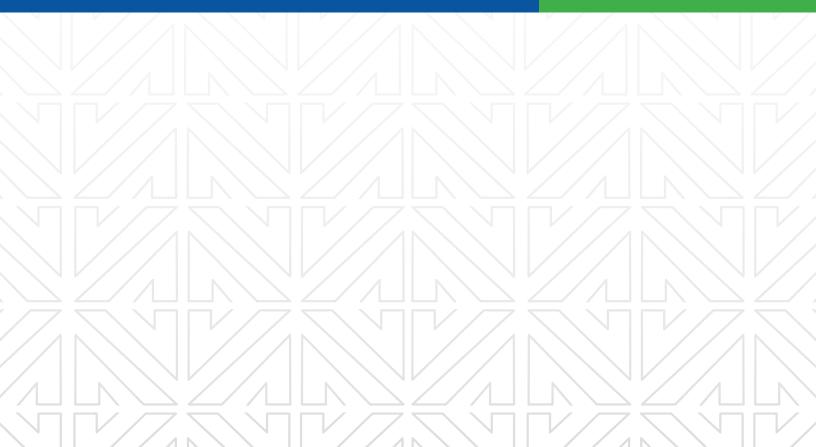


## Copper and Fiber Systems Solutions



### Welcome.

### Our commitment to quality and customer service is our connection to you!

This is our quality statement and we live by it. NetSource partners with our clients to enhance networks with premier copper and fiber solutions. We are proud to have built our business and reputation on quality and customer satisfaction; your unique requirements and specifications are our priority.

We exceed industry testing standards to ensure that every cable solution performs optimally and delivers the strongest connection possible. Our thoroughly tested, end-to-end cable solutions are assembled with U.S. based labor and manufacturing partners for seamless and reliable connectivity. At NetSource, we understand the expanding needs in today's interconnected world. We will work with you to provide both standardized and custom cable solutions to solve your technology and infrastructure challenges in this constantly evolving environment.

We leverage our 24-hour assembly capabilities across both copper and fiber optic cable solutions to ensure quick, quality assured connections for our partners.



Give us a call to learn more or place an order with one of our experienced NetSource sales representatives. 260 Progress Drive Manchester, CT 06042

1-800-557-8818 info@NetSource-inc.com

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CORNING

CAH Connections<sup>®</sup> Gold Program







### SOURCE+

# SOURCE+ is the intelligent choice for data centers and storage area network upgrades and installations.

SOURCE+ is designed to be user friendly and provides various cabling options utilizing MTP<sup>®</sup> cassettes and harnesses.

This end-to-end solution supports 10G and allows seamless migration to 40/100G platforms.

The SOURCE+ system provides a high density modular solution designed to maximize efficient use of rack space and simple installation.

SOURCE+ is suitable for any size project from simple upgrades to large enterprise build-outs.

| Cost-effective | · Uses less rack space                    |
|----------------|---|
|                | <ul> <li>Less scrap and waste</li> </ul>  |
|                | · Reduces labor and installation time     |
| Reliability    | · Factory terminated and tested           |
|                | in a controlled environment               |
|                | <ul> <li>Product consistency</li> </ul>   |
|                | · Built to customer specification         |
|                | · Warrantied solution                     |
| Optimum        | · Standard and low loss options available |
| Performance    | · Exceeds industry standards              |

#### NetSource offers multiple footprints and options to meet every need:

#### SOURCE+ SD series

The SD series fits your standard footprint **72F per RU** 

#### SOURCE+ HD series

The HD series is your high density footprint **96F per RU** 

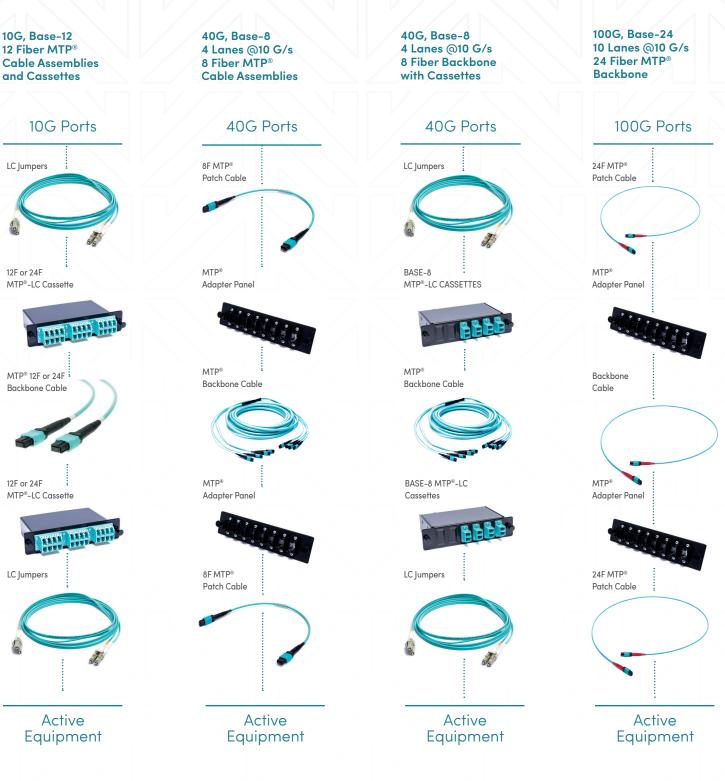
#### SOURCE+ HD+ series

The HD+ series is for your most critical space applications **144F per RU** 



### SOURCE+

We offer a variety of options to support 10/40/100G networks, guaranteeing the most cost-effective and future-proof network available for your particular design. Consult your NetSource sales representative for products that allow easy migration to 40/100G.



### MTP® Patch and MTP® Trunk Cables

SOURCE+ MTP® Trunk, MTP® Patch, and MTP® Conversion assemblies are individual components that make up NetSource's end-to-end solution. The SOURCE+ MTP® trunks are the backbone of the network and interconnect to MTP® cassettes or adapter panels.

