EDGE™ Solutions

EDGE™ Solutions for Enterprise Data Centers and Storage Area Networks

Corning EDGE solutions create a fiber optic tip-to-tip solution for data centers and storage area networks (SANs) consisting of housings, modules, panels, trunks, harnesses, and jumpers.
Awards

The DCS awards are designed to reward the product designers, manufacturers, suppliers, and providers operating in data centre area and recognize the achievements of the vendors and their business partners. The winners were selected by public vote from the installation, distribution, consultant, and end user communities from around the world.
EDGE Solutions Introduction

Data center operators have an exhaustive list of desirable parameters they employ to ensure the smooth and efficient operation of their facilities, and here at Corning, we strive to exceed their expectations. We interviewed over 3,000 operators and the outcome remained the same – the infrastructure must be reliable, high-quality, flexible, manageable, scalable, and visible to support a 24/7 year-round operation without question.

Corning award-winning EDGE Solutions are high-density preterminated optical cabling solutions that simplify installation and improve performance in the data center environment. EDGE Solutions provide increased system density when compared to traditional preterminated systems and offer the highest port density in the market. Corning® ClearCurve® bend-optimized optical fiber is the core element ensuring reliability when designing custom-engineered components thanks to it’s significant reduction in macrobend loss even in the most challenging bend scenarios. This technology enables Corning to provide significantly greater density across the range combined with simple design and integration for LAN and SAN areas within the data center, while the preterminated components allow for reduced installation time and faster moves, adds, and changes (MACs).

Corning factory-terminated solutions provide improved system performance, ensure component compatibility, and yield consistent high quality. EDGE solutions consist of an extensive range of housings, trunks, modules, adapter panels, harnesses, patch cables, and accessories for extended flexibility.

The universal-wired modular system components provide simplistic management for quick and easy networking MACs with none of the polarity concerns associated with special polarity-compensating components.

Deployment of a scalable optical connectivity solution allows an infrastructure to meet the requirements for current and future data rates. Scalability enables not only the physical expansion of the data center with respect to additional servers, switches or storage devices, but also flexibility to the infrastructure to support a migration path for increasing data rates. As technology evolves and standards are completed to define data rates such as 40/100G Ethernet, Fibre Channel (32G and beyond), and InfiniBand (40G and beyond), the cabling infrastructures installed today must provide scalability to accommodate the need for more bandwidth in support of future applications.

Finally infrastructure performance management is a method of monitoring traffic being transmitted and received along a link in a network providing real-time visibility. This can be done actively via electronic devices that replicate (also called mirroring or spanning) the link’s data and sends it to the monitoring device, or it can be done using passive optical taps, or port taps, that simply transmit all of the data, sending it simultaneously to both its intended recipient and to the monitoring device. The monitoring device filters the data and sends it to various software tools for analytics, where it is then sent on to application-layer software for use by network administrators. Please refer to the tap module section for further information.
Contents

EDGE™ Housings
High-Density Housings and Fixed Housings ................................................................. 7

EDGE™ Modules
Universal Low-Loss and Ultra-Low-Loss ........................................................................... 9

EDGE™ Adapter Panels
Pass-Through Patch Panel with MTP® Adapters .............................................................. 11

EDGE™ Trunks
MTP Trunks, MTP Extender Trunks, MTP Hybrid Trunks, and MTP® Hybrid Extender Trunks ................................................................. 12

EDGE™ Harnesses
Staggered and Non-Staggered Harnesses .......................................................................... 19

EDGE™ AO Modules
Conversion and Mesh Modules ........................................................................................ 24

EDGE™ AO Harnesses
Conversion, "Y" Jumper, Breakout, and 1x4 MTP® to LC Duplex ........................................... 26

EDGE™ MTP® Patch Cords
12-F Jumper and 24-F Jumpers ......................................................................................... 29

EDGE™ TAP Modules
Port Monitoring in LAN and SAN DC Areas ..................................................................... 31

EDGE™ Tap Harnesses
Port Monitoring in LAN and SAN DC Areas ..................................................................... 36

Reverse Polarity Patch Cords and Colored Clips
Uniboot design with the possibility of optional color coding ............................................. 37

Accessories
Cleaning, Housing, and Trunk .......................................................................................... 39
**EDGE™ Solutions**

**Features and Benefits**

- **Removable covers on the 1U and 2U housings**  
  Provide easier access to modules and panels

- **EDGE reverse polarity uniboot duplex jumpers**  
  Enables quick and easy polarity management

- **Improved mounting brackets**  
  Allow for depth adjustment in the rack

- **Bracket option for 23-in racks**  
  Offers the ultimate design flexibility

- **New mounting system**  
  Allows for one-person installation

- **Snap-in routing guides**  
  Provides easier cable management

- **MTP® PRO connectors on harnesses and jumpers**  
  Allows for pinning and polarity changes in the field

**EDGE Solutions**

EDGE solutions are high-density preterminated optical cabling solutions offering industry-leading connector density. With unprecedented finger access, there is no need for additional tools enabling faster moves, adds, and changes (MACs).

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**Specifications**

<table>
<thead>
<tr>
<th>Connected Mated Pair - Low-Loss</th>
<th>Insertion Loss, Max. OM3/OM4/OM5</th>
<th>OS2</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC Connector</td>
<td>0.15 dB</td>
<td>0.25 dB</td>
</tr>
<tr>
<td>MTP® Connector</td>
<td>0.35 dB</td>
<td>0.75 dB</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Modules/Harnesses - Low-Loss</th>
<th>Insertion Loss, Max. OM3/OM4/OM5</th>
<th>OS2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component Value</td>
<td>0.5 dB</td>
<td>1.0 dB</td>
</tr>
</tbody>
</table>
## EDGE™ Solutions

### Connected Mated Pair - Ultra-Low-Loss

<table>
<thead>
<tr>
<th></th>
<th>Insertion Loss, Max.</th>
<th>OS2</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC Connector</td>
<td>0.10 dB</td>
<td>0.25 dB</td>
</tr>
<tr>
<td>MTP® Connector</td>
<td>0.25 dB</td>
<td>0.35 dB</td>
</tr>
</tbody>
</table>

*All MTP on trunks are manufactured to meet ultra-low-loss values*

### Modules/Harnesses - Ultra-Low-Loss

<table>
<thead>
<tr>
<th></th>
<th>Insertion Loss, Max.</th>
<th>OS2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component Value</td>
<td>0.35 dB</td>
<td>0.6 dB</td>
</tr>
</tbody>
</table>
**EDGE™ Solutions**

**EDGE™ HD Housing**

EDGE HD housings are mountable in 19-in racks or cabinets and provide industry-leading high-density connectivity when combined with EDGE modules, panels, harnesses, trunks, and jumpers.

**Sliding drawers**
Allow unprecedented finger access, easier jumper/harness routing, and port identification

**Quick mounting system**
Enables one-person installation and depth adjustment of the housing in the rack

**Integrated strain-relief plate can rotate 90-degrees**
Makes it possible to install both EDGE™ solutions or Plug & Play™ system cable designs in your EDGE housings

**Removable top covers on the 1U and 2U housings**
Provides easier access to modules and panels

**Total flexibility in the same HD housing**
- Accepts EDGE universal modules
- Accepts EDGE conversion modules
- Accepts EDGE tap modules
- Accepts EDGE 2x, 4x, and 6x MTP® adapter
- Accepts EDGE 6x LC duplex adapter panels

**High-port concentration with LC duplex and MTP**
Base-12 system
- 1 U EDGE Housing EDGE-01U
  48x LC duplex ports (96 fiber)
  48x MTP ports (576 fiber)
- 1 U EDGE Housing EDGE-01U-SP
  72x LC duplex ports (144 fiber)
  72x MTP ports (864 fiber)
- 2 U EDGE Housing EDGE-02U
  144x LC duplex ports (288 fiber)
  144x MTP ports (1728 fiber)
- 4 U EDGE Housing EDGE-04U
  288x LC duplex ports (576 fiber)
  288x MTP ports (3456 fiber)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Height</th>
<th>Dimensions (W x D x H)</th>
<th>Packaging Dimensions (W x D x H)</th>
<th>Shipping</th>
<th>Number of Panels per Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDGE-01U</td>
<td>1U</td>
<td>432 mm x 561 mm x 44 mm</td>
<td>565 mm x 657 mm x 171 mm</td>
<td>9.3 kg (20.4 lb)</td>
<td>8</td>
</tr>
<tr>
<td>EDGE-01U-SP</td>
<td>1U</td>
<td>432 mm x 561 mm x 44 mm</td>
<td>565 mm x 646 mm x 171 mm</td>
<td>8.2 kg (18 lb)</td>
<td>12</td>
</tr>
<tr>
<td>EDGE-02U</td>
<td>2U</td>
<td>432 mm x 561 mm x 88 mm</td>
<td>565 mm x 660 mm x 216 mm</td>
<td>10.9 kg (24 lb)</td>
<td>24</td>
</tr>
<tr>
<td>EDGE-04U</td>
<td>4U</td>
<td>432 mm x 561 mm x 177 mm</td>
<td>565 mm x 660 mm x 305 mm</td>
<td>16.8 kg (37 lb)</td>
<td>48</td>
</tr>
</tbody>
</table>

Notes:
1) When rear strain-relief plate is removed from part number EDGE-01U-SP, product depth reduces to 14.9 in.
2) EDGE-01U has sliding inner assembly. EDGE-01U-SP does not have sliding inner assembly.
EDGE™ Solutions

