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#### MPO Cable Assemblies

(See Cable Assemblies & Backplane Interconnects Section 2, pages 106-117)

#### LIGHTPLANE Connector System

(See Cable Assemblies & Backplane Interconnects Section 2, pages 121, 122)

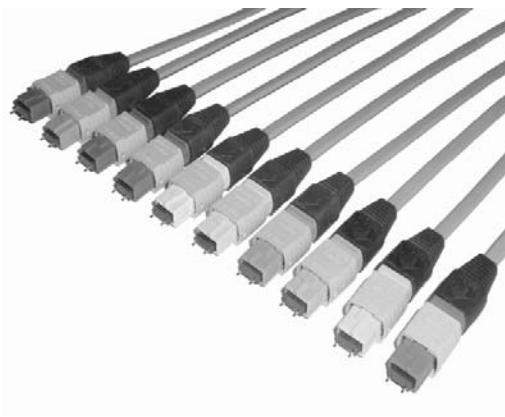
#### LIGHTTRAY MPX System Interconnects

(See Cable Assemblies & Backplane Interconnects Section 2, pages 123-137)

LuxCis is a trademark of Radiall, S.A.  
Product is manufactured under  
license from Radiall, S.A.

**Ten variants in ten colors offered in two new interfaces**

## Expanded SECURE Connector Product Line Includes MPO and LC Interfaces



Tyco Electronics has expanded its SECURE connector product offering to include both MPO and LC interfaces. Through the use of ten different color/key variations, customers operating multiple networks in common areas can physically segregate their network throughout the system, from the backbone to the equipment panel.

Primary colors and keys are available in red, blue, yellow and green, with additional, secondary options for up to ten different color/keying configurations. Only connectors and adapters of the same color will intermate, and no standard product can plug into a secure adapter.

The LC SECURE product is compatible with both jack-

eted and buffered fiber. It is available in both LIGHTCRIMP PLUS and standard epoxy/polish styles for singlemode and multimode fibers. Each connector features a color-coded key that will only mate with like-colored adapters to minimize connection to the wrong networks. Standard colors include red, blue, green and yellow. An additional six colors are available as needed.

The MPO SECURE products are available in the same colors and are compatible with color-coded MPO SECURE cassettes. Standard MPO SECURE trunk cables are available in fiber counts to 72 fibers. MPO SECURE cassettes are available as twelve or

twenty-four fiber assemblies. Cables and cassettes are available with 50µm, XG and 62.5µm multimode fiber.

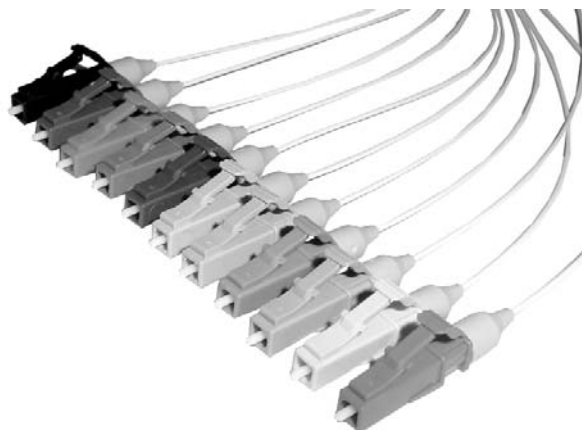
The success of the MT-RJ SECURE product line has fostered growing interest in the SECURE product concept. The addition of the LC and MPO interfaces to the AMP NETCONNECT SECURE product portfolio will allow a wider adoption of the concept and allow more customers to take advantage of the benefits the system offers.

A complete line of connectivity, cable assemblies, and cables are available for MT-RJ SECURE, LC SECURE and MPO SECURE. See pages 9-13 for details.

# **LIGHTCRIMP PLUS and Epoxy Style LC Product Facts**

- **LIGHTCRIMP PLUS—**  
No Epoxy/No Polish strip, cleave and crimp
- **LC small form factor design**  
is half the size of SC
- **10 exclusive connector variants**
- **Color coded plugs & adapters match MT-RJ & MPO SECURE offerings**
- **LIGHTCRIMP PLUS—**  
Termination to 250 or 900  $\mu$ m tight-buffered fiber using standard tooling
- **Epoxy Style—Termination**  
to 250 or 900  $\mu$ m tight-buffered fiber 1.6 – 2.0 mm jacketed fiber
- **Epoxy Style—Suitable for use with heat-cured or anaerobic (quick cure) epoxies (See instruction sheet for recommended anaerobic epoxies)**
- **Product qualification to TIA/EIA 568-B.3**
- **Field installable duplex clip (black) for polarity correction if needed**
- **Plug nose features can provide up to 70 mutually exclusive keying combinations**
- **Distinct keyway geometry on plug nose & color coding assures identifiable key-type**
- **Extended lugs on plug side-walls prevent SECURE connectors from mating with non-secure adapters**
- **Molded internal geometry produces tamper resistant system**
- **Key placement allows SECURE plugs to interface with standard 1.25 mm test equipment, inspection microscopes and application tooling**

## **LC SECURE Product Offering**



### **LIGHTCRIMP PLUS LC SECURE Kits**

| Color  | Simplex 50/125 MM SECURE | Simplex 50/125 XG MM SECURE | Simplex 62.5/125 MM SECURE | Simplex SM SECURE | Notes   |
|--------|--------------------------|-----------------------------|----------------------------|-------------------|---------|
| Red    | 1828853-1                | 1828854-1                   | 1828855-1                  | 1828856-1         | Primary |
| Yellow | 1828853-2                | 1828854-2                   | 1828855-2                  | 1828856-2         | Primary |
| Green  | 1828853-3                | 1828854-3                   | 1828855-3                  | 1828856-3         | Primary |
| Blue   | 1828853-4                | 1828854-4                   | 1828855-4                  | 1828856-4         | Primary |
| Rose   | 1828853-5                | 1828854-5                   | 1828855-5                  | 1828856-5         |         |
| Aqua   | 1828853-6                | 1828854-6                   | 1828855-6                  | 1828856-6         |         |
| Brown  | 1828853-7                | 1828854-7                   | 1828855-7                  | 1828856-7         |         |
| Violet | 1828853-8                | 1828854-8                   | 1828855-8                  | 1828856-8         |         |
| Orange | 1828853-9                | 1828854-9                   | 1828855-9                  | 1828856-9         |         |
| Slate  | 1-1828853-0              | 1-1828854-0                 | 1-1828855-0                | 1-1828856-0       |         |

Highlighted Part Numbers are routinely stocked for shortest lead times.

### **Epoxy Style LC Kits**

| Color  | Simplex Jumper Multimode | Simplex Jumper Singlemode | Simplex Buffer Multimode | Simplex Buffer Singlemode | Notes   |
|--------|--------------------------|---------------------------|--------------------------|---------------------------|---------|
| Red    | 1828078-1                | 1828079-1                 | 1828861-1                | 1828862-1                 | Primary |
| Yellow | 1828078-2                | 1828079-2                 | 1828861-2                | 1828862-2                 | Primary |
| Green  | 1828078-3                | 1828079-3                 | 1828861-3                | 1828862-3                 | Primary |
| Blue   | 1828078-4                | 1828079-4                 | 1828861-4                | 1828862-4                 | Primary |
| Rose   | 1828078-5                | 1828079-5                 | 1828861-5                | 1828862-5                 |         |
| Aqua   | 1828078-6                | 1828079-6                 | 1828861-6                | 1828862-6                 |         |
| Brown  | 1828078-7                | 1828079-7                 | 1828861-7                | 1828862-7                 |         |
| Violet | 1828078-8                | 1828079-8                 | 1828861-8                | 1828862-8                 |         |
| Orange | 1828078-9                | 1828079-9                 | 1828861-9                | 1828862-9                 |         |
| Slate  | 1-1828078-0              | 1-1828079-0               | 1-1828861-0              | 1-1828862-0               |         |

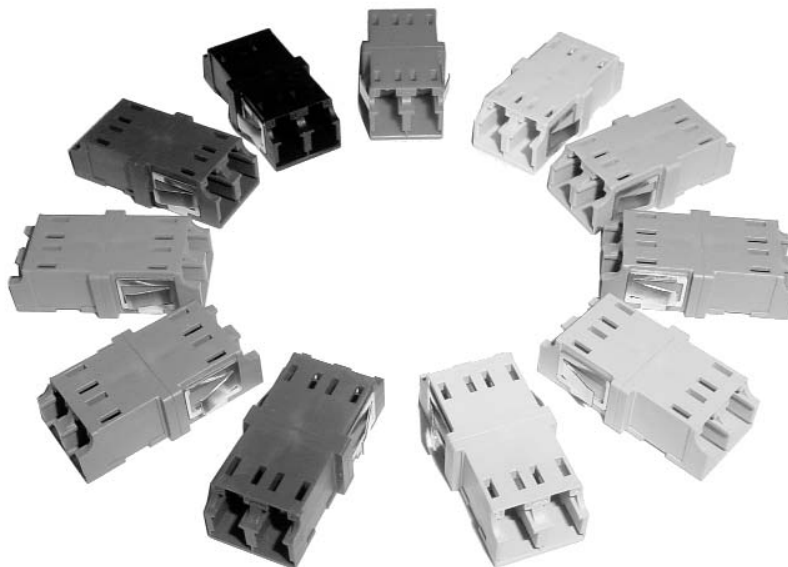
Highlighted Part Numbers are routinely stocked for shortest lead times.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**LC SECURE Product Offering** (Continued)

**LC Duplex Adapters**  
**Product Facts**

- Flange mount, flangeless, and SL Series configurations
- High quality ceramic sleeves
- Suitable for singlemode and multimode
- Key and color compatible to Epoxy Style and LIGHTCRIMP PLUS Product
- Universal Hybrid Adapters: includes universal adapter half, allows standard LC plugs to be used Behind The Wall or Inside The Box



**LC Duplex Adapters**

| Color  | SECURE Adapter Flanged | SECURE Adapter Flangeless | SECURE Adapter SL | Notes   |
|--------|------------------------|---------------------------|-------------------|---------|
| Red    | 1828073-1              | 1828074-1                 | 1828075-1         | Primary |
| Yellow | 1828073-2              | 1828074-2                 | 1828075-2         | Primary |
| Green  | 1828073-3              | 1828074-3                 | 1828075-3         | Primary |
| Blue   | 1828073-4              | 1828074-4                 | 1828075-4         | Primary |
| Rose   | 1828073-5              | 1828074-5                 | 1828075-5         |         |
| Aqua   | 1828073-6              | 1828074-6                 | 1828075-6         |         |
| Brown  | 1828073-7              | 1828074-7                 | 1828075-7         |         |
| Violet | 1828073-8              | 1828074-8                 | 1828075-8         |         |
| Orange | 1828073-9              | 1828074-9                 | 1828075-9         |         |
| Slate  | 1-1828073-0            | 1-1828074-0               | 1-1828075-0       |         |

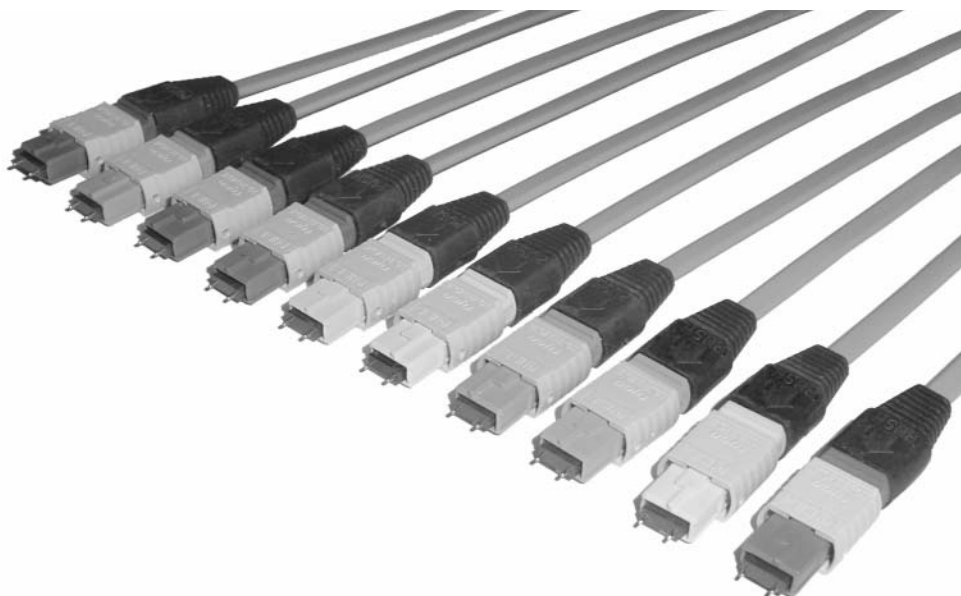
Highlighted Part Numbers are routinely stocked for shortest lead times.

**Note:** Part Numbers are RoHS compliant except::♦ Indicates non-RoHS compliant.

## MPO SECURE Trunk Cable Assemblies

### Product Facts

- Feature color-coded, keyed designs to limit improper connections in segregated or SECURE networks
  - MPO SECURE plug only mates with same color MPO SECURE port
- Trunk cable fiber polarity is pair-flipped (AB/BA)
  - Trunk cables with straight-through polarity (AB/BA) are available
- Pulling socks protect MPO terminations during installation
- Twelve (12) fibers per MPO SECURE plug
- Trunk cables come pre-tested and ready for immediate use
- MPO SECURE trunk cables are plenum cables
  - Plenum cables can be used in riser spaces
- Additional counts and lengths are available
- For use with MPO SECURE Cassettes listed on this page only



| Description | Fiber Type                              | SECURE Color/Keying | Part Number |
|-------------|-----------------------------------------|---------------------|-------------|
| 12-Fiber    | 50/125 $\mu$ m Multimode                | Red                 | 6754273-X   |
|             |                                         | Yellow              | 6754276-X   |
|             |                                         | Green               | 6754274-X   |
|             |                                         | Blue                | 6754275-X   |
|             | XG (850 nm LO 50/125 $\mu$ m) Multimode | Red                 | 6754420-X   |
|             |                                         | Yellow              | 6754421-X   |
|             |                                         | Green               | 6754422-X   |
|             |                                         | Blue                | 6754423-X   |
|             | 62.5/125 $\mu$ m Multimode              | Red                 | 6754269-X   |
|             |                                         | Yellow              | 6754272-X   |
|             |                                         | Green               | 6754270-X   |
|             |                                         | Blue                | 6754271-X   |
| 24-Fiber    | 50/125 $\mu$ m Multimode                | Red                 | 6754281-X   |
|             |                                         | Yellow              | 6754284-X   |
|             |                                         | Green               | 6754282-X   |
|             |                                         | Blue                | 6754283-X   |
|             | XG (850 nm LO 50/125 $\mu$ m) Multimode | Red                 | 6754424-X   |
|             |                                         | Yellow              | 6754425-X   |
|             |                                         | Green               | 6754426-X   |
|             |                                         | Blue                | 6754427-X   |
|             | 62.5/125 $\mu$ m Multimode              | Red                 | 6754277-X   |
|             |                                         | Yellow              | 6754280-X   |
|             |                                         | Green               | 6754278-X   |
|             |                                         | Blue                | 6754279-X   |

X denotes length in feet: -1 = 10, -2 = 20, -3 = 30, -4 = 40, -5 = 50, -6 = 60, -7 = 70, -8 = 80, -9 = 90, 1- -0 = 100, 1- -1 = 110, 1- -2 = 120, 1- -3 = 130, 1- -4 = 140, 1- -5 = 150, 1- -6 = 160, 1- -7 = 170, 1- -8 = 180, 1- -9 = 190, 2- -0 = 200, 2- -1 = 210, 2- -2 = 220, 2- -3 = 230, 2- -4 = 240, 2- -5 = 250, 2- -6 = 260, 2- -7 = 270, 2- -8 = 280, 2- -9 = 290, 3- -0 = 300

**Note:** Part Numbers are RoHS compliant except::♦ Indicates non-RoHS compliant.

## MPO SECURE Optical Fiber Cassettes

### Product Facts

- Cassette fiber polarity is pair-flipped (AB/BA)
  - Cassettes with straight-through polarity (AB/AB) are available
- Cassettes have one MPO connection (12-Fiber) or two MPO connections (24-Fiber) on the back of each cassette
- Cassettes house MPO one or two 12-fiber break-out assemblies
- Cassettes have same footprint as Snap-in Adapter Plates
  - Mount in all AMP NETCONNECT enclosures that accept Snap-in Adapter Plates
- Cassettes come pre-tested and ready for immediate use
- MPO SECURE cassettes accept one or two MPO SECURE connectors and transition to the same color MT-RJ SECURE connectors
- MPO SECURE plug only mates with same color MPO SECURE port
- For use only with MPO SECURE Trunk Cable Assemblies on this page



| Description                | Fiber Count | Duplex Port Count | Part Number |
|----------------------------|-------------|-------------------|-------------|
| 50/125 $\mu$ m Multimode   | 12          | 6                 | 1754286-X◆  |
|                            | 24          | 12                | 1754288-X◆  |
| 62.5/125 $\mu$ m Multimode | 12          | 6                 | 1754285-X◆  |
|                            | 24          | 12                | 1754287-X◆  |

X denotes: -1 = Standard, -2 = Red, -3 = Green, -4 = Blue, -5 = Yellow

**Note:** Part Numbers are RoHS compliant except:◆ Indicates non-RoHS compliant.

## MT-RJ SECURE Product Expansion — Now 10 Variants of the MT-RJ SECURE Products



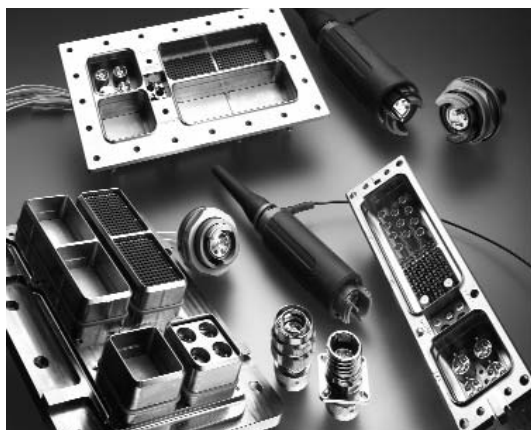
In response to several customers, the MT-RJ SECURE product line has been expanded with an additional six color/key versions. In addition to the original four colors (blue, green, red and yellow), the six new colors (brown, rose, aqua, violet, slate and orange) now make for ten variations. In keeping with the MT-RJ SECURE products features, only plugs and jacks of the same color will mate, and none of the MT-RJ SECURE products will mate with the standard versions. A complete line of jacks, cable assemblies and colored cables are available. For more information see pages 64, 65, 101 and 102.



### Rugged Fiber Optic Products

#### Product Facts

- Expanded Beam
  - PRO BEAM Sr.Connectors
  - PRO BEAM Jr.Connectors
  - PRO BEAM Mini Connectors
  - Mini 38999
  - Mini ARINC
  - Mini GPRC
- LuxCis Optical Termini
  - One common terminus for GPRC, 38999, ARINC, Quadrax Cavity Reducers
- Sealed Circular LC ODVA



Expanded Beam Products



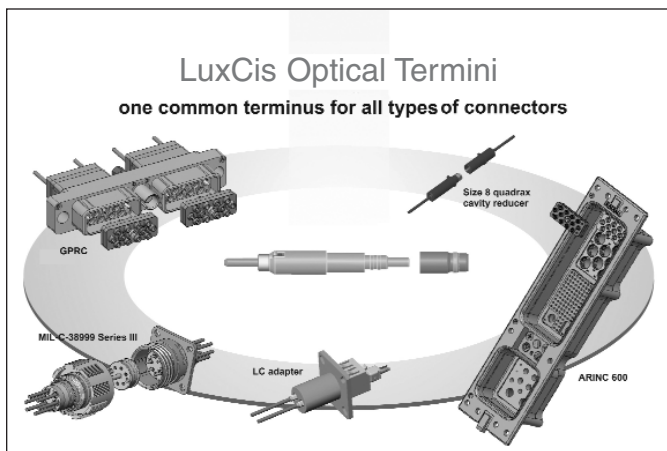
PRO BEAM Sr., Jr. & Mini Connectors

Tyco Electronics is proud to offer a full rugged fiber optic product family.

With Tyco Electronics' Expanded Beam, LuxCis Optical Termini,

and the Sealed Circular LC ODVA, the end user is guaranteed a complete choice that meets their cost and optical performance needs in multiple industries.

For specific information, please contact your local Tyco Electronics Sales Representative.



LuxCis Optical Termini

LuxCis is a trademark of Radiall, S.A. Product is manufactured under license from Radiall, S.A.

**ASSEMBLY CAPABILITIES**  
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.



Sealed Circular LC ODVA

## Rugged Fiber Optic Products (Continued)

### Expanded Beam Products

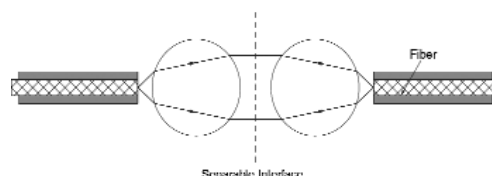
#### Product Facts

- PRO BEAM Sr., PRO BEAM Jr. and PRO BEAM Mini Connector field deployable interconnects
- ARINC 600 connectors, with inserts/holder blocks designed for Mini-Expanded Beam — up to 128 channels on size 3 ARINC 600
- MIL-C-38999 Series III shell size 11 style circular connectors — Cable assemblies up to 4 fibers
- Common insert for 1- through 4-channels
- Unique Modular Design, for use with multimode and singlemode fiber
- Tactical cables, cable reels, backpacks
- Cable assembly and termination services
- Ball lens expands cross-sectional area of light over 200 times for multimode and over 2000 times for singlemode
- Rugged hermaphroditic construction (i.e., same insert mates to each other)
- Physically non-contacting mating conditions; no wear, installed fiber ferrule protected by ball lens



From left to right: PRO BEAM Sr., PRO BEAM Jr. & Mini Expanded Beam inserts.

### Expanded Beam Technology



Expanded Beam Principle

Fiber Optic Interconnect/Cable System using Expanded Beam technology, which physically expands and collimates the transmission signal into an optical beam over 14 times its original diameter (the cross sectional area of the light beam increases over 200 times for multimode optical signals. For singlemode signals, the collimated beam is over 45 times its original diameter (the cross-

sectional area of the light beam increases over 2,000 times.). It is then refocused back down onto the core of the receiving fiber. This approach provides ease of alignment and low sensitivity to thermal changes and contamination. High strength, precision connector housings enhance a durable connection, optimizing low loss and repeatable performance.

Suitable for aerospace, avionics, field-deployable communications, marine ship-to-shore applications, security systems, mobile diagnostic units, oil and gas exploration and other harsh environment applications demanding strength, durability and reliable performance in conditions of multiple coupling/decouplings, blindmate situations, and high vibration.

