M-H Optical Fiber Components

Connectors
Adapters
Attenuators
The SC connector comprises a polymer body with a ceramic ferrule/spring/crimp barrel assembly plus a crimp-over sleeve and rubber boot. These connectors are suitable for 900µm, 2mm and 2.8mm cables. The connector is precision made to demanding specifications.

The combination of a ceramic ferrule with a precision polymer housing provides consistent, long-term mechanical and optical performance.

The SC connector is a push-pull type connector that gives an audible click when mated into its adapter. The SC connector can also be tuned in 4 positions to provide the lowest insertion loss.

**Optical Performance**

**Singlemode**
- **Insertion loss:** Max. 0.3dB Typical 0.2dB
- **Return Loss:** UPC > 50dB APC > 60dB

**Multimode**
- **Insertion loss:** Max. 0.3dB Typical 0.2dB

**Commutability**
Optically and mechanically compatible with all equivalent connectors.

(Compliant with IEC 61754-4)

**Mechanical**
- Ferrule ID / tolerance:
  - Singlemode - 126 +1/-0mm
  - Multimode - 126 -0/+2µm
- Ferrule Diameter: 2.5 ± 0.001mm (MM) / 2.4990 ± 0.0005 (SM)
- Pre-radiused, PC-end finish for Physical Contact ferrule to ferrule. R 10 to 25mm
- Tensile Strength Cable retention: >50N
  (2 & 3mm boot versions only)

**Termination Procedures:**
- Cable pre-termination, polishing and crimping on Epoxy Glue.
- Simplex & Duplex versions available
  (Duplex version uses two simplex connectors with a clip to be coupled as required)

**Temperature Cycle:**
(61300-2-18)
-40 to +75°C, 40 cycles
<0.2dB Change

**High Temperature:**
(61300-2-18)
70°C for 96 hours
<0.2dB Change

**Damp Heat:**
(61300-2-19)
40°C at 93% RH, 96 hours
<0.2dB Change

**Vibration (Mated Pair):**
(61300-2-2)
10-55 Hz, 1.5mm P to P
< 0.2dB Change

**Mating Durability:**
(61300-2-2)
500 mating cycles
Clean every 25
< 0.2 dB Change

**Operating Temperature:**
-40°C to +85°C

**Product Packaging:**
- Standard packaging:
  - 100pcs Bulk packed
- Special packaging available by request

**Back Shell:**
- Connector versions available for:
  - 3mm Cable
  - 2mm Cable
  - 900µm Buffered Fibre

**Colours:**
- 2 and 2.8mm : Blue, Red, Black, Green
Optical Fibre Components

Connectors

SC Multimode connectors

SC MULTIMODE SIMPLEX
- 3mm Cable
- Beige body
- Black, Beige or Red Boots

SC MULTIMODE DUPLEx
- 3mm Cable
- Beige body
- Black, Beige or Red Boots

SC MULTIMODE PIGTAIL
- 900µm Cable
- Beige body
- Black, Beige or Red Boots

SC Singlemode connectors

SC SINGLEMODE SIMPLEX
- 3mm Cable
- Blue body
- Blue Boots

SC SINGLEMODE DUPLEx
- 3mm Cable
- Blue body
- Blue Boots

SC SINGLEMODE PIGTAIL
- 900µm Cable
- Blue body
- Blue Boots

APC Singlemode connectors (Angle Polished Connector)

SC SINGLEMODE APC SIMPLEX
- 3mm Cable
- Green Body
- Green Boots

SC SINGLEMODE APC DUPLEx
- 3mm Cable
- Green Body
- Green Boots

SC SINGLEMODE APC PIGTAIL
- 900µm Cable
- Green Body
- Green Boots
Optical Fibre Components

Connectors

ST Connector

The ST connector has been the mainstay of optical fibre connectors for many years. It can be found in almost every communications room worldwide, but is used mainly in data communications systems. The simple to use bayonet locking mechanism reduces the risks of accidental disconnection of fibre connections.

The ST optical fibre connector is comprised of a nickel plated brass body and a ceramic ferrule/spring/crimp bar assembly, plus a crimp-over sleeve with rubber boot. These connectors are suitable for 900µm, 2mm and 3mm cables. The connector is precision made and manufactured to demanding specifications. The combination of a ceramic ferrule with precision metal housing provides consistent, long-term mechanical and optical performance.

