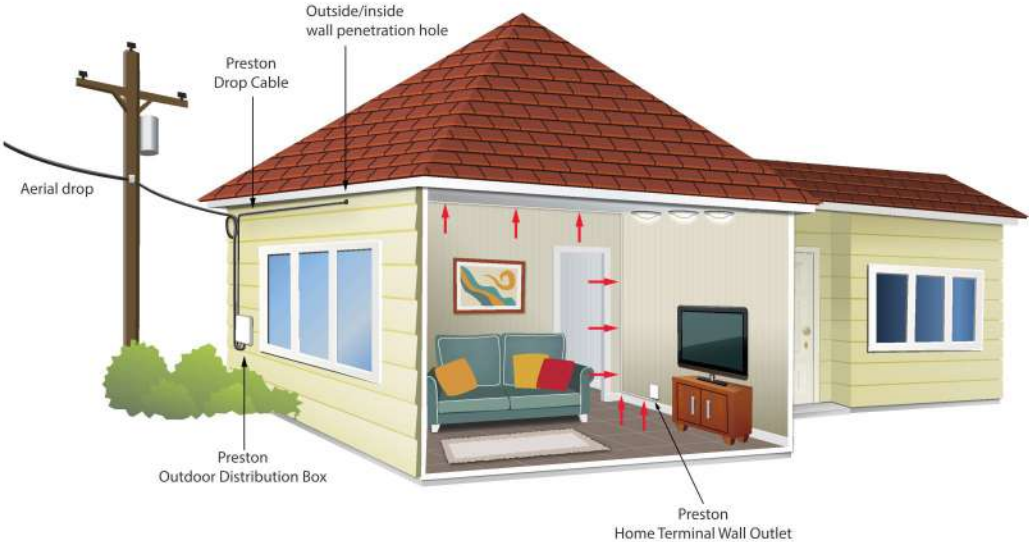
Preston's Singlemode Planar Lightwave Circuit Splitters (PLC) are developed based on unique quartz glass waveguide processes with reliable precision aligned fibre pigtails in a miniature package. Our splitters provide a low cost signal distribution solution in a small form factor design with high reliability. Our splitters are manufactured to achieve superior optical performance in terms of low Insertion Loss, low PDL, high Return Loss and excellent uniformity over a wide wavelength range from 1260nm to 1625nm. Various configurations are available with the option to terminate any connector type to suit your requirements.

Features	Applications
Pre-stubbed, factory polished ferrule	FTTx systems
No epoxy required	Splitter and Patch pannel termination
Precision mechanical alignment ensures low loss	Direct access of ONU equipments.
Less than 2 minute installation	Other applications in fibre optic systems

Features	Applications
Compact design	FTTx Systems
Low Insertion Loss and low PDL	LAN, WAN and Metro Networks
High reliability and channel counts	Analog / Digital Passive Optical Networks
Wide wavelength and operating temperature range	CATV Networks
Available in standalone or LGX configuration	Other applications in fibre optic systems

Specifications	
RoHS Compliant	Operating Temperature: -40°C to 75°C
SCUPC IL / RL: <0.25dB / >45dB	SCAPC IL / RL: <0.25dB / >55dB
SCPC MM IL / RL: <0.30dB / >25dB	Durability: < 0.1 dB change, 500 matings
Intermateability: IEC 61754-4	Tensile Strength : TIA/EIA 568-B.3

Specifications						
Port Configuration	1x2	1x4	1x8	1x16	1x32	1x64
Insertion Loss (dB)	<4.00	<7.10	<10.50	<13.80	<17.10	<20.50
Uniformity (dB)	<0.30	<0.50	<0.80	<1.00	<1.30	<2.00
Port Configuration	2x2	2x4	2x8	2x16	2x32	2x64
Insertion Loss (dB)	<4.20	<7.40	<11.00	<14.60	<17.80	<21.50
Uniformity (dB)	<1.10	<1.20	<1.60	<2.20	<2.40	<2.80
PDL (dB)	<0.20	<0.20	<0.20	<0.20	<0.30	<0.50
Operating Wavelength (nm)	1260 to 1650					
Fibre Type	G.652D OR G.657A					
Directivity (dB)	>55					
Return Loss (dB)	>55					
Operating Temperature (°C)	-40 to +85					