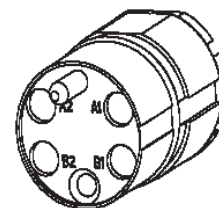
### Product Facts

- No wear on fiber optic interface; Very vibration resistant
- Easy to handle, easy to clean. Durable connection that is highly resistant to dirt/debris
- Singlemode or multimode
- Common 850/1300 Dual Wavelength, 1310, or 1550 nm wavelengths
- Easy alignment for low-loss, repeatable performance
- Consistent overall optical "link budget" assured
- Low sensitivity to thermal fluctuations and interface contamination
- Repeatable low-loss performance in harsh environments

#### ASSEMBLY CAPABILITIES

Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

### Expanded Beam Inserts



- PRO BEAM Sr. — the original, larger format, Field Tactical, hermaphroditic Connector System
- PRO BEAM Jr. — the second generation, reduced size, Field Tactical Connector System
- Mini-Expanded Beam insert for multi-channel small form factor — the smallest expanded beam multi-channel insert in the industry, a Tyco Electronics exclusive

**Rugged Fiber Optic Products (Continued)**

**PRO BEAM Jr. Connectors**

**Performance Specifications**

**Optical, Multimode**

**Insertion Loss, Typical** —  
0.7 - 1.0 dB @ 1300 nm\*

**Optical, Singlemode Version**

**Insertion Loss, Typical** —  
0.8 - 1.0 dB @ 1310 nm\*

**Return Loss** — > 34 dB @ 1310 nm  
or 1550 nm

\*Against referenced lead

**Mechanical**

**Vibration, Sinusoidal** —

10 - 500 Hz, 3 directions;  
0.75 mm amplitude @ 10g acceleration

**Bump** — 4,000 Bumps, 6 directions  
@ 50g acceleration

**Free Fall** — 500 falls on concrete;  
Severity 1.2 m

**Coupling Endurance** —  
3,000 couplings

**Weight** —

Plug — 123 grams, typical  
D-Hole bulkhead — 102 grams, typical

**Temperature**

**Operational Temperature** —  
-40°C/+85°C

**Storage Temperature** —  
-55°C/+85°C

**Temperature, Cyclic** —  
-55°C/+85°C

**Humidity (Damp Heat)** —95% RH

**Immersion**

**Water** — 5 m depth (plug) -  
2 m (Bulkhead)

**Material and Finish**

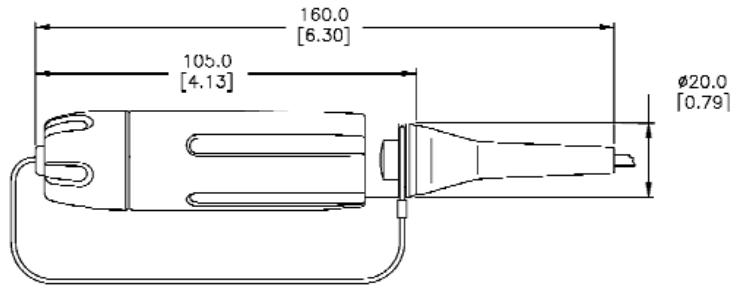
**Shell Alloy** — Aluminum; or nickel  
aluminum bronze (high saline environ-  
ment)

**Plating (For Aluminum Shells  
Only)** — clear hard anodized; or green  
chromate conversion zinc (PRO BEAM  
Jr. Bulkheads only)

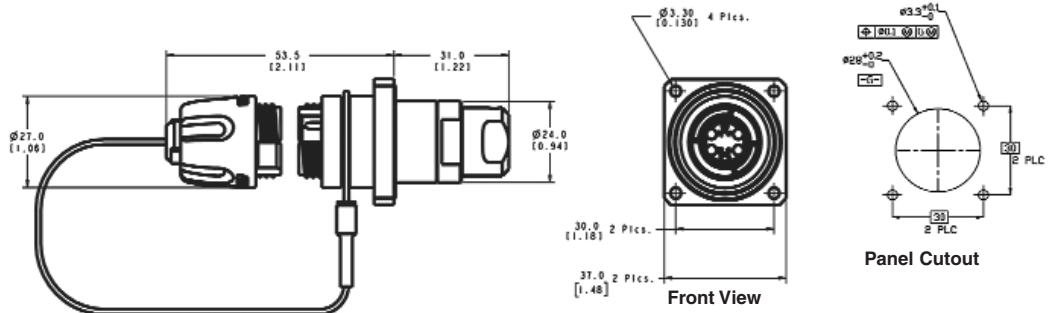
**Bulkhead Connector Panel  
Thicknesses**

**PRO BEAM Jr. Bulkhead Connector  
D-Hole** — 4 mm max.

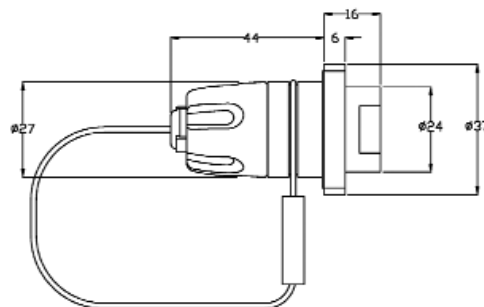
**PRO BEAM Jr. Bulkhead Connector  
Square Flange** — 6 mm max.



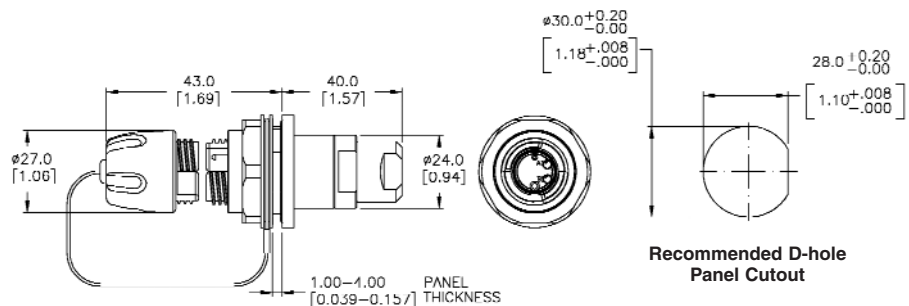
PRO BEAM Jr. Cable Connector, Plug



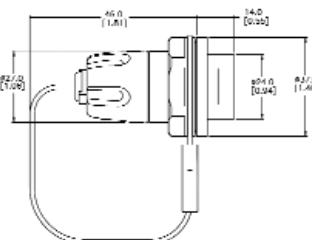
PRO BEAM Jr. Square Flange Mount Bulkhead



PRO BEAM Jr., Low Profile,  
Square Flange Mount Bulkhead



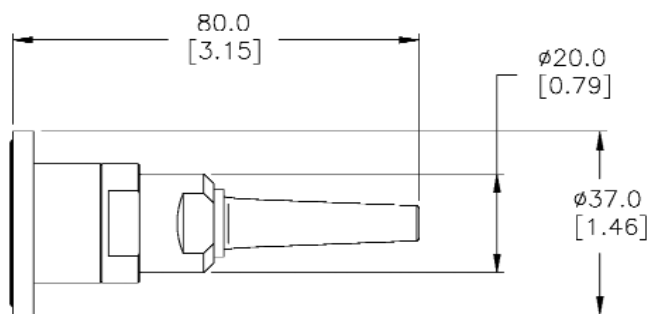
PRO BEAM Jr. D-Hole Bulkhead, Standard Cable Adapter



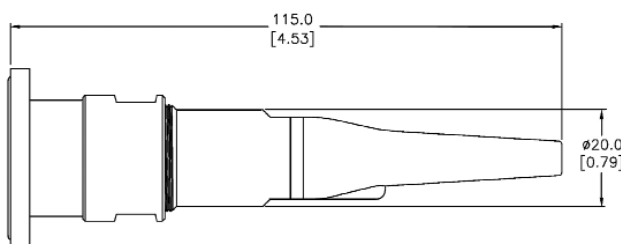
PRO BEAM Jr. Low Profile D-Hole Bulkhead

**PRO BEAM Jr. Connectors**  
(Continued)

**Rugged Fiber Optic Products (Continued)**



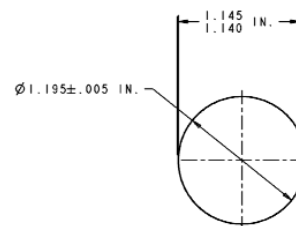
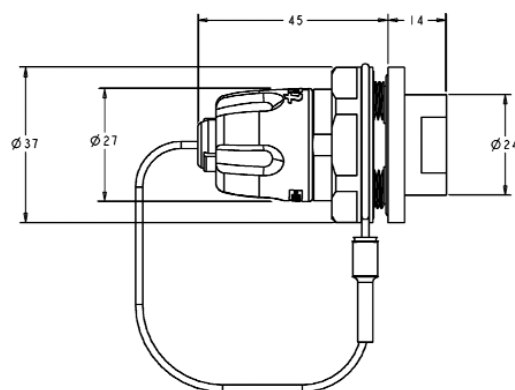
Standard Bulkhead Cable Adapter, with Boot



Environmentally Sealed Bulkhead Cable Adapter, with Boot

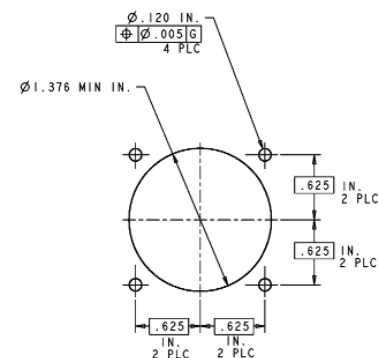
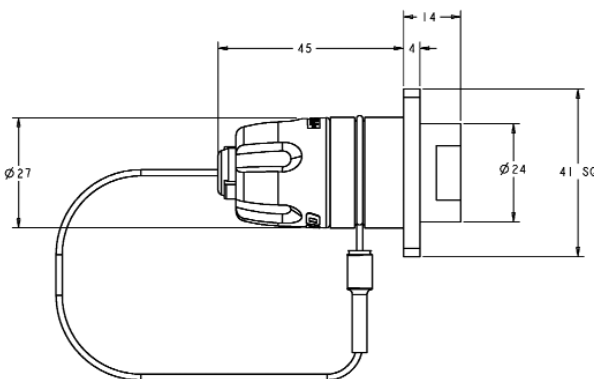
**PRO BEAM Jr. Replacement  
Receptacles for TFOCA-II  
Panel Mount Connector  
Applications**  
(see page 18 for Part Numbers)

**Panel Cutout Dimensions**



RECOMMENDED TFOCA-II<sup>®</sup> PANEL CUT-OUT  
(DIMENSIONS: INCHES)

PRO BEAM Jr. D-Hole Low Profile Buffered Fiber Bulkhead Replacement Connector for TFOCA-II Product



RECOMMENDED TFOCA-II<sup>®</sup> PANEL CUT-OUT  
(DIMENSIONS: INCHES)

PRO BEAM Jr. Square Flange, Low Profile, Buffered Fiber Bulkhead Replacement for TFOCA-II Product

TFOCA-II is a registered trademark of  
Amphenol Fiber Systems International.

### PRO BEAM Jr. Connectors (Continued)

#### Connector Assembly

1 Shell Kit  
1 Insert Kit  
1 Cable Adapter Kit\*  
X Ferrule Kits (X = No.  
of optical channels)

Part Numbers listed are  
Shell alloy = aluminum  
Plating = hard anodized.  
Consult Tyco Electronics  
for other plating/material  
options such as NiAlBz for  
Naval applications.

**ASSEMBLY  
CAPABILITIES**  
Tyco Electronics has  
extensive Rugged Optic Harness  
capabilities. Please consult  
your local Tyco Electronics  
Sales Representative  
for assistance.

#### Technical Documents

##### Product Specification

108-2177 Design Objectives

##### Application Specification

114-13099

##### Instruction Sheets

408-8791 Grounding D-Hole  
Bulkhead  
408-8797 Plug  
408-8798 Standard D-Hole Bulkhead  
408-8811 Sealed D-Hole Bulkhead  
408-8834 Low Profile Square Flange  
Bulkhead  
408-8840 Low Profile D-Hole  
Bulkhead  
408-8841 Standard Square Flange  
Bulkhead

### Rugged Fiber Optic Products (Continued)

#### PRO BEAM Jr. Connector Shell Kits

| Description                                                    | Part Number |
|----------------------------------------------------------------|-------------|
| PRO BEAM Jr. Plug w/EPDM rubber                                | 1754436-1   |
| PRO BEAM Jr. Plug w/Fluorosilicone rubber                      | 1754436-2   |
| PRO BEAM Jr. D-Hole Low Profile, Buffered Fiber Bulkhead       | 1693741-1   |
| PRO BEAM Jr. D-Hole Standard Bulkhead                          | 1754437-1   |
| PRO BEAM Jr. D-Hole Sealed Bulkhead                            | 1754438-1   |
| PRO BEAM Jr. Square Flange Low Profile Buffered Fiber Bulkhead | 1754439-1   |
| PRO BEAM Jr. Square Flange Standard Bulkhead                   | 1754440-1   |
| PRO BEAM Jr. Square Flange Sealed Bulkhead                     | 1754441-1   |

#### PRO BEAM Jr. Replacement Receptacles for TFOCA-II Panel Mount Connector Applications

| Description                                                                         | Part Number |
|-------------------------------------------------------------------------------------|-------------|
| PRO BEAM Jr. TFOCA-II Replacement D-Hole Low-Profile Buffered Fiber Bulkhead        | 1754445-1◆  |
| PRO BEAM Jr. TFOCA-II Replacement D-Hole Sealed Bulkhead                            | 1754446-1◆  |
| PRO BEAM Jr. TFOCA-II Replacement Square Flange Low-Profile Buffered Fiber Bulkhead | 1754447-1◆  |
| PRO BEAM Jr. TFOCA-II Replacement Square Flange Sealed Bulkhead                     | 1754448-1◆  |

#### PRO BEAM Jr. Insert Kits

| Description                | Part Number |
|----------------------------|-------------|
| 2 x 850 / 1300nm Multimode | 1515743-1   |
| 2 x 1310nm Singlemode      | 1515739-1   |
| 2 x 1550nm Singlemode      | 1516040-1   |
| 4 x 850 / 1300nm Multimode | 1515747-1   |
| 4 x 1310nm Singlemode      | 1515740-1   |
| 4 x 1550nm Singlemode      | 1516041-1   |

#### Ferrule Kits

| Fiber Hole Size | Mode | PRO BEAM | Part Number |
|-----------------|------|----------|-------------|
| 125 μm          | SM   | Jr.      | 1588908-2   |
| 126 μm          | SM   | Jr.      | 1588908-1   |
| 126 μm          | MM   | Jr.      | 1588700-1   |

#### PRO BEAM Jr. Connector Plug & Sealed Bulkhead Cable Adapter Kits

| Cable Dia.<br>(Max.) | Part Number |
|----------------------|-------------|
| 3.10<br>.122         | 1515814-1   |
| 3.60<br>.142         | 1515781-3   |
| 4.10<br>.161         | 1515848-2   |
| 4.60<br>.181         | 1516147-1   |
| 5.10<br>.201         | 1515834-2   |
| 5.65<br>.222         | 1515827-2   |
| 6.10<br>.240         | 1515859-3   |
| 6.70<br>.264         | 1588116-1   |
| 7.50<br>.295         | 1828168-1   |

#### PRO BEAM Jr. Connector Standard Bulkhead Cable Adapter Kits\*

| Cable Dia. (Max.)   | Part Number |
|---------------------|-------------|
| 3.10 (.122)         | 1515791-2   |
| 3.60 (.142)         | 1515808-1   |
| 5.10 (.201)         | 1515835-1   |
| 5.65 (.222)         | 1515829-1   |
| 6.10 (.240)         | 1515796-2   |
| 4 x 3.00 (4 x .118) | 1515749-1   |

Standard Cable Adapter  
Not applicable for Low Profile.\*

**Note:** Part Numbers are RoHS compliant except:◆ Indicates non-RoHS compliant.

**PRO BEAM Jr. Connectors**

(Continued)

**Spare Parts & Tools**

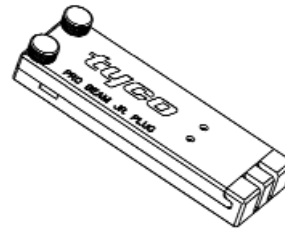
**Technical Documents**

**Product Specifications**

- 408-8857 Curing Fixtures for PRO BEAM Jr. and Sr.
- 408-8828 Cleaning Procedure for EB C/A's

**Tooling Specifications**

- 408-8795 Crimp Tool with Die Set for PRO BEAM Jr. and Sr.
- 408-10022 Die Assembly for Mini and Jr. Circular Crimps



**Curing Fixtures**

| Connector                                                                | Part Number |
|--------------------------------------------------------------------------|-------------|
| PRO BEAM Jr. Cable Plug (having cable with KEVLAR strength member fiber) | 1693797-1   |
| PRO BEAM Jr. Sealed D-Hole Bulkhead                                      | 1515567-1   |
| PRO BEAM Jr. Standard D-Hole and Square Flange Bulkhead                  | 1693800-1   |
| PRO BEAM Jr. Low Profile Buffered Fiber Bulkhead                         | 1754122-1   |

Instruction Sheet 408-8857. Available at [www.tycoelectronics.com](http://www.tycoelectronics.com)

**Cable Crimp Components**

| Description                                                            | Part Number |
|------------------------------------------------------------------------|-------------|
| Crimp Sleeve (use with all PRO BEAM Jr. Connector Crimp Support sizes) | 1515269-2   |
| 2.2 mm Crimp Support                                                   | 1515567-1   |
| 3.1 mm Crimp Support                                                   | 1515568-1   |
| 3.6 mm Crimp Support                                                   | 1515569-1   |
| 3.8 mm Crimp Support                                                   | 1515570-1   |
| 4.1 mm Crimp Support                                                   | 2-1515270-0 |
| 4.6 mm Crimp Support                                                   | 1516142-1   |
| 5.1 mm Crimp Support                                                   | 1515571-1   |
| 5.65 mm Crimp Support                                                  | 1515572-1   |
| 6.1 mm Crimp Support                                                   | 1515573-1   |
| 6.5 mm Crimp Support                                                   | 1515574-1   |
| 6.7 mm Crimp Support                                                   | 1515575-1   |
| Square Crimp Support for (4) 3 mm Cables                               | 1515632-1   |

**Ferrule Kits**

| Fiber Hole Size | Mode | PRO BEAM | Part Number |
|-----------------|------|----------|-------------|
| 125 $\mu$ m     | SM   | Jr.      | 1588908-2   |
| 126 $\mu$ m     | SM   | Jr.      | 1588908-1   |
| 126 $\mu$ m     | MM   | Jr.      | 1588700-1   |

**Protective Caps**

| Description                             | PRO BEAM | Part Number |
|-----------------------------------------|----------|-------------|
| Standard cap, for D-Hole Bulkhead       | Jr.      | 1515868-1   |
| Standard cap, for Flange Mount Bulkhead | Jr.      | 1515787-2   |
| Standard cap, for connector plug        | Jr.      | 1515867-1   |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

KEVLAR is a trademark of E. I. DuPont de Nemours and Company.

**Rugged Fiber Optic Products (Continued)**

**PRO BEAM Mini Connectors**

Tyco Electronics is pleased to announce the natural extension from our PRO BEAM Sr. and Jr. Connector product lines.

The PRO BEAM Mini Connector saves space and weight and is perfect for high density applications. The product offers the same durability as its larger counterparts.



PRO BEAM Sr., Jr. & Mini Connectors



PRO BEAM Mini Plug Connector

**Connector Assembly**

- 1 Shell Kit
- 1 Insert Kit
- 1 Cable Adapter Kit\*
- X Ferrule Kits (X = No. of optical channels)

\*Not applicable for Low Profile

**PRO BEAM Mini Connector Shell Kits**

| Type     | Mount Style | Attributes                   | P/N (HA Alum) | P/N (OD Alum) | P/N (NiAlBz) |
|----------|-------------|------------------------------|---------------|---------------|--------------|
| Plug     |             |                              | 1828698-1     | *             | 1828698-2    |
| Bulkhead | D-Hole      | Low Profile - Buffered Fiber | 1828699-1     | 1828699-2◆    | 1828699-3    |
|          |             | Low Profile - 1.8mm Jacketed | *             | *             | *            |
|          |             | Sealed                       | 1918185-1     | *             | 1918185-2    |
|          | Sq-Flg      | Low Profile - Buffered Fiber | 1828826-1     | *             | *            |
|          |             | Low Profile - 1.8mm Jacketed | *             | *             | *            |
|          |             | Sealed                       | *             | *             | *            |

\*Contact Tyco Electronics for availability.

**PRO BEAM Mini Insert Kits**

| Description                     | Part Number |
|---------------------------------|-------------|
| 2 x 850 / 1300nm Dual Multimode | 1754888-1   |
| 2 x 1310nm Singlemode           | 1588129-2   |
| 2 x 1550nm Singlemode           | 1588128-2   |
| 4 x 850 / 1300nm Dual Multimode | 1754888-2   |
| 4 x 1310nm Singlemode           | 1588129-3   |
| 4 x 1550nm Singlemode           | 1588128-3   |

**Ferrule Kits**

| Fiber Hole Size | Mode | PRO BEAM | Part Number |
|-----------------|------|----------|-------------|
| 125 μm          | SM   | Mini     | 1754700-1   |
| 126 μm          | SM   | Mini     | 1754700-2   |
| 126 μm          | MM   | Mini     | 1754699-1   |

**PRO BEAM Mini Cable Adapter Kits For Plug**

| Cable Diameter | Part Number |
|----------------|-------------|
| 5 mm           | 1828700-1   |
| 5.5 mm         | 1828700-2   |
| 6 mm           | 1828700-3   |

**Note:** Part Numbers are RoHS compliant except:◆ Indicates non-RoHS compliant.

**ASSEMBLY CAPABILITIES**  
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

## PRO BEAM Mini Connectors

(Continued)

### Performance Specifications

#### Optical, Multimode

**Insertion Loss, Typical** —  
0.5 - 1.0 dB @ 1300 nm\*

#### Optical, Singlemode Version

**Insertion Loss, Typical** —  
0.5 - 1.0 dB @ 1310 nm\*

**Return Loss** — > 34 dB @ 1310 nm  
or 1550 nm

\*Against referenced lead

### Mechanical

#### Vibration, Sinusoidal

10 - 500 Hz, 3 directions;  
0.75 mm amplitude @ 10g acceleration

**Bump** — 4,000 Bumps, 3 directions  
@ 40g acceleration

**Free Fall** — 500 falls on concrete;  
Severity 1.2 m

**Coupling Endurance** —  
3,000 couplings

#### Weight

Plug — 50 grams, typical  
D-Hole bulkhead — 39 grams, typical

### Temperature

**Operational Temperature** —  
-40°C/+85°C

**Storage Temperature** —  
-55°C/+85°C

**Temperature, Cyclic** —  
-55°C/+85°C

**Humidity (Damp Heat)** — 95% RH

### Immersion

**Water** — 5 m depth (plug) -  
2 m (Bulkhead)

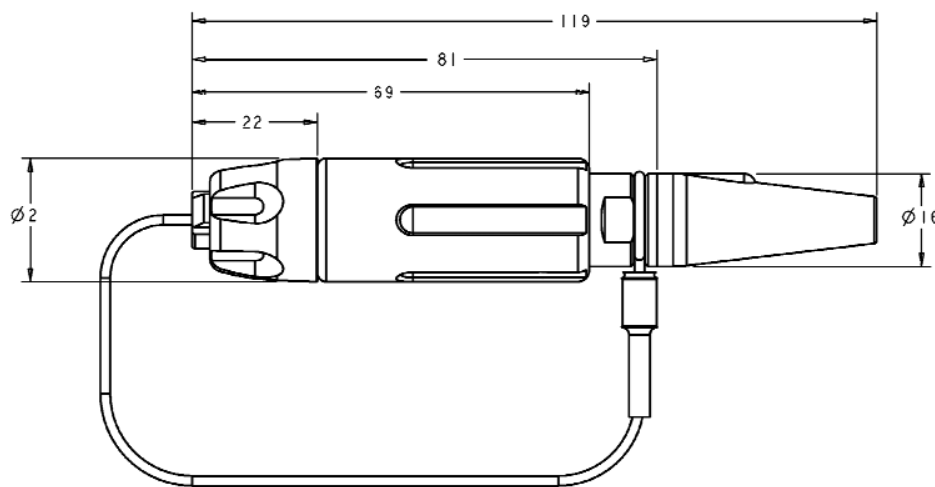
### Pressure

**Low Pressure** — 25 kPa @ -55°C

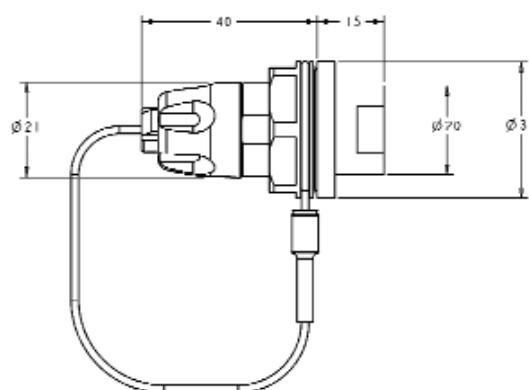
### Material and Finish

**Shell Alloy** — Aluminum; or nickel  
aluminum bronze (high saline environ-  
ment)

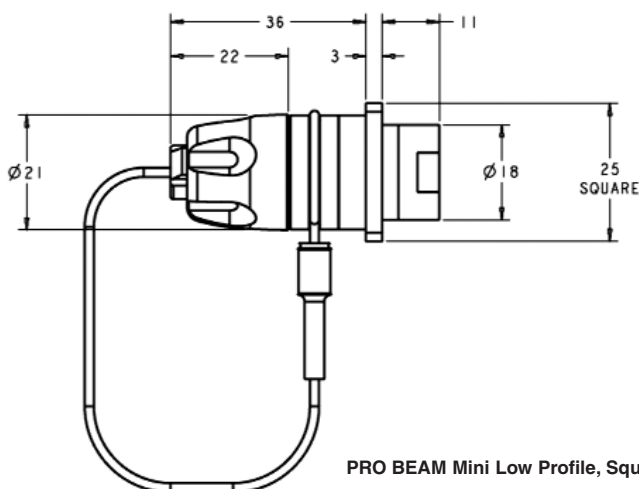
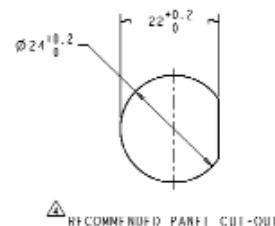
**Plating (For Aluminum Shells  
Only)** — clear hard anodized; or green  
chromate conversion zinc (PRO BEAM  
Jr. Bulkheads only)



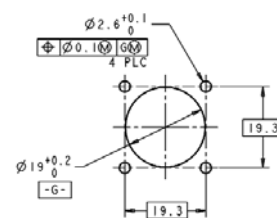
PRO BEAM Mini Cable Connector, Plug



PRO BEAM Mini D-Hole Bulkhead



PRO BEAM Mini Low Profile, Square Flange Mount Bulkhead



**Rugged Fiber Optic Products (Continued)**

**PRO BEAM Sr. Connectors**

**Performance Specifications**

**Optical, Multimode**

**Insertion Loss, Typical** —  
0.7 - 1.0 dB @ 1300 nm\*

**Optical, Singlemode**

**Insertion Loss, Typical** —  
0.8 - 1.0 dB @ 1310 nm\*

**Return Loss** — > 34 dB  
@ 1310 nm or 1550 nm

\*When tested with reference quality  
launch/receive cable assemblies.