**Optical Performance**

**Singlemode**
- **Insertion Loss:** Max. 0.3dB Typical 0.2dB
- **Return Loss:** UPC > 50dB Typical 55dB

**Multimode**
- **Insertion loss:** Max. 0.3dB Typical 0.2dB

**Intermateability**
Optically and mechanically compatible with all equivalent connectors.

(Compliant with IEC 61754-2)

**Mechanical**
- Ferrule ID / tolerance:
  - SM - 126 ±1/-0mm
  - MM - 126 -0/+2µm
- Ferrule Diameter: 2.5 ± 0.001mm (MM) / 2.4990 ± 0.0005 (SM)
- Pre-radiused, PC-end finish for Physical Contact ferrule to ferrule. R 10 to 25mm
- Tensile Strength Cable retention: >50N (2 & 3mm boot versions only)

**Temperature Cycling:**
- (61300-2-18)
- -40°C to +85°C, 40 cycles
- < 0.2 dB Change

**Vibration (Mated Pair):**
- (61300-2-1)
- 10-55 Hz, 1.5mm P to P
- < 0.2 dB Change

**High Temperature:**
- (61300-2-18)
- 70°C for 96 hours
- < 0.2dB Change

**Mating Durability:**
- 500 mating cycles
- Clean every 25 cycles
- < 0.2 dB Change

**Damp Heat:**
- (61300-2-19)
- 40°C at 93% RH, 96 hours
- < 0.2dB Change

**Operating Temperature:**
- -40°C to +85°C
Optical Fibre Components

Connectors

ST Multimode connectors

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Cable Size</th>
<th>Boot Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST MULTIMODE SIMPLEX</td>
<td>3mm Cable</td>
<td>Black Boot</td>
</tr>
<tr>
<td>ST MULTIMODE DUPLEX</td>
<td>3mm Cable</td>
<td>Red Boot</td>
</tr>
<tr>
<td>SC MULTIMODE PIGTAIL</td>
<td>3mm Cable</td>
<td>Black Boot</td>
</tr>
</tbody>
</table>

ST Singlemode connectors

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Cable Size</th>
<th>Boot Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST SINGLEMODE SIMPLEX</td>
<td>3mm Cable</td>
<td>Black Boot</td>
</tr>
<tr>
<td>ST SINGLEMODE PIGTAIL</td>
<td>900µm Cable</td>
<td>Yellow Boot</td>
</tr>
</tbody>
</table>
The FC connector is used extensively in the telecommunications market, where long singlemode optical fibre cables can run upwards of 50km. In these extreme situations, the connector needs to have very low losses and accurate geometry.

The FC connector has a screw thread fitting into the adapter to provide a secure connection. The FC connector is comprised of a nickel plated brass body and a ceramic ferrule/spring/crimp barrel assembly plus a crimp-over sleeve and rubber boot. These connectors are suitable for 900µm, 2mm and 3mm cable. The connector is precision made and manufactured to demanding specifications. The combination of a ceramic ferrule with precision nickel plated brass housing provides consistent, long-term mechanical and optical performance.

### Optical Performance

<table>
<thead>
<tr>
<th>Type</th>
<th>Insertion loss:</th>
<th>Return Loss:</th>
<th>Multimode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singlemode</td>
<td>Max. 0.3dB</td>
<td>Typical 0.2dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>UPC &gt; 50dB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>APC &gt; 60dB</td>
</tr>
<tr>
<td>Multimode</td>
<td>Max. 0.3dB</td>
<td>Typical 0.2dB</td>
<td></td>
</tr>
</tbody>
</table>

**Intermateability**

Optically and mechanically compatible with all equivalent connectors. (Compliant with IEC 61754-13)

**Mechanical**

- Ferrule ID / tolerance:
  - SM - 126.1±0mm
  - MM - 126.0±2µm
- Ferrule Diameter: 2.5 ± 0.001mm (MM) / 2.4990 ± 0.0005 (SM)
- Pre-radiused, PC-end finish for Physical Contact ferrule to ferrule.
- R 10 to 25mm
- Tensile Strength Cable retention: >50N (2 & 3mm boot versions only)

**Temperature Cycling:**

(61300-2-18)

-40 to +75°C, 40 cycles

< 0.2dB Change

**High Temperature:**

(61300-2-18)

70°C for 96 hours

< 0.2dB Change

**Damp Heat:**

(61300-2-19)

