Hubbell OptiChannel HFCD1 Series Indoor Tight Buffer Distribution Cables deliver high bandwidth optical network performance and reliability. Featuring ease of termination and a compact flame retardant design, HFCD1 series fiber cables are supported by the Hubbell Mission Critical® 25-year warranty. Premium bend-insensitive fibers are used in Hubbell OM3, OM4 and OS2 fiber cables for maximum durability. Bend insensitive fibers enhance installed cable performance, adding headroom to certification test results.

**Advantage**

- Supported by the Hubbell Mission Critical® 25-Year Warranty
- Compact, Flexible Construction for Ease of Installation
- 10 GbE Application Assurance for all Standards-Supported Lengths
- RoHS Compliant, Flame-Retardant Cable, Manufactured Locally

**Features**

- E-Z strip buffer with new dash style color stripes for contractor-friendly termination
- Compact cable diameter reduces congestion in shared or restricted pathways
- Premium bend-insensitive fiber for enhanced durability and maximum testing headroom
- Fibers supported: OM1, OM3, OM4, OS2
- Sold in feet, available in Riser (OFNR), and Plenum (OFNP) for all supported fibers
- Most cables stocked with low MOQs—call for stock availability with fast delivery

**Specifications**

- Fiber count: 6, 12 and 24 strand
- Fiber coating: 900 micron PVC tight buffer
- Temperature range:
  - Storage: -40º F to +176º F (-40º C to +80º C)
  - Installation: 32º F to +132º F (0º C to +56º C)
  - Operation: -4º F to +158º F (-20º C to +70º C)
- Multimode attenuation: 3.5/1.5dB/km at 850/1300nm
- Singlemode attenuation: 0.5/0.4dB/km at 1310/1550 nm
- Optical: see fiber data sheet

**Standards**

- Telcordia GR-409 and GR-20
- ANSI/ICEA S-83-596
- TIA-492 Series optical fiber specifications
- TIA-568-C.3 Optical fiber cabling standards
- Riser cables: UL 1666/CSA FT-4
- Plenum cables: NFPA-262/UL910/CSA FT-6

**Cable Jacket and Buffer Color Codes**

- OM1 Multimode: Orange jacket
- OM3 and OM4 Multimode: Aqua jacket
- OS2 Singlemode: Yellow jacket
- Buffer color codes and pairing sequence:
  - 1-Blue, 2-Orange, 3-Green, 4-Brown, 5-Slate, 6-White
  - 7-Red, 8-Black, 9-Yellow, 10-Violet, 11-Rose, 12-Aqua
  - 13-Blue/Black, 14-Orange/Black, 15-Green/Black, 16-Brown/Black
  - 17-Slate/Black, 18-White/Black, 19-Red/Black, 20-Black/White
  - 21-Yellow/Black, 22-Orange/Black, 23-Rose/Black, 24-Aqua/Black

**Applications**

- Building LAN, backbone and horizontal fiber cabling
- Data Center and Storage Area Network cabling
- Bandwidth-intensive, high speed data and video transmission
- Extended distance, non-conductive fiber data links
- Commercial, medical, government and education facilities

Hubbell OptiChannel HFCD1 Series Indoor Tight Buffer Distribution Cables deliver high bandwidth optical network performance and reliability. Featuring ease of termination and a compact flame retardant design, HFCD1 series fiber cables are supported by the Hubbell Mission Critical® 25-year warranty. Premium bend-insensitive fibers are used in Hubbell OM3, OM4 and OS2 fiber cables for maximum durability. Bend insensitive fibers enhance installed cable performance, adding headroom to certification test results.
HUBBELL PREMISE WIRING

INDOOR TIGHT BUFFER DISTRIBUTION FIBER CABLE

Configuration: (xxx = Fiber count (006, 012 or 024 strand), r = 'R' for Riser, 'P' for Plenum, n = '6' for 62.5 μm OM1 Multimode, '3' for 50 μm OM3 Multimode, '4' for 50 μm OM4 Multimode, 'S' for 9 μm OS2 Singlemode)

Example: HFCD1012P3
Description: CBL, Fiber, OM3, 12F, DSP, TB, AQ
Jacket print: OFNP RoHS Plenum 12 Fiber Indoor Cable xxxFT (Date) E# (UL) C(UL)
Plus Corning ClearCurve OM3 Optical Fiber 50/125

DELIVERY

HFCD1 Series fiber cables are priced and delivered in feet. Spool size and weight varies by cable and length ordered. Specify cable put-up lengths on purchase order. MOQ for non-stocked cables is 1,640 feet. MOQ for stocked cables is 500 feet. Contact Hubbell Premise Wiring for availability. Length ordered may be subject to a +/-10% production tolerance. Cut charges may apply to multi-reel orders. Refer to next page for reel capacities, dimensions and estimated shipping weights.