EDGE™ FX Housing

EDGE™ FX housings are available in 1U, 2U, and 4U sizes that mount in 19-in racks or cabinets as well as two other housings that can mount in the floor. Combine these housings with the EDGE modules, panels, trunks, harnesses, and jumpers to experience an industry-leading solution. The reduced depth of the rack-mount housings allow for the back-to-back installation in 4-post racks or cabinets as well as third-party floor boxes.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Height Unit</th>
<th>Dimensions (W x D x H)</th>
<th>Packaging Dimensions (W x D x H)</th>
<th>Shipping</th>
<th>Number of Panels per Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDGE-01U-EMOD</td>
<td>1U</td>
<td>432 mm x 107 mm x 44.5 mm (17 in x 4.2 in x 1.75 in)</td>
<td>534 mm x 201 mm x 138 mm (21 in x 7.9 in x 5.4 in)</td>
<td>1.14 kg (2.5 lb)</td>
<td>8</td>
</tr>
<tr>
<td>EDGE-01U-FP</td>
<td>1U</td>
<td>488 mm x 439 mm x 43 mm (19.2 in x 17.3 in x 1.7 in)</td>
<td>584 mm x 470 mm x 152 mm (22.9 in x 18.5 in x 5.9 in)</td>
<td>4.4 kg (9.6 lb)</td>
<td>8</td>
</tr>
<tr>
<td>EDGE-02U-FP</td>
<td>2U</td>
<td>432 mm x 434 mm x 89 mm (17 in x 17.1 in x 3.5 in)</td>
<td>569 mm x 346 mm x 229 mm (22.4 in x 13.6 in x 9 in)</td>
<td>6.4 kg (14 lb)</td>
<td>16</td>
</tr>
<tr>
<td>EDGE-04U-FP</td>
<td>4U</td>
<td>432 mm x 434 mm x 178 mm (17 in x 17.1 in x 3.5 in)</td>
<td>567 mm x 346 mm x 320 mm (22.4 in x 13.6 in x 7.25 in)</td>
<td>9.6 kg (21 lb)</td>
<td>32</td>
</tr>
<tr>
<td>EDGE-FZB-04U</td>
<td>–</td>
<td>527 mm x 527 mm x 241 mm (20.75 in x 20.75 in x 9.5 in)</td>
<td>656 mm x 643 mm x 356 mm (25.8 in x 25.3 in x 14 in)</td>
<td>17.8 kg (39 lb)</td>
<td>32</td>
</tr>
<tr>
<td>EDGE-SMH</td>
<td>–</td>
<td>152 mm x 102 mm x 25 mm (6 in x 4 in x 1 in)</td>
<td>229 mm x 184 mm x 57 mm (9 in x 7.25 in x 2.25 in)</td>
<td>1 kg (3 lb)</td>
<td>1</td>
</tr>
</tbody>
</table>

When rear strain-relief plate is removed, the depth reduces to 8.5-in for products EDGE-01U-FP/EDGE-02U-FP/EDGE-04U-FP. See hardware accessories for alternate strain-relief options.
EDGE™ Solutions

Ultra-Low-Loss Modules

EDGE™ modules provide the interface between the MTP® connector on the trunk and the LC duplex jumpers that will then connect directly into the electronics. The LC duplex adapters feature hinged VFL-compatible shutters that move up and out of the way when the connector is inserted. Specially designed indents in the shutters ensure that the end faces of the connectors are never touched. These shutters replace the standard dust caps that typically once removed are never replaced, exposing the interior end faces to dust particles and possible damage.

The EDGE ultra-low-loss module allows for extended reach capabilities in high-speed serial duplex transmission. The OM3/OM4/OM5 EDGE ultra-low-loss modules are specified to 0.35 dB compared to 0.5 dB for the low-loss EDGE module. The OS2 EDGE ultra-low-loss modules are specified to 0.60 dB compared to 1.0 dB for the standard EDGE module.

Ordering Information

<table>
<thead>
<tr>
<th>ECM -</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>U</th>
<th>L</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Select polarity.
   - UM = Universal polarity
   - RM = Straight-through

2. Defines fiber count.
   - 12 = 12 fibers

3. Select adapters on module front.
   - 05 = Shuttered LC Duplex MM
   - 04 = Shuttered LC UPC duplex SM
   - 18 = Shuttered LC APC duplex SM

4. Select MTP adapter on the back of the module.
   - 93 = MTP 12 F (pinned) MM
   - 89 = MTP 12 F (pinned) SM

5. Select fiber type.
   - T = 50 µm multimode (OM3)
   - Q = 50 µm multimode (OM4)
   - V = 50 µm wideband multimode (OM5)
   - G = Single-mode Ultra (OS2)
Low-Loss Modules

EDGE™ modules provide the interface between the MTP® connector on the trunk and the LC duplex jumpers that will then connect directly into the electronics. The LC duplex adapters feature hinged VFL-compatible shutters that move up and out of the way when the connector is inserted. Specially designed indents in the shutters ensure that the end faces of the connectors are never touched. These shutters replace the standard dust caps that typically once removed are never replaced, exposing the interior end faces to dust particles and possible damage.

Ordering Information

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECM</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. **Select polarity.**
   - UM = Universal polarity
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2. **Defines fiber count.**
   - 12 = 12 fibers

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   - 18 = Shuttered LC APC duplex SM

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   - 93 = MTP 12 F (pinned) MM
   - 89 = MTP 12 F (pinned) SM

5. **Select fiber type.**
   - T = 50 µm multimode (OM3)
   - Q = 50 µm multimode (OM4)
   - V = 50 µm wideband multimode (OM5)
   - G = Single-mode Ultra (OS2)
EDGE™ Solutions

MTP® Adapter Panels

EDGE™ MTP® adapter panels provide a simple interface to mate MTP connectors. This occurs when connecting MTP trunks to MTP extender trunks, MTP trunks to trunk harnesses, and in 40G multimode networks when MTP trunks are connected to 40G jumpers.

EDGE 72-fiber MTP panels feature translucent shuttered adapters with translucent shuttered MTP reversible adapters at the front of the panel.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Fiber Count</th>
<th>Fiber Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDGE-CP24-E3</td>
<td>24</td>
<td>50 μm MM (OM3/OM4)</td>
</tr>
<tr>
<td>EDGE-CP24-EY</td>
<td>24</td>
<td>50 μm MM (OM5)</td>
</tr>
<tr>
<td>EDGE-CP24-90</td>
<td>24</td>
<td>SM (OS2)</td>
</tr>
<tr>
<td>EDGE-CP48-E3</td>
<td>48</td>
<td>50 μm MM (OM3/OM4)</td>
</tr>
<tr>
<td>EDGE-CP48-EY</td>
<td>48</td>
<td>50 μm MM (OM5)</td>
</tr>
<tr>
<td>EDGE-CP58-90</td>
<td>48</td>
<td>SM (OS2)</td>
</tr>
<tr>
<td>EDGE-CP72-U3</td>
<td>72</td>
<td>50 μm MM (OM3/OM4)</td>
</tr>
<tr>
<td>EDGE-CP72-U1</td>
<td>72</td>
<td>SM (OS2)</td>
</tr>
</tbody>
</table>
## Trunk Specifications

**Approval and Listings**

NFPA 262, National Electrical Code® (NEC®), OFNP, CSA FT-6

**Trunk Performance**

EIA/TIA 568 C.3 – includes low/high temperature soak of -10/60°C, humidity testing at 90-95 percent at 40°C, connector durability (500 matings) and connector pull testing

Trunks can be pulled up to 100 lbs using the grip

### Mechanical Characteristics

<table>
<thead>
<tr>
<th>Fiber Count</th>
<th>Nominal Outer Diameter</th>
<th>Pulling Grip Outer Diameter</th>
<th>Strain-Relief Bracket Size</th>
<th>Minimum Conduit Size with 18-in Elbow</th>
<th>Weight</th>
<th>Min. Bend Radius Installation 15 x OD</th>
<th>Min. Bend Radius Operation 5 x OD</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>5.5 mm ± 0.3 mm (0.22 in)</td>
<td>41 mm (1.6 in)</td>
<td>1</td>
<td>2.5 in</td>
<td>32 kg/km (22 lb/1000 ft)</td>
<td>82.5 mm (3.25 in)</td>
<td>27.5 mm (1.08 in)</td>
</tr>
<tr>
<td>24</td>
<td>7.7 mm ± 0.3 mm (0.30 in)</td>
<td>41 mm (1.6 in)</td>
<td>1</td>
<td>2.5 in</td>
<td>50 kg/km (34 lb/1000 ft)</td>
<td>115.5 mm (4.55 in)</td>
<td>38.5 mm (1.52 in)</td>
</tr>
<tr>
<td>36</td>
<td>8.0 mm ± 0.3 mm (0.31 in)</td>
<td>41 mm (1.6 in)</td>
<td>1</td>
<td>2.5 in</td>
<td>56 kg/km (38 lb/1000 ft)</td>
<td>120 mm (4.72 in)</td>
<td>40 mm (1.57 in)</td>
</tr>
<tr>
<td>48</td>
<td>8.5 mm ± 0.3 mm (0.33 in)</td>
<td>56 mm (2.2 in)</td>
<td>2</td>
<td>3.0 in</td>
<td>63 kg/km (42 lb/1000 ft)</td>
<td>127.5 mm (5.02 in)</td>
<td>42.5 mm (1.67 in)</td>
</tr>
<tr>
<td>72</td>
<td>10.5 mm ± 0.3 mm (0.41 in)</td>
<td>56 mm (2.2 in)</td>
<td>2</td>
<td>3.0 in</td>
<td>93 kg/km (62 lb/1000 ft)</td>
<td>157.5 mm (6.2 in)</td>
<td>52.5 mm (2.07 in)</td>
</tr>
<tr>
<td>96</td>
<td>11.9 mm ± 0.3 mm (0.47 in)</td>
<td>56 mm (2.2 in)</td>
<td>2</td>
<td>3.0 in</td>
<td>111 kg/km (75 lb/1000 ft)</td>
<td>178.5 mm (7.03 in)</td>
<td>59.5 mm (2.34 in)</td>
</tr>
<tr>
<td>144</td>
<td>12.5 mm ± 0.3 mm (0.49 in)</td>
<td>56 mm (2.2 in)</td>
<td>2</td>
<td>3.0 in</td>
<td>130 kg/km (87 lb/1000 ft)</td>
<td>187.5 mm (7.38 in)</td>
<td>62.5 mm (2.46 in)</td>
</tr>
<tr>
<td>192</td>
<td>13.5 mm ± 0.8 mm (0.53 in)</td>
<td>38.1 mm (1.5 in)</td>
<td>Heat-shrink</td>
<td>2.0 in</td>
<td>182 kg/km (122 lb/1000 ft)</td>
<td>202.5 mm (7.97 in)</td>
<td>67.5 mm (2.66 in)</td>
</tr>
<tr>
<td>216</td>
<td>14.0 mm ± 0.8 mm (0.55 in)</td>
<td>38.1 mm (1.5 in)</td>
<td>Heat-shrink</td>
<td>2.0 in</td>
<td>195 kg/km (131 lb/1000 ft)</td>
<td>210 mm (8.27 in)</td>
<td>70 mm (2.76 in)</td>
</tr>
<tr>
<td>288</td>
<td>16.0 mm ± 0.8 mm (0.63 in)</td>
<td>38.1 mm (1.5 in)</td>
<td>Heat-shrink</td>
<td>2.0 in</td>
<td>238 kg/km (160 lb/1000 ft)</td>
<td>240 mm (9.45 in)</td>
<td>80 mm (3.15 in)</td>
</tr>
<tr>
<td>432</td>
<td>22.9 mm ± 0.8 mm (0.90 in)</td>
<td>48.3 mm (1.9 in)</td>
<td>Heat-shrink</td>
<td>2.5 in</td>
<td>400 kg/km (269 lb/1000 ft)</td>
<td>343.5 mm (13.52 in)</td>
<td>114.5 mm (4.51 in)</td>
</tr>
<tr>
<td>576</td>
<td>24.5 mm ± 0.8 mm (0.96 in)</td>
<td>48.3 mm (1.9 in)</td>
<td>Heat-shrink</td>
<td>2.5 in</td>
<td>472 kg/km (317 lb/1000 ft)</td>
<td>367.5 mm (14.47 in)</td>
<td>122.5 mm (4.82 in)</td>
</tr>
</tbody>
</table>
## Transmission Performance