40°C at 93% RH, 96 hours

< 0.2dB Change

**Vibration (Mated Pair):**

(61300-2-1)

10-55 Hz, 1.5mm P to P

< 0.2dB Change

**Mating Durability:**

(61300-2-2)

500 mating cycles

Clean every 25

< 0.2 dB Change

**Operating Temperature:**

-40°C to +85°C
Optical Fibre Components

Connectors

**FC connectors**

<table>
<thead>
<tr>
<th>FC MULTIMODE SIMPLEX</th>
<th>FC SINGLEMODE SIMPLEX</th>
<th>FC SINGLEMODE APC SIMPLEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>3mm Cable</td>
<td>3mm Cable</td>
<td>3mm Cable</td>
</tr>
<tr>
<td>Black Boot</td>
<td>Blue Boot</td>
<td>Green Boot</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FC MULTIMODE PIGTAIL</th>
<th>FC SINGLEMODE PIGTAIL</th>
<th>FC SINGLEMODE APC PIGTAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>900µm Cable</td>
<td>900µm Cable</td>
<td>900µm Cable</td>
</tr>
<tr>
<td>Black Boot</td>
<td>Blue Boot</td>
<td>Green Boot</td>
</tr>
</tbody>
</table>
The LC connector was the first small form factor (SFF) connector on the market. The LC features a latched lever mechanism to provide secure mating into the adapter. The LC has been designed to meet the need for a small optical fibre connector that uses half the space of the SC connector. The duplex version, which is two simplex connectors with a clip, plugs into an adapter with the same footprint as the SC connector.

The LC optical fibre comprises of a polymer body and a ceramic ferrule/spring/crimp barrel assembly plus a crimp over sleeve and rubber boot. These connectors are suitable for 900µm, 2mm and 3mm cables. The connector is precision made and manufactured to demanding specifications. The combination of a ceramic ferrule with polymer housing provides consistent, long-term mechanical and optical performance. The LC connector is available in singlemode UPC and APC versions as well as multimode.

**Optical Performance**

**Singlemode**
- **Insertion loss:** Max. 0.3dB Typical 0.2dB
- **Return Loss:**
  - UPC > 50dB Typical 55dB
  - APC > 60dB Typical 65dB

**Multimode**
- **Insertion Loss:** Max. 0.3dB Typical 0.2dB

**Intermateability:**
Optically and mechanically compatible with all equivalent connectors.
(Compliant with IEC 61754-20)

**Mechanical**
- Capillary diametre tolerance: 125 -0/ +1 µm
- Ferrule Diameter: 1.25 ± 0.001mm (MM) / 2.4990 ± 0.0005 (SM)

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**Temperature Cycling:**
(61300-2-18)
-40 to +75°C, 40 cycles
< 0.2dB Change

**High Temperature:**
(61300-2-18)
70°C for 96 hours
< 0.4dB Change

**Damp Heat:**
(61300-2-19)
40°C at 93% RH, 96 hours
< 0.2dB Change

**Vibration (Mated Pair):**
(61300-2-1)
10-55 Hz, 1.5mm P to P
< 0.2dB Change

**Mating Durability:**
(61300-2-2)
500 mating cycles
Clean every 25
< 0.2 dB Change

**Operating Temperature:**
-40°C to +85°C
### LC Connectors

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Cable Size</th>
<th>Body Color</th>
<th>Boot Color</th>
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</thead>
<tbody>
<tr>
<td>LC MULTIMODE SIMPLEX</td>
<td>2mm Cable</td>
<td>Beige</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>LC MULTIMODE DUPLEX</td>
<td>2mm Cable</td>
<td>Beige</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>LC SINGLEMODE PIGTAIL</td>
<td>900µm Cable</td>
<td>Beige</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>LC SINGLEMODE SIMPLEX</td>
<td>2mm Cable</td>
<td>Blue</td>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>LC SINGLEMODE DUPLEX</td>
<td>2mm Cable</td>
<td>Blue</td>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>LC SINGLEMODE PIGTAIL</td>
<td>900µm Cable</td>
<td>Blue</td>
<td>Blue</td>
<td></td>
</tr>
</tbody>
</table>
The MTRJ connector is a development of the, now legendary, MT ferrule. This amazing technology is at the heart of many state-of-the-art connectors. The MT ferrule, in its various designs, has the ability to connect anything from 2 fibres in the MTRJ connector, to 72 fibres in the latest versions of the MPO connector. 