Note: See Hubbell HFCD1M Series multi-unit distribution cables for 48-strand fiber count.

CABLE DESIGN INFORMATION

HFCD1 Series: Indoor Tight Buffer Riser OFNR FT-4 Rated, and Plenum OFNP FT-6 Rated

<table>
<thead>
<tr>
<th>Fiber Count</th>
<th>Cable Diameter in (mm)</th>
<th>Cable Weight lb/ft</th>
<th>Minimum Bend Radius (Installation) in (cm)</th>
<th>Minimum Bend Radius (In-Service) in (cm)</th>
<th>Maximum Installation Pulling Load lb</th>
<th>Maximum Operating Tensile Load lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>0.21 (5.3)</td>
<td>20</td>
<td>3.1 (8.0)</td>
<td>2.1 (5.3)</td>
<td>128</td>
<td>64</td>
</tr>
<tr>
<td>12</td>
<td>0.25 (6.3)</td>
<td>35</td>
<td>3.7 (9.5)</td>
<td>2.3 (5.8)</td>
<td>160</td>
<td>80</td>
</tr>
<tr>
<td>24</td>
<td>0.32 (8.1)</td>
<td>43</td>
<td>4.8 (12.2)</td>
<td>3.2 (8.1)</td>
<td>198</td>
<td>99</td>
</tr>
</tbody>
</table>

Note: Pulling and tensile loads shall be applied only to the internal strength member.

CABLE APPLICATION GUIDELINES: DISTANCE AND CHANNEL ATTENUATION LIMITS

<table>
<thead>
<tr>
<th>IEEE 802.3 Fiber Ethernet Application</th>
<th>Transmitter Wavelength (nm)</th>
<th>Maximum Supportable Distance (m)</th>
<th>Maximum Channel Attenuation (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>62.5/125 OM1</td>
<td>50/125 OM2</td>
<td>50/125 OM3</td>
</tr>
<tr>
<td>10/100BASE-SX</td>
<td>850</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>1000BASE-SX</td>
<td>850</td>
<td>220</td>
<td>550</td>
</tr>
<tr>
<td>1000BASE-LX</td>
<td>1300</td>
<td>550</td>
<td>550</td>
</tr>
<tr>
<td>10GBASE-S</td>
<td>850</td>
<td>26</td>
<td>82</td>
</tr>
<tr>
<td>10GBASE-L</td>
<td>1310</td>
<td>NST</td>
<td>NST</td>
</tr>
<tr>
<td>10GBASE-E</td>
<td>1550</td>
<td>NST</td>
<td>NST</td>
</tr>
<tr>
<td>10GBASE-LX</td>
<td>1300</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>10GBASE-LR4</td>
<td>1310</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>40GBASE-SR4</td>
<td>850</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>100GBASE-SR10</td>
<td>850</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>40GBASE-LR4</td>
<td>1310</td>
<td>NST</td>
<td>NST</td>
</tr>
<tr>
<td>100GBASE-LR4</td>
<td>1310</td>
<td>NST</td>
<td>NST</td>
</tr>
</tbody>
</table>

Note: S = Short wavelength, L = Long wavelength, E = Extended wavelength

SR4 = Short Range, 4-Channels (4 x 10G pairs), SR10 = Short Range, 10-Channels (10 x 10G pairs)

LX4 = Multiplex (4) Multimode Wavelengths, LR4 = Multiplex (4) Singlemode Wavelengths
NST = Non-standard, N/A = Not applicable

INSTALLATION TIPS

- Verify the IEEE 802.3 application is supported for channel distance and attenuation limits (see chart above).
- During installation or operation, comply with maximum loading, minimum bend radius, and temperature limits.
- Always pull cables by the internal strength member, or fiber damage may result.
- Use proper tools for stripping and dressing out cable to avoid fiber damage.
- Adhere to best installation practices, avoiding kinks, crushing, and abrasion. Always use proper cable supports.
- Use recognized field termination methods. Fiber terminations shall be strain relieved from any cable weight.

www.hubbell-premise.com
Reel Selection and Capacities for Hubbell HFCD Series Cable

HUBBELL FIBER CABLE DELIVERY POLICY

- Cable orders, when permissible, are shipped on a single reel unless otherwise specified.
- Specific multi reel put-up lengths required by the customer must be specified at the time of ordering.
- Cable lengths ordered that exceed single reel capacity must have the split identified, and approved by the customer.
- HFCD Series fiber cables are priced and delivered in feet.
- Length ordered may be subject to a +/-10% production tolerance.
- MOQ for non-stocked cable is 1,640 feet.
- Basic MOQ for stocked cable is 500 feet, and may be waived upon request.
- Reel capacity values on this specification allow for a 2-inch cable-to-flange clearance as illustrated.
- Refer to reel dimensions on capacity charts.
- Cut charges may apply to multi-reel orders.