The MTP® patch cords cross connect the MTP® trunks directly into a transceiver or into active electronics. The MTP® Conversion assemblies allows users to convert their existing MTP® backbone cables to an MTP® type which matches their active equipment.

These assemblies can support 10/40/100G or simplify migration to 40/100G. When used with SOURCE+ cassettes, enclosures, adapter panels, and patch cords they provide an end-to-end solution backed by our systems solution warranty.



#### FIBER INSERTION LOSS PERFORMANCE (dB)\*

|  |                  | TYP IL | MAX IL |   |                                    | TYP IL   | MAX IL |
|--|------------------|--------|--------|---|------------------------------------|----------|--------|
| Mulitmode<br>cables are                    | LC/SC            | .20    | .25    | Singlemode<br>assemblies are                | LC/SC                              | .20      | .25    |
| tested at both<br>wavelengths<br>850nm and | MTP®             | .25    | .35    | tested at both<br>wavelengths<br>1310nm and | MTP®                               | .50      | .60    |
| 1300nm                                     | Minimum LC/SC/MT |        |        | 1550nm                                      | Minimum I<br>LC/SC -65             | dB (APC) | )      |
| * Consult sales                            | for low loss     | values |        |   | LC/SC -57<br>MTP <sup>®</sup> -600 |          | )      |

#### Features & Benefits

- 100% factory terminated and tested ensuring reliability and quality
- Standard and low loss versions available to meet loss budget requirements of the network
- 8, 12, and 24F MTP<sup>®</sup> assemblies can support 10/40/100G and simplified migration to 40/100G
- Custom built to customer specifications including length, breakouts, and labeling
- All assemblies are shipped with test results and labeled with a unique serial number for traceability
- · Available on method A, B, or C (12F)
- Available in fiber counts of 8-144 fibers in multimode or singlemode
- Assemblies over 100 feet are shipped on a reel
- · Pulling eye available upon request

| MTP®<br>Fiber Assembly | Strand<br>Count                              | Glass<br>Type   | Cable<br>Type  | Ferrule<br>Count   | Connector<br>Type Side 1/2  | Wirin<br>Metho  |                                 | Length  |   | BO<br>Side 1   | Stagger<br>Type Side 1  | BO<br>Side 2   | Stagger<br>Type Side 2  |
|------------------------|--|---|--|--|---|---|---------------------------------|---|---|--|---|--|---|
| MTP®                   | 48   | 4G  | Р  | - 12   | F/F   | - A   | -                               | - 150   | - | V  | 3   | V  | 3   |
|                        | 8<br>12<br>24<br>36<br>48<br>72<br>96<br>144 | XG =<br>OM3 50um<br>(Aqua)<br>4G =<br>OM4 50um<br>(Aqua)<br>5G =<br>OM5 50um<br>(Lime Green)<br>SM =<br>Single Mode<br>(Yellow) | P = Plenum<br>Round Micro<br>Distribution<br>R = Riser<br>Round Micro<br>Distribution<br>L = Low<br>Smoke<br>Zero Halogen<br>IAP = Inter-<br>locking<br>Armored<br>Plenum<br>IO = Indoor<br>/Outdoor<br>RIB = Ribbon | *If more than<br>12-strand<br>12 =<br>12-Fiber Ferrules<br>24 =<br>24-Fiber Ferrules | F = MTP®<br>Female<br>(No pins)<br>M = MTP®<br>Male<br>(With pins)<br>/<br>F = MTP®<br>Female<br>(No pins)<br>M = MTP®<br>Male<br>(With pins) | A = Meth<br>(Straight<br>B = Meth<br>(Reverse<br>C = Meth<br>(Pair Flip<br>X = 24-Fi<br>Ferrule | )<br>od B<br>d)<br>od C<br>ped) | Length<br>in feet<br>Add 'M'<br>after<br>number<br>for a<br>meter<br>length |   | T =<br>12" BO<br>U =<br>18" BO<br>V =<br>24" BO<br>W=<br>36" BO<br>X =<br>48" BO<br>Y =<br>72" BO<br>Z =<br>96" BO | 1 =<br>Stagger<br>Leg 1<br>Longest<br>2 =<br>Stagger<br>Leg 18<br>(or last<br>leg)<br>Longest<br>3 =<br>No<br>Stagger | T =<br>12" BO<br>U =<br>18" BO<br>V =<br>24" BO<br>W=<br>36" BO<br>X =<br>48" BO<br>Y =<br>72" BO<br>Z =<br>96" BO | 1 =<br>Stagger<br>Leg 1<br>Longest<br>2 =<br>Stagger<br>Leg 18<br>(or last<br>leg)<br>Longest<br>3 =<br>No<br>Stagger |

#### EXAMPLE: MTP484GP-12F/F-A-150-V3V3



### **MTP® Harness/Breakout Cables**

SOURCE+ MTP® harnesses directly connect to the active equipment that utilize LC or into an active transceiver. The MTP® harness eliminates the need for cassettes allowing longer distances, more interconnect points, and with less insertion loss. The harness provides low loss alternative to conversion modules because they eliminate a mated MTP® pair.

When used in conjunction with SOURCE+ trunks, enclosures, adapter panels, and patch cords, they provide an end-to-end solution backed by our systems solution warranty.