The version of the MTRJ, is capable of terminating any 125µm fibre. The flexibility of the connector allows it to be used in short run local area networks in addition to longer haul cabling using singlemode fibre.

It is designed to terminate two fibres within a single connector, reducing the risk of operator error when inter-connecting equipment and distribution panels. The MTRJ has been deliberately designed to look and feel like the industry standard copper connector.

The high-density MTRJ connector allows the termination of high fibre count backbone cables into smaller distribution panels.

### Description

- **Fibre Type:**
  - 9/125S Singlemode
  - 50/125 Multimode
  - 62.5/125 Multimode

- **Fibre Count available:** 2

- **Insertion Loss (With master plug)**
  - Standard Loss: < 0.5 dB
  - Low Loss: < 0.35 dB

- **Return Loss:** ≥45dB (SM only)

- **Cable Type:** Mini Zip

- **Adapter Bulkhead:**
  - Single connector-Duplex

- **Intermateability:**
  - Optically and mechanically compatible with all equivalent connectors.
  - Compliant with IEC 61754-18.

- **Product Packaging**
  - Connector in kit form, packaged in 100pcs

### Specifications

- **Temperature Cycling:** (61300-2-18)
  - -40 to +75°C, 40 cycles
  - < 0.2dB Change

- **High Temperature:** (61300-2-18)
  - 70°C for 96 hours
  - < 0.2dB Change

- **Damp Heat:** (61300-2-19)
  - 40°C at 93% RH, 96 hours
  - < 0.2dB Change

- **Vibration (Mated Pair):** (61300-2-1)
  - 10-55 Hz, 1.5mm P to P
  - < 0.2dB Change

- **Mating Durability:** (61300-2-2)
  - 500 mating cycles
  - Clean every 25
  - < 0.2 dB Change

- **Operating Temperature:**
  - -40°C to +85°C
The MTP®/MPO connector is the latest development of the now legendary MT ferrule. The MT ferrule technology is at the heart of many state of the art connectors. The Mulder-Hardenberg range of MTP®/MPO connectors are capable of connecting between 4 and 12 fibres. The next generation of this ferrule will be used to terminate up to 72 fibres in a single connector. This allows totally new designs of fibre distribution, using densities unheard of before now.

This version of this interface is the market leader in this new and exciting field of optical fibre termination. Manufactured in ISO 9001 approved facilities, the MTP®/MPO connector gives the user total flexibility in the design of their backbone, reducing costs and keeping distribution space to a minimum.

As the use of pre-terminated fibre cables grows, the MTP®/MPO gives the perfect solution to the ever-present problem of protecting the terminated fibres. The small size of the MTP®/MPO allows pre-terminated fibre cable to be fed through the smallest holes, making the installation benefits of pre-terminated fibre even greater than before.

**Features**
- MT based ferrule that can support up to 12 fibres.
- Very high density connector.
- Reliable quality supported by more than 15 years of experience.

**Description**
The high density MTP®/MPO connector allows the simple termination of the fibre backbone. Once installed the backbone needs to have the correct interface to suit the needs of the network hardware. Using the MTP®/MPO connector on pre-terminated fibre solutions, allows you to prepare the distribution units in the comfort of your own workshop. This can be taken a step further by having the distribution cabinets built in a clean facility and only taken to site when the installation is due to go live. This saves time, reduces the possibility of damage to the fragile optical tails and limits the risk of dirt ingress into fibre couplers.

**Specifications**
- **Fibre Type:**
  - 9/125 µm singlemode
  - 50/125 µm multimode
  - 62.5/125 µm multimode
- **Fibre Count available:** 4, 8, 12
- **Polishing:** Angled or Flat
- **Insertion Loss (With master plug):**
  - Standard Loss: <0.75dB
  - Low Loss: <0.35dB
- **Return Loss:** >55dB (SM only)
- **Cable Type:** Ribbon Fibre, Ribbon Cord, Microcore
- **Adapter Bulkhead:** Simplex
- **Intermateability**
  - Optically and mechanically compatible with all equivalent connectors.
  - Compliant with IEC 61754-7.
- **Product Packaging**
  - Connector in kit form, packaged in 100pcs