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>Multimode</th>
<th>Multimode</th>
<th>Single-Mode</th>
</tr>
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<tbody>
<tr>
<td>Fiber Core Diameter (µm)</td>
<td>50</td>
<td>50</td>
<td>8.2</td>
</tr>
<tr>
<td>Fiber Category</td>
<td>OM3</td>
<td>OM4</td>
<td>OS2</td>
</tr>
<tr>
<td>Fiber Code</td>
<td>T</td>
<td>Q</td>
<td>G</td>
</tr>
<tr>
<td>Wavelengths (nm)</td>
<td>850/1300</td>
<td>850/1300</td>
<td>1310/1383/1550</td>
</tr>
<tr>
<td>Maximum Attenuation (dB/km)</td>
<td>2.8/1.0</td>
<td>2.8/1.0</td>
<td>0.4/0.4/0.3</td>
</tr>
<tr>
<td>Min. Overfilled Launch (OFL) Bandwidth (MHz-km)</td>
<td>1500/500</td>
<td>3500/500</td>
<td>–</td>
</tr>
<tr>
<td>Minimum Effective Modal Bandwidth (EMB) MHz-km</td>
<td>2000/–</td>
<td>4700/–</td>
<td>–</td>
</tr>
<tr>
<td>Serial 1 Gigabit Ethernet (m)</td>
<td>1000/600</td>
<td>1100/600</td>
<td>5000/–/–</td>
</tr>
<tr>
<td>Serial 10 Gigabit Ethernet (m)</td>
<td>300/–</td>
<td>550/–</td>
<td>10000/–/40000</td>
</tr>
<tr>
<td>Induced Attenuation @ 7.5 mm Radius dB</td>
<td>&lt; 0.2(2 turns, 850 nm)</td>
<td>&lt; 0.2(2 turns, 850 nm)</td>
<td>–</td>
</tr>
</tbody>
</table>

*Single-mode (OS2) fiber is ITU-T G.652.D compliant.
*50 µm multimode fiber (OM3/OM4) meets 0.75 ns optical skew when used in all Corning Plug & Play™/EDGE™ systems solutions.
*OM3/OM4 multimode fiber minimum effective modal bandwidth assumes 1.0 dB maximum total connector/splice loss.

Notes:
1) Improved attenuation and bandwidth options available.
2) Bend-insensitive single-mode fibers available on request.
3) Contact a Corning Customer Care Representative for additional information.

## Optical Performance Multimode

<table>
<thead>
<tr>
<th>Connector Polish</th>
<th>End Face</th>
<th>Reflectance</th>
<th>Max. Insertion Loss</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTP® Trunks</td>
<td>PC</td>
<td>Flat</td>
<td>≤ -20 dB</td>
<td>≤ 0.25 dB*</td>
</tr>
</tbody>
</table>

## Optical Performance Single-Mode

<table>
<thead>
<tr>
<th>Connector Polish</th>
<th>End Face</th>
<th>Reflectance</th>
<th>Max. Insertion Loss</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTP Trunks</td>
<td>APC</td>
<td>Angled</td>
<td>≤ -65 dB</td>
<td>≤ 0.35 dB*</td>
</tr>
</tbody>
</table>

*Note: IL in preconnectorized products is measured in the factory through two mated pairs.
# Reel Capacities

## Reel Capacities - 12 to 144 Fibers

<table>
<thead>
<tr>
<th>Packaging Method</th>
<th>Box E</th>
<th>Reel 1</th>
<th>Reel 2</th>
<th>Reel 3</th>
<th>Reel W</th>
<th>Reel Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging Material</td>
<td>Corrugated box</td>
<td>Plastic reel</td>
<td>Plastic reel</td>
<td>Plastic reel</td>
<td>Plywood reel</td>
<td>Plywood reel</td>
</tr>
<tr>
<td>Reel Diameter (in)</td>
<td>19.5</td>
<td>19.5</td>
<td>19.5</td>
<td>36</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>Reel Width (in)</td>
<td>5</td>
<td>10</td>
<td>16</td>
<td>32</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Box Dimensions (in)</td>
<td>21x21x3.3</td>
<td>26x25.5x7</td>
<td>26x25.5x14</td>
<td>26x25.5x20</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fiber Count</td>
<td>Capacities (ft)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>10-75</td>
<td>76-1200</td>
<td>1201-2255</td>
<td>2256-3500</td>
<td>3501-7677</td>
<td>-</td>
</tr>
<tr>
<td>24</td>
<td>10-75</td>
<td>76-600</td>
<td>601-1100</td>
<td>1101-1800</td>
<td>1801-3917</td>
<td>-</td>
</tr>
<tr>
<td>36</td>
<td>10-75</td>
<td>76-550</td>
<td>551-1050</td>
<td>1051-1700</td>
<td>1701-3628</td>
<td>-</td>
</tr>
<tr>
<td>48</td>
<td>10-75</td>
<td>76-450</td>
<td>451-999</td>
<td>1000-1500</td>
<td>1501-3214</td>
<td>3215-9093</td>
</tr>
<tr>
<td>72</td>
<td>10-75</td>
<td>76-300</td>
<td>301-600</td>
<td>601-999</td>
<td>1000-2106</td>
<td>2107-5959</td>
</tr>
<tr>
<td>96</td>
<td>10-75</td>
<td>76-250</td>
<td>251-500</td>
<td>501-800</td>
<td>801-1640</td>
<td>1641-4639</td>
</tr>
<tr>
<td>144</td>
<td>10-75</td>
<td>76-200</td>
<td>201-400</td>
<td>401-700</td>
<td>701-1486</td>
<td>1487-4205</td>
</tr>
</tbody>
</table>

Note: 12- to 144-fiber trunks under 75 ft are shipped in a cardboard box and not on a reel.

## Reel Capacities - 192 to 576 Fibers

<table>
<thead>
<tr>
<th>Packaging Method</th>
<th>Box H</th>
<th>Reel Q</th>
<th>Reel W</th>
<th>Reel Z (A)</th>
<th>Reel Z (48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging Material</td>
<td>Corrugated box</td>
<td>Plywood reel</td>
<td>Plywood reel</td>
<td>Plywood reel</td>
<td>Plywood reel</td>
</tr>
<tr>
<td>Reel Diameter (in)</td>
<td>27</td>
<td>36</td>
<td>41</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Reel Width (in)</td>
<td>36</td>
<td>32</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Box Dimensions (in)</td>
<td>31x31.5x7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Fiber Count</td>
<td>Capacities (ft)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>192</td>
<td>10-202</td>
<td>203-1300</td>
<td>1301-1900</td>
<td>1901-3600</td>
<td>3601-8800</td>
</tr>
<tr>
<td>216</td>
<td>10-172</td>
<td>173-1290</td>
<td>1291-1800</td>
<td>1801-3300</td>
<td>3301-8200</td>
</tr>
<tr>
<td>288</td>
<td>10-137</td>
<td>138-990</td>
<td>991-1400</td>
<td>1401-2500</td>
<td>2501-6200</td>
</tr>
<tr>
<td>432</td>
<td>10-66</td>
<td>67-480</td>
<td>481-600</td>
<td>601-1250</td>
<td>1251-3000</td>
</tr>
</tbody>
</table>
EDGE™ Solutions

MTP® Trunks

EDGE™ MTP® trunks provide the backbone of the EDGE solution. With non-pinned MTP connectors on both ends of the cable, these trunks are designed to interface with the EDGE solutions or Plug & Play™ systems modules. All trunks are shipped with strain-relief clips that allow for the tool-less installation in both EDGE solutions and Plug & Play systems housings.

Ordering Information

*For custom labels, add the letter "L" as prefix to the part number e.g. LG757548QPNDDUxxxF
Print for custom labels can be up to 30 characters. Information to be printed on custom labels must be provided at the time of order.

1. Select grip.
   G = Grip on first end only
   D = Grip on both ends
   Z = No grip

2. Select MTP connector (end one on outside of reel).
   75 = MTP 12 F (non-pinned) MM
   90 = MTP 12 F (non-pinned) SM
   00 = Pigtail (only available with "P = straight-through polarity")

3. Select MTP connector (end two on inside of reel).
   75 = MTP 12 F (non-pinned) MM
   90 = MTP 12 F (non-pinned) SM

4. Select standard fiber count.
   12 = 12 fiber
   24 = 24 fiber
   36 = 36 fiber
   48 = 48 fiber
   72 = 72 fiber
   96 = 96 fiber
   144 = 144 fiber
   192 = 192 fiber
   216 = 216 fiber
   288 = 288 fiber
   336 = 336 fiber
   432 = 432 fiber
   576 = 576 fiber

5. Select fiber type.
   T = 50 μm multimode (OM3)
   Q = 50 μm multimode (OM4)
   V = 50 μm wideband multimode (OM5)
   G = Single-mode Ultra (OS2)

6. Select cable type.
   PN = Plenum, non-armored

7. Select leg length (end one on outside of reel).
   D = 33 in (+3/-0 in)*
   0 = Pigtail

8. Defines leg length (end two on inside of reel).
   D = 33 in (+3/-0 in)*
   Furcation legs are color-coded by fiber type.

