Emerging Technology Increases Fiber Connections

New technology like 5G and IoT, IP migration, the move to 4K content and the shift from 40G to 100G Ethernet and emerging 400G technologies are changing the landscape in data centers, broadcast environments and entertainment venues.

More fiber connections are needed to handle these unavoidable demands. To ensure uptime and efficient operation and maintenance, there’s also an increasing need to effectively manage this growing number of fiber connections.

**DCX Optical Distribution Frame**

Handle high amounts of fiber connections and add density to fiber without compromising on ease of use with the new DCX Optical Distribution Frame. It optimizes the ROI of your fiber infrastructure, offering lower total cost of ownership in terms of capital and operating expenses.

**Highest per-square-foot fiber density while maximizing signal integrity and usability**
What makes the **DCX** System innovative?

- **Highest fiber termination density** available in a small footprint, with 4,608 terminations per cabinet.

- **Maximum signal integrity** through bend radius control for incoming and outgoing cables.

- **Simple patch cord access** via pull-out trays and clearance around connectors.

- **Futureproof functionality**, supporting migration from Base-12 to Base-8, Base-16 and Base-24 without infrastructure changes.

- **Flexibility of termination methods**, including MPO trunk cables, multi-fiber trunk cables with LC connectors, fusion splicing with pigtails or splice-on connectors.

- **Maximum signal integrity** through bend radius control for incoming and outgoing cables.
DCX Cabinets

DCX Cabinets are fully configurable, front-access cabinets that serve as the main building block for a large fiber cross-connect or as a high-density fiber interconnect. They protect fiber connections with a lockable front door and side panels that can be unclipped from the inside. Assemble side by side and back to back for scalability.

DCX Cabinet Components and Accessories

Order as a basic cabinet frame and dress on-site with doors, sides and cable management accessories. Pre-configured cabinets can be upgraded with additional cable entry brackets, cable distribution brackets and patch cord spools as fiber terminations increase. A patch cord management storage module can be inserted between side-by-side assemblies to manage patch cords that run to other cabinets. In-cabinet channel kits can create horizontal patch cord management channels.

Benefits

- Cable management accessories control bend radius of fiber cables and patch cords to protect signal integrity
- Place against a wall or in back-to-back arrangements to minimize use of floor space
- Simplify BOMs and save time during deployment with fully configured cabinets

Features

- Simple, easy-to-install accessories to dress incoming cables and patch cords
- Seismic frame made of 14-gauge steel meets Telcordia GR-63-CORE Zone 4 requirements
- Modular cabinets feature configurable item numbers

Unlimited Scalability

with modular frames that act as building blocks
DCX Housings

DCX Housings are available in left-to-right and right-to-left cable flow configurations for optimized management. The housings have a front-access design with 12 trays that pull out for easy access to cables connected to the back of adapter frames and cassettes. Modular cassettes can be mixed on the same tray (Base-8, Base-12, Base-16 or Base-24), enabling easy and cost-effective migration and preventing density loss.

Benefits

• Enhance signal integrity due to built-in cable bend radius control and strain relief
• Simplify management with full access around each connection for easy insertion and removal
• Reduce human error and connection issues with labeling space at the front and inside the patch cord cover for easy port reference

Features

• 4U housing with front-access design and capacity of 576 fiber terminations (using LC connectors)
• Built-in cable and patch cord management on every tray
• Articulated cable channels provide protection and bend radius control for fiber cables entering housings
Benefits
- Optimize system density regardless of the termination method
- Lower network downtime for maintenance thanks to MPO cassette modularity; only 12 fibers are affected (as opposed to 24 or 36 fibers in other solutions)
- Flippable pre-terminated cassettes provide easy fiber polarity management and simplify system planning (only one part number)

Features
- Adapter frame available with LC, SC or MPO connector interface
- Pre-terminated cassettes available in four-port (Base-8) and six-port (Base-12)
- Splice cassettes available empty or preloaded with pigtails or splice holder and protectors

DCX Adapter Frames and Cassettes
DCX adapter frames and cassettes have a modular, compact design that allows for assembly of two (Base-24), four (Base-12) or six (Base-8) cassettes per housing tray.