**Temperature Cycling:**
(61300-2-18)
-40 to +75°C, 40 cycles
<0.2dB Change

**High Temperature:**
(61300-2-18)
70°C for 96 hours
<0.2dB Change

**Damp Heat:**
(61300-2-19)
40°C at 93% RH, 96 hours
<0.2dB Change

**Vibration (Mated Pair):**
(61300-2-1)
10-55 Hz, 1.5mm P to P
<0.2dB Change

**Mating Durability:**
(61300-2-2)
500 mating cycles
Clean every 25 < 0.2 dB Change

**Operating Temperature:**
-40°C to +85°C

MTP is a registered EC trademark of US Conec Ltd
Optical Fibre Components

Connectors

MTP® Technology

Key Features
- Installation is simple and fast.
- MTP®/MPO connectors are robust.
- Connectors click into their adaptors and are reverse polarity protected.
- Easy to use cable management solutions.

High Density
- 72 fibres per 1U of space.
- 12 fibres per connector.
- Less cable yields more space in cabinets and cable raceways, giving better airflow.
- Up to 15,000 fibres per rack.

Reliability
- Cables terminated and factory tested.
- State of the art termination processes.
- Quality controlled at every step.
- Immune to EMI/RFI

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 10/100-1Gbps ethernet and fibre channel standards.
- Singlemode capability beyond 10Gbps.

Simplicity
- Modular systems designed for the fastest adds, moves and changes.
- Designed for simple, easy, handling, installing and testing.

MTP is a registered EC trademark of US Conec Ltd
Connectors

Boots

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>90°C Angled Boot Blue</td>
</tr>
<tr>
<td>90°C Angled Boot Red</td>
</tr>
<tr>
<td>90°C Angled Boot Black</td>
</tr>
<tr>
<td>SC 3mm Boot</td>
</tr>
<tr>
<td>FC 3mm Boot</td>
</tr>
<tr>
<td>FC 2mm Boot</td>
</tr>
<tr>
<td>LC 3mm Boot</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC/FC 900µm Boot Blue</td>
</tr>
<tr>
<td>45°C Angled Boot Blue</td>
</tr>
<tr>
<td>ST 3mm Boot Red</td>
</tr>
<tr>
<td>ST 3mm Boot Black</td>
</tr>
<tr>
<td>ST 3mm Boot</td>
</tr>
<tr>
<td>ST 2mm Boot</td>
</tr>
<tr>
<td>ST 900µm Boot</td>
</tr>
</tbody>
</table>

Fan-out Tubing

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8mm Fan-out Tubing</td>
</tr>
<tr>
<td>Orange Fan-out Tubing, 2.8mm</td>
</tr>
<tr>
<td>Yellow Fan-out Tubing, 2.8mm</td>
</tr>
</tbody>
</table>

Tubing Cross Section

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8mm Fan-out Tubing</td>
</tr>
<tr>
<td>Orange Fan-out Tubing, 2mm</td>
</tr>
<tr>
<td>Yellow Fan-out Tubing, 2mm</td>
</tr>
</tbody>
</table>
An optical fibre adapter or uniter is used to mate two connectors together, usually mounted in a distribution panel or wall box.

Our optical fibre adapters are precision made to ensure perfect alignment of connectors, reducing insertion loss. In most cases, it is the critical part of the system that aligns the ferrule part of the connectors, keeping the fibres in perfect alignment.

Phosphor bronze sleeves are for general use, while the ceramic versions are normally only used in singlemode low loss environments.

In the case of the MTRJ and MTP®/MPO the alignment is carried out by two small pins fitted to one of the connectors. The adapter is purely to support and lock the connectors together in the distribution panel or wall box.

### Features
- Available as FC, SC, ST, LC, MTRJ, E2000 and MTP®/MPO
- Available in simplex, duplex, quad(LC) and hybrid versions
- High precision zirconia or standard phosphor bronze sleeves
- Low insertion loss
- High repeatability and stability

### Applications
- Fibre distribution
- LAN and WAN
- FTTx Applications
- CATV
- Testing instruments
- Telecommunications systems