9. Select trunk type.
   U = Standard Type-B
   P = Straight-through Type-A

10. Select cable length.
    005-999 ft
    (1 ft increments from furcation to furcation)
    002-300 m
    (1 m increments from furcation to furcation)
    Longer cable lengths available upon request.

11. Select unit of measure.
    F = Feet
    M = Meters

*For fiber counts above 144 F, the legs will be staggered starting at 33-in.
EDGE™ Solutions

MTP® Extender Trunks

EDGE™ MTP® extender trunks provide additional distance for the backbone of the EDGE solution. With a non-pinned MTP connector on one end of the cable, a pinned MTP connector on the other, and a TIA-568 Type-A polarity, these trunks are designed to interface with an EDGE solutions or Plug & Play™ systems module and an MTP trunk. All trunks are shipped with strain-relief clips that allow for the tool-less installation in both EDGE solutions and Plug & Play systems housings. Most often these extender trunks will be used in a zone distribution area (ZDA). These trunks conform to TIA-568 Type-A polarity.

Ordering Information

1 Select grip.
   G = Grip on first end only
   Z = No grip

2 Select MTP connector (end on outside of reel).
   93 = MTP 12 F (pinned) MM
   89 = MTP 12 F (pinned) SM

3 Select MTP connector (end on inside of reel).
   75 = MTP 12 F (non-pinned) MM
   90 = MTP 12 F (non-pinned) SM

4 Select standard fiber count.
   12 = 12 fiber
   24 = 24 fiber
   36 = 36 fiber
   48 = 48 fiber
   72 = 72 fiber
   96 = 96 fiber
   E4 = 144 fiber
   K2 = 192 fiber
   M6 = 216 fiber
   U8 = 288 fiber
   AK = 432 fiber
   AZ = 576 fiber

5 Select fiber type.
   T = 50 μm multimode (OM3)
   Q = 50 μm multimode (OM4)
   V = 50 μm wideband multimode (OM5)
   G = Single-mode Ultra (OS2)

6 Select cable type.
   PN = Plenum, non-armored

7 Defines leg length (end one on inside of reel).
   C = 60 in (+3/-0 in)
   Mates with trunk (long leg reaches from rear to the front side of housing).

8 Defines leg length (end two on outside of reel).
   D = 33 in (+3/-0 in)*
   Mates with module/harness.

9 Defines trunk type.
   X = Extender

10 Select cable length.
   005-999 ft
   (1 ft increments measured from furcation to furcation)
   002-300 m
   (1 m increments measured from furcation to furcation)
   Longer cable lengths available upon request.

11 Select unit of measure.
   F = Feet
   M = Meters

*For fiber counts above 144 F, the legs will be staggered starting at 33-in.
Hybrid MTP® to LC Duplex Uniboot Trunks

EDGE™ hybrid MTP® to LC duplex uniboot trunks combine non-pinned MTP connectors that connect to EDGE modules and duplex uniboot LC connectors that connect directly to the electronics enabling more options for the cabling of data centers.

Ordering Information

1 Select grip.
   G = Grip on one end
   Z = No grips

2 Select MTP connector
   (end one on outside of reel).
   75 = MTP 12 F (non-pinned) MM
   90 = MTP 12 F (non-pinned) SM

3 Select LC connector
   (end two on inside of reel).
   79 = LC Uniboot, low-loss MM
   78 = LC UPC Uniboot SM

4 Select fiber count.
   12 = 12 fiber
   24 = 24 fiber
   36 = 36 fiber
   48 = 48 fiber
   72 = 72 fiber
   96 = 96 fiber
   144 = 144 fiber

5 Select fiber type.
   T = 50 µm multimode (OM3)
   Q = 50 µm multimode (OM4)
   V = 50 µm wideband multimode (OM5)
   G = Single-mode Ultra (OS2)

6 Defines cable type.
   PN = Plenum, non-armored

7 Defines leg length
   (end one or outside of reel).
   D = 33 in (+3/-0 in)
   Mates with module/harness.

8 Select leg length
   (end two or inside of reel).
   J = 12 in (+3/-0 in)
   K = 24 in (+3/-0 in)
   L = 36 in (+3/-0 in) (standard)
   M = 48 in (+3/-0 in)
   N = 60 in (+3/-0 in)
   P = 72 in (+3/-0 in)

9 Defines trunk type.
   W = Universal hybrid trunk

10 Select cable length.
   005-999 ft
   (1 ft increments measured from furcation to furcation)
   002-300 m
   (1 m increments measured from furcation to furcation)
   Longer cable lengths available upon request.

11 Select unit of measure.
   F = Feet
   M = Meters
**EDGE™ Solutions**

**Hybrid MTP® to LC Duplex Uniboot Extender Trunks**

EDGE™ hybrid MTP® to LC duplex uniboot trunks combine pinned MTP connectors that connect into MTP trunks and duplex uniboot LC connectors that connect directly into the electronics providing more options for the cabling of data centers. These hybrid extender trunks are most often used in a zone distribution area (ZDA).

**Ordering Information**

<table>
<thead>
<tr>
<th>Photo REN3267</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select grip.</td>
<td>G = Grip on one end</td>
<td>Z = No grips</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Select MTP connector (end one on outside of reel).</td>
<td>93 = MTP 12 F (pinned) MM</td>
<td>89 = MTP 12 F (pinned) SM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Select LC connector (end two on inside of reel).</td>
<td>79 = LC Uniboot, low-loss MM</td>
<td>78 = LC UPC Uniboot SM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Select fiber count.</td>
<td>12 = 12 fiber</td>
<td>24 = 24 fiber</td>
<td>36 = 36 fiber</td>
<td>48 = 48 fiber</td>
<td>72 = 72 fiber</td>
<td>96 = 96 fiber</td>
<td>144 = 144 fiber</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Select fiber type.</td>
<td>T = 50 ( \mu )m multimode (OM3)</td>
<td>Q = 50 ( \mu )m multimode (OM4)</td>
<td>V = 50 ( \mu )m wideband multimode (OM5)</td>
<td>G = Single-mode Ultra (OS2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Defines cable type.</td>
<td>PN = Plenum, non-armored</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Defines leg length (end one on outside of reel).</td>
<td>C = 60 in (+3/-0 in)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Select 2.0 mm leg length (end two on inside of reel).</td>
<td>J = 12 in (+3/-0 in)</td>
<td>K = 24 in (+3/-0 in)</td>
<td>L = 36 in (+3/-0 in) (standard)</td>
<td>M = 48 in (+3/-0 in)</td>
<td>N = 60 in (+3/-0 in)</td>
<td>P = 72 in (+3/-0 in)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Defines trunk type.</td>
<td>Z = Universal hybrid extender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Select cable length.</td>
<td>005-999 ft (1 ft increments measured from furcation to furcation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Select unit of measure.</td>
<td>002-300 m (1 m increments measured from furcation to furcation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Longer cable lengths available upon request.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F = Feet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M = Meters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**EDGE Solutions Hybrid Extender Trunk Configuration**

| Drawing ZA-3671 |
EDGE™ Solutions

EDGE™ Harnesses

One of the critical challenges facing data center owners, operators, and maintenance personnel in high-density (HD) computing areas is how to provide high-port-concentration deployments to support the latest generation of high-speed switches without losing them under a mass of patch cords.

An EDGE harness is an ultra-slim 12-fiber (2.0 mm) preterminated fiber cable with an MTP® PRO connector on one end and six LC Uniboot-style duplex connectors on the other. The majority of the harness is a single cable which breaks out into six, 2-fiber legs to enable connectivity to the switch ports which are staggered to replicate the specific switch ports to save on excess cable length. MTP PRO allows for a simple one-step color-coded polarity change feature without removing the connector housing. The connector also provides the capability for field-friendly pinning configuration changes with safe handling of pins and easy color identification while maintaining product integrity.

Specialty designed harnesses are available for numerous distribution switches including Cisco, Arista, Brocade, Juniper, and HP using SFP+ (LC interfaces) for Ethernet or Fibre Channel with duplex transmission for port mirroring, aggregation, fabric, or breakout applications.

Features
- Slim round 2-fiber interconnect cable
- Uniboot-style duplex connectors
- Low-loss connectivity enables system design flexibility
- Designed to withstand tight bends and challenging cable routes
- MTP PRO allows for pinning and polarity changes in the field

EDGE Staggered Harness Examples | Photo ZA4252
EDGE™ Solutions

EDGE™ MTP® to LC Uniboot Staggered Harnesses

The EDGE™ MTP® to LC uniboot harness provides breakout from 12-fiber MTP PRO connectors and LC uniboot connectors.

The EDGE module harness is designed to create a cross-connect point near the electronics by enabling port replication. This is possible with duplex LC connectors to interface with the electronics and a non-pinned MTP PRO connector to connect into the back of a module. With port replication, your installation will look the same even after multiple moves, adds, and changes (MACs). This solution can be used in a horizontal distribution area (HDA).

The EDGE trunk harness is designed to facilitate an interconnect point when the electronics are located in a separate area than the cross-connect of patching field. This is possible with duplex LC connectors to interface with the electronics and a pinned MTP PRO connector to connect into a trunk. This solution can be used in an equipment distribution area (EDA).

Ordering Information

<table>
<thead>
<tr>
<th>H</th>
<th>1</th>
<th>2</th>
<th>12</th>
<th>PH -</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
</table>

1. Select MTP PRO connector.
   - 75 = MTP 12 F (non-pinned) MM
   - 93 = MTP 12 F (pinned) MM
   - 89 = MTP 12 F (pinned) SM
   - 90 = MTP 12 F (non-pinned) SM

2. Select the breakout connector type.
   - 79 = LC Uniboot, low-loss MM
   - 78 = LC UPC Uniboot SM
   LCs are universally wired

3. Select fiber type.
   - T = 50 µm multimode (OM3)
   - Q = 50 µm multimode (OM4)
   - V = 50 µm wideband multimode (OM5)
   - G = Single-mode Ultra (OS2)

4. Defines cable type.
   - PH = Plenum, harness

5. Select leg length in inches (leg OD is 2.0 mm).
   - 1 = Type 1 Stagger
   - 2 = Type 2 Stagger
   - 3 = Type 3 Stagger
   - 4 = Type 4 Stagger (uniform)
   - 5 = Type 5 Stagger

   Note: For harness stagger type, reference AEN157.