Easy and Efficient Fiber Polarity Management
- Symmetrical cassette design maintains sequential port numbering (flip it over)
- Same cassette on both ends simplifies planning
### DCX Cabinets

#### DCX Cabinet Seismic 84” x 36” x 15”, Left-Right, White, Brush + 8 Top Cable Entry Brackets, Brush + 8 Bottom Cable Entry Brackets, Bifold Plexi Door, Solid Side Panel, Full Rear Panel, 8 Cable Distribution Brackets, 8 Patch Cord Spools

- **Maximum Capacity**: 2304 (4608)
- **Belden Part Number**: DCXS11-33121-22

#### DCX Cabinet Seismic 84” x 36” x 15”, Right-Left, White, Brush + 8 Top Cable Entry Brackets, Brush + 8 Bottom Cable Entry Brackets, Bifold Plexi Door, Solid Side Panel, Full Rear Panel, 8 Cable Distribution Brackets, 8 Patch Cord Spools

- **Maximum Capacity**: 2304 (4608)
- **Belden Part Number**: DCXS21-33121-22

#### DCX Cabinet Seismic 84” x 36” x 15”, Left-Right, White, No Top Panel, No Bottom Panel, No Doors, No Side Panel, No Rear Panel, No Cable Attachment, No Spools

- **Maximum Capacity**: 2304 (4608)
- **Belden Part Number**: DCXS11-00000-00

#### DCX Cabinet Seismic 84” x 36” x 15”, Right-Left, White, No Top Panel, No Bottom Panel, No Doors, No Side Panel, No Rear Panel, No Cable Attachment, No Spools

- **Maximum Capacity**: 2304 (4608)
- **Belden Part Number**: DCXS21-00000-00

### DCX Cabinet Accessories

#### Description

- DCX Cable Attachment Bracket - Top (4 Brackets For 24 Cables) Central Office White
  - **Belden Part Number**: DCX-TOPE-KIT03W
- DCX Bottom Panel Solid Central Office White
  - **Belden Part Number**: DCX-BOTE-KIT02W
- DCX Cable Distribution Attachment Kit (1 Bracket w/(2) Plastic Holders Up To 24 LPM Transition Per Holder) Black
  - **Belden Part Number**: DCX-CABV-KIT01B
- DCX Patch Cord Spool Kit (1 Telescopic Spool + Management Bar) Black
  - **Belden Part Number**: DCX-SPOO-KIT02B
- DCX Horizontal In-Cabinet Channel Kit (One Patch Cord Tray) Central Office White
  - **Belden Part Number**: DCX-HINC-KIT01W
- DCX Horizontal In-Cabinet Short Channel Kit (For End Cabinet) Central Office White
  - **Belden Part Number**: DCX-HINC-KIT02W
- DCX Horizontal In-Cabinet Front-To-Back Patch Cord Bridge Black
  - **Belden Part Number**: DCX-HINB KIT01B
- DCX Horizontal Rear Channel Kit (4 Patch Cord Trays) Left-Right Central Office White
  - **Belden Part Number**: DCX-HRRC-LR01W
- DCX Horizontal Rear Channel Kit (4 Patch Cord Trays) Right-Left Central Office White
  - **Belden Part Number**: DCX-HRRC-RL01W
- DCX Patch Cord Storage Module Central Office White w/Black Door w/15 Spools
  - **Belden Part Number**: DCX-PCST-MOD11W
- DCX Patch Cord Spool Kit (1 Fixed Spool + Management Bar) Black
  - **Belden Part Number**: DCX-SPOO-KIT01B

### DCX Cabinets

Building a SmartPart Number

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable Flow</th>
<th>Color*</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Left-Right</td>
<td>White</td>
</tr>
<tr>
<td></td>
<td>Right-Left</td>
<td>Black</td>
</tr>
</tbody>
</table>

*By default, top, bottom, side and rear panels are powder coated to match frame color