#### FIBER INSERTION LOSS PERFORMANCE (dB)\*

|  |                       | TYP IL | MAX IL |   |                                   | TYP IL  | MAX IL |
|--|-----------------------|--------|--------|---|-----------------------------------|---------|--------|
| Mulitmode<br>cables are                    | LC/SC                 | .20    | .25    | Singlemode<br>assemblies are                | LC/SC                             | .20     | .25    |
| tested at both<br>wavelengths<br>850nm and | MTP®                  | .25    | .35    | tested at both<br>wavelengths<br>1310nm and | MTP®                              | .50     | .60    |
| 1300nm                                     | Minimum I<br>LC/SC/MT |        |        | 1550nm                                      | Minimum<br>LC/SC -65              | dB (APC | )      |
| * Consult sales                            | for low loss          | values |        |   | LC/SC -57<br>MTP <sup>®</sup> -60 |         | )      |

#### **Features and Benefits**

- Factory terminated and tested ensuring reliability and quality
- Standard and low loss versions available to meet the loss budget requirements of the network
- $\cdot$  8, 12, and 24F MTP® assemblies support 10/40/100G and simplified migration to 40/100G
- · Available in fiber counts of 8-144
- · Fibers in multimode or singlemode
- Custom built to customer specifications including length, breakouts, and labeling
- All assemblies are shipped with test results and labeled with a unique serial number for traceability
- Assemblies over 100 feet are shipped on a reel
- · Pulling eye available upon request

#### EXAMPLE: MTP<sup>®</sup>244GP-F/LC-A-10M

| MTP® Fiber<br>Assembly | Strand<br>Count                              | Glass<br>Type   | Cable<br>Type  |   | Type S  | ide 1/2                      |   | Wiring<br>Method  |   | Length  |
|------------------------|--|---|--|---|---|------------------------------|---|---|---|---|
| MTP®                   | 24   | 4G  | Р  | - | F/  | LC                           | - | A   | - | 10M   |
|                        | 8<br>12<br>24<br>36<br>48<br>72<br>96<br>144 | XG =<br>OM3 50um<br>(Aqua)<br>4G =<br>OM4 50um<br>(Aqua)<br>5G =<br>OM5 50um<br>(Lime Green)<br>SM =<br>Single Mode<br>(Yellow) | P = Plenum<br>Round Micro<br>Distribution<br>R = Riser<br>Round Micro<br>Distribution<br>L = Low<br>Smoke<br>Zero Halogen<br>IAP = Inter-<br>locking<br>Armored<br>Plenum<br>IO = Indoor<br>/Outdoor<br>RIB = Ribbon |   | F = MTP®<br>Female<br>(No pins)<br>M = MTP®<br>Male<br>(With<br>pins) | LC<br>LC-APC<br>SC<br>SC-APC |   | A = Method A<br>(Straight)<br>B = Method B<br>(Reversed)<br>C = Method C<br>(Pair Flipped)<br>X = 24-Fiber<br>Ferrule |   | Length in feet<br>Add 'M' after<br>number for a<br>meter length |



### SD1 Cassettes

SOURCE+ SD1 cassettes serve as the point of interconnection between the MTP® trunks and MTP® harnesses. The cassettes breakout the MTP® to single fiber connectors and allow easy patching within the network. When used in conjunction with SOURCE+ MTP® trunks, enclosures, adapter panels and patch cords they provide an end-to-end solution backed by our systems solution warranty.

MTP<sup>®</sup>-MTP<sup>®</sup> conversion cassettes support 40G and upward migration to 100G. 8, 12, and 24F MTP<sup>®</sup> ferrules.

The conversion cassettes utilize 1x24F MTP<sup>®</sup> in and 3x8F MTP<sup>®</sup> out.

Consult sales for more information.



#### FIBER INSERTION LOSS PERFORMANCE (dB)\*

|  |                       | TYP IL | MAX IL |   |                                    | TYP IL   | MAX IL |
|--|-----------------------|--------|--------|---|------------------------------------|----------|--------|
| Mulitmode<br>cables are                    | LC/SC                 | .20    | .25    | Singlemode<br>assemblies are                | LC/SC                              | .20      | .25    |
| tested at both<br>wavelengths<br>850nm and | MTP®                  | .25    | .35    | tested at both<br>wavelengths<br>1310nm and | MTP®                               | .50      | .60    |
| 1300nm                                     | Minimum R<br>LC/SC/MT |        |        | 1550nm                                      | Minimum I<br>LC/SC -65             | dB (APC) |        |
| * Consult sales                            | for low loss v        | alues  |        |   | LC/SC -57<br>MTP <sup>®</sup> -600 |          |        |

#### Features & Benefits

- Factory terminated and tested ensuring reliability and quality
- Standard and low loss versions available to meet the loss budget requirements of the network
- $\cdot$  Variety of single fiber interfaces including LC and SC
- · 8, 12, and 24F MTP® ferrules
- Cassettes are compatible with the SD1 series accommodating up to 72 fibers in 1RU
- All adapters are secured to the cassettes eliminating possible movement of the mated pair
- LC adapters are available with an internal shutter to prevent exposure to light and excess dust build up for added protection to the eye

#### EXAMPLE: CAS-SD124F4GLC

| Cassettes |   | Series | Fibers        | MTP <sup>®</sup> Style                       | Туре                                  | Connector   |
|-----------|---|--------|---------------|--|---------------------------------------|-------------|
| CAS       | - | SD1    | 24            | F  | 4G                                    | LC          |
|           |   | SD1    | 8<br>12<br>24 | F = 12 Fiber Ferrule<br>X = 24 Fiber Ferrule | 4G = OM4 MM<br>XG = OM3 MM<br>SM = SM | LA = LC/APC |





### **Adapter Panels**

SOURCE+ adapter panels serve as the point of interconnection among MTP® trunks, MTP® harnesses and pre-terminated fiber cable assemblies.

The adapter panels are part of NetSource's end-to-end solution and are backed by a 25-year warranty.



#### Features and Benefits

- $\cdot$  Variety of single fiber adapters including LC, MTP®, SC, and ST
- Adapter housing colors follow TIA/EIA-568-C.3 suggested color scheme
- Adapter panels are available 6 fiber, 8 fiber, 12 fiber, 24 fiber, 72 fiber, and 96 fiber
- All adapters are secured to the panel, eliminating possible movement of the mated pair
- LC adapters available with an internal shutter to prevent exposure to light and excess dust build-up for added protection
- The single fiber adapters come with a ceramic split sleeve
- The MTP<sup>®</sup> adapter is available in both opposing keyway and aligned keyway

#### EXAMPLE: PNL-SDI24LCAQ

| Panels<br>PNL - | series<br>- SD1 | Fibers<br>24 | Adapters<br>LC     | color<br>AQ      |
|-----------------|-----------------|--------------|--------------------|------------------|
|                 | SD1             | 8            | LC                 | AQ = Aqua        |
|                 |                 | 12           | SC                 | BL = Blue        |
|                 |                 | 24           | ST                 | GN = Green       |
|                 |                 | 72*          | MTP <sup>®</sup> * | EV= Erica Violet |
|                 |                 | 96*          |                    |                  |
|                 |                 |              |                    |                  |

\*Only available when using  $MTP^{\circledast}$ 





### **SD1 Enclosures**

SOURCE+ SD1 enclosures support SD1 cassettes, adapter panels, and MTP<sup>®</sup> trunks. When used in conjunction with SOURCE+ MTP<sup>®</sup> trunks, adapter panels, and patch cords they provide an end-to-end solution and are included in our systems solution warranty.