**Mechanical**

**Vibration, Sinusoidal** —

10 - 500 Hz, 3 directions;  
0.75 mm amplitude @ 10g acceleration

**Bump** — 4,000 Bumps, 6 directions,  
@ 50g acceleration

**Free Fall** — 500 falls on concrete;  
Severity 1.2 m

**Coupling Endurance** —  
3,000 couplings

**Weight** —

Plug — 290 grams, typical  
Chassis bulkhead — 150 grams, typical

**Temperature**

**Operational Temperature** —  
-40°C/+85°C

**Storage Temperature** —  
-55°C/+85°C

**Temperature, Cyclic** —  
-55°C/+85°C

**Humidity (Damp Heat)** — 95% RH

**Immersion**

**Water** — 5 m depth (plug),  
2 m (Bulkhead)

**Material and Finish**

**Shell Alloy** — Aluminum; or nickel  
aluminum bronze (high saline environ-  
ment)

**Plating (For Aluminum Shells  
Only)** — clear hard anodized

**Bulkhead Connector Panel  
Thicknesses**

**PRO BEAM Sr. D-Hole** —  
6.5 mm max.

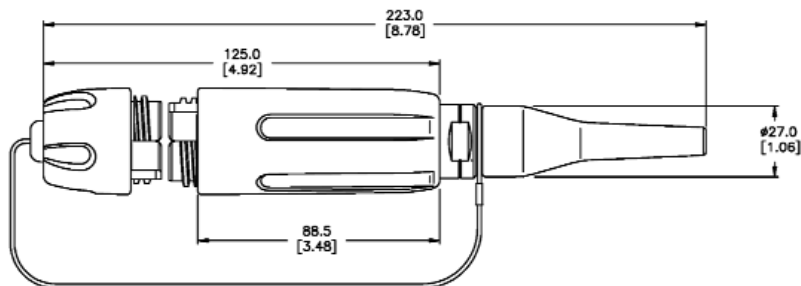
**PRO BEAM Sr. Square Flange** —  
8.5 mm max.

**Technical Documents**

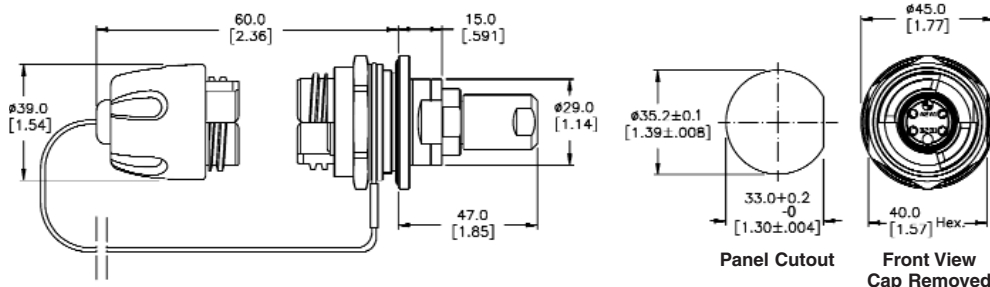
**Product Specifications**

408-8799 Plug  
408-8800 D-Hole Bulkhead  
408-8877 Square Flange Bulkhead

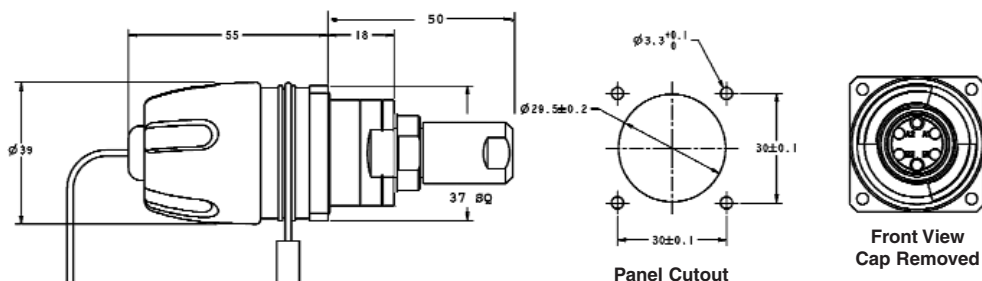
**Application Specification**  
114-13122



PRO BEAM Sr. Cable Connector, Plug



PRO BEAM Sr. D-Hole Bulkhead with Standard Cable Adapter



PRO BEAM Sr. Square Flange Mount Bulkhead with Standard Cable Adapter

**Please contact your local  
Tyco Electronics  
Sales Representative  
for Part Numbers and  
availability.**



### PRO BEAM Sr. Connectors

(Continued)

#### Connector Assembly

1 Shell Kit  
1 Insert Kit  
1 Cable Adapter Kit\*  
X Ferrule Kits (X = No.  
of optical channels)

\*Not applicable for Low Profile

Part numbers listed are  
Shell alloy = aluminum  
Plating = hard anodized.  
Consult Tyco Electronics  
for other plating/material  
options such as NiAlBz for  
Naval applications.



#### Technical Documents

##### Product Specifications

408-8857 Curing Fixtures for  
PRO BEAM Jr. and Sr.  
408-8828 Cleaning Procedure for  
EB C/A's

##### Tooling Specifications

408-8795 Crimp Tool with Die Set for  
PRO BEAM Jr. and Sr.  
408-10022 Die Assembly for Mini and  
Jr. Circular Crimps

### Rugged Fiber Optic Products (Continued)

| PRO BEAM Sr. Connector Shell Kits            | Part Number |
|----------------------------------------------|-------------|
| PRO BEAM Sr. Plug w/EPDM rubber              | 1754842-1   |
| PRO BEAM Sr. D-Hole Standard Bulkhead        | 1754843-1   |
| PRO BEAM Sr. Square Flange Standard Bulkhead | 1754844-1   |

| PRO BEAM Sr. Insert Kits   | Part Number |
|----------------------------|-------------|
| 2 x 850 / 1300nm Multimode | 1693001-1   |
| 2 x 1310nm Singlemode      | 1515734-2   |
| 4 x 850 / 1300nm Multimode | 1693001-2   |
| 4 x 1310nm Singlemode      | 1515739-1   |

#### Ferrule Kits

| Fiber Hole Size | Mode | PRO BEAM | Part Number |
|-----------------|------|----------|-------------|
| 125 $\mu$ m     | SM   | Sr.      | 1515941-1   |
| 126 $\mu$ m     | SM   | Sr.      | 1515941-2   |
| 126 $\mu$ m     | MM   | Sr.      | 1588801-1   |

#### PRO BEAM Sr. Connector Plug & Sealed Bulkhead Cable Adapter Kits

| Cable Dia.<br>(Max.) | Part Number |
|----------------------|-------------|
| 5.10<br>.201         | 1515940-1   |
| 5.65<br>.222         | 1515940-3   |
| 6.20<br>.244         | 1515940-5   |

#### PRO BEAM Sr. Connector Standard Bulkhead Cable Adapter Kits\*

| Cable Dia.<br>(Max.) | Style                  | Part Number |
|----------------------|------------------------|-------------|
| 5.10<br>.201         | Standard Cable Adapter | 1515847-1   |
| 5.65<br>.222         | Standard Cable Adapter | 1515724-2   |

\*Not applicable for Low Profile

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Cable Assemblies and Accessories

#### Product Facts

- Ruggedized cable assemblies custom tailored for field use in harsh environments
- Heavy-duty light-weight cable reel organizes and protects connectors and cable for easy pay-out and safe storage
- Reels available up to 2000 meters
- Options for 500 meter reels include special backpack harnesses, a separate reel stand, or a combination reel and reel stand



**PRO BEAM Jr.  
Termination Kit  
1828650-1**

**Cleaning Kit  
1828335-2**



### Rugged Fiber Optic Products (Continued)

#### Featured Cable Assemblies



**TFOCA to PRO BEAM Jr.  
Cable Assy  
1828536-1◆**

**LPBHD w/1.8mm cable  
1828454-1◆**

**Plug to Plug (100 meters)  
6754475-2**

#### Typical Reels and Reel Stands for Field-Deployable Cable Assemblies



1515900-1



Tactical Reel/Drum Options

#### Cable Reels

##### Reel Capacity (Random Lay)

| Cable Diameter |        | Notes/Description                                                              | Part Number |
|----------------|--------|--------------------------------------------------------------------------------|-------------|
| 5.0mm          | 5.5mm  |                                                                                |             |
| 225 M          | 186 M  | Reel & Reel Stand Combination<br>Reel can be detached from stand without tools | 1515900-1   |
| 297 M          | 247 M  | Reel*                                                                          | 1754515-1   |
| 570 M          | 462M   | Reel*                                                                          | 1754515-2   |
| 998M           | 816M   | Reel*                                                                          | 1754515-3   |
| 1271 M         | 1052 M | Reel*                                                                          | 1754515-4   |

\* See Accessories options below



Backpack with Reel



Reel with Stand  
"Static Frame"



Backpack Harness

#### Accessories

| Description  | Reel Diameter   | Part Number |
|--------------|-----------------|-------------|
| Backpack     | 370mm Dia. Reel | 1754516-1*  |
| Backpack     | 460mm Dia. Reel | 1754516-2*  |
| Backpack     | 510mm Dia. Reel | 1754516-3*  |
| Static Frame | 500mm Dia. Max  | 1754517-1*  |
| Static Frame | 700mm Dia. Max  | 1754517-2*  |

\* Reel must be ordered separately.

**Note:** For lower cost alternative options. Please contact your local Tyco Electronics' Sales Representative or Tyco Electronics Product Information Center at 1-800-522-6752.

**Note:** Part Numbers are RoHS compliant except:◆ Indicates non-RoHS compliant.

## Optical Test Set for Fiber Optic Cables — Designed for harsh environments

### Product Facts

- Especially designed to support the installation of optical links in the field
- Able to test both cable drums and entire links
- Powered by batteries with high autonomy
- Suitable for diagnostics and construction teams
- Easy to use, ergonomic, rugged design
- Suitable for cable length up to 10 km
- Supports up to 4 fibers per cable with various types of connectors



### Diagnostic Features

#### Power Meter

The optical power from any source can easily be measured with the power meter function.

#### Optical Source

A continuous optical signal is generated and transmitted with selectable output power.

#### Drum Test / Cable Test

Test of an entire cable drum with automatic good/bad indication. The test of an entire cable is realized with a 2nd KPG-opt or a loop connector.

#### Test Frames (optional)

The KPG-opt can generate specific test frames as used in optical networks and LOS systems.

### Optical Tester

| Description                              | Part Number |
|------------------------------------------|-------------|
| 850nm 38999 III Size 11 Optical Test Kit | 1918016-1   |
| 850/1300nm PRO BEAM Jr. Optical Test Kit | 1918016-2   |

For Singlemode and additional wavelength testers, contact your local Tyco Electronics Sales Representative.

#### Protective Case

1918082-1

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**Tactical Field Deployable  
Fiber Optic Cable  
for Extreme Environments  
(Metallic for Rodent Proof)**



**The Rochester  
Corporation**

**Non-Metallic Tactical Field  
Deployable Fiber Optic Cable**

**Product Facts**

- All terrain field deployable cable, up to 4 fibers, singlemode or multimode
- Developed for deployment under the most demanding conditions
- Tight buffered fibers are protected by Aramid yarns and a tough ruggedized polyurethane sheath
- Tested in accordance with DEF STAN 60-1 (PART 0) and MILPRF 85045
- Flexible, water resistant, high crush resistant, and lightweight,
- Designs available to be resilient against radiation exposure

Other fibers (i.e. Polyimide, Silicon buffer, Carbon coated, radiation hardened, etc.) are available upon request.

Contact Tyco Electronics or your local Tyco Electronics Sales Representative for part numbers, pricing, and availability.

**Rugged Fiber Optic Products (Continued)**

**1- 4 Fiber Singlemode**

**Technical Data:**

|                         |                                            |
|-------------------------|--------------------------------------------|
| Attenuation             | 0.4 dB/km @ 1310 nm / 0.25 dB/km @ 1550 nm |
| Diameter                | 3.76 mm                                    |
| Weight                  | 24 kg/km                                   |
| Recommended Bend Radius | 13.2 cm                                    |
| Breaking Strength       | 3.1 kN                                     |

**1- 4 Fiber Multimode – 50 µm**

**Technical Data:**

|                         |                                          |
|-------------------------|------------------------------------------|
| Attenuation             | 3.2 dB/km @ 850 nm / 1.0 dB/km @ 1300 nm |
| Diameter                | 3.76 mm                                  |
| Weight                  | 26 kg/km                                 |
| Recommended Bend Radius | 13.2 cm                                  |
| Breaking Strength       | 3.3 kN                                   |

**1- 4 Fiber Multimode – 62.5 µm**

**Technical Data:**

|                         |                                          |
|-------------------------|------------------------------------------|
| Attenuation             | 3.0 dB/km @ 850 nm / 1.0 dB/km @ 1300 nm |
| Diameter                | 3.76 mm                                  |
| Weight                  | 26 kg/km                                 |
| Recommended Bend Radius | 13.2 cm                                  |
| Breaking Strength       | 3.3 kN                                   |

**Mil-Standard Distribution Cable - 1 Fiber Singlemode and Multimode**

**Technical Data:**

|                        |                                             |
|------------------------|---------------------------------------------|
| Attenuation            | ≤ 0.5 dB/km @ 1310nm / ≤ 0.5 dB/km @ 1550nm |
| Diameter               | 43.0mm - 4.0mm                              |
| Weight                 | 15 kg/km                                    |
| Minimum Bending Radius | 32mm                                        |
| Crush Resistance       | 440N/cm                                     |
| Operating Temperature  | -55° C to +85° C                            |

**Mil-Standard Distribution Cable - 2 Fiber Singlemode**

**Technical Data:**

|                        |                                             |
|------------------------|---------------------------------------------|
| Attenuation            | ≤ 0.5 dB/km @ 1310nm / ≤ 0.5 dB/km @ 1550nm |
| Diameter               | 5.0mm                                       |
| Weight                 | 31 kg/km                                    |
| Minimum Bending Radius | 40mm                                        |
| Crush Resistance       | 440N/cm                                     |
| Operating Temperature  | -55° C to +85° C                            |

**Mil-Standard Distribution Cable - 4 Fiber Singlemode**

**Technical Data:**

|                        |                                             |
|------------------------|---------------------------------------------|
| Attenuation            | ≤ 0.5 dB/km @ 1310nm / ≤ 0.5 dB/km @ 1550nm |
| Diameter               | 5.5mm                                       |
| Weight                 | 42 kg/km                                    |
| Minimum Bending Radius | 44mm                                        |
| Crush Resistance       | 440N/cm                                     |
| Operating Temperature  | -55° C to +85° C                            |

**Mil-Standard Distribution Cable - 2 Fiber Multimode**

|             |                                          |
|-------------|------------------------------------------|
| Fiber Type  | 50µm/125µm and 62.5/125                  |
| Attenuation | ≤ 3.0 dB/km @ 850nm / ≤ 1.0 dB/km @ 1300 |

**Mil-Standard Distribution Cable - 4 Fiber Multimode**

|             |                                          |
|-------------|------------------------------------------|
| Fiber Type  | 50µm/125µm and 62.5/125                  |
| Attenuation | ≤ 3.0 dB/km @ 850nm / ≤ 1.0 dB/km @ 1300 |

**“Mini” Expanded Beam for Harsh Environments**

**Product Facts**

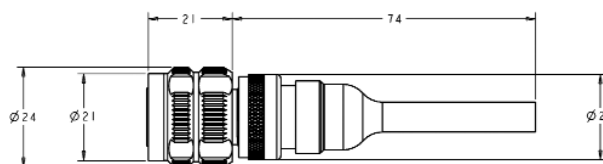
- Available in shell size 11, housed on D38999 Series III style shells for harness applications
- Multiple options available for backshells. Consult your local Tyco Electronics Sales Representative

**Standard Material and Finish**  
**Shell Alloy** — Aluminum  
**Plating** — Nickel & green chromate

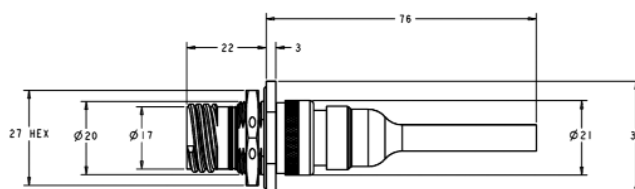
\*Refer to customer drawing for dash number designation

For part number details and plating options, contact your local Tyco Electronics Sales Representative.

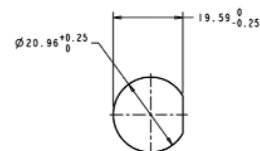
**Rugged Fiber Optic Products (Continued)**



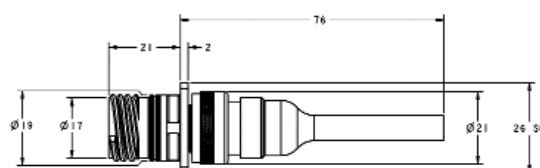
Plug Shell Kit



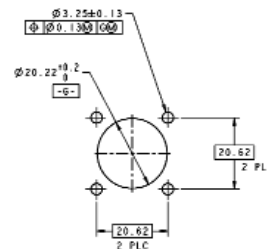
D-Hole Receptacle Shell Kit



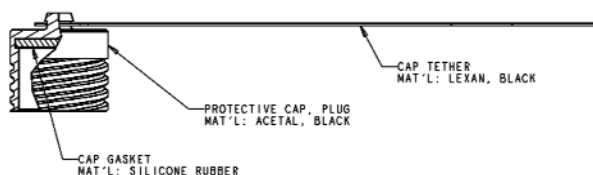
Receptacle Panel Cut-Out (shell size 11)  
per MIL-DTL-38999K, figure 11



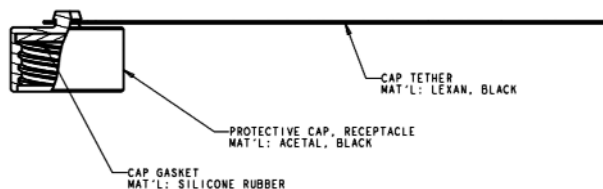
Square Flange Receptacle Shell Kit



**ASSEMBLY CAPABILITIES**  
 Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.



38999 Plug Cap  
1918024-1



38999 Receptacle Cap  
 1918025-1 = Jam Nut Receptacle  
 1918025-2 = Square Flange Receptacle



**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

# Expanded Beam Avionics-Related Standards and Specifications for ARINC 600, 664, 763 and 801

## ARINC 664 — Aircraft Data Network

Tyco Electronics' ARINC Connectors with Mini-Expanded Beam inserts will meet/exceed all 100 Base-FX Ethernet LAN applications

## ARINC 763 — Avionics Network Server System —

Tyco Electronics' ARINC 600 Connectors are designed to meet/exceed 100 Base-FX Ethernet LAN applications.

**Network Server Unit (NSU)** — can use ARINC 600 Size 1 connector with up to 8 Expanded Beam fiber optic channels (two Mini-Expanded Beam inserts in cavity C)

**Server Interface Unit (SIU)** — can use ARINC 600 Size 3 connector with up to 16 Expanded Beam fiber optic channels (four Mini-Expanded Beam inserts in cavity F)

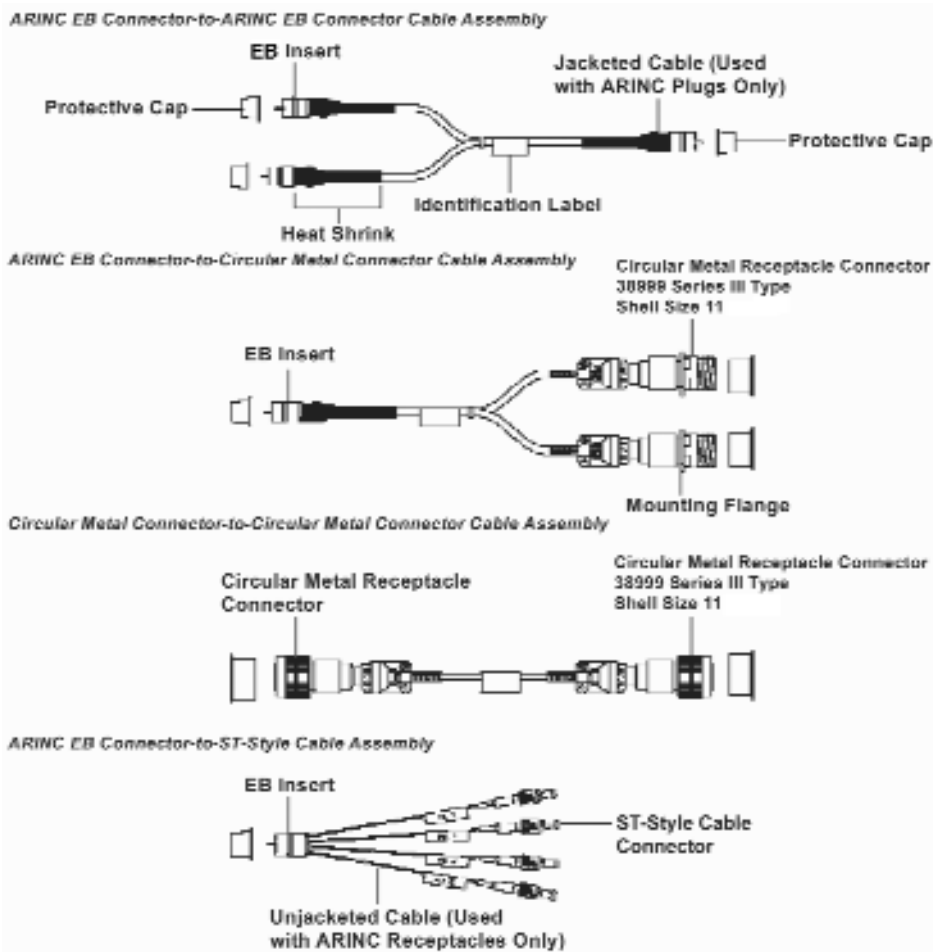
**Integrated Network Server Unit (INSU)** — can use ARINC 600 Size 3 connector with up to 16 Expanded Beam fiber optic channels (four Mini Expanded Beam inserts in cavity F)

## ARINC 801 — Fiber Optics Working Group

Tyco Electronics provides a single reference point for Flight Level Optics that are multi-sourced.