**By default, door, cable distribution brackets and spool metal supports are black medium texture

Note: Standard white enclosures will have black doors and standard black enclosures will have black doors Consult factory for special color options and/or enclosure configurations
DCX Housings

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Modules</th>
<th>Total LC Duplex Ports</th>
<th>Belden Part Number</th>
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</thead>
<tbody>
<tr>
<td>DCX Housing 4U, Left-Right Cable Flow, with 12 Trays,</td>
<td>24</td>
<td>288</td>
<td>DCX-04FM-LR</td>
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<tr>
<td>Trunk &amp; Patch Cord Management</td>
<td>48</td>
<td></td>
<td></td>
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<tr>
<td>DCX Housing 4U, Right-Left Cable Flow, with 12 Trays,</td>
<td>24</td>
<td>288</td>
<td>DCX-04FM-RL</td>
</tr>
<tr>
<td>Trunk &amp; Patch Cord Management</td>
<td>48</td>
<td></td>
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</table>

Zero U Trays

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Modules</th>
<th>Belden Part Number</th>
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<tbody>
<tr>
<td>DCX Zero U Tray, Small with Magnets for 1 DCX Cassette Base-12, Black</td>
<td>1</td>
<td>DCX-ZUTR-S</td>
</tr>
<tr>
<td>DCX Zero U Bracket, Large with Magnets for 2 DCX Cassettes Base-12, Black</td>
<td>1</td>
<td>DCX-ZUTR-L</td>
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<td>2</td>
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DCX Adapter Frames

<table>
<thead>
<tr>
<th>Description</th>
<th>Belden Part Number</th>
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<tbody>
<tr>
<td>Patch Ports (fibers)</td>
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</tr>
<tr>
<td>OM3 Aqua Adapters</td>
<td>FF3D04MP</td>
</tr>
<tr>
<td>OM4 Erika Violet Adapters</td>
<td>FF4D04MP</td>
</tr>
<tr>
<td>SM Blue Adapters</td>
<td>FFSD04MP</td>
</tr>
<tr>
<td>SM/APC Green Adapters</td>
<td>FFSD06MP</td>
</tr>
<tr>
<td>MPO Type-A (Key-Up/Key-Down)</td>
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</tr>
<tr>
<td>4 (48)</td>
<td>FF3D04MP</td>
</tr>
<tr>
<td></td>
<td>FF4D04MP</td>
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<tr>
<td></td>
<td>FFSD04MP</td>
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<tr>
<td>6 (72)</td>
<td>FF3D06MP</td>
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<tr>
<td></td>
<td>FF4D06MP</td>
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<td></td>
<td>FFSD06MP</td>
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<tr>
<td>LC Duplex</td>
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</tr>
<tr>
<td>4 (8)</td>
<td>FF3D04LD</td>
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<tr>
<td></td>
<td>FF4D04LD</td>
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<td></td>
<td>FFSD04LD</td>
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<tr>
<td></td>
<td>FFSD04LA</td>
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<td>6 (12)</td>
<td>FF3D06LD</td>
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<td></td>
<td>FF4D06LD</td>
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<td></td>
<td>FFSD06LA</td>
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<tr>
<td>SC Duplex</td>
<td></td>
</tr>
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<td>3 (6)</td>
<td>FF3D03SD</td>
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<td>FF4D03SD</td>
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<td>FFSD03SA</td>
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DCX Adapter Frames

Building a `SmartPart Number`

1. Choose Fiber Type
2. Choose Product Family
3. Choose Port Count (Patch Side)
4. Choose Connector (Patch Side)

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>Product Family</th>
<th>Port Count (Patch Side)</th>
<th>Connector (Patch Side)</th>
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<tbody>
<tr>
<td>3</td>
<td>OM3</td>
<td>4-port</td>
<td>LD</td>
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<tr>
<td>4</td>
<td>OM4</td>
<td></td>
<td>LA</td>
</tr>
<tr>
<td>5</td>
<td>OM5</td>
<td>6-port</td>
<td>SD</td>
</tr>
<tr>
<td>6</td>
<td>DCX</td>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>7</td>
<td>DCX</td>
<td></td>
<td>MP</td>
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</tbody>
</table>
DCX Pre-Terminated Cassettes