Preston's Home Terminal Boxes (HTB) are designed for FTTH solutions in which functionality is one of the key elements. Our HTB's reduce installation time and minimize the amount of space used while maintaining a modern, compact and aesthetic design. They are used as a termination point for FTTH networks by placing drop cables and connecting them with fibre optic pigtails with the use of fusion splices or directly with fast field installable connectors. The HTB body is injection moulded with high quality plastic PC + ABS, which is flame retardant and impact resistant. It has excellent sealing and anti-ageing properties and protects the cable at the exit.

No matter what your network requirements are, Preston has a complete portfolio of distribution box solutions available to meet your fibre connectivity needs. In today's competitive marketplace, every subscriber counts, which demands service providers to be more strategic in their network plans and fibre deployments. Ultimately, choosing network equipment that addresses flexibility and future capacity is vital to building and sustaining a cost-effective and profitable network. Preston's distribution box solutions offer customers quality, performance and reliability for the multifaceted needs of tomorrow's networks. We have solutions for both in-building and outside plant environments, from the head-end to the customer premises locations.

Features

- Direct termination with field installable connectors
- Splicing to factory terminated pigtails
- Maximum fibre capacity – 4 fibres
- Durable ABS + PC construction
- Wall mounted with mechanical protection
- Small size, lightweight & attractive design
- Multiple cable entry points & positive fibre management

Applications

- Suitable for direct termination & fusion splicing
- Widely used in FTTH access networks
- Data communication Networks
- CATV networks
- Local area networks
- SDU & MDU
- Customer premise



Dimensions

- Height : 130mm
- Width : 84mm
- Depth : 24mm



Dimensions

- Height : 100mm
- Width : 80mm
- Depth : 24mm



Features

- Plug-and-play technology
- Integrated bend radius protection
- Clear, intuitive cable routing paths
- Easy connector & cable access
- Physical protection of fibre
- Fast & easy installation
- IP65 rated, withstands harsh environmental conditions
- Direct termination with field installable connectors
- Wall or pole mountable
- Lockable for added security
- Hinge + latch models available

Applications

- Suitable for direct termination & fusion splicing
- Widely used in FTTH access networks
- Telecommunication networks
- LAN & WAN
- Splitting & distribution
- Indoor & outdoor
- SDU & MDU
- Mid-Span access
- Data communication networks



Dimensions

- Height : 287mm
- Width : 172mm
- Depth : 102mm



Dimensions

- Height : 252mm
- Width : 210mm
- Depth : 72mm



Dimensions

- Height : 310mm
- Width : 240mm
- Depth : 105mm

Dimensions

- Height : 215mm
- Width : 200mm
- Depth : 55mm





Today's networking environment is increasingly dependent on high density solutions making effective cable management a challenge. Preston's 19" compatible Patch-Free modules are a modular distribution solution employing effective cable-to-cable splicing. The module is specially designed for use in FTTH and other fibre optic high-density applications. The patch-free module can be equipped with splitter inserts and distributor trays and eliminates the possibility of tampering or unintentional disconnection of cables.

Features	Specifications	Applications
High degree of flexibility and modularity Removable front lockable doors Two separate swing-out splice elements Stress free and easy to handle fibre guidance Suitable for loose tube & ribbon cables 19" Rack & Wall-Mount compatible Available in durable CRCA & Aluminium	Storage temperature: -30°C to 70°C Operating temperature: -25°C to 55°C Restriction of Hazardous Substances (RoHS) Compliant IP20 protection Climate testing: IEC 60068-2-2, IEC 60068-2-1 Change of temperature and damp heat: IEC 61300-2-22, IEC 61300-2-19	Provide interconnect and cross-connect in high density applications, data centres and FTTH networks.



Preston's 4U/6U/9U and 12 U Wall Mount Rack Enclosure Cabinet is designed to integrate wall-mounting, easy equipment access, and cable management in IT network applications with limited floor space. Perforated side panels allow generous airflow and heat dissipation to keep equipment operating safely. 19" vertical rails accommodate up to 9U of standard 19" rack mount equipment. A sturdy wall mount bracket allows the cabinet to quickly be hung on the wall.