6. Select harness polarity.
   - A = Type-A
   - B = Type-B

7. Select harness length.
   - 003-020 ft
     (1 ft increments measured from plug to MTP, does not include leg length)
   - 001-006 m
     (1 m increments measured from plug to MTP, does not include leg length)

8. Select unit of measure.
   - F = Feet
   - M = Meters

An EDGE harness should have type-A polarity and a pinned MTP PRO connector when connecting to a trunk.

An EDGE harness should have type-B polarity and a non-pinned MTP PRO connector when connecting to a module.

Harness length is measured from MTP connector to furcation plug and therefore does not include LC leg length.
EDGE™ MTP® to LC Uniboot Non-Staggered Harnesses

The EDGE™ MTP® to LC uniboot harness provides breakout from 12-fiber MTP PRO connectors and LC uniboot connectors.

The EDGE module harness is designed to create a cross-connect point near the electronics by enabling port replication. This is possible with duplex LC connectors to interface with the electronics and a non-pinned MTP PRO connector to connect into the back of a module. With port replication, your installation will look the same even after multiple moves, adds, and changes (MACs). This solution can be used in a horizontal distribution area (HDA).

The EDGE trunk harness is designed to facilitate an interconnect point when the electronics are located in a separate area than the cross-connect of patching field. This is possible with duplex LC connectors to interface with the electronics and a pinned MTP PRO connector to connect into a trunk. This solution can be used in an equipment distribution area (EDA).

Ordering Information

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
</table>
| Select MTP PRO connector. 75 = MTP 12 F (non-pinned) MM 93 = MTP 12 F (pinned) MM 89 = MTP 12 F (pinned) SM 90 = MTP 12 F (non-pinned) SM | Defines cable type. PH = Plenum, harness | Select leg length in inches (leg OD is 2.0 mm).  
J = 12 in (+3/-0 in)  
K = 24 in (+3/-0 in)  
L = 36 in (+3/-0 in)  
M = 48 in (+3/-0 in)  
N = 60 in (+3/-0 in)  
P = 72 in (+3/-0 in)  
R = 98 in (+3/-0 in)  
Furcation legs are color coded by fiber type. | Select harness polarity. A = Type-A  B = Type-B | Select the harness length. 003-200 ft (1 ft increments measured from plug to MTP, does not include leg length) 001-060 m (1 m increments measured from plug to MTP, does not include leg length) | Select unit of measure. F = Feet  M = Meters |

An EDGE harness should have **type-A polarity** and a pinned MTP PRO connector when connecting to a trunk. An EDGE harness should have **type-B polarity** and a non-pinned MTP PRO connector when connecting to a module.

Harness length is measured from MTP connector to furcation plug and therefore does not include LC leg length.
EDGE™ Solutions

Features and Benefits

Conversion modules and harnesses transition connectivity from 12 to 8 fibers
Ensures 100 percent utilization of trunks at 40 and 100G

MTP® assemblies with reduced footprint and cable outside diameter
Reduced congestion in high-connectivity environment

Conversion modules and harnesses offer the industry's best rack density for parallel optics
72 MTP ports per 1U enables higher-revenue generation per rack unit

Reversible MTP adapters allow on-site polarity changes
Reduced risk of installation delays or errors during commissioning of new devices

Port tap modules integrate network monitoring into the structured cabling
No additional rack space required for tap devices; eliminates downtime associated with port tap changes

Utilizes existing EDGE solutions hardware and backbone cabling
Higher return on investment and reduced capitalization and installation costs

Corning® ClearCurve® fiber-enabled components create smaller-form-factor, more rugged cabling
Reduced congestion within and between racks for improved airflow; less risk of downtime due to pinched or bent cables

EDGE AO solutions is a comprehensive suite of advanced optical components that enable the next level of performance in your data center or storage area network (SAN). From network monitoring to migration to parallel optics, this advanced optical technology integrates directly into your EDGE solutions cabling system for maximum efficiency and return on investment.

Parallel Optics
EDGE AO solutions allow for design flexibility based on the unique requirements of your data center by offering both module and harness components. EDGE AO solutions delivers efficiency by ensuring 100 percent trunk fiber utilization at 40 and 100G. The solution’s conversion modules and harnesses breakout 12-fiber connectivity from the trunk into 8-fiber connectivity for mating to electronics. Transmission at 40G is based on using eight fibers in the link – four transmitting at 10G in each direction. The 100GBASE-SR4 standard also utilizes eight fibers at 4 x 25G in each direction.

Network Monitoring
EDGE AO Solutions also includes port tap modules, which integrate directly into the EDGE solutions structured cabling footprint. The EDGE tap module, available in multiple configurations for network monitoring at 1G, 10G, or 40G, has a passive optical splitter inside. The result is a “zero-U,” fully pass-through passive tap device with reduced downtime and link loss, and with increased rack space utilization and density compared to other optical tap options.
EDGE™ Solutions

Specifications

<table>
<thead>
<tr>
<th>Modules/Harnesses</th>
<th>Insertion Loss, Max.</th>
<th>Insertion Loss, Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OM3/OM4</td>
<td>OS2</td>
</tr>
<tr>
<td>Component Value</td>
<td>0.5 dB</td>
<td>1.0 dB</td>
</tr>
</tbody>
</table>

Temperature Range

| Operating Temperature | -10 °C to 60 °C (14 °F to 140 °F) |
Conversion Modules

EDGE™ conversion modules have 12-fiber MTP® adapters in the rear for mating to backbone trunks and breakout to 8-fiber MTP adapters in the front for connectivity to electronics. The conversion modules fully utilize all fibers in each Base-12 set in the trunk by breaking out Base-12 MTP adapters at the rear of the module into a proportionate number of Base-8 MTP adapters at the front.

EDGE conversion modules are available in two configurations: 2x3 (two 12-fiber MTP adapters in the rear and three 8-fiber MTP adapters in the front) and 4x6 (four adapters in the rear and six in the front).

These modules come from the factory as a TIA-568 Type-B component. However, EDGE conversion modules also offer on-site MTP connectivity changes to manage field polarity. Every EDGE conversion module features translucent shuttered adapters that eliminate the need for separate dust caps.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Adapter Type Front</th>
<th>Adapter Color Front</th>
<th>Adapter Type Back</th>
<th>Fiber Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECM-UM24-93-93Q</td>
<td>Shuttered MTP</td>
<td>Aqua</td>
<td>MTP</td>
<td>50 µm MM (OM4)</td>
</tr>
<tr>
<td>ECM-UM48-93-93Q</td>
<td>Shuttered MTP</td>
<td>Aqua</td>
<td>MTP</td>
<td>50 µm MM (OM4)</td>
</tr>
</tbody>
</table>

Note: For application reference, please refer to AEN150, AEN151, and AEN152
EDGE™ Solutions

Mesh Modules

EDGE™ 4x4 mesh modules are used to break out four-channel parallel ports to create a duplex fabric, eliminating the need to break the MTP® into LC connectivity. The mesh modules contain four 8-fiber MTP's in the rear for mating to backbone trunks and break out to four 8-fiber MTP's in the front for connectivity to the electronics. These modules allow customers to take advantage of higher port densities per switch with lower-power consumption and a lower cost per 10G port, as well as improves their ability to create port diversification when using QSFP+ transceivers for 10G applications.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Adapter Type Front</th>
<th>Adapter Color</th>
<th>Adapter Type Back</th>
<th>Fiber Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMM-MM32-9393Q</td>
<td>Shuttered MTP (Pinned)</td>
<td>Aqua</td>
<td>MTP (Pinned)</td>
<td>50 µm MM (OM4)</td>
</tr>
<tr>
<td>EMM-MM32-9375Q</td>
<td>Shuttered MTP (Pinned)</td>
<td>Aqua</td>
<td>MTP (Non-pinned)</td>
<td>50 µm MM (OM4)</td>
</tr>
<tr>
<td>EMM-SM32-8989G</td>
<td>Shuttered MTP (Pinned)</td>
<td>Black</td>
<td>MTP (Pinned)</td>
<td>Single-mode (OS2)</td>
</tr>
<tr>
<td>EMM-SM32-8990Q</td>
<td>Shuttered MTP (Pinned)</td>
<td>Black</td>
<td>MTP (Non-pinned)</td>
<td>Single-mode (OS2)</td>
</tr>
</tbody>
</table>
Conversion Harnesses

The EDGE™ conversion harness is a plenum-rated preterminated harness that, like EDGE modules, provide the conversion from 12- to 8-fiber connectivity for full-fiber utilization. It is offered as a 2x3 MTP® harness (two 12-fiber MTP connectors on one end, three 8-fiber MTP connectors on the other) for connection to electronics with MPO-style ports.

EDGE harnesses are a TIA-568 Type-A component.

Ordering Information

1. Select fiber type.
   - T = 50 µm multimode (OM3)
   - Q = 50 µm multimode (OM4)
2. Select the 12-fiber MTP connector leg length in inches (leg OD is 2.5 mm).
   - J = 12 in (+3/-0 in)
   - K = 24 in (+3/-0 in)
   - L = 36 in (+3/-0 in)
3. Select the 8-fiber MTP connector leg length in inches (leg OD is 2.5 mm).
   - J = 12 in (+3/-0 in)
   - K = 24 in (+3/-0 in)
   - L = 36 in (+3/-0 in)
4. Select the harness length in feet (does not include leg length).
   - 003-200 (1 ft increments measured from plug to MTP, does not include MTP leg length)
EDGE™ Solutions

24F "Y" Jumpers and Breakout Harnesses

EDGE™ solutions 24 F “Y” jumper is a plenum-rated preterminated assembly that provides the conversion from 24- to 12-fiber connectivity for full-fiber utilization of an existing base-12 backbone. It is offered as a 1x2 MTP® assembly (one 24-fiber MTP connector on one end, two 12-fiber MTP Connectors on the other), creating the connection from the patch panel to 20-fiber/24-fiber switch ports.