<table>
<thead>
<tr>
<th>Description</th>
<th>Belden Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC Duplex to MPO-12 (12f) Female Type-A (Base-12)</td>
<td>FC3D06LDMF</td>
</tr>
<tr>
<td>LC Duplex to MPO-12 (8f) Female SR4 (Base-8)</td>
<td>FC3D04LDF4</td>
</tr>
<tr>
<td>SC Duplex to MPO-12 (12f) Female</td>
<td>FC3D06SDMF</td>
</tr>
<tr>
<td>SC Duplex to MPO-12 (8f) Female</td>
<td>FC3D04SD4F</td>
</tr>
</tbody>
</table>

DCX Pre-Terminated Cassettes

Building a Smart Part Number

1. Choose Fiber Type
2. Choose Product Family
3. Choose Port Count (Patch Side)
4. Choose Connector (Patch Side)
5. Choose Connector (Trunk Side)

DCX Splice Cassettes

<table>
<thead>
<tr>
<th>Description</th>
<th>Belden Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC Duplex - Includes 250 μm discreet pigtails, splice tray and heat shrink</td>
<td>FC3D06LDFP</td>
</tr>
<tr>
<td>SC Duplex - Includes 250 μm ribbon pigtails, splice tray and heat shrink</td>
<td>FC3D12LDFP</td>
</tr>
<tr>
<td>SC Duplex - Pigtails, trays, protector sleeves sold separately</td>
<td>FC3D12LDFS</td>
</tr>
<tr>
<td>SC Duplex - Includes 250 μm ribbon pigtails, splice tray and heat shrink</td>
<td>FC3D06SDFP</td>
</tr>
<tr>
<td>SC Duplex - Pigtails, trays, protector sleeves sold separately</td>
<td>FC3D06SDFS</td>
</tr>
</tbody>
</table>

DCX Splice Cassettes

Building a Smart Part Number

1. Choose Fiber Type
2. Choose Product Family
3. Choose Port Count (Patch Side)
4. Choose Connector (Patch Side)
5. Choose Configuration

Configuration
- FP: Preloaded Stranded Pigtails
- FM: Preloaded w/ Ribbon Pigtail
- FS: Empty
### FiberExpress MPO Trunks (Base-12, Base-8)

**Building a SmartPart Number**

1. **Choose Fiber Type**
   - **FM**
2. **Choose Connector**
   - **4**
3. **Choose Gender**
   - **M**
4. **Choose Polarity**
   - **M**
5. **Choose Connector Count**
   - **B**
6. **Choose Length**
   - **4**
7. **Choose Fire Rating**
   - **010M**
8. **Choose Cable Construct**
   - **P**
9. **Choose Fan Out**
   - **U**
10. **Choose Jacket Color**
    - **E**

*If selecting Base-12 Connectors, choose from Base-12 Connector Count.
If selecting Base-8 Connectors, choose from Base-8 Connector Count.

**Examples:**

- **FM3OM8MO10MPUEU** - FX MPO Trunk, OM3, MPO-12 Male to Male, Type-B, 12 MPO (48 Fibers), 50 m, OFNP, Mini-Distribution (2.0 mm Subunits), Fan-out: 1.0 m x In-Line, Aqua Jacket
- **FM4OM8MO10MPUEU** - FX MPO Trunk, OM4, MPO-12 Male to Male, Type-B, 12 MPO (48 Fibers), 50 m, OFNP, Mini-Distribution (2.0 mm Subunits), Fan-out: 1.0 m x In-Line, Yellow Jacket
- **FM4OM8MO10MPUEU** - FX MPO Trunk, OM4, MPO-12 Male to Male, Type-B, 12 MPO (48 Fibers), 50 m, OFNP, Mini-Distribution (2.0 mm Subunits), Fan-out: 1.0 m x In-Line, Erika Violet Jacket

### FiberExpress Multi-Fiber Trunks

**Building a SmartPart Number**

1. **Choose Fiber Type**
   - **A**
2. **Choose Fiber Count**
   - **48**
3. **Choose Connector 1**
   - **LD**
4. **Choose Cable Construction 1**
   - **7**
5. **Choose Connector 2**
   - **LD**
6. **Choose Cable Construction 2**
   - **7**
7. **Choose Fire Rating**
   - **P**
8. **Choose Length**
   - **030M**

*If selecting Base-12 Connectors, choose from Base-12 Connector Count.
If selecting Base-8 Connectors, choose from Base-8 Connector Count.