Features	Applications	Optional Accessories
4U/6U/9U/12U wall-mounted enclosure Front door with fibre glass Lockable front door Perforated side panels for better airflow Fully assembled for quick installation Powder coated durable finish Available in single & double section construction	Server systems Community networks Monitoring & surveillance Network & MATV equipment UPS systems Campus networks AV, Telecom & Lab applications	Cooling fans Cantilever shelf Cable organisers AC power outlets

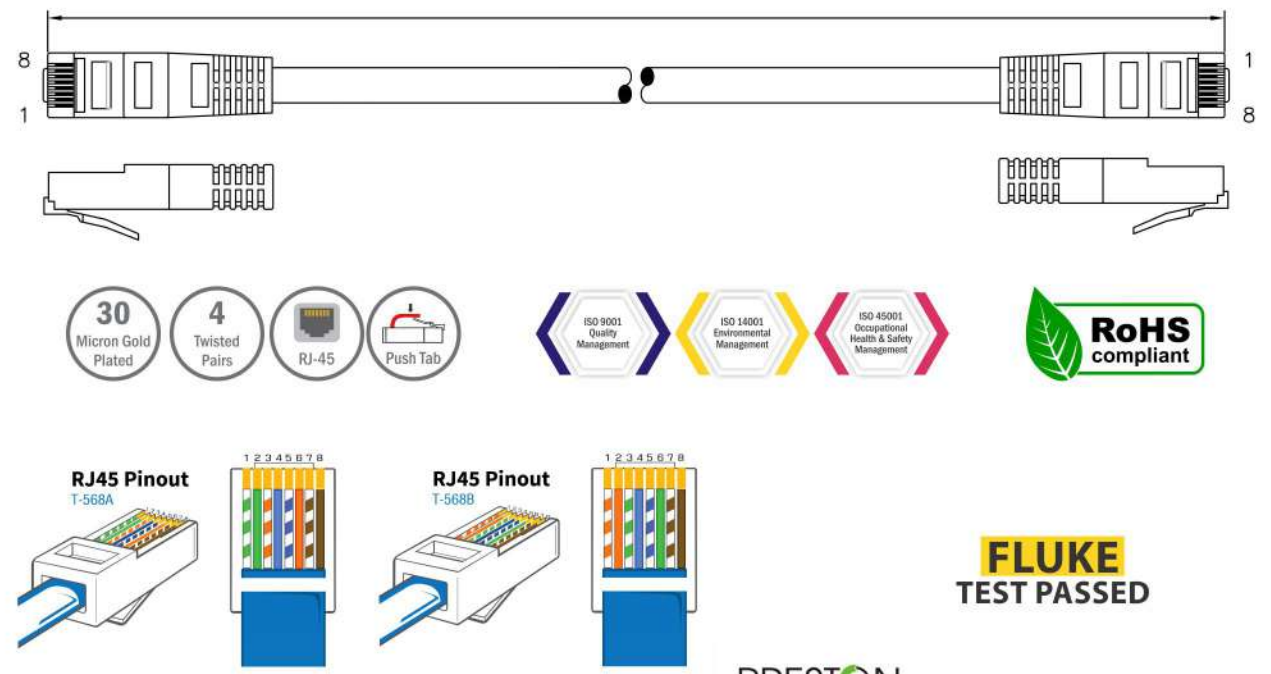


Dimensions	Material	Finish
600mm x 600mm x 4U/6U/9U/12U (WxDxH)	CRCA 1.6mm thickness	Powder Coated





Preston's ethernet assemblies represent networking leadership at every turn, providing top performing structured cabling solutions that reduce downtime, ease deployment and facilitate migration to advanced networking technologies and converged building systems. Designed with innovative technologies that provide performance beyond standards and reliability, while meeting current and future needs for capacity and scalability. Our ethernet assemblies are available in various options to meet your specific needs — no matter what your application, your environment or your plans.



