# FiberExpress®EASE GP-range Patch cord

## Applications
- Optical Fiber cable (OFC) patch cords are intended for in-building networks, for instance, LAN (local area network), SAN (storage area network), Access network, optical Fiber CATV network.
- Support current and future optical Fiber applications such as 10G Ethernet, 40G Ethernet, 100G Ethernet and FDDI.

## General standards
- IEC 60793-2-50, Product specifications - Sectional specification for B6_a1 single-mode Fiber
- IEC 60793-2-10, Product specifications - Sectional specification for category A1 multimode Fibers
- TIA/EIA-598 , Optical Fiber Cable Color Coding
- IEC 61300(EN 61300) series as test method

## Construction of Partnumber

### 1. Patch cords with Single Fiber connectors

<table>
<thead>
<tr>
<th>FX Patch Cord</th>
<th>Special</th>
<th>Fiber Type</th>
<th>Cable Type</th>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Length</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP</td>
<td>-</td>
<td>3</td>
<td>2</td>
<td>LD</td>
<td>LD</td>
<td>005M</td>
<td>X</td>
</tr>
</tbody>
</table>

- "ED" is for E2000 Duplex but there will be 2 pieces E2000 simplex connectors on duplex cable that are not clipped together.

### 2. MPO patch cords

<table>
<thead>
<tr>
<th>FX Patch Cord</th>
<th>Special</th>
<th>Fiber Type</th>
<th>Cable Type</th>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Length</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP</td>
<td>-</td>
<td>3</td>
<td>2</td>
<td>MM</td>
<td>MM</td>
<td>005M</td>
<td>X</td>
</tr>
</tbody>
</table>

- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if applicable
- Only used if appli...
3. MPO Hydra Patch cords

<table>
<thead>
<tr>
<th>FX Patch Cord</th>
<th>Special</th>
<th>Fiber Type</th>
<th>Cable Type</th>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Length</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP</td>
<td>-</td>
<td>3</td>
<td>2</td>
<td>MM</td>
<td>LD</td>
<td>005M</td>
<td>X</td>
</tr>
</tbody>
</table>

- Standard
  1) OM1
  2) OM2
  3) OM3
  4) OM4
  5) OS2

- 3 mm Round Cord

<table>
<thead>
<tr>
<th>MM</th>
<th>MPO Base-12 (M)</th>
<th>MPO Base-12 (F)</th>
<th>MPO Base-8 (M)</th>
<th>MPO Base-8 (F)</th>
<th>MPO Base-24 (M)</th>
<th>MPO Base-24 (F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD</td>
<td>LC Duplex</td>
<td>LC Simplex</td>
<td>LC/PC Duplex</td>
<td>LC/PC Simplex</td>
<td>SC Duplex</td>
<td>SC Simplex</td>
</tr>
<tr>
<td>LA</td>
<td>SC Duplex</td>
<td>SC Simplex</td>
<td>SC/PC Duplex</td>
<td>SC/PC Simplex</td>
<td>EA</td>
<td>EA/PC Duplex</td>
</tr>
<tr>
<td>LB</td>
<td>EL Duplex</td>
<td>EL Simplex</td>
<td>EL/PC Duplex</td>
<td>EL/PC Simplex</td>
<td>EA</td>
<td>EA/PC Duplex</td>
</tr>
<tr>
<td>SD</td>
<td>OS2 Duplex</td>
<td>OS2 Simplex</td>
<td>OS2/PC Duplex</td>
<td>OS2/PC Simplex</td>
<td>EA</td>
<td>EA/PC Duplex</td>
</tr>
<tr>
<td>SA</td>
<td>UA</td>
<td>UA/PC Duplex</td>
<td>UA/PC Simplex</td>
<td>UA/PC Simplex</td>
<td>EA</td>
<td>EA/PC Duplex</td>
</tr>
<tr>
<td>SB</td>
<td>EA</td>
<td>EA/PC Duplex</td>
<td>EA/PC Simplex</td>
<td>EA/PC Simplex</td>
<td>OE</td>
<td>OE/PC Duplex</td>
</tr>
<tr>
<td>ST</td>
<td>ST</td>
<td>ST/PC Duplex</td>
<td>ST/PC Simplex</td>
<td>ST/PC Simplex</td>
<td>EA</td>
<td>EA/PC Duplex</td>
</tr>
<tr>
<td>SC</td>
<td>SC</td>
<td>SC/PC Duplex</td>
<td>SC/PC Simplex</td>
<td>SC/PC Simplex</td>
<td>EA</td>
<td>EA/PC Duplex</td>
</tr>
<tr>
<td>FC</td>
<td>FC</td>
<td>FC/PC Duplex</td>
<td>FC/PC Simplex</td>
<td>FC/PC Simplex</td>
<td>EA</td>
<td>EA/PC Duplex</td>
</tr>
</tbody>
</table>

* ED* is for E2000 Duplex but there will be 2 pieces E2000 simplex connectors on duplex cable that are not clipped together.