**Examples:**

- **A48LD7LD7P050M** - FX Multi-Fiber Trunk, OM4, 48 Fibers, LC Duplex (Jacketed 1.6 mm x 1.0 m), LC Duplex (Jacketed 1.6 mm x 1.0 m), OFNP, 50 m, Erika Violet Jacket
- **A96LD7LD7P050M** - FX Multi-Fiber Trunk, OM4, 96 Fibers, LC Duplex (Jacketed 1.6 mm x 1.0 m), OFNP, 50 m, Aqua Jacket
- **A54LD7LD7P050M** - FX Multi-Fiber Trunk, OM4, 54 Fibers, LC Duplex (Jacketed 1.6 mm x 1.0 m), LC Duplex (Jacketed 1.6 mm x 1.0 m), OFNP, 50 m, Yellow Jacket

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*References:*

- Fiber Express Manual
- FiberExpress Product Catalogue
- Fiber Express Technical Specifications
FiberExpress Patch Cords
Building a SmartPart Number

1. Choose Fiber Type
2. Choose Connector 1
3. Choose Connector 2
4. Choose Length*
5. Choose Fire Rating
6. Choose Cable Construction
7. Choose Polaritity
8. Choose Jacket Color

Examples:
- FPSLDLD03M5R1XY - FX Patch Cord, OS2, LC Duplex - LC Duplex, 3.5 m, OFNR, Duplex Zip 1.6 mm, A-To-B, Yellow Jacket
- FPSLB03M5R9SY - FX Patch Cord, OS2, LC Simplex/APC - LC Simplex/APC, 3.5 m, OFNR, Simplex 1.6 mm, A-To-A, Yellow Jacket
- FP44F4F4F15M5P6BE - FX Patch Cord, OM4, MPO-12 Base-8 (F) - MPO-12 Base-8 (F), 15.5 m, OFNP, Round 2.0 mm, Type-B, Erika Violet Jacket
- FP3LDLD03M5R1XA - FX Patch Cord, OM3, LC Duplex - LC Duplex, 3.5 m, OFNR, Duplex Zip 1.6 mm, A-To-B, Aqua Jacket

FiberExpress Flexible Ribbon Cables
Building a SmartPart Number

1. Choose FX Fiber Cable
2. Choose Fiber Type
3. Choose Family
4. Choose Fiber Count
5. Choose Fire Rating
6. Choose Subunit Type/Configuration

Examples:
- FISR024P0 - FX Indoor Flexible Ribbon OS2, 24 Fibers OFNP Double Jacket (Non-unitized)
- FISR288P5 - FX Indoor Flexible Ribbon OS2, 288 Fibers OFNP Subunits 3.0 mm (24F)
- FISR144L2 - FX Indoor Flexible Ribbon OS2, 144 Fibers LSZH/OFNR Subunits 7.0 mm (144F)
- FISR576RZ - FX Indoor Flexible Ribbon OS2, 576 Fibers OFNP Subunits 7.0 mm (144F)
- FDSR072R2 - FX Indoor/Outdoor Flexible Ribbon OS2, 72 Fibers OFNR Subunits 3.0 mm (12F)

Notes:
1.) Plenum rating cable is only available in indoor cable 12-288F
2.) Riser/LSZH rating cable is only available in indoor cable 12-288F, Fiber count above 288F is only available in riser rating
3.) Indoor/outdoor cable is only available in riser rating 12-288F
Highest per-square-foot fiber density while maximizing signal integrity and usability
Find out more at belden.com/dcx