## Rugged Fiber Optic Products (Continued)

### Typical Assemblies for In-Flight Network Applications



### Typical Assemblies

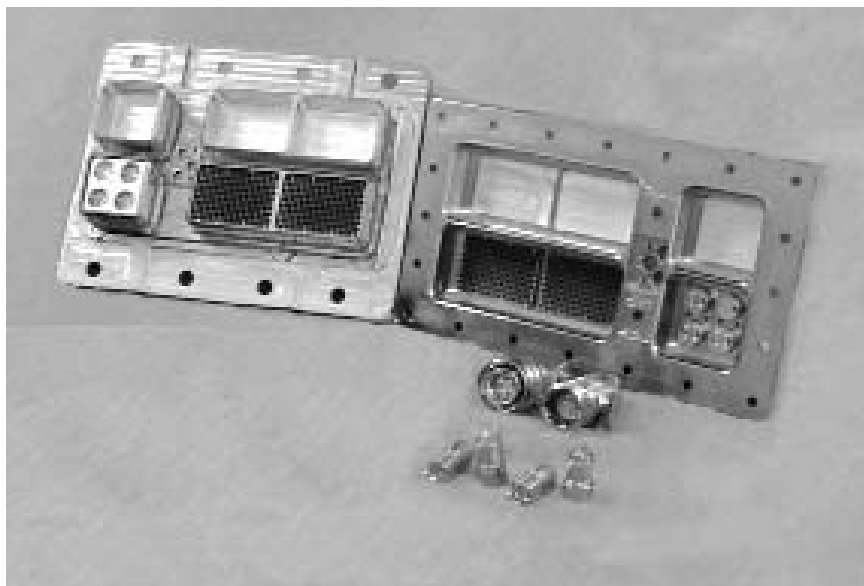


**ASSEMBLY CAPABILITIES**  
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

### ARINC 600 AND 404

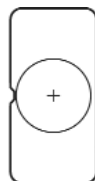
#### Product Facts

- For use in 100 base-FX Ethernet LAN applications per ARINC 664 and ARINC 763
- Insert holders designed to ARINC 600, Supplement 13 or to specific customer needs for Mini Expanded Beam inserts
- Drop-In Insert Holders utilize Standard ARINC 600 Retainers
  - Hard Stop on Plug Side
  - Spring-Loaded Stop on Receptacle Side
  - Captive Hardware
- Facial Sealing — Optional
  - Bonded to Receptacle Block Mating Face
  - Raised Collar Seal around Optics Insert compresses against Chamfer on Plug Block Mating Face

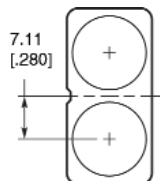


ARINC 600 Insert Holders for Mini-Expanded Beam Contacts

#### Size 1 Power Cavities

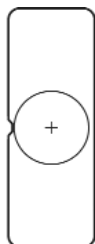


ARINC 600, 1 Position  
1MP

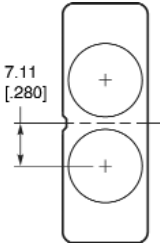


ARINC 600, 2 Position  
2MP

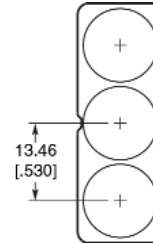
#### Size 1 Signal Cavities



ARINC 600, 1 Position  
1MS



ARINC 600, 2 Position  
2MS



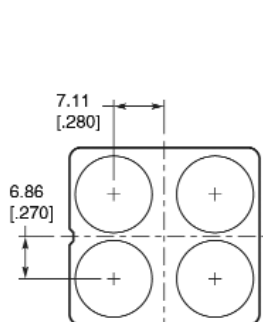
ARINC 600, 3 Position  
3MS

**ASSEMBLY CAPABILITIES**  
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

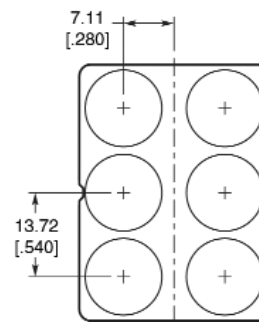
See next page (30) for Size 2 / 3 Power and Signal Cavities

Size 2 / 3  
Power and Signal Cavities

**Rugged Fiber Optic Products (Continued)**

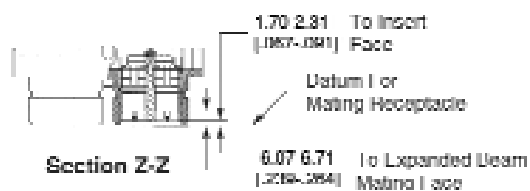
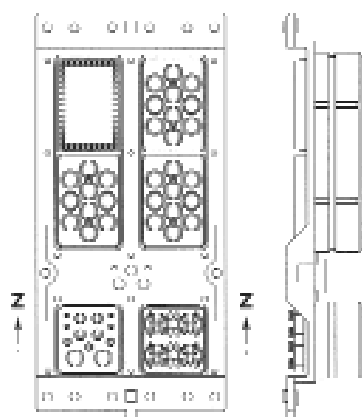


ARINC 600, 4 Position  
4MP

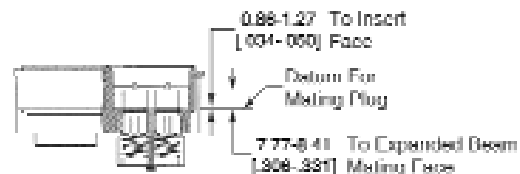
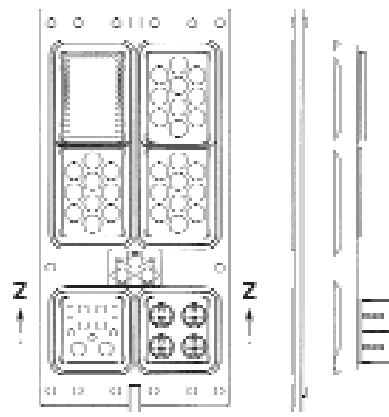


ARINC 600, 6 Position  
6MS

**ARINC 600 Insert Holders  
for Mini-Expanded Beam  
Contacts**



Typical Layout for Plug



Typical Layout for Receptacle



**Comparative on Expanded Beam Inserts**

**Rugged Fiber Optic Products (Continued)**

**Comparative on Expanded Beam Inserts' weight and Insertion Forces when applied to an ARINC housing**

- ARINC 600 connector mated pair size 2 = 440 grams (without copper contacts)
- ARINC style Mini and Junior size Expanded Beam inserts = 5 pounds insertion force each when applied to the Rack and Panel ARINC Connector inserts
- Signal Cavity Optical Holder insert (i.e.: holds up to six mini inserts with four fiber ball lenses each or up to 24 fibers each insert set) = @ 30 grams
- Power Cavity Optical Holder insert (i.e.: holds up to four mini inserts with four fiber ball lenses each or up to 16 fibers each insert set) = @ 20 grams
- Insert mated pair PRO BEAM Jr. Connector insert set = @ 41.79 grams
- Insert mated pair PRO BEAM mini Connector insert set = @ 16.17 grams
- Fiber = single fiber  $\leq 4$  kg / km
- Fiber = four fiber jacketed with a support member  $\leq 24$  kg / km
- Static spring force per mated Expanded Beam insert pair = 5 lbs.

**LuxCis Optical Termini Notes**

LuxCis is a trademark of Radiall, S.A.  
Product is manufactured under license from Radiall, S.A.

**Sealed Circular LC ODVA Notes**

## Rugged Fiber Optic Products (Continued)

### LuxCis Optical Termini

#### Product Facts

- Optical termini for use with GPR, ARINC 600, circular MIL-DTL-38999 connectors.
- Industry Standard 1.25mm ceramic ferrule
- Compatible with 1.5-2.2mm Tight jacket and loose tube cable construction:
  - MT - Tight jacket cable
  - ML - Loose tube cable
- SM / MM versions

#### Materials

**Housings** — Nickel Plated Copper

**Ferrule** — Zirconia

**Spring** — Stainless Steel

**Crimp Sleeve** — Nickel Plated Copper

**Protective Cover** — Silicone

#### Optical Performance

**Singlemode, 1310nm/1550nm (UPC):**

**Attenuation, Mean** — 0.15dB

**Return Loss** — > 50dB

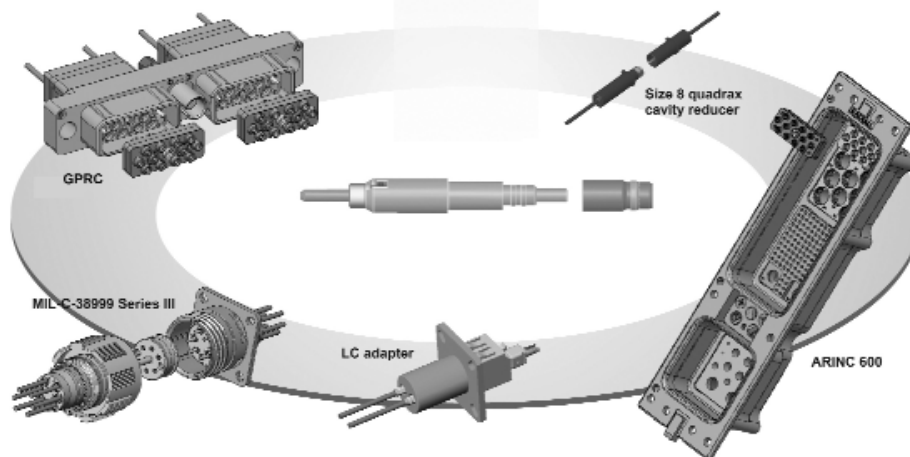
**Multimode, 850nm/1310nm:**

**Attenuation, Mean** — 0.10dB

**Return Loss** — > 20dB

### LuxCis OPTICAL TERMINI

one common terminus for all types of connectors



#### Mechanical / Environmental Performance

| Test Description            | Standard                       | HD 1.25mm Termini in GPR A & B Connector     | HD 1.25mm Termini in 38999 Connector         | HD 1.25mm Termini in ARINC 600 Connector       |
|-----------------------------|--------------------------------|----------------------------------------------|----------------------------------------------|------------------------------------------------|
| Thermal Shock               | SAE-AS-13441 met 1003.1        | -55C /+100C                                  | -55C /+100C                                  | -55C /+100C                                    |
| Temperature Life            | TIA/EIA 455-20A                | 500h @ +100C                                 | 500h @ +100C                                 | 500h @ +100C                                   |
| Vibration                   | TIA/EIA 455-11                 | 8h/axis<br>3.8g <sup>2</sup> /Hz<br>43 G rms | 8h/axis<br>3.8g <sup>2</sup> /Hz<br>43 G rms | 8h/axis<br>0.2g <sup>2</sup> /Hz<br>16.4 G rms |
| Shock                       | TIA/EIA 455-14A                | 300 G - 3ms                                  | 300 G - 3ms                                  | 50G - 11ms                                     |
| Mate/Unmate (GPR/ARINC 600) | SAE-AS-13441 met 2016          | 100 Cycles                                   | N/A                                          | 100 Cycles                                     |
| Mate/Unmate (38999)         | TIA/EIA 455-21A                | N/A                                          | 500 Cycles                                   | N/A                                            |
| Maint. Aging                | SAE-AS-13441 met 2002-1        | 10 Cycles                                    | 10 Cycles                                    | 10 Cycles                                      |
| Salt Spray                  | SAE-AS-13441 met 1001.1 cond C | 96 hr                                        | 500 hr                                       | 48 hr                                          |
| Cable Ret. (1.8mm)          | SAE-AS-13441 met 2009-1        | 68N                                          | 68N                                          | 68N                                            |
| Humidity (GPR/38999)        | TIA/EIA 455-5 met B7A          | 10 cycles / 24h<br>90% RH<br>-25C/+65C       | 10 cycles / 24h<br>90% RH<br>-25C/+65C       | N/A                                            |
| Humidity (ARINC 600)        | TIA/EIA 455-5 met B            | N/A                                          | N/A                                          | 10 cycles / 24h<br>90% RH<br>-25C/+65C         |
| Altitude Imm.               | TIA/EIA 455-15                 | 10,000 ft (69.6kPa)                          | 10,000 ft (69.6kPa)                          | 10,000 ft (69.6kPa)                            |

#### ASSEMBLY CAPABILITIES

Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

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Product is manufactured under license from Radiall, S.A.

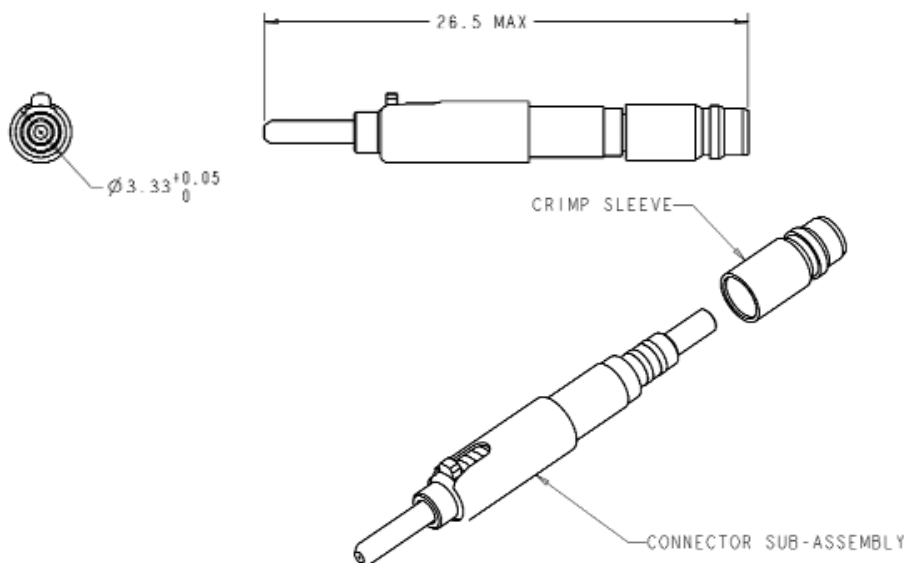
## LuxCis Optical Termini

There are three types of LuxCis Optical Termini available dependent upon cable structure.

Tyco Electronics has multiple connector types/families available for the LuxCis Optical Termini System.

These are:

- General Purpose Rectangular Connectors
  - F5 & F12 Inserts
- MIL-DTL-38999 connectors n 13-04, 15-06, 21-16
- ARINC 600
  - F12 combinations and F36
- Quadrax Cavity Reducers
- Motherboard & Daughtercard Solutions



### LuxCis Optical Termini Part Numbers

| Cable Dia.   | Cable Structure<br>ML (loose & tight)<br>MT (ultra tight) | S/M Fiber<br>125,3 µm<br>PC/UPC | S/M Fiber<br>125,3 µm<br>APC | M/M Fiber<br>128 µm<br>PC |
|--------------|-----------------------------------------------------------|---------------------------------|------------------------------|---------------------------|
| 0.9mm Buffer | —                                                         | *                               | *                            | *                         |
| 1.5 - 2.2mm  | ML                                                        | *                               | *                            | 1828199-1                 |
| 1.5 - 2.2mm  | MT                                                        | *                               | *                            | 1828200-1                 |

Consult your local Tyco Electronics Sales Representative for additional options.

\* Contact Tyco Electronics for availability.

| Accessories          | Part Number |
|----------------------|-------------|
| Dust Cap (bag of 10) | 1828221-1   |

### Connector Options:

For part numbers, details, and / or additional connector types and arrangements, contact your local Tyco Electronics Sales Representative.

### ASSEMBLY CAPABILITIES

Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

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### Cable Structure

|                                        | Loose Structure | Tight Structure | Ultra Tight Structure |
|----------------------------------------|-----------------|-----------------|-----------------------|
| Movement between fiber & 900 µm buffer | Yes             | No              | No                    |
| Movement between 900 µm & cable jacket | Yes             | Yes             | No                    |

### Adapters

| Type                             | Version                           | Alignment Sleeve | Part Number | Dim.   |
|----------------------------------|-----------------------------------|------------------|-------------|--------|
| LuxCis Termini to LuxCis Termini | Simplex Bulkhead Feedthrough Type | Ceramic Zirconia | 1828996-1   | Fig. 1 |
| LuxCis Termini to LuxCis Termini | Simplex Straight                  | Ceramic Zirconia | 1828997-1   | Fig. 2 |
| LuxCis Termini to LC             | Simplex LC Panel Cutout           | Ceramic Zirconia | 1828979-1   | Fig. 3 |
| LuxCis Termini to LC             | Duplex LC Panel Cutout            | Ceramic Zirconia | 1828980-1   | Fig. 4 |
| LuxCis Termini to LC             | Duplex MIL-DTL-38999 Panel Cutout | Ceramic Zirconia | 1828995-1   | Fig. 5 |

### Tools

| Description/Function                   | Part Number  |
|----------------------------------------|--------------|
| Metal Extraction Tool (M81 969/1-03)   | 91066-3      |
| Plastic Extraction Tool (M81 969/1403) | M81969/14-03 |
| Daniels Right Angle Insertion Tool     | DAK83-16*    |
| Daniels Right Angle Removal Tool       | DRK83-16*    |

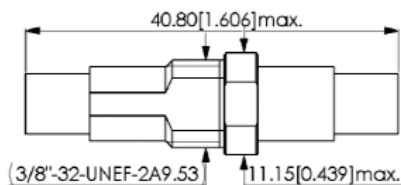
\* Contact Daniels Manufacturing

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.



**LuxCis Optical Termini  
Adapter Dimensions**

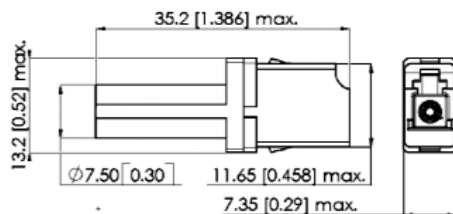
**Rugged Fiber Optic Products (Continued)**



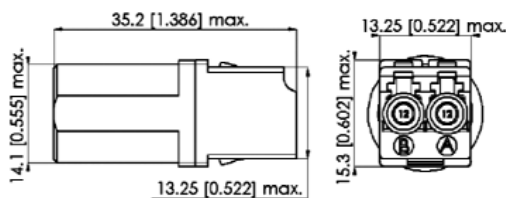
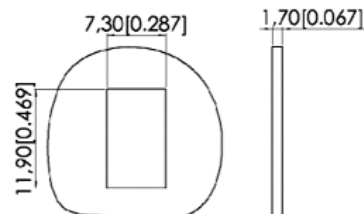
Terminus to Terminus Bulkhead Feedthrough



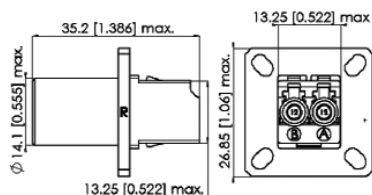
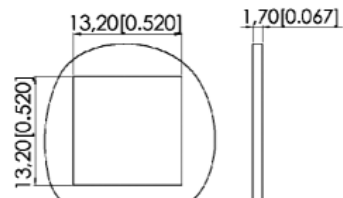
Terminus to Terminus Straight



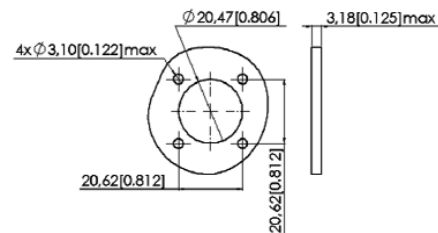
Terminus to LC Simplex



Terminus to LC Duplex, LC Panel



Terminus to LC Duplex, MIL-DTL-38999 Panel Cutout



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Product is manufactured under license  
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**LuxCis Optical Termini  
Termination Kit  
1828644-1**



**LuxCis Optical Termini  
Service Tool Kit (Inspection,  
testing & cleaning)  
1828335-1**

**LuxCis Optical Termini  
Service Tool Kit  
(Cleaning only)  
1828335-2**

**LuxCis Optical Termini  
Service Tool Kit  
(Testing only)  
1828335-3**

**LuxCis Optical Termini  
Service Tool Kit (Hand Held  
Digital Probe Kit)  
1828335-4**



**Rugged Fiber Optic Products (Continued)**

Most of the tools included in the Termination Kit are commonly used in the fiberoptic industry (strippers, cutting pliers and all accessories for fiber and cable preparation). The items in the table below are specially made for the LuxCis Optical Termini System. Their use is highly recommended to achieve mechanical and optical performances.

| Description                                              | Qty |
|----------------------------------------------------------|-----|
| Ceramic scissors                                         | 1   |
| Cutting pliers for aramid members (HS 6000)              | 1   |
| T-stripper outer jacket stripper                         | 1   |
| Miller primary stripper (for coating 900µm)              | 1   |
| Waste container                                          | 1   |
| Inner ferrule insertion and shaping tool                 | 1   |
| Alcohol dispenser                                        | 1   |
| Bag of 6 353 ND epoxy resin                              | 1   |
| Resin injector                                           | 1   |
| Pack for resin injector (capillaries)                    | 1   |
| Crimping tool                                            | 1   |
| Curing oven                                              | 1   |
| Scoring blade                                            | 1   |
| Bag of 10 abrasive strips 12µm                           | 1   |
| Bag of 10 cleaning pipes 1.25 mm                         | 1   |
| Bag of 10 cleaning sticks 1.25 mm                        | 1   |
| Manual Polishing tool (standard LC)                      | 1   |
| Soft rubber polishing base                               | 1   |
| Bag of 10 polishing 3 µm films (Alumina)                 | 1   |
| Bag of 10 polishing 1 µm films (Alumina)                 | 1   |
| Bag of 10 polishing 0.3 µm films (Alumina)               | 1   |
| Bag of 6 pockets cleaning papers                         | 1   |
| Microscope X100                                          | 1   |
| Resin applicator                                         | 1   |
| Metal insertion and extraction tool ((Mil M81 969/1 -03) | 1   |
| Plastic insertion and extraction tool (Mil M81 969/14-03 | 1   |
| Hexagonal key 5/64 inch(2mm) / flats                     | 1   |

Other accessories available include ruler, tweezers, cleaning tips, roller adhesive tape, moss cable support, goggles, thermometer, permanent ink markers. Necessary material not included in the kit: Alcohol, canned air, and clean cloth.

**Tool Kit Contents**

| Item # | Comp Part Number | Description                             | -1 | -2 | -3 | -4 |
|--------|------------------|-----------------------------------------|----|----|----|----|
| 1      | 1278540-1        | Soft Carry Bag                          | 1  | —  | —  | —  |
| 2      | 1754767-1        | 200x Microscope                         | 1  | —  | —  | —  |
| 3      | 1754765-1        | LC Microscope adapter                   | 1  | —  | —  | —  |
| 4      | 6374613-5        | LC - SC 50/125 cable assembly           | 2  | —  | —  | —  |
| 5      | 6374615-5        | LC - SC 62.5/125 cable assembly         | 2  | —  | —  | —  |
| 6      | 1828355-1        | 1.25mm swab                             | 2  | 2  | —  | —  |
| 7      | 1828354-1        | Connector Cleaning Pad                  | 2  | 5  | —  | —  |
| 8      | 1828349-1        | Optical Loss Test Set                   | 1  | —  | 1  | —  |
| 9      | 1828350-1        | OLTS 1.25 mm detector cap               | 1  | —  | 1  | —  |
| 10     | 1828352-1        | Visual Fault Locator                    | 1  | —  | 1  | —  |
| 11     | 1828353-1        | VFL 1.25 mm Adapter                     | 1  | —  | 1  | —  |
| 12     | 1828465-1        | Label, Service Kit                      | 1  | —  | 1  | —  |
| 13     | 1918222-1        | Inspection, Hand Held Digital Probe Kit | —  | —  | —  | 1  |
| 14     | 1918223-1        | 1.25 mm Adapter, Digital Probe          | —  | —  | —  | 1  |

-1 inspection, cleaning & testing  
-2 cleaning  
-3 testing  
-4 Hand Held Digital Probe Kit

**Note:** Part Numbers are RoHS compliant except::♦ Indicates non-RoHS compliant.

LuxCis is a trademark of Radiall, S.A.  
Product is manufactured under license from Radiall, S.A.

**Rugged Fiber Optic Products (Continued)**

**Sealed Circular LC ODVA**

**Product Facts**

- IP67 rated to ensure protection from dust and water immersion
- LC connector qualified to Telcordia GR-326 and TIA/EIA 568B.3
- Temperature range of -408C to 858C
- Bayonet-style mechanical lock
- Flame retardant materials per UL 94 V-0
- Dual mounting bulkhead design
- Singlemode and multimode fiber
- LC to LC internal to the box Jumpers
- ODVA Compliant Plug to X interface on tactical with break out
- ODVA Compliant Plug to Plug on tactical cable
- Build to customer need

**Applications**

The LC ODVA Compliant is ideal for:

- Harsh environments where chemicals, corrosive gases and liquids are commonplace
- Inside and outside industrial plant and equipment that interface with industrial Ethernet networks
- Remote interface applications such as towers and antennae as well as FTTX in PON and at the home applications
- Mobile routers and internet hardware



**Plug Part Numbers:**

1828618-1 (Multimode)  
1828618-2 (Singlemode)

**Receptacle Part Numbers:**

1828619-1 (Multimode)  
1828619-2 (Singlemode)

**Featured Assembly Base**

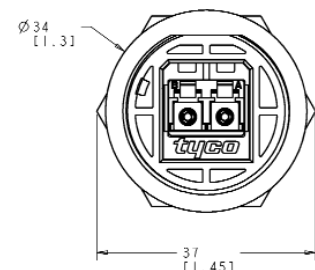
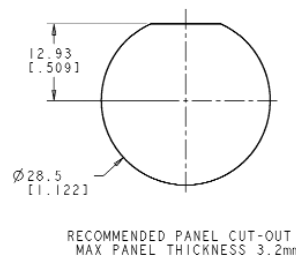
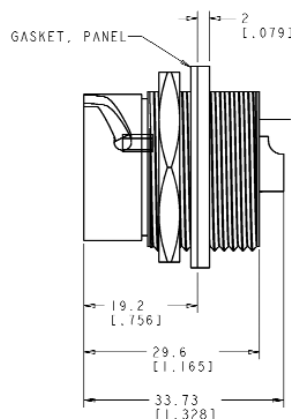
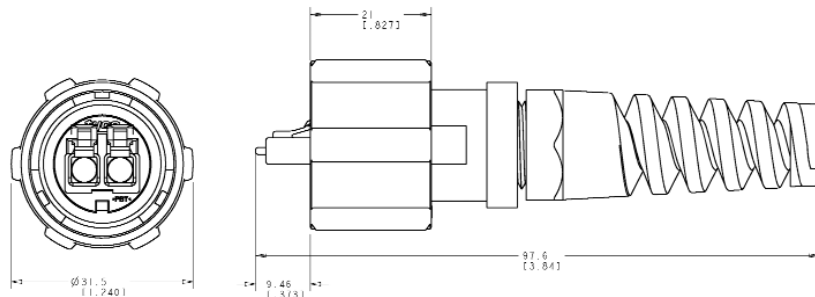
**Part Numbers:**

1828708◆ 1828709◆  
1828710◆ 1878711◆

**Plug & Receptacle Cap**

**Part Numbers:**

Plug Cap 1828740-1  
Receptacle Cap 1918177-1



**ASSEMBLY CAPABILITIES**  
Tyco Electronics has extensive Rugged Optic Harness capabilities. Please consult your local Tyco Electronics Sales Representative for assistance.

**Note:** Part Numbers are RoHS compliant except:◆ Indicates non-RoHS compliant.



**Harsh Environment  
Optical Media Converter  
Assemblies allowing  
blind mate field  
applications over one,  
two, or four fibers**

Tyco Electronics offers solutions for Harsh Environment applications of Ethernet Media Converters.