EDGE solutions 24 F MTP MXP breakout harness is a plenum-rated preterminated Y-harness that provides the conversion from 24- to 8-fiber connectivity. The harness allows for connectivity between the 24-fiber switch ports to three 8-fiber ports, as well as breakout 24-fiber ports using Base-8 structured cabling.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA69324QPH-LZxxxF1</td>
<td>EDGE AO 24 F &quot;Y&quot; Jumper, 24 F 24/12 Jumper, 24 F MTP (non-pinned) to 12 F MTP (pinned), plenum cable, 50 μm multimode OM4 fiber, Type Universal polarity, 12 F leg length of 36 in (L), length xxx feet</td>
<td>Harness-&gt; Base-12 trunk-&gt; Harness</td>
</tr>
<tr>
<td>HA67524QPH-L6xxxF1</td>
<td>EDGE AO 24 F &quot;Y&quot; Jumper, 24 F 24/12 Jumper, 24 F MTP (non-pinned) to 12 F MTP (non-pinned), plenum cable, 50 μm multimode OM4 fiber, Type-6 polarity, 12 F leg length of 36 in (L), length xxx feet</td>
<td>Harness-&gt; Base-12 trunk-&gt; Conversion mod..-&gt;MTP jumper</td>
</tr>
<tr>
<td>HA67524QPH-L7xxxF1</td>
<td>EDGE AO 24 F &quot;Y&quot; Jumper, 24 F 24/12 Jumper, 24 F MTP (non-pinned) to 12 F MTP (non-pinned), plenum cable, 50 μm multimode OM4 fiber, Type-7 polarity, 12 F leg length of 36 in (L), length xxx feet</td>
<td>Harness-&gt;Base-12 module -&gt; LC jumper</td>
</tr>
<tr>
<td>HA69324QPH-L8xxxF1</td>
<td>EDGE AO 24 F &quot;Y&quot; Jumper, 24 F 24/12 Jumper, 24 F MTP (non-pinned) to 12 F MTP (pinned), plenum cable, 50 μm multimode OM4 fiber, Type-8 polarity, 12 F leg length of 36 in (L), length xxx feet</td>
<td>Harness-&gt; Base-12 trunk-&gt; Conversion mod..-&gt;MTP jumper</td>
</tr>
<tr>
<td>HA69324QPH-L9xxxF1</td>
<td>EDGE AO 24 F &quot;Y&quot; Jumper, 24 F 24/12 Jumper, 24 F MTP (non-pinned) to 12 F MTP (pinned), plenum cable, 50 μm multimode OM4 fiber, Type-9 polarity, 12 F leg length of 36 in (L), length xxx feet</td>
<td>Harness-&gt; Base-12 trunk-&gt; Base-12 module -&gt; LC jumper</td>
</tr>
<tr>
<td>HA67524QPH-KAxxxF1</td>
<td>EDGE AO 24 F MTP Breakout Harness, 24 F 24/8 Harness, 24 F MTP (non-pinned) to 8 F MTP (non-pinned), plenum cable, 50 μm multimode OM4 fiber, Type A polarity, 8 F leg length of 24 in (K), length xxx feet</td>
<td>Harness-&gt; 8-fiber transceivers</td>
</tr>
<tr>
<td>HA69324QPH-KAxxxF1</td>
<td>EDGE AO 24 F MTP Breakout Harness, 24 F 24/8 Harness, 24 F MTP (non-pinned) to 8 F MTP (pinned), plenum cable, 50 μm multimode OM4 fiber, Type A polarity, 8 F leg length of 24 in (K), length xxx feet</td>
<td>Harness-&gt; Base-8 modules -&gt; LC Jumper</td>
</tr>
</tbody>
</table>

Note 1: Available in lengths from 003-200 feet (1 ft increments measured from plug to MTP, does not include MTP leg length).
Note 2: For application details, please reference AEN150 and AEN156.
EDGE™ 1x4 MTP® to LC Harnesses

The EDGE™ harness is a 1x4 MTP to LC uniboot harness (one pinned or non-pinned 8-fiber MTP PRO connector on one end, four LC duplex connectors on the other) for connection to electronics with LC-style ports and for use in aggregation of 10G ports to a 40G port.

EDGE harnesses are uniquely wired to manage polarity within and maintain transmit-to-receive connectivity.

MTP PRO allows for a simple one-step color-coded polarity change feature without removing the connector housing. The connector also provides the capability for field-friendly pinning configuration changes with safe handling of pins and easy color identification while maintaining product integrity.

Ordering Information

1. Select MTP PRO connector.
   - E5 = MTP 8 F (pinned) MM
   - E6 = MTP 8 F (non-pinned) MM

2. Select the breakout connector type.
   - 79 = LC uniboot MM
   - LCs are universally wired

3. Select fiber type.
   - T = 50 µm multimode (OM3)
   - Q = 50 µm multimode (OM4)

4. Defines cable type.
   - PH = Plenum, harness

5. Select leg length in inches
   - (leg OD is 2.0 mm).
   - J = 12 in (+3/-0 in)
   - K = 24 in (+3/-0 in)
   - L = 36 in (+3/-0 in)
   - M = 48 in (+3/-0 in)
   - N = 60 in (+3/-0 in)
   - P = 72 in (+3/-0 in)
   - R = 98 in (+3/-0 in)

   Furcation legs are color coded by fiber type.

6. Select harness polarity.
   - A = Type-A polarity
   - B = Type-B polarity

   Note: For harness polarity, reference AEN152.

7. Select the harness length.
   - 003-200 ft
     - (1 ft increments measured from plug to MTP, does not include leg length)
   - 001-060 m
     - (1 m increments measured from plug to MTP, does not include leg length)

8. Select unit of measure.
   - F = Feet
   - M = Meters
MTP® Jumper

EDGE™ MTP® assemblies are used to connect the conversion modules or MTP adapter panels to the electronics. These plenum-rated cable assemblies feature a smaller (2.0 mm) outside diameter than traditional 12-fiber jumpers to improve finger access as well as reduce congestion and increase airflow in the horizontal and vertical rack space.

EDGE MTP assembly has the same connector size and cable footprint as duplex LC jumpers used today. The density, airflow, and cable management advantages of EDGE solutions is preserved as you migrate to higher data rates. Assemblies are built utilizing MTP PRO connectors.

MTP PRO allows for a simple one-step color-coded polarity change feature without removing the connector housing. The connector also provides the capability for field-friendly pinning configuration changes with safe handling of pins and easy color identification while maintaining product integrity.

Ordering Information

* J □ □ □ 1 2 □ □ □ E 8 - □ □ □ □ □

*For custom labels, add the letter “L” as prefix to the part number e.g. LJ757512QE8-NBxxxF
Print for custom labels can be up to 30 characters. Information to be printed on custom labels must be provided at the time of order.

1 Select MTP PRO connector.
   75 = MTP 12 F (non-pinned) MM
   93 = MTP 12 F (pinned) MM
   89 = MTP 12 F (pinned) SM
   90 = MTP 12 F (non-pinned) SM

2 Select MTP PRO connector.
   75 = MTP 12 F (non-pinned) MM
   93 = MTP 12 F (pinned) MM
   89 = MTP 12 F (pinned) SM
   90 = MTP 12 F (non-pinned) SM

3 Select fiber type.
   T = 50 µm multimode (OM3)
   Q = 50 µm multimode (OM4)
   V = 50 µm wideband multimode (OM5)
   G = Single-mode Ultra (OS2)

4 Defines cable type.
   E8 = Plenum, interconnect

5 Defines patch cord.
   N = Patch cord, no furcation

6 Select patch cord polarity.
   A = Type-A polarity
   B = Type-B polarity
   Note: For patch cord polarity, reference AEN151.

7 Select patch cord length.
   003-200 ft
   (Measured in 1 ft increments)
   001-060 m
   (Measured in 1 m increments)

8 Select unit of measure.
   F = Feet
   M = Meters

Note: Always list lowest numbered connector first.
EDGE™ Solutions

MTP® 24-F Jumpers

EDGE™ solutions 24-fiber jumpers allow for seamless migration to 100G when used in direct connect architectures.

EDGE MTP assemblies are used to connect between electronics. These plenum-rated cable assemblies feature a 3.3 mm outside diameter.

Ordering Information

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

1. Select MTP connector.
   - A6 = MTP 24 F (non-pinned) MM
   - A9 = MTP 24 F (non-pinned) SM

2. Select MTP connector.
   - A6 = MTP 24 F (non-pinned) MM
   - A9 = MTP 24 F (non-pinned) SM

3. Select fiber type.
   - T = 50 µm multimode (OM3)
   - Q = 50 µm multimode (OM4)
   - G = Single-mode Ultra (OS2)

4. Defines cable type.
   - PH = Plenum, micro-module

5. Defines patch cord.
   - N = Patch cord, no furcation

   - A = Type-A polarity

7. Select patch cord length.
   - 001-060 m
   - (Measured in 1 m increments)

8. Select unit of measure.
   - M = Meters

Notes:
1) Always list lowest numbered connector first.
2) Refer to AEN150 for application guidance.
EDGE™ Tap Modules

EDGE™ tap modules, part of EDGE solutions for data centers and storage area networks (SAN), enable passive optical tapping of the network while reducing downtime and link loss, and increasing rack space utilization and density compared to other optical tap options.

Unlike other passive optical taps that must be added as separate devices in the network link, the EDGE tap module integrates the coupler technology for passive optical tapping into a structured cabling component – the module. Monitored ports can be added without disrupting the system’s live traffic, and elimination of the tap as a separate device reduces insertion loss in the link.

EDGE tap modules use an advanced splitter technology for multimode to reduce insertion loss compared to traditional splitter technology.