#### **Features and Benefits**

- The enclosures are available in patch, patch and splice, and splice
- The enclosures can be prewired to customer specifications
- · Locks available upon request
- Easy access with a slide out drawer front and rear with removable top cover
- Each enclosure can accommodate 72 fibers per rack unit: (3) adapter panels,
  (3) cassettes and/or (3) splice trays per rack unit
- · Available in 1RU, 2RU, and 4RU
- Includes internal fiber management
- Material: 16 Gauge CRS with a black powder coat finish
- Mounts in 19" and 23" racks
- Standard 19" sliding mounting brackets allow up to 5" extension to a flush mount projection

#### PATCH

SD1-1RU 1.75"x15"x19" Accepts (3) adapter panels or (3) cassettes

SD1-2RU 3.5"x15"x19" Accepts (6) adapter panels or (6) cassettes

SD1-4RU 7"x15"x19" Accepts (12) adapter panels or (12) cassettes

#### PATCH & SPLICE

 SD1-1RU-P/S
 1.75"x15"x19"

 Accepts (3) adapter panels and (3) splice trays

SD1-2RU-P/S3.5"x15"x19"Accepts (6) adapter panels and (6) splice trays

SD1-4RU-P/S7"x15"x19"Accepts (12) adapter panels and (12) splice trays

#### SPLICE

SD1-1RU-S 1.75"x15"x19" Splice only accepts (3) splice trays

 SD1-2RU-S
 3.50"x15"x19"

 Splice only accepts (6) splice trays

SD1-4RU-S 7"x15"x19" Splice only accepts (12) splice trays









### **Wall Mounts**

SOURCE+ SD1 wall mount enclosures support the SD1 cassettes and adapter panels in an indoor environment.

#### **Features and Benefits**

- The enclosures are available for direct termination from 6-144 fibers with lock or latch
- · Material: 16 Gauge CRS with a black powder coat finish\*

\*Consult sales for patch and splice options.









WALL-SD1-1 7"x7"x1.5" Patch only accepts (1) adapter panel or (1) cassette **UP TO 24 FIBERS** 

WALL-SD1-2 13"x9.25"x3.5" Patch only accepts (2) adapter panels or (2) cassettes **UP TO 48 FIBERS** 

WALL-SD1-4 13"x11.5"x3.5" Patch only accepts (4) adapter panels or (4) cassettes UP TO 96 FIBERS

WALL-SD1-8 17"x12"x5.87" (+inner panel) Patch only accepts (8) adapter panels or (8) cassettes UP TO 192 FIBERS

#### WALL-SD1-12

17"x16"x5.87" Patch only accepts (12) adapter panels or (12) cassettes UP TO 192 FIBERS



### **HD1 Series**

SOURCE+ HD1 series can accommodate 25% more fiber in a 1RU than our standard SD1 series.

These components are designed to work with SOURCE+ MTP® cable assemblies and patch cords for a complete high density solution supporting 10/40/100G.

#### ADAPTER PANELS

CASSETTES

- The adapter panels are available in a variety of fiber adapters, including LC and MTP® adapters supporting Base-8, 12, and 24 backbones, as well as multifiber solutions
- All adapter panels are secured to the panels eliminating possible movement of the mated pair
- · LC adapters come with an internal shutter to prevent dust

types including OM3, OM4, and OS2

available with an SC or ST interface

#### EXAMPLE: PNL-HD1-12LCAQ

| Panels |   | Series |   | Fibers | CONN | Color      |
|--------|---|--------|---|--------|------|------------|
| PNL    | 4 | HD1    | - | 12     | LC   | AQ         |
|        |   | HD1    |   | 8      | LC   | AQ = Aqua  |
|        |   | SD1    |   | 12     | SC   | BL = Blue  |
|        |   |        |   | 24     | ST   | GN = Green |
|        |   |        |   | 72*    | MTP* |            |
|        |   |        |   | 96*    |      |            |

\*Only available when using MTP®

#### FIBER INSERTION LOSS PERFORMANCE (dB)\*

|  |                     | TYP IL | MAX IL |
|--|---------------------|--------|--------|
| Mulitmode<br>cables are                    | LC/SC               | .20    | .25    |
| tested at both<br>wavelengths<br>850nm and | MTP®                | .25    | .35    |
| 1300nm                                     | Minimum<br>LC/SC/MT |        |        |

assemblies are tested at both wavelengths 1310nm and 1550nm M

Singlemode

 TYP IL
 MAX IL

 LC/SC
 .20
 .25

 MTP<sup>®</sup>
 .50
 .60

 Minimum Return Loss

LC/SC -65dB (APC) LC/SC -57dB (UPC) MTP<sup>®</sup> -60dB

possible movement of the mated pair
The LC adapters are available with an internal shutter to prevent dust

· All adapters are secured to the cassette, eliminating

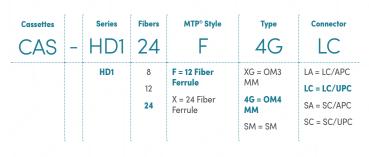
 $\cdot$  In addition to supporting 10/40/100G the cassettes are also

• The HD1 cassettes are available with an LC interface supporting Base-8, 12, and 24 fiber in a variety of fiber

• The cassettes are available in both standard and low loss to support maximum distances required by the 40/100G Ethernet loss budget

\* Consult sales for low loss values

#### EXAMPLE: CAS-HD124F4GLC



#### **FIBER TRAYS**

- HD1 rack mount fiber trays support HD1 cassettes and adapter panels
- Fiber trays are available in both 1RU and 2RU accommodating up to 96 fiber per 1RU
- Each fiber panel comes with a bracket to tie down and route the backbone cable

HD1-1RU-PNL

1.75"x19"x7"

Accepts 4 HD adapter panels or 4 HD cassettes

HD1-2RU-PNL3.5"x19"x7"Accepts 8 HD adapter panels or 8 HD cassettes





### Fiber SFP, QSFP+ AOC DAC

NetSource offers an extensive range of fiber optic transceivers and active optical cables for Ethernet, InfiniBand, and Fiber Channel+ (FCoE) applications. Our transceivers and AOC support high-end servers over 4/8/10G fiber channel transmissions.