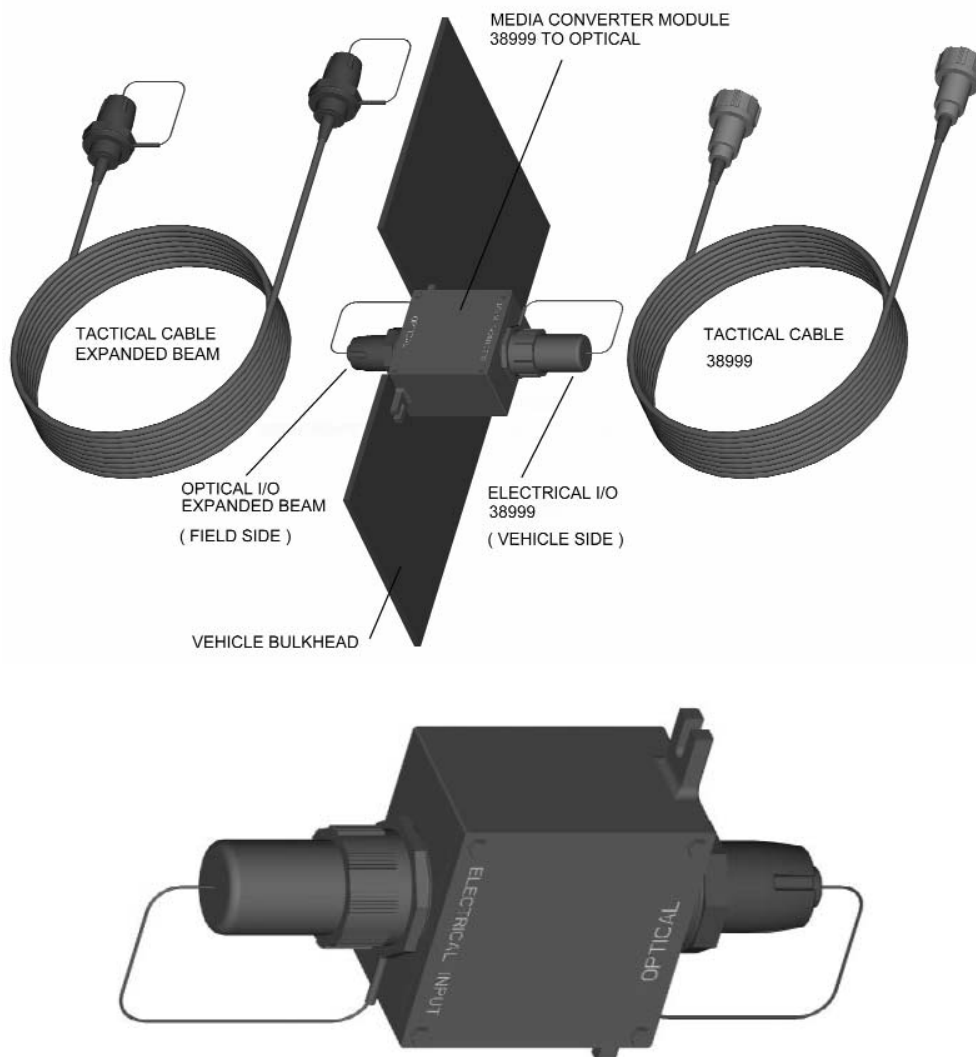
This page demonstrates Tyco Electronics' capabilities for Advanced Optical Modules. These include Fast, Gigabit, and Ethernet Link Extenders.

For additional Advanced Optical Modules, see Fiber Management & Packaged Solutions, Catalog 1307895, Section 3.

Contact your local Tyco Electronics Sales Representative with your specific design needs.

**Rugged Fiber Optic Products (Continued)**

**Rugged Media Converter & Ethernet Link Extender Solutions**



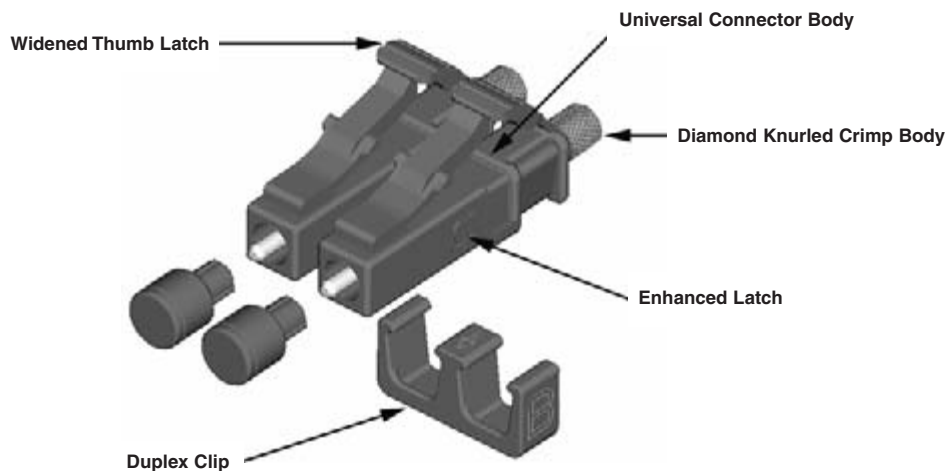
**Design Objectives**

| Specifications      | Results                                                                                                     |
|---------------------|-------------------------------------------------------------------------------------------------------------|
| Standard            | IEEE802.3, IEEE802.3u Ethernet @ 10/100 Mb/s                                                                |
| Data Rates          | 10 and 100 Mb/s auto negotiation (option to force 10 Mb/s for legacy systems)                               |
| Duplex Mode         | Full or half-duplex auto-negotiation and N-Way support                                                      |
| Max. Forward Rate   | 14,880 packets per second (pps) @ 10 Mb/s, 148,800 pps @ 100 Mb/s                                           |
| Fiber Connector     | Multimode                                                                                                   |
| Fiber Working Range | TBD                                                                                                         |
| Optical Budget      | TBD                                                                                                         |
| Optical Wavelength  | Multimode                                                                                                   |
| Emissions           | Complies with FCC Class A and CE Class A                                                                    |
| Safety              | UL, CE                                                                                                      |
| Temperature Range   | -40° - 85°C with humidity 10% to 90% non-condensing                                                         |
| Dimensions          | Ø 2.0" (51mm) X 7.7" (195mm) from cap to cap<br>Ø 2.0" (51mm) X 6.6" (168mm) X 7.6" (194mm) for 90 assembly |
| Power Consumption   | TBD                                                                                                         |
| Power               | 5VDC                                                                                                        |
| Qualification       | Complies with MIL-STD-810D environmental requirements                                                       |

## LC Connectors

### Product Facts

- Singlemode Telecordia GR-326 tested (Report #501-582)
- Multimode TIA/EIA 568-B.3 tested (Report #501-580)
- Singlemode and Multimode are compatible with both anaerobic adhesives and heat cure epoxy adhesives
- Universal Connector Body
  - Common body for simplex or duplex
  - Common body for jumper or buffer applications
  - Fewer parts to inventory
- Duplex Clip
  - Field installable
  - Makes simplex assemblies duplex
  - Correct polarity errors
  - Used for both jumpers and buffered fiber applications
- Enhanced Latch
  - Improved rigidity
  - Stronger Body
  - Improved side-load strength



- Widened Thumb Latch
  - Increased hit area
  - Increased bend strength
  - Ramped front latch for snag resistance
- Diamond Knurled Crimp Body
  - Increased tensile proof strength
  - Identical to Tyco Electronics' SC/FC design

### Performance Characteristics

**Insertion Loss** — 0.5 dB Typical  
**Reflectance** — -58 dB Typical  
**Operating Temperature** —  
 -40°C to +75°C  
**Durability** — 500 Cycles



### LC Connector Kits

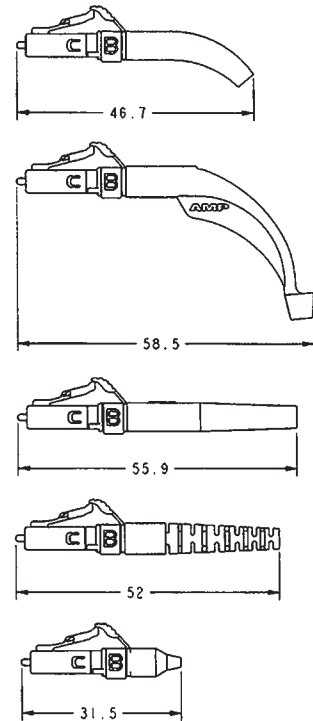
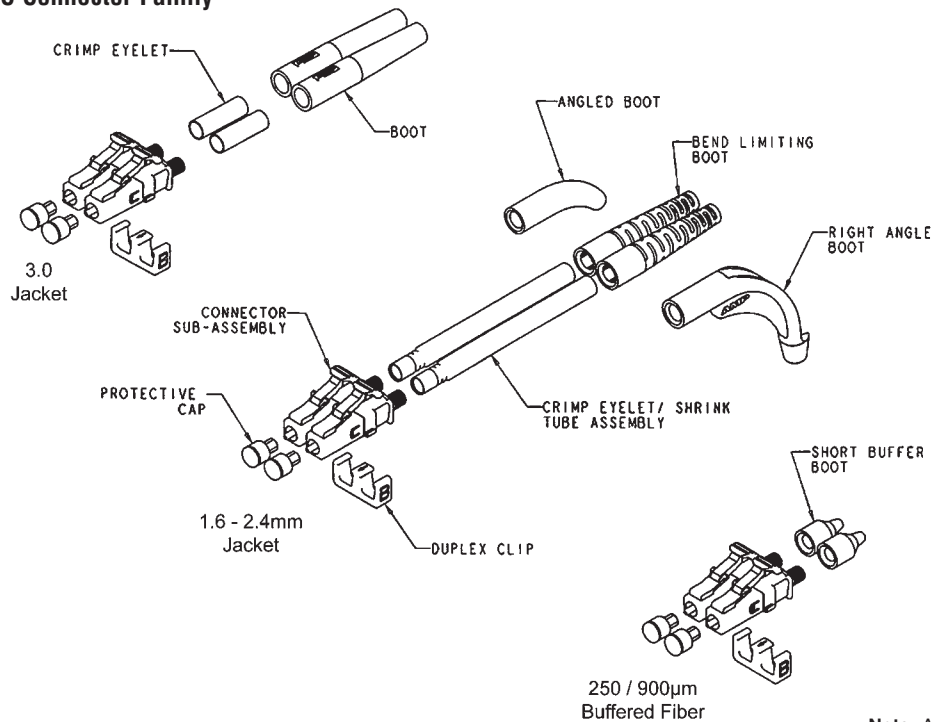
| Fiber Type                                | Kit Part Number | Description         |
|-------------------------------------------|-----------------|---------------------|
| Singlemode<br>(blue body & straight boot) | 6588709-X       | Simplex, 1.6-2.0 mm |
|                                           | 6588710-X       | Simplex, 900 μm     |
|                                           | 6588711-X       | Duplex, 1.6-2.0 mm  |
|                                           | 6588712-X       | Duplex, 900 μm      |
|                                           | 6754723-X       | Simplex, 2.4mm      |
|                                           | 6693482-X       | Simplex, 3.0mm      |
| Multimode<br>(beige body & straight boot) | 6693481-X       | Duplex, 3.0mm       |
|                                           | 6588705-X       | Simplex, 1.6-2.0 mm |
|                                           | 6588706-X       | Simplex, 900 μm     |
|                                           | 6588707-X       | Duplex, 1.6-2.0 mm  |
|                                           | 6588708-X       | Duplex 900 μm       |
|                                           | 6754724-X       | Duplex, 2.4mm       |
|                                           | 6693480-X       | Simplex, 3.0mm      |
|                                           | 6693479-X       | Duplex, 3.0mm       |

**Note:** X = -1 for individual package, -2 for bulk package.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**LC Connectors** (Continued)

**LC Connector Family**



**Note:** All of the above are also available in simplex.

**LC Connector Component Selection Chart (bulk packaged)**

| Fiber Type                | Simplex Connector Assembly & Dust Cap | Duplex Clip | Cable Size | Crimp Eyelet with Heat Shrink | Crimp Eyelet | Strain Relief Description | Strain Relief Part Number (see chart below) |
|---------------------------|---------------------------------------|-------------|------------|-------------------------------|--------------|---------------------------|---------------------------------------------|
| Singlemode<br>(blue hsg.) | 6588239-1                             | 1374728-1   | 1.6-2.0 mm | 6374150-1                     | —            | Straight/Bend Limiting    | 1588153-X                                   |
|                           |                                       |             | 1.6-2.0 mm | 6374150-1                     | —            | Angled                    | 1374737-X                                   |
|                           |                                       |             | 1.6-2.0 mm | 6374150-1                     | —            | 50 Degree Angle           | 6457543-X                                   |
|                           |                                       |             | 2.4 mm     | 6588189-1                     | —            | Straight/Bend Limiting    | 1588153-X                                   |
|                           |                                       |             | 2.4 mm     | 6588189-1                     | —            | Angled                    | 1374737-X                                   |
|                           |                                       |             | 2.4 mm     | 6588189-1                     | —            | 50 Degree Angle           | 6457543-X                                   |
|                           |                                       |             | 3.0 mm     | —                             | 5504118-3    | Straight                  | 502716-X                                    |
|                           |                                       |             | 900 µm     | —                             | —            | 900 µm Buffer, 10mm       | 6588612-X                                   |
|                           |                                       |             | 1.6-2.0 mm | 6374150-1                     | —            | Straight/Bend Limiting    | 1588153-X                                   |
|                           |                                       |             | 1.6-2.0 mm | 6374150-1                     | —            | Angled                    | 1374737-X                                   |
| Multimode<br>(beige hsg.) | 6588240-1                             | 1374728-2   | 1.6-2.0 mm | 6374150-1                     | —            | 50 Degree Angle           | 6457543-X                                   |
|                           |                                       |             | 2.4 mm     | 6588189-1                     | —            | Straight/Bend Limiting    | 1588153-X                                   |
|                           |                                       |             | 2.4 mm     | 6588189-1                     | —            | Angled                    | 1374737-X                                   |
|                           |                                       |             | 2.4 mm     | 6588189-1                     | —            | 50 Degree Angle           | 6457543-X                                   |
|                           |                                       |             | 3.0 mm     | —                             | 5504118-3    | Straight                  | 502716-X                                    |
|                           |                                       |             | 900 µm     | —                             | —            | 900 µm Buffer, 10mm       | 6588612-X                                   |



**Crimp Tool Dieset only - 1588175-1**  
**Crimp Tool with Dieset - 1588176-1**  
**Instruction Sheet: 408-8675**

**Termination Kit - 1754462-1**  
**Upgrade Kit for Anaerobic terminations - 1754603-1**

**Strain Relief Color**

| Base Part Number | Beige | Blue | Black | Red |
|------------------|-------|------|-------|-----|
| 1588153          | -5    | -2   | -3    | —   |
| 1374737          | -2    | -1   | -3    | -4  |
| 6457543          | -1    | -2   | -4    | —   |
| 502716           | -3    | -4   | -1    | -5  |
| 6588612          | -1    | -2   | -5    | -4  |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.



# **“NEW” Tight Jacketed LC Connectors**

## **Product Facts**

- Multimode or singlemode
- Simplex or duplex
- Tested using MIL-PRF-85045/16 2.0mm cable

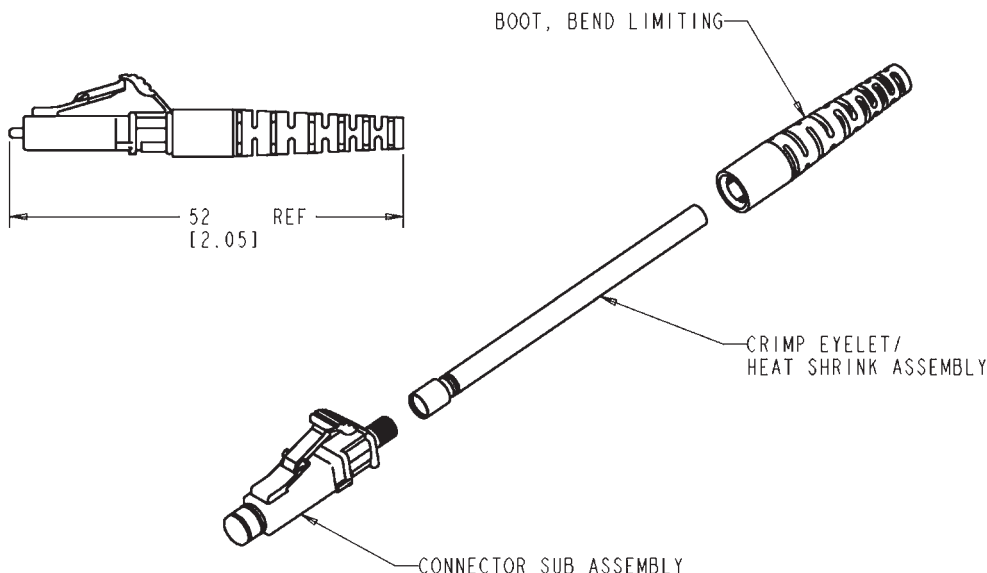
## **Application**

- In Flight Networks
- Shipboard Applications
- Aero Market



The tight jacketed LC Connectors are non pull-proof versions of the standard connectors that are designed for use with tight construction cable. Unlike

standard connectors, this design allows the jacket and buffer to move together, reducing the chances of micro-bends and fiber breakage.



| Fiber Type                                | Kit Part Number | Description        |
|-------------------------------------------|-----------------|--------------------|
| Singlemode<br>(blue body & straight boot) | 6828095-X       | Simplex, 1.6–2.0mm |
|                                           | 6828130-X       | Duplex, 1.6–2.0mm  |
|                                           | 1918228-1       | Simplex, 2.4mm     |
| Multimode<br>(beige body & straight boot) | 6828094-X       | Simplex, 1.6–2.0mm |
|                                           | 6828129-X       | Duplex, 1.6–2.0mm  |
|                                           | 1918153-X       | Simplex, 2.4mm     |

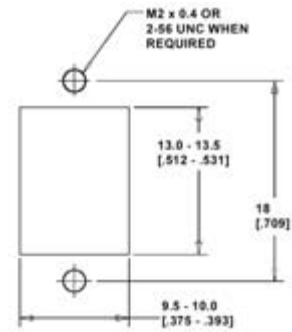
**Note:** X = -1 for individual package, -2 for bulk package.  
Instruction Sheet 408-10014

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.



### LC Duplex Adapter for SC Cutout — Plastic

| Alignment Sleeve Material | Housing Color | Description | Part Numbers |
|---------------------------|---------------|-------------|--------------|
| Ceramic                   | Blue          | Flangeless  | 6457567-1    |
| Ceramic                   | Beige         | Flangeless  | 6457567-2    |
| Ceramic                   | Green         | Flangeless  | 6457567-3    |
| Ceramic                   | Blue          | Flanged     | 6457567-4    |
| Ceramic                   | Beige         | Flanged     | 6457567-5    |
| Ceramic                   | Green         | Flanged     | 6457567-6    |
| Metal                     | Beige         | Flangeless  | 6457567-7    |
| Metal                     | Beige         | Flanged     | 6457567-8    |
| "NEW" Ceramic             | Aqua          | Flanged     | 1918150-1    |
| "NEW" Ceramic             | Aqua          | Flangeless  | 1918151-1    |



Recommended Panel Cutout  
Max. Panel Thk. 1.70 [.067]



### LC Duplex Adapter for LC Cutout — Plastic

| Alignment Sleeve Material | Housing Color | Description           | Part Numbers |
|---------------------------|---------------|-----------------------|--------------|
| Ceramic                   | Blue          | Duplex, Square Cutout | 1374352-1    |
| Ceramic                   | Beige         | Duplex, Square Cutout | 1374352-2    |

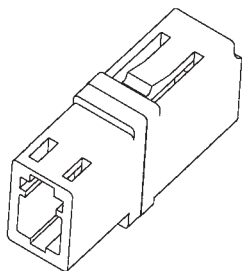


Recommended Panel Cutout  
Panel Thk. 1.2/1.7 [.047/.067]



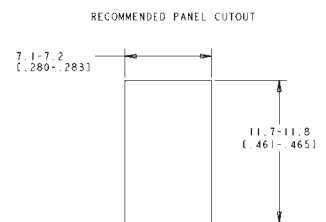
### LC Adapter for SC Cutout — Metal

| Alignment Sleeve Material | Housing Color      | Description                 | Part Numbers |
|---------------------------|--------------------|-----------------------------|--------------|
| Ceramic                   | Electroless Nickel | Flangeless                  | 1754682-1    |
| Ceramic                   | Electroless Nickel | Flanged                     | 1754683-1    |
| Ceramic                   | Electroless Nickel | Flangeless w/ EMI Shielding | 1754727-1    |



### LC Simplex Adapter — Plastic

| Alignment Sleeve Material | Housing Color | Part Numbers |
|---------------------------|---------------|--------------|
| Ceramic                   | Blue          | 1457062-1    |
| Ceramic                   | Beige         | 1457062-2    |



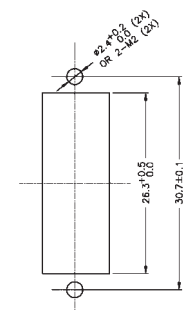
Recommended Panel Cutout  
Panel Thk. 1.2/1.7 [.047/.067]



### LC Quad Adapter — Plastic Flanged

| Alignment Sleeve Material | Housing Color | Part Numbers |
|---------------------------|---------------|--------------|
| Ceramic                   | Blue          | 1695790-4    |
| Metal                     | Beige         | 1695790-5    |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.



Recommended Panel Cutout  
Max. Panel Thk. 1.7 [.067]

## MU High Density Connectors

### Product Facts

- Singlemode and multimode product range
- For digital network applications PC end face available on both singlemode and multimode connectors
- For analog network applications, APC end face available on singlemode connectors (8°)
- Connector design uses 1.25mm ceramic ferrule technology
- Polarized for precise insertion
- Factory terminated cable assemblies
- LSZH sheathed cable available
- High optical performance (low insertion, high return loss)
- High density (up to 8 lines per module)

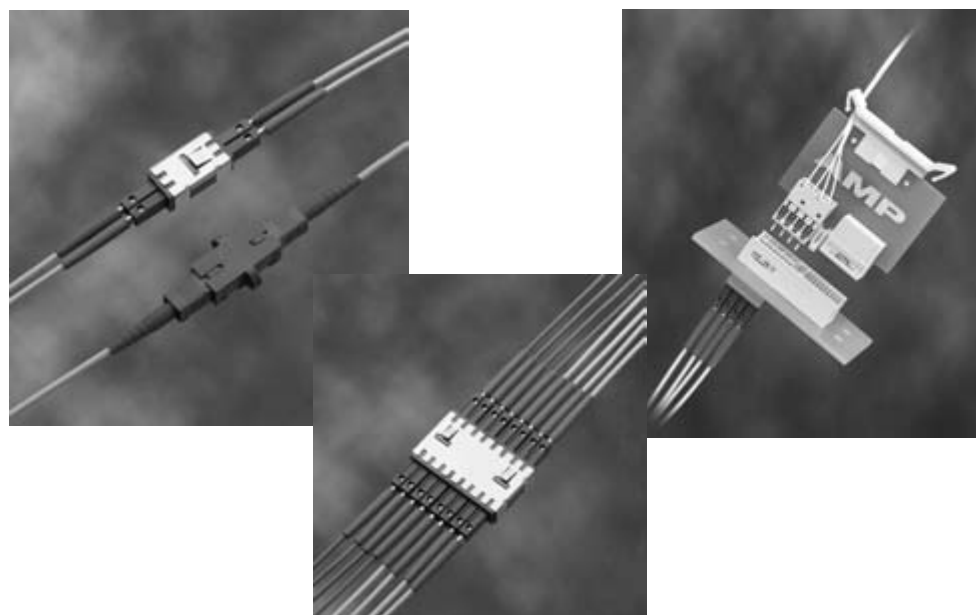
### Performance Characteristics

**Insertion Loss** — 0.1 dB Typical

**Reflectance** — -55 dB Typical

**Operating Temperature** —  
-25°C to +75°C

**Durability** — 500 Cycles



Tyco Electronics' MU high density fiber optic interconnection system offers a solution for high performance telecommunications networking.

The system centers around the fully standardized MU connector, which is also sometimes known as the Mini SC. The MU connector is at least half the size of the standard SC connector. It can offer twice the port density but all the optical performance of traditional fiber optic connectors.

Featuring a similar latching mechanism to the SC connector, the MU is just as easy to connect and disconnect.

The MU system includes a complete range of multimode and singlemode pre-terminated cable assemblies; bulkhead adapters; backplane housings; system card housings; connector kits; termination tooling and customer polishing processes.

### Key Applications

**Front Panel I/O and High Density Patch Panels for Optical Transmission Equipment, Optical Distribution Frames and Optical Network Units.**

- Full range of simplex, duplex and 8 position bulkhead adapters
- Color coded adapters for ease of identification
- Tuneable versions available to achieve lower insertion losses
- "Push-pull" type latching mechanism

- Fully compliant with relevant IEC standards (IEC 60874-1, CECC 86 305 801)

- Exceeds ETSI performance requirements (ETSI Grade P)

**Back Panel I/O in Optical Transmission and Switching Equipment**

- 8 position Type L optical modules available
- 2.0mm misalignment pickup tolerance during mating
- Zero force on backplane when fully mated

| Description                  | Part Number |
|------------------------------|-------------|
| FOKIT MU SM PC 0.9 125/1.0   | 1348982-1 ♦ |
| FOKIT MU SM PC 0.9 126/1.0   | 1348982-2 ♦ |
| FOKIT MU SM PC 125µm, 2.0 mm | 106875-1 ♦  |
| FOKIT MU SM PC 126µm, 2.0 mm | 106875-2 ♦  |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

- Zero tensile load on daughter card when fully mated
- Constant mating force during 2.5mm free float
- Fully compliant with IEC 60917 and IEC 61076-4-101

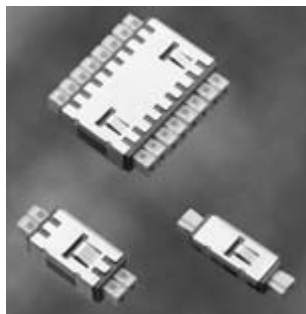
### MU Standards Compliance

**Product range** —  
MU cable assembly

**Applicable standards** —  
IEC 60874-1  
CECC 86 305 801 (MU-APC)  
I-ETS 300 671  
IEC 61300

**Product range** —  
Z-PACK 2mm HM Product

**Applicable standards** —  
IEC 60917  
IEC 61076-4-101



### MU Bulkhead Adapter

The MU bulkhead adapter is designed to help save valuable panel space in high density applications. The adapter enables the interconnection of two MU connectors and features a 1.25mm ceramic alignment sleeve to ensure precise fiber alignment and low insertion loss, both during and after the interconnection process.