**Specifications:**

Conductor: Bare electrolytic grade copper in either Stranded or Solid Type

Insulation: HDPE (High Density Polyethylene)

Outer Sheath: PVC / LSZH

Outer Sheath Colour (Standard) – Grey / Blue

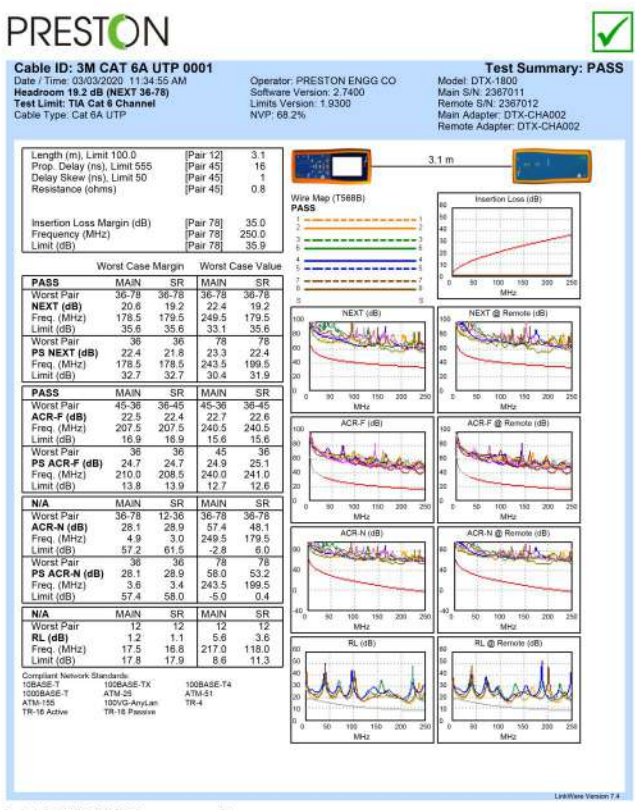
RJ45 Plug – 8P UTP/STP, Gold Plated Contact Blade

RJ45 Plug Housing: Clear Polycarbonate

Temperature Range: -10° C to +60° C

Category	Standard	Data Rate	Frequency	# of Cores
CAT5	100BASE-TX	100Mbps	100 MHz	4 or 8
CAT5E	100BASE-TX	1Gbps	100 MHz Duplex	8
CAT6	EIA/TIA 568B2.1	1-10Gbps*	250 MHz	8
CAT6A	10GBASE-T	10Gbps	500 MHz	8
CAT7	10GBASE-T	10Gbps	600 MHz	8
CAT7A	10GBASE-T	10Gbps	1000 MHz	8
CAT8	10GBASE-T	25/40Gbps	1600-2000 MHz	8

\*Depends on length and cable type  
This table shows the difference between Cat 5 to Cat 8, but sheath materials, cable quality, and other considerations will also need to be considered when finding the right cable to match an application.



Performance Characteristics							
FREQUENCY MHZ	ATTENUATION dB/100m	NEXT dB	PS-NEXT dB	RL dB	ELFEXT dB	PS-ELFEXT dB/100m	PHASE DELAY ns
1	2	65.3	62.3	20	63.8	60.8	570
4	4.1	56.3	53.3	23	51.8	48.8	552
8	5.8	51.8	48.8	24.5	45.7	42.7	546.73
10	6.5	50.3	47.3	25	43.8	40.8	545.38
16	8.2	47.2	44.4	25	39.7	36.7	543
20	9.3	45.8	42.8	25	37.8	34.8	542.05
25	10.4	44.3	41.3	24.3	35.8	32.8	541.2
31.25	11.7	42.9	39.9	23.6	33.9	30.9	540.44
62.5	17	38.4	35.4	21.5	27.9	24.9	538.55
100	22	35.3	32.3	20.1	23.8	20.8	537.6

IMPEDANCE (1-100MHz) ohms	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km	MAXIMUM RESISTANCE UNBALANCE %
100±15	110	5