All transceivers are pre-programmed and tested to match your equipment's requirements to ensure compatibility. All products are compliant to MSA and IEEE standards.



#### SFP+ AND QSFP+ DAC ACTIVE OPTICAL CABLES

- SFP+ 10G data link
- Typical data rate 10.3125G/s Max 10.42 G/s
- Various fiber lengths ranging from 1–100 meters
- · Single 3.3V power supply

#### 100G EDR QSFP28

- · 4 independent full-duplex channels
- · Transmission data rate up to 28G/s per channel
- Reliable VCSEL array technology using multimode fiber
- Available in standard lengths of 3, 5, 10, 15, 20, 30, 50, 100m
- Maximum power consumption 3.5W each terminal
- Operating case temperature 0°C to +70°C
- · Single 3.3V power supply
- $\cdot$  RoHS 6 compliant
- · Hot pluggable QSFP form factor

#### QSFP+ 4/8/10G FIBER CHANNEL

- · Data rate of 10.5 Fb/ss each lane
- Maximum aggregate data rate 42.0 G/s
- Various fiber lengths ranging from 1–100 meters
- · Single 3.3V power supply

#### TRANSCEIVERS

- Consult sales for hot pluggable transceivers in a variety of distance options, data rate, and protocols
- · 40G/s QFFP+SR4
- · 56G/s QFFP+SR4
- · Dual Fiber SFP
- · 6-10G SFPT
- · 10G DWDM SFP+
- · 10G CWDM SFP+



5

### **Fiber Solutions**

NetSource pre-terminated end-to-end fiber solutions are designed to be user friendly, cost-effective, and easy to install. This end-toend system supports a customized fiber solution backed by our system warranty.\*

NetSource Fiber Solutions provides a comprehensive line of various cabling options utilizing a complete set of components. NetSource Fiber Solutions components include enclosures, patch cords, patch panels, and backbone trunk assemblies manufactured to your specific requirements. The components arrive on the job site, on time and ready to be deployed allowing a quick, seamless install.

#### **Features and Benefits**

| Cost-effective | <ul><li>Rapid deployment</li><li>Less scrap and waste</li><li>Reduces labor and installation time</li></ul> |
|----------------|---|
| Reliability    | <ul> <li>Factory terminated and tested<br/>in a controlled environment</li> </ul>                           |
|                | Product consistency   |
|                | <ul> <li>Built to customer specification</li> </ul>   |

\*Consult sales for warrantied solutions



### **Pre-Terminated Multifiber Assemblies**

Pre-terminated multi-strand fiber solutions from NetSource are designed to save both time and money. These assemblies are available with a wide variety of custom specifications.



#### Features and Benefits

- · Cost-effective
- · Rapid deployment
- $\cdot \mbox{ Less scrap}$  and waste
- $\cdot$  Reduces labor and installation time
- · Optimum performance
- · Reliability

#### EXAMPLE: FA36SMP-LCSC-50-VBO9

- $\cdot$  Factory terminated and tested in a controlled environment
- Product consistency
- $\cdot$  Built to customer specification
- $\cdot$  Custom manufactured
- $\cdot$  Standard and low loss options available

| Fiber<br>Assembly<br>FA | Strand<br>Count<br>36                  | <sup>Glass</sup><br>Type<br>SM  | Cable<br>Type<br>P  | _ | Type S  | ide 1/2<br>SC   | _ | Length<br>50  | _ | BO Length  | во<br>ВО | BO<br>Size<br>9                 |
|-------------------------|--|---|---|---|---|---|---|---|---|--|----------|---------------------------------|
|                         | 8<br>24<br>36<br>48<br>72<br>96<br>144 | XG =<br>OM3 50um<br>(Aqua)<br>4G =<br>OM4 50um<br>(Aqua)<br>5G =<br>OM5 50um<br>(Lime Green)<br>SM =<br>Single Mode<br>(Yellow) | P = Plenum<br>R = Riser<br>L = Low Smoke<br>Zero Halogen<br>IAP = Interlocking<br>Armored Plenum<br>IO = Indoor<br>/Outdoor<br>RIB = Ribbon |   | FA = FC-APC<br>FC = FC<br>LA = LC-APC<br>LC = LC<br>SA = SC-APC<br>SC = SC<br>ST = ST | FA = FC-APC<br>FC = FC<br>LA = LC-APC<br>LC = LC<br>SA = SC-APC<br>SC = SC<br>ST = ST |   | Length in feet<br>Add 'M' after<br>number for a<br>meter length |   | T = 12" BO<br>U = 18" BO<br>V = 24" BO<br>W = 36" BO<br>X = 48" BO<br>Y = 72" BO<br>Z = 96" BO |          | 9 = 900um<br>2 = 2mm<br>3 = 3mm |



### Pigtails

Typically 1 meter to 3 meters in length, pigtails are assemblies that have a factory-terminated connector on one end of a tight buffered fiber and are open on the other end. This open end is to be used for fusion splicing to another piece of fiber.

Pigtails eliminate the need for mechanical splice connectors or any other type of field-termination.