The MU bulkhead adapter is available in PC and APC versions for both digital and

analog network applications. It is also available in a choice of simplex, duplex and 8 position versions.

| Description                       | Part Number |
|-----------------------------------|-------------|
| <b>PC finish</b>                  |             |
| Simplex MU Adapter                | 233263-1 ♦  |
| Duplex MU Adapter                 | 233263-3 ♦  |
| Duplex MU Adapter with SC cut-out | 1348840-2   |
| <b>APC finish</b>                 |             |
| Duplex MU Adapter with SC cut-out | 1348840-1   |



### Z-PACK 2mm HM<sup>1</sup> Type L and M Connector Housings

Z-PACK 2mm HM connector housings offer a solution to the demand for discrete fiber lines, allowing single disconnects and routing on the backplane.

The 8 position Type L connector housing is fully optical and can accommodate up to 8 fiber lines. These connector housings are available in female configurations and are designed for use on the system card.

The hybrid Type M connector housing combines optical and electrical contacts in one housing, with 55 signal contact positions and 4 fiber optic lines. It allows easy migration from combined optical / electrical to full optical backplane

inter-connections. Female Type M connector housings are suitable for use on the system card while male Type M connector housings are designed for back panel application.

Tyco Electronics also designs and manufactures a range of MT based fiber optic backplane connectors, LIGHTRAY MPX fiber optic backplane connectors. For further information, see Cable Assemblies & Backplane Interconnects Section 2, pages 122-136.

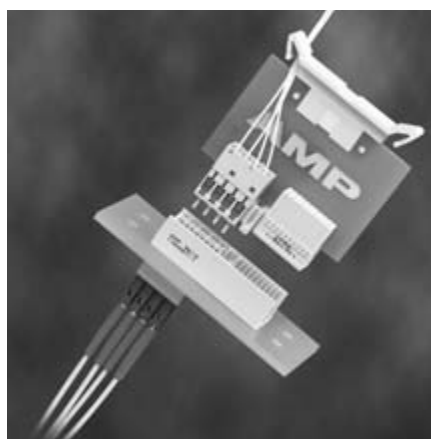
| Description   | Part Number |
|---------------|-------------|
| <b>Type L</b> |             |
| Male          | 106743-1 ♦  |
| Female        | 106744-1    |

<sup>1</sup>HM : Hard Metric

## MU Backplanes

### Product Facts

- Complies to IEC 60917 and IEC 61076-4-101
- Constant mating force during 2.5 mm free float
- Zero tensile load on system card and backplane when fully mated
- Low insertion / extraction forces
- Scalable system allows easy implementation of future upgrades
- Low loss
- High return loss
- APC versions available
- Float in all directions (including x and y)
- Misalignment pick up tolerances 2.0 horizontal, 2.5 mm vertical, and 2 degrees angular



| Description                                   | Part Number |
|-----------------------------------------------|-------------|
| <b>2 Position</b>                             |             |
| Backplane Housing (includes mounting bracket) | 1391160-1 ♦ |
| Systemcard Housing                            | 1391095-1   |
| <b>4 Position</b>                             |             |
| Backplane Housing (includes mounting bracket) | 1391161-1 ♦ |
| Systemcard Housing                            | 1391094-1   |

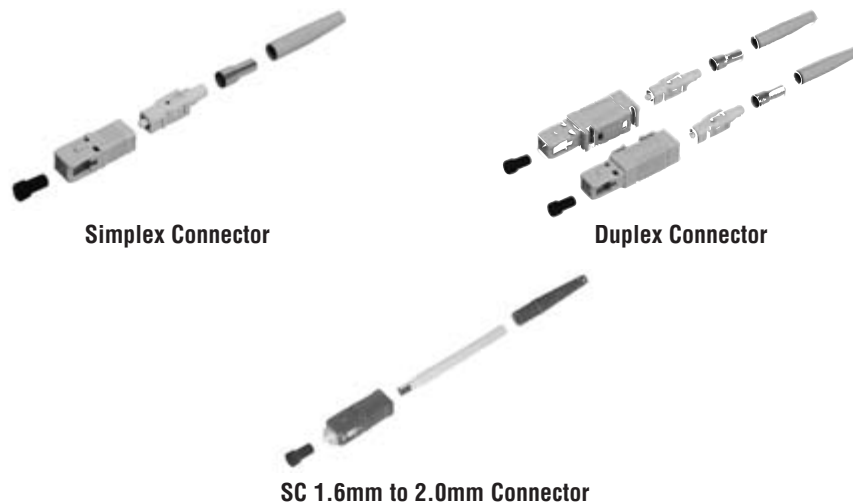
**Note:** Future product extensions planned: 6 position and 8 position versions. Please contact your local Sales Engineer for additional information.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## SC Connectors

### Product Facts

- One-piece connector body:
  - Fastest assembly
  - Field installable
  - Anaerobic epoxy compatible
- Compliant with
  - JIS C-5973
  - Fibre Channel
  - TIA FOCIS-3
- Pre-radiused ferrules
- For 125  $\mu$ m cladding diameter



### Performance Characteristics

**Insertion Loss** — <0.2 dB Typical

**Return Loss** — <-55 dB Typical

**Durability** — 200 Cycles

### Singlemode SC Connector Kits - Polymer Crimp Body

| Ferrule Type | Crimp Body Material | Jacket Size | Simplex / Duplex | Indiv. Pack w/ Strain Relief | Bulk Pack No Strain Relief | Bulk Pack w/ Strain Relief | Crimp Tool | Instruction Sheet |
|--------------|---------------------|-------------|------------------|------------------------------|----------------------------|----------------------------|------------|-------------------|
| Ceramic      | Polymer             | 3.0 mm      | Simplex          | 5504646-1                    | 5504646-5                  | 5504646-3                  | 503911-1   | 408-8674          |
| Ceramic      | Polymer             | 3.0 mm      | Duplex           | 5504655-1                    | 5504655-3                  | 5504655-2                  | 503911-1   | 408-8674          |
| Ceramic      | Polymer             | 900 $\mu$ m | Simplex          | 5492123-1                    | 5492123-7                  | 5492123-2                  | n/a        | 408-8674          |
| Ceramic      | Polymer             | 2.0 mm      | Simplex          | 504934-1 ♦                   | —                          | 504934-2 ♦                 | 503911-1   | 408-4208          |

### Performance Characteristics for GR-326 Style Product

**Insertion Loss** — <0.2 dB Typical

**Return Loss** — <-59 dB Typical

**Durability** — 200 Cycles

**Tested to GR-326 (Test Report 501-584)**

**Tunable** — 6 positions

### GR-326 Style Singlemode SC Connector Kits - Metal Crimp Body

| Ferrule Type | Crimp Body Material | Jacket Size | Simplex / Duplex | Indiv. Pack w/ Strain Relief | Bulk Pack w/ Strain Relief | Crimp Tool                  | Instruction Sheet |
|--------------|---------------------|-------------|------------------|------------------------------|----------------------------|-----------------------------|-------------------|
| Ceramic      | Metal               | 3.0 mm      | Simplex          | 6457215-4                    | 6457215-2                  | (1) 492131-1<br>(1) 58532-1 | 408-8674          |
| Ceramic      | Metal               | 3.0 mm      | Duplex           | 1754599-2                    | 1754599-4                  | (1) 492131-1<br>(1) 58532-1 | 408-8674          |
| Ceramic      | Metal               | 2.4 mm      | Simplex          | 6588714-5                    | 6588714-6                  | 1588176-1                   | 408-8674          |
| Ceramic      | Metal               | 2.4 mm      | Duplex           | 6693776-5                    | 6693776-6                  | 1588176-1                   | 408-8674          |
| Ceramic      | Metal               | 1.6-2.0 mm  | Simplex          | 6588714-2                    | 6588714-4                  | 1588176-1                   | 408-8674          |
| Ceramic      | Metal               | 1.6-2.0 mm  | Duplex           | 6693776-2                    | 6693776-4                  | 1588176-1                   | 408-8674          |

### Performance Characteristics

**Insertion Loss** — <0.2 dB Typical

**Durability** — 500 Cycles

**TIA 586B Compliant**

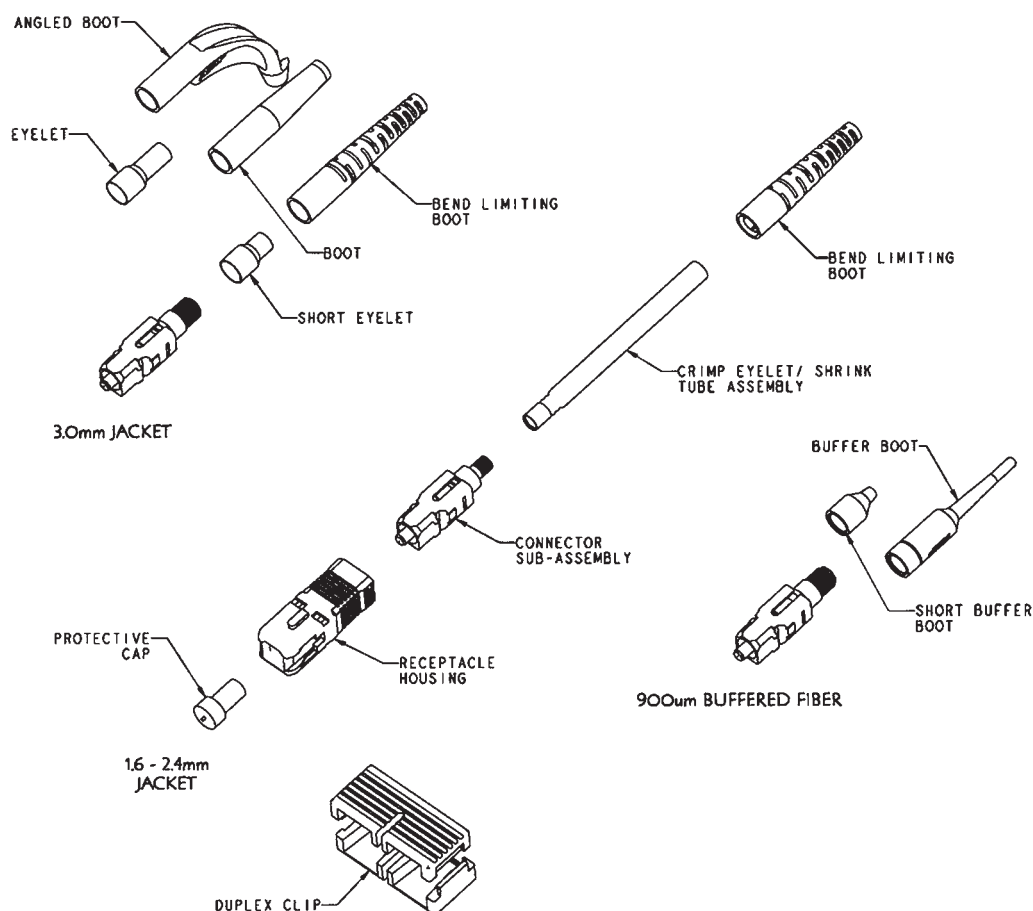
### Multimode SC Connector Kits

| Ferrule Type | Crimp Body Material | Jacket Size | Simplex / Duplex | Indiv. Pack w/ Strain Relief | Bulk Pack No Strain Relief | Bulk Pack w/ Strain Relief | Crimp Tool | Instruction Sheet |
|--------------|---------------------|-------------|------------------|------------------------------|----------------------------|----------------------------|------------|-------------------|
| Ceramic      | Polymer             | 3.0 mm      | Simplex          | 5503948-1                    | 5503948-3                  | 5503948-2                  | 503911-1   | 408-8674          |
| Ceramic      | Polymer             | 3.0 mm      | Duplex           | 5504657-1                    | 5504657-3                  | 5504657-2                  | 503911-1   | 408-4211          |
| Ceramic      | Metal               | 2.4 mm      | Simplex          | 6588715-3                    | 6588715-4                  | —                          | 1588176-1  | 408-8674          |
| Ceramic      | Metal               | 2.4 mm      | Duplex           | 6693775-3                    | 6693775-4                  | —                          | 1588176-1  | 408-8674          |
| Ceramic      | Metal               | 1.6-2.0 mm  | Simplex          | 6588715-1                    | 6588715-2                  | —                          | 1588176-1  | 408-8674          |
| Ceramic      | Metal               | 1.6-2.0 mm  | Duplex           | 6693775-1                    | 6693775-2                  | —                          | 1588176-1  | 408-8674          |
| Ceramic      | Polymer             | 900 $\mu$ m | Simplex          | 5504932-1                    | 503948-7                   | 5504932-2                  | n/a        | 408-8674          |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## SC Connectors (Continued)

### SC Connector Components



### SC Duplex Clip (Black) Part Number 1348522-1



### SC Connector Component Selection Chart (bulk packaged)

| Fiber Type                      | Simplex Connector Sub-Assembly | Duplex Clip*  | Cable Size | Crimp Eyelet w/ Heat Shrink | Crimp Eyelet | Strain Relief Part Number**           |
|---------------------------------|--------------------------------|---------------|------------|-----------------------------|--------------|---------------------------------------|
| Singlemode - GR-326 Style       | 6588714-3                      | (2) 6348522-1 | 1.6-2.0 mm | 6374150-1                   | —            | 1588153-X                             |
|                                 |                                |               | 2.4 mm     | 6588189-1                   | —            | 1588153-X                             |
|                                 | 6457215-5                      | (2) 6348522-1 | 3.0 mm     | —                           | 504973-3     | 1588491-X                             |
|                                 |                                |               | 2.4 mm     | —                           | 503970-6     | 5503971-X                             |
| Singlemode - Polymer Crimp Body | 492123-7                       | (2) 6348522-1 | 3.0 mm     | —                           | 503970-3     | 5503971-X                             |
|                                 |                                |               | 900 µm     | —                           | —            | 6457493-X (long)<br>6278309-X (short) |
|                                 |                                |               | 1.6-2.0 mm | 6374150-1                   | —            | 1588153-X                             |
|                                 |                                |               | 2.4 mm     | 6588189-1                   | —            | 1588153-X                             |
| Multimode - Ceramic Ferrule     | 6588715-5                      | (2) 6348522-1 | 3.0 mm     | —                           | 503970-3     | 5503971-X                             |
|                                 |                                |               | 900 µm     | —                           | —            | 6457493-X (long)<br>6278309-X (short) |
|                                 |                                |               | 3.0 mm     | —                           | 503970-3     | 5503971-X                             |
|                                 | 5503948-7                      | (2) 6348522-1 | 900 µm     | —                           | —            | 6457493-X (long)<br>6278309-X (short) |

\* For Fibre Channel compliant assemblies, use one (1) piece each of pn 503487-Y and 503488-Y. (Dash refers to color - refer to customer drawing for details).

\*\* Strain relief dash number indicates color - see page 46 for details.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## SC Connectors (Continued)

### SC Strain Reliefs — Jacketed Cable

| Description     | GR-326 Style | Part Number |           |             |           |           |
|-----------------|--------------|-------------|-----------|-------------|-----------|-----------|
|                 |              | Color       |           |             |           |           |
|                 |              | Black       | Yellow    | Red         | Beige     | Blue      |
| 3.0 mm          | No           | 1-5503971-0 | 5503971-7 | 1-5503971-1 | 5503971-1 | 5503971-2 |
| 2.4 mm          | No           | 1-5503971-2 | 5503971-8 | 1-5503971-3 | 5503971-3 | 5503971-4 |
| 3.0 mm          | Yes          | —           | —         | —           | 1588491-5 | 1588491-2 |
| 1.6 mm - 2.4 mm | Yes          | 1588153-3   | 1588153-4 | —           | 1588153-5 | 1588153-2 |
| 2.0 mm          | No           | 2-5503971-3 | 5503971-9 | 2-5503971-7 | 5503971-5 | 5503971-6 |

3.0mm - GR-326 Style



3.0mm Angled



900µm Short



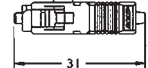
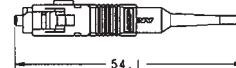
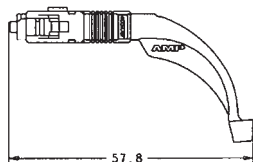
900µm

### SC Strain Reliefs — Angled

| Description |             | Part Number |           |           |           |
|-------------|-------------|-------------|-----------|-----------|-----------|
|             |             | Color       |           |           |           |
|             |             | Black       | Red       | Beige     | Blue      |
| 3.0 mm      | Simplex     | 1278705-3   | 1278705-4 | 1278705-2 | 1278705-1 |
| 2.0 mm      | Simplex     | 1374737-3   | 1374737-4 | 1374737-2 | 1374737-1 |
| 2.0 mm      | 45° Simplex | 6457543-4   | 6457543-3 | 6457543-1 | 6457543-2 |

### SC Strain Reliefs — 900 micron

| Description         | Part Number |           |           |           |           |
|---------------------|-------------|-----------|-----------|-----------|-----------|
|                     | Color       |           |           |           |           |
|                     | Black       | Yellow    | Red       | Beige     | Blue      |
| Long (33mm) 900µm   | 6457493-3   | 6457493-5 | 6457493-4 | 6457493-9 | 6457493-1 |
| Short (10 mm) 900µm | 6278309-1   | —         | 6278309-3 | —         | 6278309-2 |



## SC Low Loss Loopback Connector

### Part Number 5503141-1

#### Product Facts

- 62.5/125 Multimode
- Use for Equipment Testing
- 0.6 dB Insertion Loss
- 0.5" Ferrule Centerline

### Part Number 5503141-2

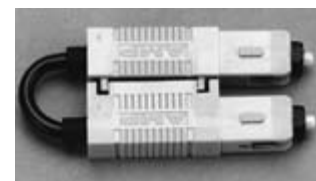
#### Product Facts

- 50/125 Multimode
- Use for Equipment Testing
- 0.8 dB Insertion Loss
- 0.5" Ferrule Centerline

### Part Number 5504883-1

#### Product Facts

- Singlemode
- Use for Equipment Testing
- 1.5 dB Insertion Loss
- 0.5" Ferrule Centerline



**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.



**“NEW” Tight Jacketed SC Connectors**

**Product Facts**

- Multimode or singlemode
- Simplex or duplex
- Tested using MIL-PRF-85045/16 2.0mm cable

**Application**

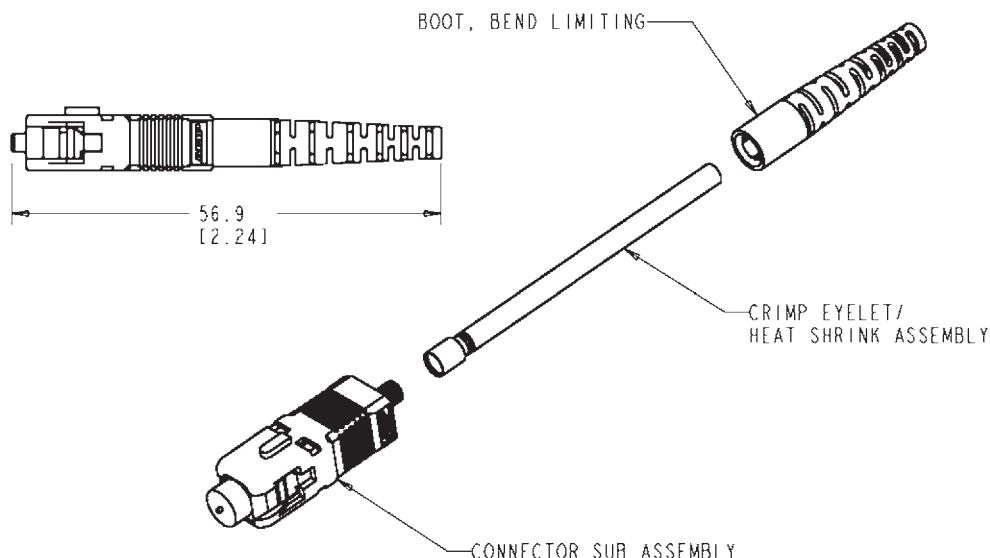
- In Flight Networks
- Shipboard Applications
- Aero Market

**SC Connectors (Continued)**



The tight jacketed SC Connectors are non pull-proof versions of the standard connectors that are designed for use with tight construction cable. Unlike

standard connectors, this design allows the jacket and buffer to move together, reducing the chances of micro-bends and fiber breakage.



**Tight Jacketed SC Connector Kits**

| Fiber Type                                | Kit Part Number | Description        |
|-------------------------------------------|-----------------|--------------------|
| Singlemode<br>(blue body & straight boot) | 6828100-X       | Simplex, 1.6–2.0mm |
|                                           | 1828573-X       | Duplex, 1.6–2.0mm  |
|                                           | 1918227-1       | Simplex, 2.4mm     |
| Multimode<br>(beige body & straight boot) | 6828099-X       | Simplex, 1.6–2.0mm |
|                                           | 1828574-X       | Duplex, 1.6–2.0mm  |
|                                           | 1918154-X       | Simplex, 2.4mm     |

**Note:** X = -1 for individual package, -2 for bulk package.  
Instruction Sheet 408-10015

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**SC Connectors** (Continued)

**SC Adapters**

**Product Facts**

- Suitable for any SC connector
- Available with metal or ceramic alignment sleeves
- Choice of housing materials and colors
- Duplex adapters accept two simplex connectors or one duplex connector
- Assortment of hybrid configurations available
- Mounting screws available  
Part Number 503663-1
- Slide-on cover available
- EMI gasketed parts available



SC Simplex Adapter - Plastic



Flangeless SC Simplex Adapter - Plastic



SC Simplex Adapter - Metal



Flangeless SC Simplex Adapter - Metal



SC Duplex Adapter - Plastic

**SC Simplex Adapter - Plastic**

| Alignment Sleeve Material/Application | Housing Color | Part Numbers |
|---------------------------------------|---------------|--------------|
| Metal/MM only                         | Beige         | 5504614-1    |
| Metal                                 | Black         | 5502632-7    |
| Metal                                 | Blue          | 5502632-8    |
| Metal                                 | Beige         | 5502632-9    |
| Metal                                 | Aqua          | 2-5502632-3  |
| Ceramic                               | Black         | 1-5502632-0  |
| Ceramic                               | Blue          | 1-5502632-1  |
| Ceramic                               | Beige         | 1-5502632-2  |
| "NEW" Ceramic                         | Aqua          | 2-5502632-4  |
| Ceramic/APC                           | Green         | 1828028-2    |

**Flangeless SC Simplex Adapter - Plastic**

| Alignment Sleeve Material | Housing Color | Part Numbers |
|---------------------------|---------------|--------------|
| Metal                     | Black         | 5504632-1    |
| Ceramic                   | Black         | 5504632-2    |
| Metal                     | Blue          | 5504632-3    |
| Ceramic                   | Blue          | 5504632-4    |

**SC Simplex Adapter - Metal**

| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Metal                     | Electroless Nickel | 6278348-1    |
| Ceramic                   | Electroless Nickel | 6278348-3    |

**Flangeless SC Simplex Adapter - Metal**

| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Metal                     | Electroless Nickel | 6278348-5    |
| Ceramic                   | Electroless Nickel | 6278348-7    |

**SC Duplex Adapter - Plastic**

| Alignment Sleeve Material/Application | Housing Color | Part Numbers |
|---------------------------------------|---------------|--------------|
| Metal/MM only                         | Black         | 5504640-4    |
| Metal/MM only                         | Beige         | 5504640-1    |
| Metal                                 | Black         | 5502776-7    |
| Metal                                 | Blue          | 5502776-8    |
| Metal                                 | Beige         | 5502776-9    |
| "NEW" Metal                           | Aqua          | 2-5502776-5  |
| Ceramic                               | Black         | 1-5502776-0  |
| Ceramic                               | Blue          | 1-5502776-1  |
| Ceramic                               | Beige         | 1-5502776-2  |
| "NEW" Ceramic                         | Aqua          | 2-5502776-6  |
| Ceramic/APC                           | Green         | 2-5502776-3  |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**SC Adapters (Continued)**



SC Duplex Adapter

**SC Duplex Adapter - Metal**

| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Metal                     | Electroless Nickel | 6278049-1    |
| Ceramic                   | Electroless Nickel | 6278049-3    |



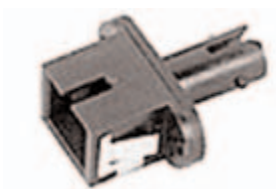
SC Duplex Metal Adapter  
w/ EMI Shielding

**Shielded SC Duplex Adapter - Metal**

| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Metal                     | Electroless Nickel | 6374223-1    |
| Ceramic                   | Electroless Nickel | 6374223-3    |

- Designed to help prevent EMI leak
- Ideal for high-speed applications

**SC to ST Hybrid Adapters**



SC to ST Simplex Adapter -  
Plastic

**SC to ST Simplex Adapter - Plastic**

| Alignment Sleeve Material | Housing Color | Part Numbers |
|---------------------------|---------------|--------------|
| Metal                     | Black         | 5502780-1    |
| Metal                     | Blue          | 5502780-2    |
| Metal                     | Beige         | 5502780-3    |
| Ceramic                   | Black         | 5502780-4    |
| Ceramic                   | Blue          | 5502780-5    |



SC to ST Simplex Adapter - Metal

**SC to ST Simplex Adapter - Metal**

| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Ceramic                   | Electroless Nickel | 6278350-3    |
| Metal                     | Electroless Nickel | 6278350-1    |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**SC to ST Hybrid Adapters**  
(Continued)



**Flangeless SC to ST Simplex Adapter - Metal**

**Flangeless SC to ST Simplex Adapter - Metal**

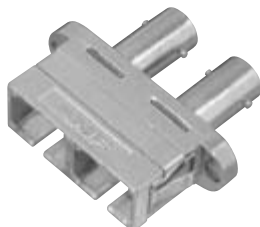
| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Ceramic                   | Electroless Nickel | 6278350-7    |
| Metal                     | Electroless Nickel | 6278350-5    |



**SC to ST Duplex Adapter - Plastic**

**SC to ST Duplex Adapter - Plastic**

| Alignment Sleeve Material | Housing Color | Part Numbers |
|---------------------------|---------------|--------------|
| Metal (MM Only)           | Beige         | 5504663-4    |
| Metal                     | Black         | 5503137-1    |
| Metal                     | Blue          | 5503137-2    |
| Metal                     | Beige         | 5503137-3    |
| Ceramic                   | Black         | 5503137-4    |
| Ceramic                   | Blue          | 5503137-5    |
| Ceramic                   | Beige         | 5503137-6    |



**SC to ST Duplex Adapter - Metal**

**SC to ST Duplex Adapter - Metal**

| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Metal                     | Electroless Nickel | 6278051-1    |
| Ceramic                   | Electroless Nickel | 6278051-3    |

**Slide-on Retractable Cover for SC Simplex or Duplex Applications**



The Tyco Electronics slide-on retractable cover is used for simplex or duplex SC applications. These retractable doors slip onto the end of existing Tyco Electronics adapters and can be mounted after the adapter has already been installed.