Featuring the EDGE solutions high-density module footprint, EDGE tap modules enable up to 72 monitored links per one rack unit, and they fit seamlessly into EDGE solutions hardware for maximum cable management and better utilization of rack space.
**EDGE™ Solutions**

**Features and Benefits**

Integrates tap splitters directly into the structured cabling infrastructure  
Eliminates network downtime associated with changing monitored ports in a live system  

| **Rear-exiting, MTP® connector-based tap ports do not require additional rack space**  |  
| **Zero-rack-space impact results in higher revenue generation per rack unit; allows separation of live and tap ports into different cabinet locations**  |  

**Utilizes advanced splitter technology**  
Maintains equal modal power distribution, reducing insertion loss for increased link reach  

**EDGE™ solutions-based footprint**  
Integrates seamlessly into an existing EDGE solutions infrastructure  

**Universal polarity management**  
Eliminates the frustration of needing to flip connector pairs or modules  

**Application-defined split ratio**  
Provides 50/50 split ratio for Ethernet (DC LAN) and 70/30 split ratio for Fibre Channel (DC SAN) environments  

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**EDGE Tap Module Specifications**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Fiber Type</th>
<th>Split Ratio</th>
<th>Splitter Loss (dB)</th>
<th>LC Connector Loss (dB)</th>
<th>MTP Connector Loss (dB)</th>
<th>Tap Module’s Live Link Loss (dB)</th>
<th>Tap Module’s TAP Link Loss (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETM-5A-Q</td>
<td>OM4</td>
<td>50/50</td>
<td>3.7/3.7</td>
<td>0.15</td>
<td>N/A</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>ETM-5A-Q-BD</td>
<td>OM4</td>
<td>50/50</td>
<td>3.7/3.7</td>
<td>0.15</td>
<td>N/A</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>ETM-7A-Q</td>
<td>OM4</td>
<td>70/30</td>
<td>1.8/5.8</td>
<td>0.15</td>
<td>N/A</td>
<td>2.1</td>
<td>6.1</td>
</tr>
<tr>
<td>ETM-5A-G</td>
<td>OS2</td>
<td>50/50</td>
<td>3.5/3.5</td>
<td>0.25</td>
<td>N/A</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>ETM-7A-G</td>
<td>OS2</td>
<td>70/30</td>
<td>2.0/5.8</td>
<td>0.25</td>
<td>N/A</td>
<td>2.5</td>
<td>6.3</td>
</tr>
<tr>
<td>ETM-5B-Q</td>
<td>OM4</td>
<td>50/50</td>
<td>3.7/3.7</td>
<td>0.15</td>
<td>0.35</td>
<td>4.2</td>
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<tr>
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<td>OM4</td>
<td>50/50</td>
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<td>0.35</td>
<td>4.2</td>
<td>4.4</td>
</tr>
<tr>
<td>ETM-7B-Q</td>
<td>OM4</td>
<td>70/30</td>
<td>1.8/5.8</td>
<td>0.15</td>
<td>0.35</td>
<td>2.3</td>
<td>6.5</td>
</tr>
<tr>
<td>ETM-5B-G</td>
<td>OS2</td>
<td>50/50</td>
<td>3.5/3.5</td>
<td>0.25</td>
<td>0.75</td>
<td>4.5</td>
<td>5.0</td>
</tr>
<tr>
<td>ETM-7B-G</td>
<td>OS2</td>
<td>70/30</td>
<td>2.0/5.8</td>
<td>0.25</td>
<td>0.75</td>
<td>3.0</td>
<td>7.3</td>
</tr>
<tr>
<td>ETM-5C-Q</td>
<td>OM4</td>
<td>50/50</td>
<td>3.7/3.7</td>
<td>N/A</td>
<td>0.35</td>
<td>4.4</td>
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<tr>
<td>ETM-5C-Q-R</td>
<td>OM4</td>
<td>50/50</td>
<td>3.7/3.7</td>
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<td>0.35</td>
<td>2.5</td>
<td>6.5</td>
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<tr>
<td>ETM-7C-Q</td>
<td>OM4</td>
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<td>1.8/5.8</td>
<td>N/A</td>
<td>0.35</td>
<td>2.5</td>
<td>6.6</td>
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<tr>
<td>ETM-7C-Q-R</td>
<td>OM4</td>
<td>70/30</td>
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<td>N/A</td>
<td>0.35</td>
<td>2.5</td>
<td>6.6</td>
</tr>
<tr>
<td>ETM-5C-G</td>
<td>OS2</td>
<td>50/50</td>
<td>3.5/3.5</td>
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<td>0.75</td>
<td>5.0</td>
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<tr>
<td>ETM-5C-G-R</td>
<td>OS2</td>
<td>50/50</td>
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<td>7.3</td>
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<tr>
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<td>OS2</td>
<td>70/30</td>
<td>2.0/5.8</td>
<td>N/A</td>
<td>0.75</td>
<td>3.5</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Multimode losses are for 850 nm.  
Single-mode losses are for 1310 nm.
EDGE™ Solutions

LC Duplex to LC Duplex Tap Modules

EDGE™ tap module for traditional LC duplex systems enables the customer to manage the monitoring access points via the patch cord infrastructure zone at the front of the cabinets.

EDGE tap module with two red LC duplex adapters for tap, four blue LC duplex adapters for live ports. The red LC adapter enables monitoring on the application side.

Features

- Designed for duplex-based infrastructure solutions
- For Ethernet duplex application up to 100G
- For Fibre Channel duplex application up to 16G
- All LC ports on the front for simple TAP links to the monitoring equipment

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Units per Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETM-5A-Q</td>
<td>EDGE Tap Module, 50 µm multimode (OM4), 50/50 split ratio (live/tap), 12-fiber LC duplex ports; four aqua LC duplex adapters and two red LC duplex ports at the front of the module. Enables monitoring of two ports.</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-5A-Q-BD</td>
<td>EDGE Tap Module, 50 µm multimode (OM4), 50/50 split ratio (live/tap), 8-fiber LC duplex ports; two aqua LC duplex adapters and two red LC duplex ports at the front of the module. Enables monitoring of one port for BiDi links.</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-7A-Q</td>
<td>EDGE Tap Module, 50 µm multimode (OM4), 70/30 split ratio (live/tap), 12-fiber LC duplex ports; four aqua LC duplex adapters and two red LC duplex ports at the front of the module. Enables monitoring of two ports.</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-5A-G</td>
<td>EDGE Tap Module, Single-mode (OS2), 50/50 split ratio (live/tap), 12-fiber LC duplex ports; four blue LC duplex adapters and two red LC duplex ports at the front of the module. Enables monitoring of two ports.</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-7A-G</td>
<td>EDGE Tap Module, Single-mode (OS2), 70/30 split ratio (live/tap), 12-fiber LC duplex ports; four blue LC duplex adapters and two red LC duplex ports at the front of the module. Enables monitoring of two ports.</td>
<td>1/1</td>
</tr>
</tbody>
</table>
EDGE™ Solutions

MTP® to LC Duplex Tap Modules

EDGE™ tap MTP® connector to LC modules provide one pinned MTP adapter labeled live and one pinned red MTP adapter labeled tap on the rear side which enables monitoring of the six live LC duplex ports on the application side.

Features

- Designed for parallel optic infrastructure solution
- For Ethernet duplex application up to 100G
- For Fibre Channel duplex application up to 32G
- MTP on the rear side for easy TAP link integration to the infrastructure

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ETM-5B-Q</td>
<td>EDGE Tap Module, 50 µm multimode (OM4), 50/50 split ratio (live/tap), 12-fiber LC duplex ports, one pinned MTP adapter labeled LIVE, one pinned red MTP adapter labeled TAP, enables monitoring of six ports.</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-5B-Q-BD</td>
<td>EDGE Tap Module, 50 µm multimode (OM4), 50/50 split ratio (live/tap), 12-fiber LC duplex ports, one pinned MTP adapter labeled LIVE, two pinned red MTP adapter labeled TAP, enables monitoring of six ports for BiDi links</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-7B-Q</td>
<td>EDGE Tap Module, 50 µm multimode (OM4), 70/30 split ratio (live/tap), 12-fiber LC duplex ports, one pinned MTP adapter labeled LIVE, one pinned red MTP adapter labeled TAP, enables monitoring of six ports.</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-5B-G</td>
<td>EDGE Tap Module, Single-mode (OS2), 50/50 split ratio (live/tap), 12-fiber LC duplex ports; one pinned MTP adapter labeled LIVE, one pinned red MTP adapter labeled TAP, enables monitoring of six ports.</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-7B-G</td>
<td>EDGE Tap Module, Single-mode (OS2), 70/30 split ratio (live/tap), 12-fiber LC duplex ports; one pinned MTP adapter labeled LIVE, one pinned red MTP adapter labeled TAP, enables monitoring of six ports.</td>
<td>1/1</td>
</tr>
</tbody>
</table>
EDGE™ MTP® to MTP connector tap modules provide two options to connect the monitoring equipment from the front or rear of the rack to support duplex or parallel optic deployments.

Features
- Designed for parallel optic infrastructure solution
- Ethernet to support 40G and 100G applications
- Fibre Channel for 32G and beyond
- MTP on the front side for simple TAP links to the monitoring equipment

<table>
<thead>
<tr>
<th>Part Number</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ETM-5C-Q</td>
<td>EDGE Tap Module, 50 μm multimode (OM4), 50/50 split ratio (live/tap), 12-fiber MTP ports; one pinned MTP adapter labeled LIVE and one pinned red MTP adapter labeled TAP at the front of the module, one pinned MTP adapter labeled LIVE at the rear of the module. Enables monitoring of six duplex or one parallel port(s).</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-7C-Q</td>
<td>EDGE Tap Module, 50 μm multimode (OM4), 70/30 split ratio (live/tap), 12-fiber MTP ports; one pinned MTP adapter labeled LIVE and one pinned red MTP adapter labeled TAP at the front of the module, one pinned MTP adapter labeled LIVE at the rear of the module. Enables monitoring of six duplex or one parallel port(s).</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-5C-G</td>
<td>EDGE Tap Module, Single-mode (OS2), 50/50 split ratio (live/tap), 12-fiber MTP ports; one pinned MTP adapter labeled LIVE and one pinned red MTP adapter labeled TAP at the front of the module, one pinned MTP adapter labeled LIVE at the rear of the module. Enables monitoring of six duplex or one parallel port(s).</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-7C-G</td>
<td>EDGE Tap Module, Single-mode (OS2), 70/30 split ratio (live/tap), 12-fiber MTP ports; one pinned MTP adapter labeled LIVE and one pinned red MTP adapter labeled TAP at the front of the module, one pinned MTP adapter labeled LIVE at the rear of the module. Enables monitoring of six duplex or one parallel port(s).</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-5C-Q-R</td>
<td>EDGE Tap Module, 50 μm multimode (OM4), 50/50 split ratio (live/tap), 12-fiber MTP ports; one pinned MTP adapter labeled at the front of the module, one pinned MTP adapter labeled LIVE and one pinned red MTP adapter labeled TAP at the rear of the module. Enables monitoring of six duplex or one parallel port(s).</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-7C-Q-R</td>
<td>EDGE Tap Module, 50 μm multimode (OM4), 70/30 split ratio (live/tap), 12-fiber MTP ports; one pinned MTP adapter labeled LIVE at the front of the module, one pinned MTP adapter labeled LIVE and one pinned red MTP adapter labeled TAP at the rear of the module. Enables monitoring of six duplex or one parallel port(s).</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-5C-G-R</td>
<td>EDGE Tap Module, Single-mode (OS2), 50/50 split ratio (live/tap), 12-fiber MTP ports; one pinned MTP adapter labeled LIVE and one pinned red MTP adapter labeled TAP at the rear of the module. Enables monitoring of six duplex or one parallel port(s).</td>
<td>1/1</td>
</tr>
<tr>
<td>ETM-7C-G-R</td>
<td>EDGE Tap Module, Single-mode (OS2), 70/30 split ratio (live/tap), 12-fiber MTP ports; one pinned MTP adapter labeled LIVE and one pinned red MTP adapter labeled TAP at the rear of the module. Enables monitoring of six duplex or one parallel port(s).</td>
<td>1/1</td>
</tr>
</tbody>
</table>
Tap Module Harness