#### NetSource offers pigtails with a wide variety of options:

- Individual 900 micron 'unjacketed' fiber terminated with any type of connector and in any glass type
- Multi-strand fiber without a jacket, bundled in color-coded groups of 6 or 12
- Multi-strand fiber that remains jacketed, typically with an 18" 900 micron breakout
- 6, 12, 24, 36, 48, 72, 144, and 288-strand fiber counts available





#### EXAMPLE: FP12900XG-LC-3M

| Fiber Pigtails | Strand Count<br>12                                     | 900                        | Glass Type<br>XG  | Cable Type   | - | Connector Type Side 1   | – 3M   |
|----------------|--|----------------------------|---|--|---|---|--|
|                | 1<br>2<br>6<br>12<br>24<br>36<br>48<br>72<br>96<br>144 | lf it's a 900um<br>pigtail | XG = OM3 50um<br>(Aqua)<br>4G = OM4 50um<br>(Aqua)<br>5G = OM5 50um<br>(Lime Green)<br>SM = Single Mode<br>(Yellow) | No letter = Riser Rated Jacket<br>P = Plenum<br>Round Micro Distribution<br>R = Riser<br>Round Micro Distribution<br>L = Low Smoke Zero Halogen<br>IAP = Interlocking Armored<br>Plenum<br>IO = Indoor/Outdoor<br>RIB = Ribbon |   | FA = FC-APC<br>FC = FC<br>LA = LC-APC<br>LC = LC<br>SA = SC-APC<br>SC = SC<br>ST = ST | Length in<br>feet<br>Add 'M' after<br>number for a<br>meter length |



### **Fiber Patch Cords**

All cables are factory terminated and 100% optically tested to meet or exceed industry performance standards. Lifetime warranty against defects in materials and craftsmanship. NetSource utilizes the most advanced testing and polishing procedures available.



#### Features & Benefits

- Available in all standard glass types including OM1, OM2 OM3, OM4, OM5 multimode, and singlemode
- Available using all industry standard connectors including LC, SC, ST, Angled Polish Connectors, and LC Uniboot Connectors
- · Available in U.S. Made, Corning® Gold, and Net-Lite Series

#### EXAMPLE: FASMP-LCSC-15M

| Options Type<br>FA                                      | Glass Type<br>SM   | Cable Type<br>P  | - Connector   | - 15M   |   |
|---|--|--|---|---|---|
| G-Fa = Corning® Gold<br>FA = U.S. Made<br>NL = Net-Lite | XG = OM3 50um<br>(Aqua)<br>4G = OM4 50um<br>(Aqua)<br>5G = OM5 50um<br>(Lime Green)<br>SM = Single Mode<br>(Yellow)<br>62 = OM1 62.5<br>(Orange) | No letter equals Riser<br>P = Plenum<br>Round Micro Distribution<br>LSZH = Low Smoke<br>Zero Halogen | FA = FC-APC $FC = FC$ $LA = LC-APC$ $LC = LC$ $LU = LC UNIBOOT$ $SA = SC-APC$ $SC = SC$ $ST = ST$ | FA = FC-APC $FC = FC$ $LA = LC-APC$ $LC = LC$ $LU = LC UNIBOOT$ $SA = SC-APC$ $SC = SC$ $ST = ST$ | Length in feet<br>Add 'M' after<br>number for a<br>meter length |

#### U.S. MADE FIBER PATCH CABLES

Our U.S. Made fiber optic patch cords utilize the same industry leading manufacturing processes handed down from Corning<sup>®</sup>. Made in the USA with high quality components, these cables are available in all types of connector configurations for both custom and standard length cords.

A variety of different jacketing options are available, including different colors and sizes. We will offer a system solutions warranty for customers purchasing fiber patch cords in our SOURCE+ Fiber Solutions system.





### **Fiber Patch Cords**

#### **CORNING® GOLD FIBER PATCH CABLES**

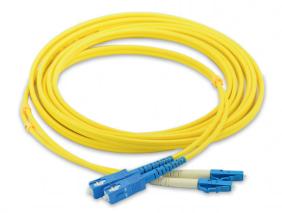
NetSource's association with Corning® Cable Systems in the CAH Gold Program enables us to provide high-quality Corning® equivalent fiber patch cables to complement a full Corning® warranty. These cables are manufactured in accordance with the high standards that have made Corning® #1 in the industry for decades. Able to be built to all custom lengths and specifications, these cables are always available with a timely turnaround.



CAH Connections<sup>®</sup> Gold Program

#### **NET-LITE ECONOMY PATCH CABLES**

NetSource's Net-Lite fiber jumpers are our most economical line of fiber patch cables. These are kept in stock and are often able to ship same day. Net-Lite jumpers are stocked in meter lengths between 1 and 30 meters. Custom lengths and specifications are available at the same economical price point and typically carry a 5-7 day lead time.





### **LC Uniboot Patch Cords**

#### **CORNING® LC UNIBOOT PATCH CORDS**

Corning's<sup>®</sup> LC Uniboot allows you to manage polarity when and where you need it with a simple flip. These fiber patch cords are also backed by Corning's<sup>®</sup> 25-year warranty through the Gold Program.

Combine the above features with the NetSource commitment to fast delivery, quality products, and excellent service and you have an unbeatable combination.

- Brand you can trust
- Proven product reliability
- Small form factor connectors
- Single 2mm cable for 2 fibers to facilitate easier and better cable routing for densely populated areas
- Unique and rapid field polarity switching capability that allows changes without exposing the fiber
- Polarity identification features

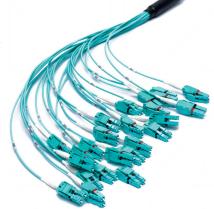
CORNING CAH

CAH Connections" Gold Program

#### LC UNIBOOT PATCH CORDS

LC Uniboots use a single boot and a round style 2mm or 3mm jacket instead of duplex zipcord cables, reducing cable size accommodating today's highly dense applications. The housing of the Uniboots allows it to be taken apart without any special tools to reverse or flip polarity without having to re-terminate the connectors. The uniboot connectors fits into any standard Duplex LC adapter.