**1693539-1** — Blue Simplex SC

**1693539-3** — Green Simplex SC

**1693540-1** — for use on all Tyco Electronics SC Duplex Adapters

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Product Facts

- Epoxy type connector
- Pre-radiused ferrule finish
- Available in bulk packages

### Singlemode Ceramic

#### Performance Characteristics

**Insertion Loss** — 0.3 dB typical  
**Back Reflection** — <-40 dB typical  
**Durability** — 200 cycles

### Ceramic

#### Materials

**Ferrule Material** — Ceramic  
**Body Material** — Nickel Plated Brass  
**Coupling Nut Material** —  
 Plated Die Cast  
**Nominal Fiber Size** — 126



### Singlemode ST Connector Kits

| Ferrule Type | Body Material | Jacket Size*          | Strain Relief Type & Color | Indiv. Pack w/ Strain Relief | Bulk Pack w/ Strain Relief | Crimp Tool | Instruction Sheet |
|--------------|---------------|-----------------------|----------------------------|------------------------------|----------------------------|------------|-------------------|
| Ceramic      | Metal         | 3.0 mm (900µm, 2.4mm) | Bend Limiting/ Yellow      | 5502579-2                    | —                          | 58433-4    | 408-9645          |
| Ceramic      | Metal         | 3.0 mm (900µm, 2.4mm) | Short/Yellow               | 5502580-2                    | 5502580-4                  | 58433-4    | 408-9645          |
| Ceramic      | Metal         | 900µm                 | Bare Buffer/ Yellow        | 5503613-2                    | —                          | 58433-4    | 408-9645          |

\* Jack sizes in parentheses can be accommodated with no additional purchases by using build-up tubing included in the kit part numbers listed.

### Multimode Ceramic

#### Performance Characteristics

**Insertion Loss** — 0.3dB typical  
**Durability** — 500 cycles

### Ceramic



### Multimode ST Connector Kits - Ceramic Ferrule

| Ferrule Type  | Body Material | Coupling Nut Material | Jacket Size*                 | Strain Relief Type & Color            | Indiv. Pack w/ Strain Relief | Bulk Pack No Strain Relief | Bulk Pack w/ Strain Relief | Crimp Tool | Instruction Sheet |
|---------------|---------------|-----------------------|------------------------------|---------------------------------------|------------------------------|----------------------------|----------------------------|------------|-------------------|
| Ceramic       | Polymer       | Polymer               | 3.0 mm                       | Short/Black                           | —                            | 503569-1                   | 503569-2                   | 58433-4    | 408-9971          |
| Ceramic       | Polymer       | Polymer               | 3.0 mm (900µm, 2.4mm)        | Short/Black                           | 503571-1                     | —                          | —                          | 58433-4    | 408-9971          |
| Ceramic       | Polymer       | Polymer               | 3.0 mm (900µm, 2.0mm, 2.4mm) | Bare Buffer/Black                     | 5503571-3                    | —                          | —                          | 58433-4    | 408-9971          |
| Ceramic       | Polymer       | Metal                 | 3.0 mm                       | Short/Black                           | 503677-2                     | 503676-1                   | 503677-1                   | 58433-4    | 408-9971          |
| Ceramic       | Metal         | Metal                 | 3.0 mm (900µm, 2.4mm)        | Right Angle/Black                     | 5502674-1                    | —                          | —                          | 58433-4    | 408-9645          |
| Ceramic       | Metal         | Metal                 | 3.0 mm                       | Short/Black                           | —                            | 5492458-3                  | 5492458-2                  | 58433-4    | 408-9645          |
| Ceramic       | Metal         | Metal                 | 3.0 mm, 900µm                | Bare Buffer/Black Bend Limiting/Black | 5492458-1                    | —                          | —                          | 58433-4    | 408-9645          |
| Ceramic       | Metal         | Metal                 | 3.0 mm (900µm, 2.4mm)        | Bare Buffer/Black                     | 5501380-1                    | —                          | —                          | 58433-4    | 408-9645          |
| Ceramic       | Metal         | Metal                 | 3.0 mm (900µm, 2.4mm)        | Short/Black                           | 1-5501380-6                  | —                          | —                          | 58433-4    | 408-9645          |
| Ceramic       | Metal         | Polymer               | 3.0 mm                       | None                                  | —                            | 6374332-2                  | —                          | 58433-4    | 408-9645          |
| Ceramic 140µm | Metal         | Polymer               | 3.0 mm                       | Short/Black                           | —                            | —                          | 6374332-1                  | 58433-4    | 408-9645          |
| Ceramic 140µm | Metal         | Metal                 | 3.0 mm (900µm, 2.4mm)        | Bend Limiting/Black                   | 5501380-6                    | —                          | —                          | 58433-4    | 408-9645          |

\* Jacket sizes in parentheses can be accommodated with no additional purchases by using build-up tubing included in the kit part numbers listed.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## ST Connectors — Epoxy Type (Continued)

### Polymer Composite

#### Multimode Polymer Composite

##### Performance Characteristics

Insertion Loss — 0.3dB Typical

Durability — 500 Cycles

##### Materials

Ferrule — Composite Polymer

Body — Polymer

Coupling Nut — Polymer



#### Multimode ST Connector Kits - Polymer Ferrule

| Ferrule Type | Body Material | Coupling Nut Material | Jacket Size   | Strain Relief Type & Color       | Indiv. Pack w/ Strain Relief | Bulk Pack w/ Strain Relief | Crimp Tool | Instruction Sheet |
|--------------|---------------|-----------------------|---------------|----------------------------------|------------------------------|----------------------------|------------|-------------------|
| Polymer      | Polymer       | Polymer               | 3.0 mm, 900µm | Short/Black<br>Bare Buffer/Black | 5503415-1                    | —                          | 58433-4    | 408-9971          |
| Polymer      | Polymer       | Polymer               | 3.0 mm        | Short/Beige                      | —                            | 503424-3                   | 58433-4    | 408-9971          |

### Stainless Steel

#### Multimode Stainless Steel

##### Performance Characteristics

Insertion Loss — 0.3dB Typical

Operating Temp. Range —  
-30°C to +70°C

Durability — 500 cycles



#### Multimode ST Connector Kits - Stainless Steel Ferrule

| Ferrule Type    | Ferrule Designation | Body Material | Coupling Nut Material | Jacket Size | Strain Relief Type & Color | Indiv Pack w/ Strain Relief | Bulk Pack No Strain Relief | Crimp Tool | Instruction Sheet |
|-----------------|---------------------|---------------|-----------------------|-------------|----------------------------|-----------------------------|----------------------------|------------|-------------------|
| Stainless Steel | 125                 | Metal         | Metal                 | 3.0 mm      | Bend Limiting/<br>Black    | 5504008-3                   | 5-5504008-4                | 58551-1    | 408-4151          |
| Stainless Steel | 140                 | Metal         | Metal                 | 3.0 mm      | Bend Limiting/<br>Black    | 5504008-7                   | —                          | 58551-1    | 408-4151          |
| Stainless Steel | 231                 | Metal         | Metal                 | 3.0 mm      | Bend Limiting/<br>Black    | 1-5504008-4                 | —                          | 58551-1    | 408-4151          |
| Stainless Steel | 240                 | Metal         | Metal                 | 3.0 mm      | Bend Limiting/<br>Black    | 1-5504008-3                 | —                          | 58551-1    | 408-4151          |
| Stainless Steel | 125                 | Metal         | Metal                 | 4.3 mm      | Long/<br>Black             | 5504008-4                   | —                          | 58551-1    | 408-4151          |
| Stainless Steel | 280                 | Metal         | Metal                 | 3.0 mm      | Bend Limiting/<br>Black    | 4-5504008-6                 | —                          | 58551-1    | 408-4151          |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## ST Connectors — Epoxy Type (Continued)

ST Connector Component Selection Chart (Bulk Packaged)

| Fiber Type                                                  | Connector Sub-Assembly | Cable Size | Crimp Eyelet | Tubing    | Strain Relief Part Number* |
|-------------------------------------------------------------|------------------------|------------|--------------|-----------|----------------------------|
| Singlemode -<br>Ceramic Ferrule<br>Metal Body, Metal Nut    | 5502578-2              | 1.6-2.0mm  | 501971-3     | 5502275-1 | 502128-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 501457-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-2 | 503219-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 5502667-X                  |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 502128-X                   |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 501457-X                   |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 5502667-X                  |
|                                                             |                        | 3.0mm      | 501971-3     | —         | 502128-X                   |
|                                                             |                        | 3.0mm      | 501971-3     | —         | 501457-X                   |
|                                                             |                        | 3.0mm      | 501971-3     | —         | 5502667-X                  |
| Multimode -<br>Ceramic Ferrule<br>Metal Body, Metal Nut     | 5492458-5              | 900um      | 501971-3     | 502179-7  | 5503628-X                  |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 502128-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 501457-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-2 | 503219-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 5502667-X                  |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 502128-X                   |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 501457-X                   |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 5502667-X                  |
|                                                             |                        | 3.0mm      | 501971-3     | —         | 502128-X                   |
|                                                             |                        | 3.0mm      | 501971-3     | —         | 501457-X                   |
| Multimode -<br>Ceramic Ferrule<br>Metal Body, Polymer Nut   | 5501458-8              | 3.0mm      | 501971-3     | —         | 5502667-X                  |
|                                                             |                        | 900um      | 501971-3     | 502179-7  | 5503628-X                  |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 502128-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 501457-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-2 | 503219-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 5502667-X                  |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 502128-X                   |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 501457-X                   |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 5502667-X                  |
|                                                             |                        | 3.0mm      | 501971-3     | —         | 502128-X                   |
| Multimode -<br>Ceramic Ferrule<br>Polymer Body, Metal Nut   | 503676-5               | 3.0mm      | 501971-3     | —         | 501457-X                   |
|                                                             |                        | 3.0mm      | 501971-3     | —         | 5502667-X                  |
|                                                             |                        | 900um      | 501971-3     | 502179-7  | 5503628-X                  |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 502128-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 501457-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-2 | 503219-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 5502667-X                  |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 502128-X                   |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 501457-X                   |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 5502667-X                  |
| Multimode -<br>Ceramic Ferrule<br>Polymer Body, Polymer Nut | 503676-4               | 3.0mm      | 501971-3     | —         | 502128-X                   |
|                                                             |                        | 3.0mm      | 501971-3     | —         | 501457-X                   |
|                                                             |                        | 3.0mm      | 501971-3     | —         | 5502667-X                  |
|                                                             |                        | 900um      | 501971-3     | 502179-7  | 5503628-X                  |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 502128-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 501457-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-2 | 503219-X                   |
|                                                             |                        | 1.6-2.0mm  | 501971-3     | 5502275-1 | 5502667-X                  |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 502128-X                   |
|                                                             |                        | 2.4mm      | 501971-3     | 5501275-1 | 501457-X                   |

\* Strain relief dash number indicates color - see chart on page 54 for details.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## ST Connectors — Epoxy Type (Continued)



Bend Limiting



Short



Right Angle



Bare Buffer

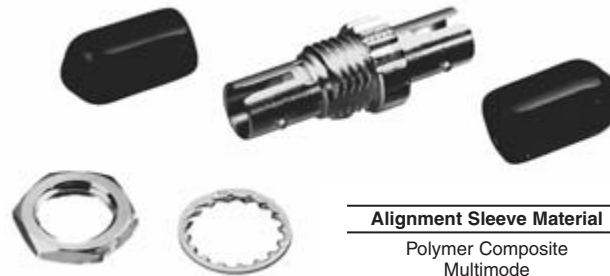
### Strain Relief Bulk packages (100 pcs./package)

| Color | Bend Limiting | Short (3.0mm) | Right Angle | Bare Buffer | Short (2.0mm) |
|-------|---------------|---------------|-------------|-------------|---------------|
| Black | 502128-1      | 501457-1      | 5502667-1   | 5503628-2   | 503219-1      |
| Red   | 502128-3      | 501457-3      | 5502667-4   | 2-5503628-4 | —             |
| Blue  | 502128-7      | 501457-5      | 5502667-2   | 5503628-9   | 503219-5      |
| Beige | 502128-4      | 502457-4      | 5502667-3   | 2-5503628-9 | 503219-4      |

### Product Facts

- Free-hanging or panel mount design

### ST Coupling Receptacles



| Alignment Sleeve Material   | Packaging   | Part Number |
|-----------------------------|-------------|-------------|
| Polymer Composite Multimode | Single      | 501381-1    |
|                             | Bulk (1000) | 501381-2    |
| Metal Multimode             | Single      | 504021-1    |
|                             | Bulk (50)   | 504021-2    |
| Zirconia Ceramic Singlemode | Single      | 502750-1    |
|                             | Bulk (50)   | 502750-2    |

### ST Polymer Duplex Receptacle



| Alignment Sleeve Material | Color      | Part Number |
|---------------------------|------------|-------------|
| Metal/MM Only             | Beige      | 504662-2    |
| Metal/MM Only             | Lt. Almond | 504662-1    |

## ST Active Device Mounts — Multimode

### Product Facts

- Designed to accept multimode TO-18, TO-46 and TO-52 active devices
- Nickel plated, die cast zinc
- Mount to PCB or through panel
- Includes positioning ring



| Description     | Packaging    | Height | Part Number |
|-----------------|--------------|--------|-------------|
| Standard height | Single       | .410   | 5501474-1   |
| Low profile     | Single       | .280   | 5502585-2   |
| Low profile     | Single (100) | .314   | 5504022-2   |
| Low profile     | Bulk (50)    | .314   | 5504022-3   |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Product Facts

- One-piece connector body:
  - Fastest assembly
- Compliant with:
  - JIS C-5970
- Pre-radiused ferrule

### Singlemode FC Connector Kits - Polymer Crimp Body

#### Performance Characteristics

**Insertion Loss** — <0.2 dB Typical

**Return Loss** — <-59 dB Typical

**Durability** — 200 Cycles

### GR-326 Style FC Connector Kits - Metal Crimp Body Singlemode

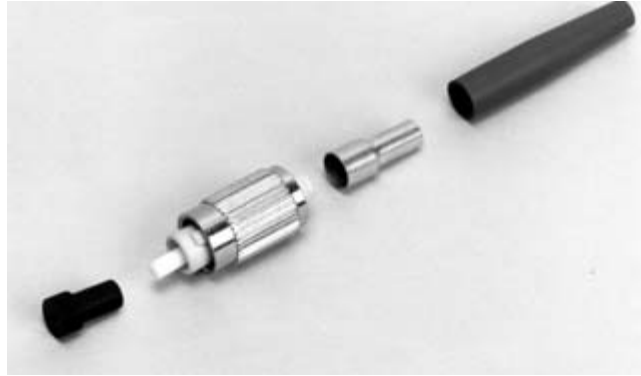
#### Performance Characteristics

**Insertion Loss** — <0.2 dB Typical

**Return Loss** — <-59 dB Typical

**Tested to GR-326**

**Tuning** — 6 position



### Singlemode FC Connector Kits - Polymer Crimp Body

| Ferrule Type | Crimp Body Material | Jacket Size | Indiv. Pack w/Strain Relief | Bulk Pack w/Strain Relief | Crimp Tool | Instruction Sheet |
|--------------|---------------------|-------------|-----------------------------|---------------------------|------------|-------------------|
| Ceramic      | Polymer             | 3.0 mm      | 5504649-1                   | 5504649-8                 | 503911-1   | 408-8674          |
| Ceramic      | Polymer             | 900µm       | 5492052-1                   | 5492052-4                 | n/a        | 408-8674          |

### GR-326 Style Singlemode FC Connector Kits - Metal Crimp Body

| Ferrule Type | Crimp Body Material | Jacket Size  | Indiv. Pack w/Strain Relief | Bulk Pack w/Strain Relief | Crimp Tool                  | Instruction Sheet |
|--------------|---------------------|--------------|-----------------------------|---------------------------|-----------------------------|-------------------|
| Ceramic      | Metal               | 3.0 mm       | 6457216-4                   | 6457216-2                 | (1) 492131-1<br>(1) 58532-1 | 408-8674          |
| Ceramic      | Metal               | 2.4 mm       | 6754264-5                   | 6754264-6                 | 1588176-1                   | 408-8674          |
| Ceramic      | Metal               | 1.6 - 2.0 mm | 6754264-4                   | 6754264-7                 | 1588176-1                   | 408-8674          |
| Ceramic      | Metal               | 900µm        | 6754264-2                   | —                         | 1588176-1                   | 408-8674          |

### FC Strain Reliefs — Jacketed Cable

| Description     | GR-326 Style | Part Number |           |             |           |           |
|-----------------|--------------|-------------|-----------|-------------|-----------|-----------|
|                 |              | Color       |           |             |           |           |
|                 |              | Black       | Yellow    | Red         | Beige     | Blue      |
| 3.0 mm          | No           | 1-5503971-0 | 5503971-7 | 1-5503971-1 | 5503971-1 | 5503971-2 |
| 2.4 mm          | No           | 1-5503971-2 | 5503971-8 | 1-5503971-3 | 5503971-3 | 5503971-4 |
| 3.0 mm          | Yes          | —           | —         | —           | 1588491-5 | 1588491-2 |
| 1.6 mm - 2.4 mm | Yes          | 1588153-3   | 1588153-4 | —           | 1588153-5 | 1588153-2 |
| 2.0 mm          | No           | 2-5503971-3 | 5503971-9 | 2-5503971-7 | 5503971-5 | 5503971-6 |

### FC Strain Reliefs — Angled

| Description |             | Part Number |           |           |           |
|-------------|-------------|-------------|-----------|-----------|-----------|
|             |             | Color       |           |           |           |
|             |             | Black       | Red       | Beige     | Blue      |
| 3.0 mm      | Simplex     | 1278705-3   | 1278705-4 | 1278705-2 | 1278705-1 |
| 2.0 mm      | Simplex     | 1374737-3   | 1374737-4 | 1374737-2 | 1374737-1 |
| 2.0 mm      | 45° Simplex | 6457543-4   | 6457543-3 | 6457543-1 | 6457543-2 |

### FC Strain Reliefs — 900 micron

| Description          |  | Part Number |           |           |           |           |
|----------------------|--|-------------|-----------|-----------|-----------|-----------|
|                      |  | Color       |           |           |           |           |
|                      |  | Black       | Yellow    | Red       | Beige     | Blue      |
| Long (33mm) 900µm    |  | 6457493-3   | 6457493-5 | 6457493-4 | 6457493-9 | 6457493-1 |
| Short (10 mm) 900 µm |  | 6278309-1   | —         | 6278309-3 | —         | 6278309-2 |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.



3.0mm - GR-326 Style



3.0mm Angled



900µm Short



900µm

## FC Connectors (Continued)

### FC Connector Component Selection Chart (bulk packaged)

| Fiber Type                    | Simplex Connector Sub-Assembly | Cable Size | Crimp Eyelet w/ Heat Shrink | Crimp Eyelet | Strain Relief Part Number*            |
|-------------------------------|--------------------------------|------------|-----------------------------|--------------|---------------------------------------|
| Singlemode - GR-326 Style     | 6754264-8                      | 1.6-2.0 mm | 6374150-1                   | —            | 1588153-X                             |
|                               |                                | 2.4 mm     | 6588189-1                   | —            | 1588153-X                             |
|                               | 6457216-5                      | 3.0 mm     | —                           | 504973-3     | 1588491-X                             |
|                               |                                | 2.4 mm     | —                           | 503970-6     | 5503971-X                             |
| Singlemode Polymer Crimp Body | 5504649-9                      | 3.0 mm     | —                           | 503970-3     | 5503971-X                             |
|                               |                                | 900 µm     | —                           | —            | 6457493-X (long)<br>6278309-X (short) |
|                               |                                | 1.6-2.0 mm | 6374150-1                   | —            | 1588153-X                             |
|                               |                                | 2.4 mm     | 6588189-1                   | —            | 1588153-X                             |
| Multimode - Ceramic Ferrule   | 6374778-2                      | 3.0 mm     | —                           | 503970-3     | 5503971-2                             |
|                               |                                | 900 µm     | —                           | —            | 6457493-9 (long)<br>6278309-1 (short) |
|                               | 5504922-3                      | 3.0 mm     | —                           | 503970-3     | 5503971-2                             |
|                               |                                | 900 µm     | —                           | —            | 6457493-9 (long)<br>6278309-1 (short) |

\* Strain relief dash number indicates color - see page 55 for details.

## FC Adapters



FC Square Flange Adapter

### FC Simplex Square Flange Adapter - Metal

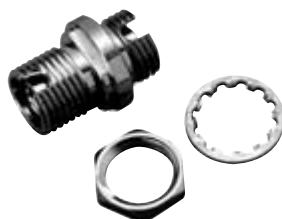
| Alignment Sleeve Material | Panel Cut-out | Keyway Slot (Nom.) | Part Numbers |
|---------------------------|---------------|--------------------|--------------|
| Metal                     | Square Flange | Std. 2.33 mm       | 5501506-2    |
| Ceramic                   | Square Flange | Std. 2.33 mm       | 5501506-1    |



FC 8mm/9mm Dia. Round

### FC Simplex 8mm/9mm Dia. Round (D-Hole) Adapter - Metal

| Alignment Sleeve Material | Panel Cut-out | Keyway Slot (Nom.) | Part Numbers |
|---------------------------|---------------|--------------------|--------------|
| Metal (Copper)            | D-Hole        | Std. 2.33 mm       | 5504407-1    |
| Ceramic                   | D-Hole        | Std. 2.33 mm       | 5504407-3    |
| Ceramic/APC               | D-Hole        | 2.05 mm Type R     | 5504407-8    |
| Ceramic/APC               | D-Hole        | Prec. 2.02 mm      | 5504407-7    |



FC 8mm Dia. Round (Double D)

### FC Simplex 8mm Dia. Round (Double D-Hole) Adapter - Metal

| Alignment Sleeve Material | Panel Cut-out | Keyway Slot (Nom.) | Part Numbers |
|---------------------------|---------------|--------------------|--------------|
| Metal                     | Double D-Hole | Std. 2.33mm        | 5504013-1    |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

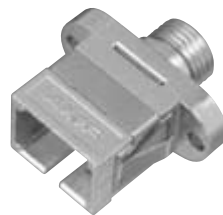
Hybrid Adapters - SC/FC/ST



FC to ST Simplex Adapter - Metal

Hybrid FC to ST Simplex Adapter - Metal

| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Metal                     | Electroless Nickel | 5503640-1    |
| Ceramic                   | Electroless Nickel | 5503640-2    |



SC to FC Simplex Adapter - Metal

SC to FC Simplex Adapter - Metal

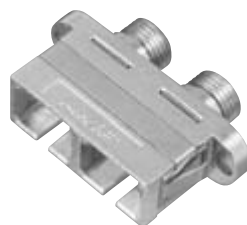
| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Metal                     | Electroless Nickel | 6278349-1    |
| Ceramic                   | Electroless Nickel | 6278349-3    |



Flangeless SC to FC Simplex Adapter - Metal

Flangeless Simplex Adapter - Metal

| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Metal                     | Electroless Nickel | 6278349-5    |
| Ceramic                   | Electroless Nickel | 6278349-7    |



SC to FC Duplex Adapter - Metal

SC to FC Duplex Adapter - Metal

| Alignment Sleeve Material | Housing Color      | Part Numbers |
|---------------------------|--------------------|--------------|
| Metal                     | Electroless Nickel | 6278050-1    |
| Ceramic                   | Electroless Nickel | 6278050-3    |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## FSD Connector Components — Multimode

### Product Facts

- Meets specifications of FDDI PMD - ANSI X3.166
- Ceramic or polymer composite ferrules
- Designed in polarization and user defined keying

### Performance Characteristics

**Insertion Loss** — 0.5dB typical

#### Durability —

Ceramic Ferrules 500 cycles

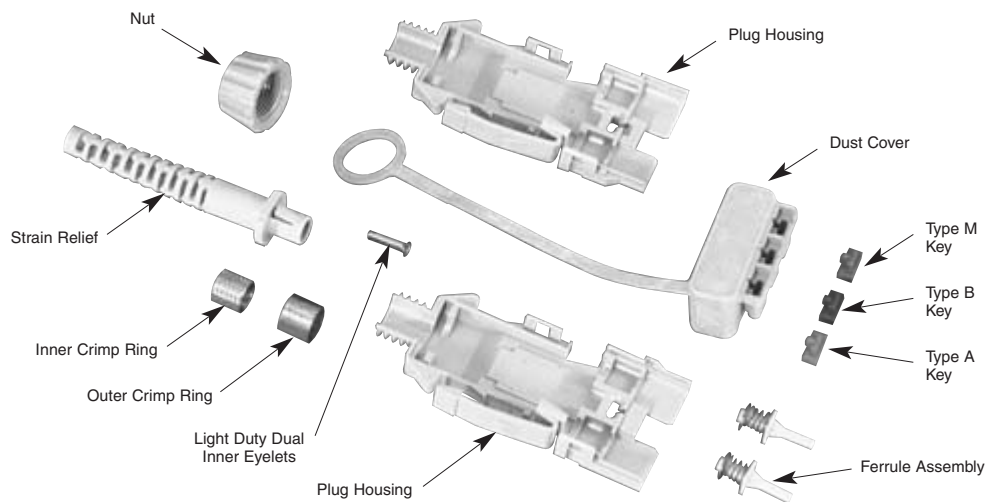
Polymer Ferrules 250 cycles

### Ceramic Instruction Sheet

408-9373

### Polymer Instruction Sheet

408-9972



### FSD

| Diameter<br>(μm) | Part Number   |             |                         |             | Replacement<br>Ferrules |
|------------------|---------------|-------------|-------------------------|-------------|-------------------------|
|                  | Cable Type    |             |                         |             |                         |
|                  | DUALAN Cable  |             | Light Duty DUALAN Cable |             |                         |
|                  | Single Packed | Bulk Packed | Single Packed           | Bulk Packed |                         |
| Ceramic Ferrules |               |             |                         |             |                         |
| 125              | 5501780-1     | 501780-3*◆  | 5502015-1               | 502015-3*◆  | 5501779-1               |
| Polymer Ferrules |               |             |                         |             |                         |
| 125              | 503347-1      | 503347-4    | 503347-5                | 503347-7    | —                       |

Termination Kit: 503746-6

\* Bulk packed, 200 per package.