1) **Jacket color**

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>OS2</th>
<th>OM1</th>
<th>OM2</th>
<th>OM3</th>
<th>OM4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacket color</td>
<td>Yellow</td>
<td>Orange</td>
<td>Orange</td>
<td>Aqua</td>
<td>Erica-Violet</td>
</tr>
</tbody>
</table>

2) **Fiber Type**

- Performance level for Single mode fiber
  - Performance level for Multi-mode fiber

3) **Material requirements:**
- Free of matching fluid or gel
- Resistant to corrosion
- Shall not support fungus growth per ASTM-G21-70
- Flammable materials shall have a UL-94 rating of V-1 or better.

4) **Color Code of the connectors:**

<table>
<thead>
<tr>
<th>Performance level</th>
<th>Connector Type</th>
<th>Housing color</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS2/UPC</td>
<td>ST and FC</td>
<td>Metal</td>
</tr>
<tr>
<td></td>
<td>All other</td>
<td>Blue</td>
</tr>
<tr>
<td>OS2/APC</td>
<td>ST and FC</td>
<td>Metal</td>
</tr>
<tr>
<td></td>
<td>All other</td>
<td>Green</td>
</tr>
<tr>
<td>OM1&amp;OM2/PC</td>
<td>ST and FC</td>
<td>Metal</td>
</tr>
<tr>
<td></td>
<td>All other</td>
<td>Beige</td>
</tr>
<tr>
<td>OM3/PC</td>
<td>ST and FC</td>
<td>Metal</td>
</tr>
<tr>
<td></td>
<td>All other</td>
<td>Aqua</td>
</tr>
<tr>
<td>OM4/PC</td>
<td>ST and FC</td>
<td>Metal</td>
</tr>
<tr>
<td></td>
<td>All other</td>
<td>E. Violet</td>
</tr>
</tbody>
</table>
5) Polishing Type

<table>
<thead>
<tr>
<th>Polishing Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPC - Ultra Physical Contact</td>
<td>Standard for Single mode when APC is not mentioned</td>
</tr>
<tr>
<td>APC - Angled Polish Contact</td>
<td>Only for Single mode</td>
</tr>
<tr>
<td>PC - Physical Contact Polish</td>
<td>When the fiber type is multi-mode</td>
</tr>
</tbody>
</table>

6) Length (meter)

XXXX: Represents the length of the cord in meter (maximum 4 digits). E.g. “1000” = 1000 meter, “5” = 5 meter, “D5” represent 0.5 meter and “2D5” is 2.5 meter.

<table>
<thead>
<tr>
<th>Cable Lengths</th>
<th>From</th>
<th>Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 m to 5 m</td>
<td>0.1 m</td>
<td></td>
</tr>
<tr>
<td>5.5 m to 50 m</td>
<td>0.5 m</td>
<td></td>
</tr>
<tr>
<td>51 m to 100 m</td>
<td>1 m</td>
<td></td>
</tr>
<tr>
<td>105 m to 300 m</td>
<td>5 m</td>
<td></td>
</tr>
</tbody>
</table>

Technical information

1) Insertion loss (IL)

All connectors must be measured with EN 61300-3-4.

<table>
<thead>
<tr>
<th>Fiber type</th>
<th>Polishing</th>
<th>IL for MPO</th>
<th>IL for LC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>IL Max (dB)</td>
<td>IL Max (dB)</td>
</tr>
<tr>
<td>OS2</td>
<td>APC</td>
<td>0.35</td>
<td>0.25</td>
</tr>
<tr>
<td>OM3</td>
<td>PC</td>
<td>0.35</td>
<td>0.25</td>
</tr>
<tr>
<td>OM4</td>
<td>PC</td>
<td>0.2</td>
<td>0.15</td>
</tr>
</tbody>
</table>

2) Return loss (RL)

All connectors are complied with EN 61300-3-6.

<table>
<thead>
<tr>
<th>Fiber type</th>
<th>Polishing</th>
<th>RL for MPO</th>
<th>RL for LC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>RL Max (dB)</td>
<td>RL Max (dB)</td>
</tr>
<tr>
<td>OS2</td>
<td>APC</td>
<td>-60</td>
<td>-60</td>
</tr>
<tr>
<td>OM3</td>
<td>PC</td>
<td>-25</td>
<td>-25</td>
</tr>
<tr>
<td>OM4</td>
<td>PC</td>
<td>-25</td>
<td>-25</td>
</tr>
</tbody>
</table>

3) Bandwidth

The basic Bandwidth requirement is as follows for multimode fiber cable.

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>Core diameter</th>
<th>Overfilled launch bandwidth</th>
<th>Effect laser launch bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
<td></td>
<td>850 nm</td>
<td>1300 nm</td>
</tr>
<tr>
<td>OM1</td>
<td>62.5 µm</td>
<td>200</td>
<td>500</td>
</tr>
<tr>
<td>OM3</td>
<td>50 µm</td>
<td>1500</td>
<td>500</td>
</tr>
<tr>
<td>OM4</td>
<td>50 µm</td>
<td>3500</td>
<td>500</td>
</tr>
</tbody>
</table>

For single mode fiber, the bandwidth is not specified.
4) Mechanical characteristics & Environmental characteristics

All patch cords must be compliant with IEC 61300 (EN 61300) series in all mechanical and environmental tests. (*The bending radius is > 30mm.*) The operation & storage temperature range is -20 to + 60 °C and installation temperature range is -15 to + 50 °C.

5) Packaging

Coiled and packed in transparent plastic Zip bag.