The EDGE™ tap harness is used to breakout the 12-fiber MTP® tap port at the rear of the EDGE tap module into LC duplex connectors. These duplex connectors then can be easily separated into simplex connectors to plug into monitoring electronics.

The use of harnesses provides a solution that occupies less space than traditional jumpers, as the cable end of the harness is much smaller than the size of equivalent jumpers. This reduced cabling bulk improves airflow for increased cooling and facilitates easier moves, adds, and changes (MACs).

MTP PRO allows for pinning and polarity changes in the field.

Ordering Information

1. Select MTP PRO connector.  
   - 75 = MTP 12 F (non-pinned) MM  
   - 90 = MTP 12 F (non-pinned) SM

2. Select the LC connector type.  
   - 03 = LC Simplex MM  
   - 02 = LC UPC simplex SM

3. Select fiber type.  
   - Q = 50 µm multimode (OM4)  
   - G = Single-mode Ultra (OS2)

4. Select leg length in inches  
   - (leg OD is 2.0 mm).  
   - J = 12 in (-0/+3 in), standard construction  
   - K = 24 in (-0/+3 in)  
   - L = 36 in (-0/+3 in)  
   See Note 1.

5. Select the harness length.  
   - 003-200 ft  
   - (1 ft increments measured from plug to MTP; does not include leg length)
   - 001-060 m  
   - (1 m increments measured from plug to MTP; does not include leg length)

6. Select unit of measure.  
   - M = Meters  
   - F = Feet

Note: Furcation legs are color coded by fiber type: Q = Aqua; G = Yellow.
Reverse Polarity Uniboot Duplex Jumpers

EDGE™ reverse polarity uniboot duplex jumpers allow for the quick and easy conversion from a TIA-568 A-B polarity to a TIA-568 A-A polarity without exposing the fibers or needing any tools. This jumper comes with a straight-through polarity from the factory, but you can convert it to a flipped jumper with no tools. This uniboot design allows one cable to carry both fibers, reducing jumper bulk when routing.

Features
- Slim round 2-fiber interconnect cable
- Uniboot-style duplex connectors
- Improved handling in high-density applications
- Low-loss connectivity enables system design flexibility
- Enabled by bend-insensitive Corning® ClearCurve® multimode or SMF-28e® Ultra single-mode fibers
- Designed to withstand tight bends and challenging cable routes

<table>
<thead>
<tr>
<th>LC Uniboot Patch Cord Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector Code</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>MM LC Uniboot 79</td>
</tr>
<tr>
<td>SM LC UPC Uniboot 78</td>
</tr>
<tr>
<td>SM LC APC Uniboot 80</td>
</tr>
</tbody>
</table>

Ordering Information

1. Select connector one type.
   - 79 = Multimode LC uniboot (OM3/OM4/OM5)
   - 78 = Single-mode LC UPC uniboot (OS2)
   - 80 = Single-mode LC APC uniboot (OS2)

2. Select connector two type.
   - 79 = Multimode LC uniboot (OM3/OM4/OM5)
   - 78 = Single-mode LC UPC uniboot (OS2)
   - 80 = Single-mode LC APC uniboot (OS2)

3. Select fiber type.
   - T = 50 µm multimode (OM3)
   - Q = 50 µm multimode (OM4)
   - V = 50 µm wideband multimode (OM5)
   - G = Single-mode Ultra (OS2)

4. Select flame rating.
   - 1 = Riser
   - 8 = Plenum

5. Select length.
   - 001-250 (tip-to-tip)

6. Select unit of measure.
   - F = Feet
   - M = Meters
Reverse Polarity LC Duplex Clips

All reverse polarity uniboot LC duplex connectors come with a clip that is removable. We offer a total of 12 colors to allow for easy link identification or fabric segmentation.

Ordering Information

TRIGGER-BP-U-□

1 Select color.
   N = Blue
   E = Orange
   G = Green
   W = White
   C = Slate
   R = Red
   B = Black
   Y = Yellow
   V = Violet
   P = Rose
   A = Aqua
   K = Beige

Note: Must order in multiples of 100.
## Housing Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Product Description</th>
<th>Units per Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC1-BKT-23</td>
<td>EDGE™ Extension and Flush-Mount Bracket for mounting 1U housings into 23-in racks or cabinets</td>
<td>1/1</td>
</tr>
<tr>
<td>PC2-BKT-23</td>
<td>EDGE™ Extension and Flush-Mount Bracket for mounting 2U housings into 23-in racks or cabinets</td>
<td>1/1</td>
</tr>
<tr>
<td>PC4-BKT-23</td>
<td>EDGE™ Solutions Mounting Bracket for mounting 4U housings into 23-in racks or cabinets</td>
<td>1/1</td>
</tr>
<tr>
<td>EDGE-EMOD-STRN</td>
<td>EDGE™ Solutions Strain-Relief Bracket, EMOD, 1U</td>
<td>1/1</td>
</tr>
<tr>
<td>EDGE-CDF-RJ04-BKT</td>
<td>EDGE™ Solutions Strain-Relief Bracket, accommodating four EDGE Solutions clip parking positions</td>
<td>1/1</td>
</tr>
<tr>
<td>EDGE-CDF-RJ08-BKT</td>
<td>EDGE™ Solutions Strain-Relief Bracket, accommodating eight EDGE Solutions clip parking positions</td>
<td>1/1</td>
</tr>
<tr>
<td>EDGE-CDF-RJ12-BKT</td>
<td>EDGE™ Solutions Strain-Relief Bracket, accommodating 12 EDGE solutions clip parking positions</td>
<td>1/1</td>
</tr>
<tr>
<td>EDGE-BKT-WT-2RU</td>
<td>Wire Tray Mounting Bracket for up to 2U of housing mounting space</td>
<td>1/1</td>
</tr>
<tr>
<td>EDGE-BKT-WT-4RU</td>
<td>Wire Tray Mounting Bracket for up to 4U of housing mounting space</td>
<td>1/1</td>
</tr>
</tbody>
</table>
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<tr>
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</thead>
<tbody>
<tr>
<td>EDGE-BKT-LR-2RU</td>
<td>Ladder Rack Mounting Bracket for up to 2U of housing mounting space</td>
<td>1/1</td>
</tr>
<tr>
<td>EDGE-BKT-LR-4RU</td>
<td>Ladder Rack Mounting Bracket for up to 4U of housing mounting space</td>
<td>1/1</td>
</tr>
<tr>
<td>CJP-01U-P</td>
<td>Pretium™ Jumper Management Panel 1U; provides jumper management in a 1.75-in rack space</td>
<td>1/1</td>
</tr>
<tr>
<td>CJP-02U-P</td>
<td>Pretium™ Jumper Management Panel 2U; provides jumper management in a 3.5-in rack space</td>
<td>1/1</td>
</tr>
<tr>
<td>EDGE-01U-FLSH-BKT</td>
<td>EDGE™ Extension and Flush-Mount Bracket for EDGE-01U</td>
<td>1/1</td>
</tr>
<tr>
<td>EDGE-SMH-SLK</td>
<td>EDGE™ Single-Module Housing Slack Storage and Splicing Accessory, used in conjunction with the EDGE-SMH and EDGE panel in order to facilitate pigtail splicing or storage of slack beneath the EDGE single-module housing.</td>
<td>1/1</td>
</tr>
</tbody>
</table>

## Cleaning Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Product Description</th>
<th>Units per Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLEANER-PORT-LC</td>
<td>Single-Fiber Port Cleaner for LC, keyed LC, and MU connector end faces for both UPC and APC polishes</td>
<td>1/1</td>
</tr>
<tr>
<td>2104466-01</td>
<td>Fiber Optic Cleaning Tool used to clean MTP® connector end faces as well as MTP connectors installed in a module</td>
<td>1/1</td>
</tr>
</tbody>
</table>
## MTP® PRO Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
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<th>Units per Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTPPRO-TOOL</td>
<td>Field Tool to perform pinning and polarity changes of MTP® PRO connectors</td>
<td>1/1</td>
</tr>
<tr>
<td>MTPPRO-PEX-MME-NOPINS</td>
<td>MTP PRO Pin Exchanger Kit, MM MTP Elite, empty (without pins)</td>
<td>1/1</td>
</tr>
<tr>
<td>MTPPRO-PEX-MME-PINS</td>
<td>MTP PRO Pin Exchanger Kit, MM MTP Elite, loaded (with pins)</td>
<td>1/1</td>
</tr>
<tr>
<td>MTPPRO-PEX-SME-NOPINS</td>
<td>MTP PRO Pin Exchanger Kit, SM MTP Elite, empty (without pins)</td>
<td>1/1</td>
</tr>
<tr>
<td>MTPPRO-PEX-SME-PINS</td>
<td>MTP PRO Pin Exchanger Kit, SM MTP Elite, loaded (with pins)</td>
<td>1/1</td>
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