- Compact design
- Polarity management
- No special tools required





### **Copper Solutions**

NetSource's Copper Solutions provide a comprehensive line of various cabling options utilizing a complete set of components.

NetSource's Copper Solutions components include patch cords, patch panels, copper trunk assemblies, and workstation pieces that can be manufactured to your specific requirements. The assemblies and components arrive at the job site, on time and ready to be deployed, allowing a quick, seamless install.

| <b>Features and Benefits</b> |
|------------------------------|
|------------------------------|

| Cost-effective | <ul><li>Less scrap and waste</li><li>Reduces labor and installation time</li></ul> |
|----------------|--|
| Reliability    | <ul> <li>Factory terminated and tested<br/>in a controlled environment</li> </ul>  |
|                | <ul> <li>Product consistency</li> </ul>  |
|                | • Built to customer specification  |
|                |  |







### **Copper Trunks & Bundled Assemblies**

#### **COPPER TRUNKS**

NetSource pre-terminated end-to-end copper solution is designed to be user friendly, cost-effective, and easy to install. This end-to-end system supports a customized CAT6/6A solution backed by our warranty.

- Reduces labor and installation time
- Less scrap and waste
- Reliability
- Factory terminated and tested ensuring reliability and quality
- Product consistency
- Built to customer specification

#### **BUNDLED ASSEMBLIES**

NetSource copper bundles are the backbone of the pre-terminated copper solution. When used in conjunction with patch panels, patch cords, and work stations they provide an end-to-end solution backed by our system warranty.

- Factory terminated and tested ensuring reliability and quality
- Custom built to customer specifications including length, breakouts, and labeling
- Bundles can be terminated to plugs (male) or jacks (female) in groups of 6 to 24 with tie wraps/velcro or under a braided sleeve
- Available in Riser or Plenum in a variety of colors for both the sleeving and the cable



#### EXAMPLE: BU12-C6PMFBL50

| Bundled<br>Assemblies | Cables<br>in Bundles |   | Category<br>Rating                        | Jacket<br>Rating | Connectors                         | Color | Length  |
|-----------------------|----------------------|---|---|------------------|------------------------------------|-------|---|
| BU                    | 12                   | - | C6  | Ρ                | MF                                 |       | 50  |
|                       | 6<br>12<br>24        |   | C6=<br>Standard<br>CAT6<br>C6A =<br>CAT6A | P =<br>Plenum    | M=<br>RJ45 Plug<br>F=<br>RJ45 Jack | BL    | Length<br>in feet<br>Add 'M'<br>after<br>number<br>for a<br>meter<br>length |





### **Patch Panels**

NetSource's end-to-end solution is available in both STP and UTP CAT6 and CAT6A.

#### Features and Benefits

- Flexible installation install from either front or rear of faceplate
- · Quick identification colored icons provided for port identification
- Easy termination punch down with standard 110 termination tools
- · Universal wiring T568A and T568B wiring compatible
- Field Configurable Patch Panels allow you to customize your application with snap-in keystone jacks

#### **PATCH PANELS**



#### JACKS AND ADDITIONAL MODULES

| KJ-C6-XX*     | CAT6 Keystone Jack                     | *XX = Color              |
|---------------|--|--------------------------|
| KJ-C6A-XX*    | CAT6A Keystone Jack                    | Available in:<br>Blue    |
| KJ-C6-SH      | CAT6 Shielded Keystone Jack            | Black<br>Green<br>Orange |
| KJ-BLANK      | Blanks Package Of 25                   | Red<br>White<br>Yellow   |
| KJ-C5E-FF-XX* | CAT5E Keystone Coupler                 |                          |
| KJ-C6-FF-XX*  | CAT6 Keystone Coupler                  |                          |
| KJ-C5E-FF-SH  | CAT5E Shielded Keystone Coupler        |                          |
| KJ-C6-FF-SH   | CAT6 Shielded Keystone Coupler Diecast |                          |
| KJ-FCONN-XX*  | F-Connector Keystone Coupler           |                          |
| KJ-BNC-XX*    | BNC Keystone Coupler                   |                          |



### Workstations

NetSource workstation solutions include standard and high density faceplates and surface mount boxes, along with a variety of snap-in hacks and modules to help make installations quick and easy.

#### Features and Benefits

- · Includes all necessary hardware for easy installation
- · Durable construction to ensure long life
- $\cdot$  Variety of custom configuration options
- $\cdot$  Compatible with a wide range of copper and fiber modules

#### FIBER MODULES

| KJ-LC-XX* | LC Duplex Keystone White  | *XX = Color  |   |
|-----------|---------------------------|--|---|
| KJ-SC-XX* | SC Simplex Keystone White | Available in:<br>AQ = Aqua<br>BE = Beige<br>BL = Blue<br>EV = Erika Violet<br>GN = Green<br>WH = White | 5 |
|           |                           |  |   |

#### FACEPLATES AND SURFACE MOUNT BOXES

| KJ-SG-FP-01 | Keystone Face Plates, Single Gang, Plastic White, 1 Port  |
|-------------|---|
| KJ-SG-FP-02 | Keystone Face Plates, Single Gang, Plastic White, 2 Ports |
| KJ-SG-FP-03 | Keystone Face Plates, Single Gang, Plastic White, 3 Ports |
| KJ-SG-FP-04 | Keystone Face Plates, Single Gang, Plastic White, 4 Ports |
| KJ-SG-FP-06 | Keystone Face Plates, Single Gang, Plastic White, 6 Ports |
| KJ-SFB-01   | Keystone 1 Port Surface Mount Box White                   |
| KJ-SFB-02   | Keystone 2 Port Surface Mount Box White                   |
| KJ-SFB-04   | Keystone 4 Port Surface Mount Box White                   |
| KJ-SFB-06   | Keystone 6 Port Surface Mount Box White                   |





### **Copper Patch Cords**

NetSource copper patch cords support a variety of applications from voice and video to high speed networks and POE. All copper cables are manufactured to your custom requirements and meet or exceed industry standards for NEXT and return loss.