WEIGHTS, DIMENSIONS AND CAPACITIES

- Cable Weight = [Length Ordered] \times [Weight per Foot]
- Estimated Shipping Weight = [Cable Weight] + [Reel Weight] + [Skid Weight]
- Reel capacities on this specification allow for a 2 inch cable-to-flange clearance.
- Refer to specific dimensions on the reel selection chart.
- Estimated Width = [Traverse Length] + [2 inches]

STANDARD REEL SELECTIONS

<table>
<thead>
<tr>
<th>Reel</th>
<th>Flange Diameter (in)</th>
<th>Traverse Length (ft)</th>
<th>Drum Diameter (in)</th>
<th>Reel Weight (lb)</th>
<th>Skid Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>24</td>
<td>15</td>
<td>16.5</td>
<td>*</td>
<td>n/a</td>
</tr>
<tr>
<td>B</td>
<td>30</td>
<td>24</td>
<td>18</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>C</td>
<td>45</td>
<td>24</td>
<td>18</td>
<td>115</td>
<td>40</td>
</tr>
<tr>
<td>D</td>
<td>48</td>
<td>24</td>
<td>24</td>
<td>120</td>
<td>40</td>
</tr>
</tbody>
</table>

*A-size reels are plastic and boxed. See charts for cable weight.

HUBBELL HFCD SERIES FIBER CABLE: MAX REEL CAPACITY CHART, PLENUM OR RISER

<table>
<thead>
<tr>
<th>Cable Family</th>
<th>Fiber Count</th>
<th>Overall Jacket Diameter (mm)</th>
<th>Reel A 24(^\circ) Flange ft</th>
<th>Reel B 30(^\circ) Flange ft</th>
<th>Reel C 45(^\circ) Flange ft</th>
<th>Reel D 48(^\circ) Flange ft</th>
<th>Cable Weight per Foot (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFCD1 Series: Indoor Distribution</td>
<td>6 strand</td>
<td>0.210 (5.3)</td>
<td>4052</td>
<td>14,079</td>
<td>n/a</td>
<td>n/a</td>
<td>0.020</td>
</tr>
<tr>
<td>HFCD14 Series: Indoor/Outdoor</td>
<td>12 strand</td>
<td>0.250 (6.3)</td>
<td>2881</td>
<td>10,007</td>
<td>n/a</td>
<td>n/a</td>
<td>0.035</td>
</tr>
<tr>
<td></td>
<td>24 strand</td>
<td>0.320 (8.1)</td>
<td>1670</td>
<td>5863</td>
<td>n/a</td>
<td>n/a</td>
<td>0.043</td>
</tr>
<tr>
<td>HFCD1M Series: Indoor Multi-Unit, Plenum</td>
<td>48 strand</td>
<td>0.610 (15.4)</td>
<td>n/a</td>
<td>1411</td>
<td>2077</td>
<td>n/a</td>
<td>0.146</td>
</tr>
<tr>
<td>HFCD1M Series: Indoor Multi-Unit, Riser</td>
<td>48 strand</td>
<td>0.610 (15.4)</td>
<td>n/a</td>
<td>1411</td>
<td>2408</td>
<td>n/a</td>
<td>0.146</td>
</tr>
<tr>
<td>HFCD14 Series: I/O Multi-Unit, Plenum</td>
<td>48 strand</td>
<td>0.610 (15.4)</td>
<td>n/a</td>
<td>1411</td>
<td>2077</td>
<td>n/a</td>
<td>0.146</td>
</tr>
<tr>
<td>HFCD14 Series: I/O Multi-Unit, Riser</td>
<td>48 strand</td>
<td>0.610 (15.4)</td>
<td>n/a</td>
<td>1411</td>
<td>2408</td>
<td>n/a</td>
<td>0.146</td>
</tr>
<tr>
<td>HFCD15 Series: Armored Indoor</td>
<td>6 strand</td>
<td>0.625 (15.9)</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>5404</td>
<td>0.165</td>
</tr>
<tr>
<td></td>
<td>12 strand</td>
<td>0.625 (15.9)</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>5404</td>
<td>0.170</td>
</tr>
<tr>
<td></td>
<td>24 strand</td>
<td>0.684 (17.4)</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>4511</td>
<td>0.188</td>
</tr>
<tr>
<td></td>
<td>48 strand</td>
<td>0.930 (23.5)</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>2156</td>
<td>0.365</td>
</tr>
</tbody>
</table>