Performance Characteristics							
FREQUENCY MHZ	ATTENUATION dB/100m	NEXT dB	PS-NEXT dB	RL dB	ELFEXT dB	PS-ELFEXT dB/100m	PHASE DELAY ns
1	2.03	74.3	72.3	20	67.8	64.8	570
4	3.78	65.3	63.3	23	55.8	52.8	552
8	5.32	60.8	58.8	24.5	49.7	46.7	546.73
10	5.95	59.3	57.3	25	47.8	44.8	545.38
16	7.55	56.2	54.2	25	43.7	40.7	543
20	8.47	54.8	52.8	25	41.8	38.8	542.05
25	9.51	53.3	51.3	24.3	39.8	36.8	541.2
31.25	10.67	51.9	49.9	23.6	37.9	34.9	540.44
62.5	15.38	47.7	45.4	21.5	31.9	28.9	538.55
100	19.8	44.3	42.3	20.1	27.8	24.8	537.6
200	28.98	39.8	37.8	18	21.8	18.8	536.54
250	32.85	38.3	36.3	17.3	19.8	16.8	536.27

IMPEDANCE (1.0-250MHz) ohms	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km	MAXIMUM RESISTANCE UNBALANCE %
100±15	95	5





CAT 7 S/FTP



Performance Characteristics

Frequency MHZ	Return Loss (RL) ≥dB	Attenuation (ATT) ≤dB	Near End Crosstalk (NEXT) ≤dB	Phase Delay ≤ns	Power Sum Near End Crosstalk (PS NEXT) ≥dB	PS-ELFEXT dB/100m	Phase Delay ns
1.0	20.0	-	78.0	570.0	75.0	78.0	75.0
4.0	23.0	3.74	78.0	552.0	75.0	78.0	75.0
8.0	24.5	5.24	78.0	546.7	75.0	75.9	72.9
10.0	25.0	5.86	78.0	545.4	75.0	74.0	71.0
16.0	25.0	7.41	78.0	543.0	75.0	69.9	66.9
20.0	25.0	8.29	78.0	542.0	75.0	68.0	65.0
25.0	24.3	9.29	78.0	541.2	75.0	66.0	63.0
31.25	23.6	10.41	78.0	540.4	75.0	64.1	61.1
62.5	21.5	14.88	75.5	538.6	72.5	58.1	55.1
100	20.1	19.02	72.4	537.6	69.4	54.0	51.0
150	18.9	23.56	69.8	536.9	66.8	50.2	47.2
200	18.0	27.47	67.9	536.5	64.9	48.0	45.0
250	17.3	30.97	66.4	536.3	63.4	46.0	43.0
300	17.3	34.19	65.2	536.1	62.2	44.5	41.5
600	17.3	50.10	60.7	535.5	57.7	38.4	35.4

Electrical Characteristics

Impedance ohms			Maximum DC Resistance ohms/100m	Maximum DC Conductor Resistance %
1-100MHz	100-250MHz	100-250MHz		
100±15	100±18	100±25	9.5	2.5

Characteristics

Temperature Rating	Minimum Bending Radius
Fixed: -20°C to +70°C	Fixed: 4 x overall diameter Flexed: 8 x overall diameter

Construction

Conductor	Sheath	Insulation	Note
Solid bare electrolytic grade copper	PVC / LSZH	HDPE (High Density Polyethylene)	Outdoor versions available

Standards

ISO / IEC 11801, TIA 568C.2

Core Identification

Pair 1: Blue	White/Blue
Pair 2: Orange	White/Orange
Pair 3: Green	White/Green
Pair 4: Brown	White/Brown

Sheath Colour

Grey



Guide to Ethernet Cables

Common Industry Acronyms	As per ISO/IEC11801	Cable Shielding Type	Twisted Pair Shielding Type	Example
UTP	U/UTP	None	None	
FTP, STP, ScTP	F/UTP	Foil	None	
STP, ScTP	S/UTP	Braiding	None	
SFTP, S-FTP, STP	SF/UTP	Braiding & Foil	None	
STP, ScTP	U/FTP	None	Foil	
FFTP	F/FTP	Foil	Foil	
SSTP, SFTP, STP	S/FTP	Braiding	Foil	
SSTP, SFTP	SF/FTP	Braiding & Foil	Foil	

Cat5e, Cat6 and Cat6a are available in unshielded and shielded versions. Cat7 is only available as a shielded cable.





## Preston Engineering Company Delhi Private Limited

An ISO 9001 14001 45001 Certified Company

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