Our cords are factory terminated for superior performance guaranteeing consistent reliable results.

#### Features & Benefits

EXAMPLE: PCC6B-BL-10

- · Available in CAT5E, CAT6, CAT6A, shielded and unshielded, riser, plenum, and LSZH in your choice of length
- · Available in U.S. Made and Economy Series

- · Industry standard T-568A, T568-B, crossover or custom wiring available
- · Options for non-booted or variations of boots (snagless) available

| Patch Cord Type PC                   | Boot Option  | Category<br>6                  | Fixed Note<br>B | Additional<br>Options                               | _ | B  |  | _ | Length<br>10   |
|--------------------------------------|--|--------------------------------|-----------------|---|---|--|--|---|--|
| PC = U.S. Made<br>IM =Economy Series | C = Clear Slimline Boot<br>(only available w/U.S. made)<br>S = Bubble Boot<br>Blank= No Boot | 5E=CAT5E<br>6=CAT6<br>6A=CAT6A |                 | MP = Minipatch<br>SH = Shielded<br>Blank = Standard |   | AQ = Aqua<br>BK = Black<br>BL = Blue<br>BN = Brown<br>GN = Green<br>GY = Gray<br>LG = Lime Green | OR = Orange<br>PK = Pink<br>PR = Purple<br>RD = Red<br>WH = White<br>YL = Yellow |   | Length in<br>feet<br>Add 'M' after<br>number for a<br>meter length |

\*Not all colors are available in Economy Series

#### U.S. MADE CAT5E, CAT6, AND CAT6A PATCH CORDS

When used in conjunction with copper trunks, patch panels and work stations they provide an end-to-end solution backed by a system warranty.

Our U.S. Made copper patch cords are custom built to fit your requirements. Made in the USA with high quality components, these cables are available in CAT5E, CAT6, and CAT6A using 24 AWG stranded patch cable and high quality RJ45 modular plugs.

Patch cords are available in many different colors and can be built using no boots, slide-on boots, or clear slimline boots.

Also available in shielded stranded 26 AWG STP cable.







### **Copper Patch Cords**

#### CAT6 AND CAT6A (MINI-PATCH) 28 AWG

NetSource Snagless Unshielded (UTP) and Shielded (STP) Slim 28 AWG Network Patch Cords are the perfect solution for high density and top of rack data center applications.

The use of 28 AWG reduces the overall foot print, utilizing less space and increasing air flow.

The smaller bend radius facilitates improved cable management in high density layouts.

When used in conjunction with copper trunks, patch panels, and work stations, they provide an end-to-end solution backed by a 25-year warranty. Overall diameter: 0.15" (standard CAT6 overall diameter: .235")

Manufactured with: 28 AWG, stranded copper (7x32), four twisted pairs

#### NETSOURCE ECONOMY SERIES CAT5E, CAT6 AND CAT6A

NetSource economy series are the most cost-effective solution in patch cables.

Cables are imported and stock/availability will vary.

The patch cables are available in standard colors and lengths with and without boots.





### Fiber to the Antenna

The next generation of fiber and copper harsh environment cable assemblies.

NetSource ruggedized fiber and copper cable assemblies are built to withstand even the most inhospitable of conditions. Every assembly is USA made for quick turnarounds and tested to ensure industryleading performance and reliability.

All NetSource Harsh Environment assemblies can be customized to fit your applicationspecific requirements.

NetSource offers a wide selection of FTTA, FTTH, and DAS cable assemblies with the following ruggedized connectors with various indoor/outdoor cables with or without power.

- · IP68 MPO, LC or SC assemblies
- FullAXS®
- · ODC®-type 2-fiber and 4-fiber
- · Hardened drop fiber assemblies
- $\cdot$  IP67 RJ45 CAT5e, CAT6, and CAT6a

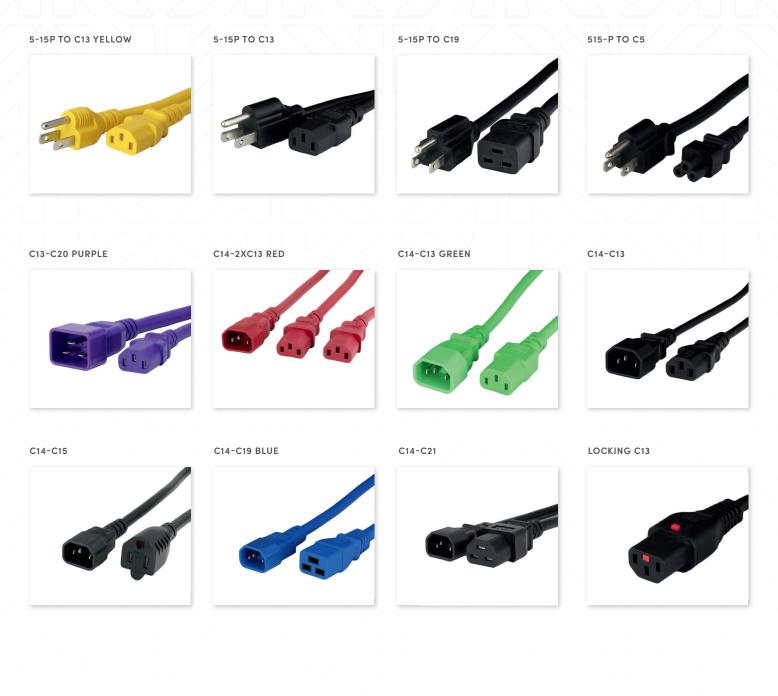


Hardened Drop



### Power

Leading distributor of high quality power cords for data centers, IT installations, high temperature environments, and hazardous applications. We sell a full range of IEC Power Cords including C5, C7, C13, C14, C15, C19, C20, and C21 power cords, jumper cables, and adapters, as well as North American and international NEMA power cords. We stock a wide range of data center power cables, jumper cables, adapters, and more in a variety of lengths, colors, and cordage types to simplify your next installation.







Our commitment to quality and customer service is our connection to you!

260 Progress Drive Manchester, CT 06042

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