MTP is a registered EC trademark of US Conect Ltd
# Optical Fibre Components

## Adapters

### SC Adapters

<table>
<thead>
<tr>
<th>Model</th>
<th>Image</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC MULTIMODE SIMPLEX</td>
<td><img src="image1" alt="Image" /></td>
<td>Beige</td>
</tr>
<tr>
<td>LC MULTIMODE DUPLEx</td>
<td><img src="image2" alt="Image" /></td>
<td>Beige</td>
</tr>
<tr>
<td>SC SINGLEMODE SIMPLEX</td>
<td><img src="image3" alt="Image" /></td>
<td>Blue</td>
</tr>
<tr>
<td>SC SINGLEMODE DUPLEx</td>
<td><img src="image4" alt="Image" /></td>
<td>Blue</td>
</tr>
<tr>
<td>SC SINGLEMODE APC SIMPLEX</td>
<td><img src="image5" alt="Image" /></td>
<td>Green</td>
</tr>
<tr>
<td>SC SINGLEMODE APC DUPLEx</td>
<td><img src="image6" alt="Image" /></td>
<td>Green</td>
</tr>
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</table>

### MTRJ, MTP®/MPO & Hybrid Adapters

<table>
<thead>
<tr>
<th>Model</th>
<th>Image</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTRJ SIMPLEX</td>
<td><img src="image7" alt="Image" /></td>
<td>Grey</td>
</tr>
<tr>
<td>SC-ST MULTIMODE DUPLEx</td>
<td><img src="image8" alt="Image" /></td>
<td>Beige</td>
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<td>SC-FC SINGLEMODE SIMPLEX</td>
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<td>Blue</td>
</tr>
<tr>
<td>MPO SIMPLEX</td>
<td><img src="image10" alt="Image" /></td>
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</tr>
<tr>
<td>SC-ST SINGLEMODE DUPLEx</td>
<td><img src="image11" alt="Image" /></td>
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*Metal Version also available
Part No.. SCSTDUPHBRMETAL
## Optical Fibre Components

### Adapters

<table>
<thead>
<tr>
<th>ST MULTIMODE SIMPLEX</th>
<th>E2000 MULTIMODE SIMPLEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Blue</td>
</tr>
<tr>
<td>Yellow</td>
<td>APC - Green</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LC MULTIMODE DUALPLEX</th>
<th>LC SINGLEMODE DUALPLEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beige</td>
<td>Blue</td>
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</table>

<table>
<thead>
<tr>
<th>LC SINGLEMODE QUAD</th>
<th>LC MULTIMODE QUAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>Beige</td>
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</table>

<table>
<thead>
<tr>
<th>FC MULTIMODE SIMPLEX</th>
<th>FC SINGLEMODE SIMPLEX</th>
<th>FC SINGLEMODE APC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>White</td>
<td>Green</td>
</tr>
</tbody>
</table>
Our singlemode attenuators are used in communication systems to reduce optical power launched onto the photo detector. These high performance devices are designed to give accurate attenuation over a wide range of wavelengths. The plug type configuration allows use directly on the ends of the fibre jumpers and insert directly into the adapter.

Available in FC, SC, LC, ST and MU connector styles with PC or APC finish providing the ultra low return loss. These attenuators comes to you from a world class manufacturing facility backed by 20 years of experience in manufacturing passive and active fibre optic devices. Products coming out of this facility have found worldwide applications in computer networking, telecommunications and cable TV.

Features
► Plug-in type package
► Accurate attenuation
► Ultra low back reflection
► Broad wavelength band
► Flat response over all wavelengths
► Environmentally stable
► Quick delivery

Applications
► Telecommunication networks
► Fibre optic sensors
► Test and Measurement
► CATV
► LAN and WAN
► FTTx
► Attenuation values available
  01= 1dB, 02= 2dB, 03= 3dB, 04= 4dB,
  05= 5dB
  06= 6dB, 07= 7dB, 08= 8dB, 09= 9dB,
  10= 10dB
  15= 15dB, 20= 20dB
## Description

<table>
<thead>
<tr>
<th>Available Range of attenuation</th>
<th>1 to 30dB with 1dB increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Wavelength</td>
<td>1310 and 1550nm (Or single wavelength)</td>
</tr>
<tr>
<td>Operating Band pass</td>
<td>Dual Window 1310 and 1550nm (±25nm)</td>
</tr>
<tr>
<td>Attenuators = 5dB</td>
<td>± 0.5 dB</td>
</tr>
<tr>
<td>Attenuators 6 to 30dB</td>
<td>± 10% of attenuation</td>
</tr>
<tr>
<td>Reflectance</td>
<td>UPC = 55dB</td>
</tr>
<tr>
<td></td>
<td>APC = 60dB</td>
</tr>
<tr>
<td>International Standard</td>
<td>Telcordia GR-910-CORE</td>
</tr>
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Other versions available.