Assembly Fixtures: with Polishing Tool: 501795-1; without Polishing Tool: 502023-1

### Field Keyable FSD Receptacles and Adapters



### Multimode Receptacles

| Description | Sleeve Material |          |
|-------------|-----------------|----------|
|             | Metal           | Ceramic  |
| FSD to FSD  | 502806-2        | 502806-4 |
| FSD to ST   | 502808-2        | 502808-4 |

**Note:** Part Numbers are RoHS compliant except: ◆ Indicates non-RoHS compliant.

## ESCON Connector Plug

### Product Facts

- Multimode
- IBM Approved
- Simple field assembly

### Performance Characteristics

**Assembly Loss** — 0.2 dB Typical

**Durability** — 200 cycles

### Instruction Sheet

408-9808



| Description  | Part Number |
|--------------|-------------|
| 125 μm       | Black       |
| DUALAN Cable | 5492181-1   |
| DUALAN Cable | 5492181-2*  |

\* Bulk packed, 50 per package  
Termination Kit: 503746-6.

## ESCON Receptacles

### Product Facts

- Multimode



| Description    | Part Number |
|----------------|-------------|
|                | Black       |
| ESCON to ESCON | 502825-2    |
| ESCON to ST    | 502826-2    |

## Receptacle Dust Cover



| Description            | Part Number |
|------------------------|-------------|
|                        | Black       |
| Without Mounting Strap | 503004-3    |

## ESCON Assembly Fixture Kit

Used to hold ferrules during assembly, epoxy curing, and polishing. Allows simultaneous polishing of both ferrules.



| Description               | Part Number |
|---------------------------|-------------|
|                           | Black       |
| Without Polishing Bushing | 492236-2    |
| Polishing Bushing         | 492269-1    |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Product Facts

- Industry compatible with 905 (FSMA-I) and 906 (FSMA-II) style connectors
- Terminates fiber sizes from 125 through 1000 microns in diameter
- Design parameters conform to NATO and IEC interface standards

### Performance Characteristics

Insertion Loss — 1.5 dB Typical

Temperature Range —  
-55°C to +105°C

Durability — 200 cycles

### Instruction Sheet

FSMA 905 & 906 — 408-9863

## FSMA Products — Multimode



### FSMA Connectors

| Ferrule Material | Connector Body Material | Fiber Diameter (μm) | Nominal Jacket O.D. |             |             |
|------------------|-------------------------|---------------------|---------------------|-------------|-------------|
|                  |                         |                     | 3.1mm               |             | 4.3mm       |
|                  |                         |                     | 905                 | 906         | 905         |
| Stainless Steel  | Nickel-Plated Brass     | 125                 | 5504566-1           | 5504014-1   | 5504567-1   |
|                  |                         | 140                 | 5504566-2           | 1-5504014-0 | 5504567-2   |
|                  |                         | 231                 | 5504566-7           | —           | —           |
|                  |                         | 1000                | 3-5504566-0         | —           | —           |
|                  |                         | 336                 | 1-5504566-4         | —           | —           |
|                  |                         | 720                 | —                   | —           | 3-5504566-9 |
|                  |                         | 1050                | 3-5504566-1         | —           | 2-5504566-9 |
|                  |                         | 2050                | —                   | —           | 3-5504566-3 |
|                  |                         |                     |                     |             |             |
|                  |                         |                     |                     |             |             |

### Adapter Product Facts

- Precision mating adapter for all FSMA connectors
- In-line splice or panel mount design



| Description                                      | Part Number |
|--------------------------------------------------|-------------|
| <b>FSMA Adapters</b>                             |             |
| Hex Flange, Stainless Steel                      | 501049-1    |
| Hex Flange, Stainless Steel, Counterbore, Sealed | 501050-1    |
| Fixed Flange, Nickel-Plated Brass                | 5504026-1   |
| In-Line, Stainless Steel                         | 504028-1    |
| In-Line, Nickel-Plated Brass, Counterbore        | 5504030-1   |
| In-Line, Stainless Steel, Counterbore, Short     | 504031-1    |

### Active Device Mount Product Facts

- Designed to house TO-18, TO-46, and TO-52 devices
- Constructed of nickel plated die cast zinc alloy or stainless steel
- Mounts to PC board or through panel



| Description                                  | Part Number |
|----------------------------------------------|-------------|
| <b>FSMA Active Device Mounts</b>             |             |
| PC Mount Receptacle, Die Cast                | 5502136-1   |
| PC Mount Receptacle, Die Cast, Bulk Packaged | 5502136-2   |
| PC Mount Receptacle, Stainless Steel         | 501055-1    |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## MT-RJ Plugs

### Product Facts

- Designed to meet TIA/EIA 568-B.3
- Each MT-RJ Connector houses two fibers
- Half the size of duplex SC and ST Connectors
- Options available include:
  - Multimode or singlemode
  - Mini DUALAN or Mini Zipcord cable
  - With or without guide pins

### Performance Characteristics

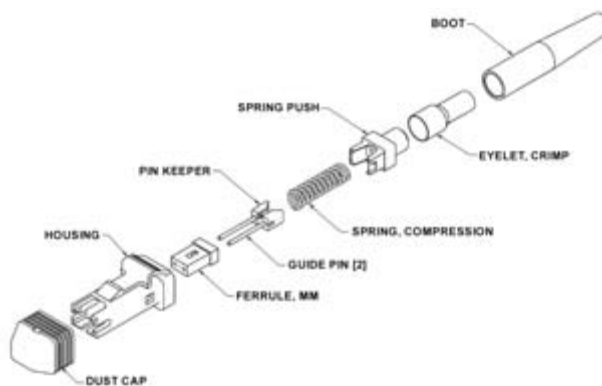
**Insertion Loss** — Typical (dB) 0.2dB

**Operating Temperature** —  
-10°C to 60°C

**Durability** — 500 Cycles

### Instruction Sheet

408-4540



| Fiber Type | Cable Type         | Pins               | Figure | Part Number |
|------------|--------------------|--------------------|--------|-------------|
| Singlemode | 3.0mm DUALAN       | Without Guide Pins | A      | 6278399-1   |
|            | 3.0mm DUALAN       | With Guide Pins    | B      | 6278399-2   |
|            | 1.8mm Mini Zipcord | Without Guide Pins | A      | 6278751-1   |
|            | 1.8mm Mini Zipcord | With Guide Pins    | B      | 6278751-2   |
| Multimode  | 3.0mm DUALAN       | Without Guide Pins | A      | 6278398-1   |
|            | 3.0mm DUALAN       | With Guide Pins    | B      | 6278398-2   |
|            | 1.8mm Mini Zipcord | Without Guide Pins | A      | 6278750-1   |
|            | 1.8mm Mini Zipcord | With Guide Pins    | B      | 6278750-2   |

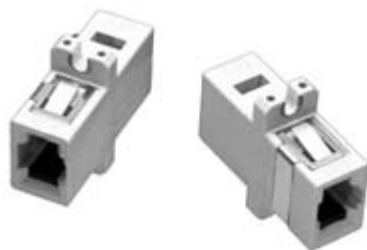
## MT-RJ to MT-RJ Adapter

**Simplex Part Number:**  
1278017-1 (light almond)

**Duplex Part Number:**  
6374906-X

6374906-1 (Almond)  
6374906-3 (Black)  
6374906-5 (Blue)

## MT-RJ to MT-RJ Simplex Adapter



## MT-RJ to MT-RJ Duplex Adapter



**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## SL Series Outlets

### Product Facts

- Front-loading modules snap in and out for easy access
- Modular approach for flexibility
- “Invisible” icon holes stay hidden until used
- Individual jacks and inserts increase configuration and color-coding options
- MT-RJ SL Series housing accepts one MT-RJ Jack sold separately (See pages 99-103)

## MT-RJ SL Series Housing

| Color            | Part Number |
|------------------|-------------|
| Almond           | 1374416-1   |
| Black            | 1374416-2   |
| White            | 1374416-3   |
| Gray             | 1374416-4   |
| Orange           | 1374416-5   |
| Blue             | 1374416-6   |
| Red              | 1374416-7   |
| Yellow           | 1374416-8   |
| Green            | 1374416-9   |
| Violet           | 1-1374416-0 |
| Electrical Ivory | 1-1374416-1 |
| Rose             | 2-1374416-3 |
| Aqua             | 2-1374416-4 |
| Brown            | 2-1374416-5 |
| Slate            | 2-1374416-6 |



## MT-RJ Optical Patch Panel

Tyco Electronics' MT-RJ optical patch panels feature 24-port (48 fiber) capacity in a 1U high rack mounted enclosure and offer twice the fiber density of conventional patch panels. Features include pre-installed cable management, rugged cable entry

strain relief, and a sliding, tilt-out drawer for easy termination of tight buffer or loose tube cable. Adjustable mounting brackets allow the user to mount the enclosure in forward, flush or recessed positions. The patch panel is supplied ready for MT-RJ jack installation.

| Description                                                                                                                                                                     | Part Number |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 1U Patch Panel with four, six-position MT-RJ interface housing Cable Management Rings (2 pieces), Cable Glands PG16, PG13.5, Dust Caps (24 pieces). (Jack modules not included) | 1206704-4   |



## MT-RJ Snap-In Adapter Plate

The MT-RJ snap-in adapter plate manages six MT-RJ Patch panel jacks (ordered separately, see page 64). The adapter plate is designed to fit into existing rack and wall mount enclosures with the benefit of industry standard labels and icons for port identification.



| Description                                              | Part Number |
|----------------------------------------------------------|-------------|
| MT-RJ Snap-In Adapter Plates (Jack modules not included) | 1278328-3   |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## MT-RJ Loopbacks



| Description                             | Part Number |
|-----------------------------------------|-------------|
| MT-RJ to Singlemode Loopback            | 6278358-1   |
| MT-RJ to Multimode Loopback, 50/125μm   | 6278357-1   |
| MT-RJ to Multimode Loopback, 62.5/125μm | 6278153-1   |

## MT-RJ Cable Assemblies

See Cable Assemblies & Backplane Interconnects Section.

## MT-RJ Bend Limiting Boots Part Number 1374208-X



### Product Facts

- Compatible with all MT-RJ Jacks (see pages 99-103)

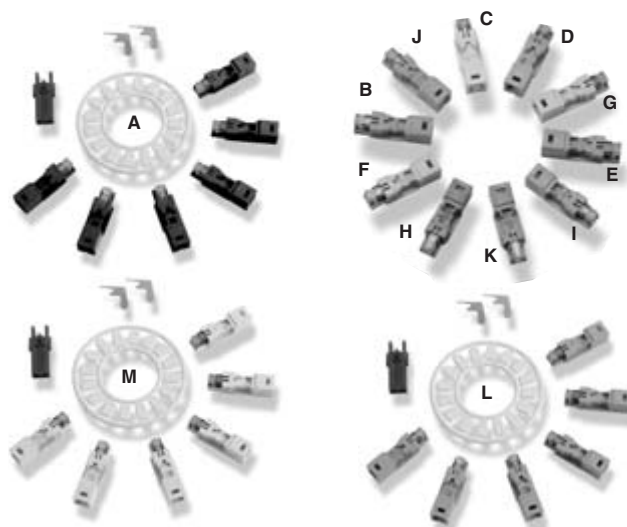
| Color | Part Number |
|-------|-------------|
| Black | 6374208-4   |
| Beige | 6374208-5   |
| Blue  | 6374208-6   |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## MT-RJ Patch Panel Jacks, No Epoxy, No Polish

### Product Facts

- Patch panel jacks terminate either two 900  $\mu$ m tight-buffered fibers or two 250  $\mu$ m coated fibers (select appropriate part number):
  - No epoxy, no polishing, no crimping
  - Two (2) fibers in one ferrule
  - Re-terminatable – improves yield
  - Tunable
  - No bench tool required
- Each part number includes:
  - Six (6) patch panel jacks
  - Two (2) actuation tools
  - Fiber guide
  - Icon wheel
- Jack design eliminates need for MT-RJ Coupler
- Match fiber type of cable to fiber type of MT-RJ Jack
- Small form factor design is half the size of SC duplex
- Six (6) patch panel jacks fit in the MT-RJ Snap-in Adapter Plate (see page 63)
- SL Series Housings and bend-limiting boots sold separately (see pages 61, 63 and 68)
- MT-RJ Cable Assemblies on pages 101-103
- MT-RJ SECURE Jacks feature color-coded, keyed designs to limit improper connections in segregated or SECURE networks
- MT-RJ SECURE Plug only mates with same color MT-RJ SECURE Jack
- MT-RJ SECURE Cable Assemblies on pages 101 and 102
- Singlemode MT-RJ pigtail jacks on page 104



Easy 3-Step Termination



| Fiber Type                                    | Jack Color | Figure | Part Number              |                                  |
|-----------------------------------------------|------------|--------|--------------------------|----------------------------------|
|                                               |            |        | 250 $\mu$ m Coated Fiber | 900 $\mu$ m Tight-buffered Fiber |
| 50/125 $\mu$ m Multimode                      | Standard   | Black  | A                        | 6278303-1                        |
|                                               |            | RED    | B                        | 6278807-1                        |
|                                               |            | YELLOW | C                        | 6278807-2                        |
|                                               | SECURE     | GREEN  | D                        | 6278807-3                        |
|                                               |            | BLUE   | E                        | 6278807-4                        |
|                                               |            | ROSE   | F                        | 6278807-5                        |
|                                               |            | AQUA   | G                        | 6278807-6                        |
|                                               |            | BROWN  | H                        | 6278807-7                        |
|                                               |            | VIOLET | I                        | 6278807-8                        |
|                                               |            | ORANGE | J                        | 6278807-9                        |
|                                               |            | SLATE  | K                        | 1-6278807-0                      |
|                                               |            |        |                          | 1-6588879-0                      |
|                                               |            |        |                          | 6588880-3                        |
|                                               |            |        |                          | 6588879-1                        |
| XG<br>(850 nm LO 50/125 $\mu$ m)<br>Multimode | Standard   | Gray   | L                        | 6278303-4                        |
|                                               |            | RED    | B                        | 6693951-1                        |
|                                               |            | YELLOW | C                        | 6693951-2                        |
|                                               | SECURE     | GREEN  | D                        | 6693951-3                        |
|                                               |            | BLUE   | E                        | 6693951-4                        |
|                                               |            | ROSE   | F                        | 6693951-5                        |
|                                               |            | AQUA   | G                        | 6693951-6                        |
|                                               |            | BROWN  | H                        | 6693951-7                        |
|                                               |            | VIOLET | I                        | 6693951-8                        |
|                                               |            | ORANGE | J                        | 6693951-9                        |
|                                               |            | SLATE  | K                        | 1-6693951-0                      |
|                                               |            |        |                          | 1-6693949-0                      |
|                                               |            |        |                          | 6693949-1                        |
|                                               |            |        |                          | 6693949-2                        |
| 62.5/125 $\mu$ m Multimode                    | Standard   | Beige  | M                        | 6278303-2                        |
|                                               |            | RED    | B                        | 6278808-1                        |
|                                               |            | YELLOW | C                        | 6278808-2                        |
|                                               | SECURE     | GREEN  | D                        | 6278808-3                        |
|                                               |            | BLUE   | E                        | 6278808-4                        |
|                                               |            | ROSE   | F                        | 6278808-5                        |
|                                               |            | AQUA   | G                        | 6278808-6                        |
|                                               |            | BROWN  | H                        | 6278808-7                        |
|                                               |            | VIOLET | I                        | 6278808-8                        |
|                                               |            | ORANGE | J                        | 6278808-9                        |
|                                               |            | SLATE  | K                        | 1-6278808-0                      |
|                                               |            |        |                          | 1-6588878-0                      |
|                                               |            |        |                          | 6588880-2                        |
|                                               |            |        |                          | 6588878-1                        |
|                                               |            |        |                          | 6588878-2                        |

**Note:** Highlighted part numbers are routinely stocked for shortest lead times.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Product Facts

- Outlet jacks terminate two 900  $\mu$ m tight-buffered fibers
  - No epoxy, no polishing, no crimping
  - Two fibers in one ferrule
  - Re-terminatable - improves yield
  - Tunable
  - No bench tool required
- Each part number includes:
  - One (1) outlet jack
  - Actuation tool
  - Bend-limiting boot
  - SL Series Housing
- Match fiber type of cable to fiber type of MT-RJ Jack
- Jack design eliminates need for MT-RJ Coupler
- Small form factor design is half the size of SC duplex
- SL Series Housing allows use in any faceplate or outlet that accepts SL Series Jacks
- MT-RJ Cable Assemblies on pages 101-103
- MT-RJ SECURE Jacks feature ten color-coded, keyed designs to limit improper connections in segregated or SECURE networks
  - MT-RJ SECURE plug only mates with same color MT-RJ SECURE Jack
- MT-RJ SECURE Cable Assemblies on pages 101 and 102

### Easy 3-Step Termination



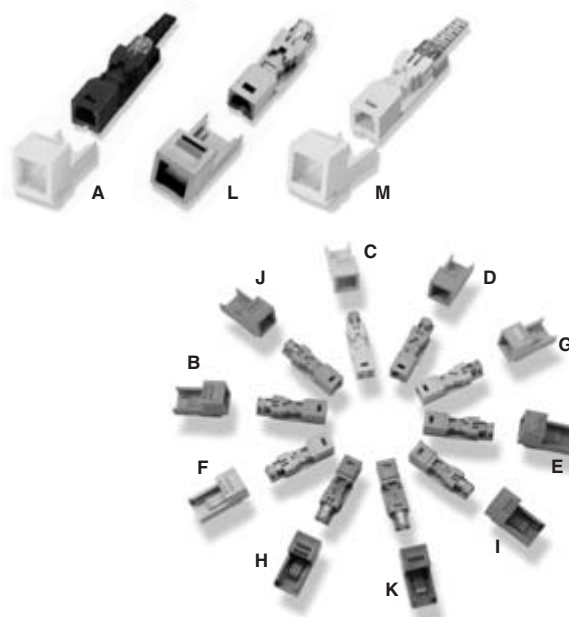
Strip



Cleave



Lock



| Fiber Type                 | Jack Color | Housing Color | Figure | Part Number |
|----------------------------|------------|---------------|--------|-------------|
| 50/125 $\mu$ m Multimode   | Standard   | Black         | A      | 6278414-X   |
|                            | SECURE     | RED           | B      | 6278811-1   |
|                            |            | YELLOW        | C      | 6278811-2   |
|                            |            | GREEN         | D      | 6278811-3   |
|                            |            | BLUE          | E      | 6278811-4   |
|                            |            | ROSE          | F      | 6278811-5   |
|                            |            | AQUA          | G      | 6278811-6   |
|                            |            | BROWN         | H      | 6278811-7   |
|                            |            | VIOLET        | I      | 6278811-8   |
|                            |            | ORANGE        | J      | 6278811-9   |
|                            |            | SLATE         | K      | 1-6278811-0 |
|                            | Standard   | Gray          | L      | 1-6278414-2 |
|                            | SECURE     | RED           | B      | 6754252-1   |
|                            |            | YELLOW        | C      | 6754252-2   |
|                            |            | GREEN         | D      | 6754252-3   |
|                            |            | BLUE          | E      | 6754252-4   |
|                            |            | ROSE          | F      | 6754252-5   |
|                            |            | AQUA          | G      | 6754252-6   |
|                            |            | BROWN         | H      | 6754252-7   |
|                            |            | VIOLET        | I      | 6754252-8   |
|                            |            | ORANGE        | J      | 6754252-9   |
|                            |            | SLATE         | K      | 1-6754252-0 |
| 62.5/125 $\mu$ m Multimode | Standard   | Beige         | M      | 6278415-X   |
|                            | SECURE     | RED           | B      | 6278810-1   |
|                            |            | YELLOW        | C      | 6278810-2   |
|                            |            | GREEN         | D      | 6278810-3   |
|                            |            | BLUE          | E      | 6278810-4   |
|                            |            | ROSE          | F      | 6278810-5   |
|                            |            | AQUA          | G      | 6278810-6   |
|                            |            | BROWN         | H      | 6278810-7   |
|                            |            | VIOLET        | I      | 6278810-8   |
|                            |            | ORANGE        | J      | 6278810-9   |
|                            |            | SLATE         | K      | 1-6278810-0 |
|                            | SECURE     | RED           | B      | 6278810-1   |
|                            |            | YELLOW        | C      | 6278810-2   |
|                            |            | GREEN         | D      | 6278810-3   |
|                            |            | BLUE          | E      | 6278810-4   |

X denotes housing color: -1 = Almond, -2 = Black, -3 = White, -4 = Gray, -5 = Orange, -6 = Blue, -7 = Red, -8 = Yellow, -9 = Green, 1- - 0 = Violet, 1- -1 = Electrical Ivory

**Note:** Highlighted part numbers are routinely stocked for shortest lead times.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

# **LIGHTCRIMP PLUS No Epoxy, No Polish LC, SC and ST Connectors**

## **Product Facts**

- Multimode connector kits come with accessories needed to terminate to 250  $\mu$ m fiber, 900  $\mu$ m tight-buffered fiber, 900  $\mu$ m easy-strip, and buffer tube splitter kits
- SC and ST multimode kits also terminate 3 mm cables
- Singlemode connector kits terminate to 250  $\mu$ m fiber, 900  $\mu$ m tight-buffered fiber, 900  $\mu$ m easy-strip and buffer tube splitter kits
- Easy installation:
  - No epoxy, no polishing
  - No bench tool required
  - Strip, cleave and crimp
- Easy identification:
  - Singlemode is blue
  - XG is gray — 10 Gb/s applications
  - 50/125  $\mu$ m and 62.5/125  $\mu$ m are beige
- Match fiber type of cable to fiber type of LIGHTCRIMP PLUS
- Mates with standard couplers, adapters and adapter plates
- LC small form factor design is half the size of SC
- Meets TIA/EIA 568-B.3
- Termination tool kits on page 70

## **Performance Characteristics**

**Insertion Loss** — Typical (dB)

0.2 dB SM; 0.3 dB MM

**Temperature Range** —

-10°C to 60°C

**Durability** — 500 cycles



| Connector Type | Fiber Type                              | Housing Color | Used With                                    | Figure | Part Number | IS Sheet |
|----------------|-----------------------------------------|---------------|----------------------------------------------|--------|-------------|----------|
| Simplex LC     | Singlemode                              | Blue          | 900 $\mu$ m & 250 $\mu$ m Fibers             | A      | 6754482-1   | 408-8925 |
|                | 50/125 $\mu$ m Multimode                | Beige         | 900 $\mu$ m & 250 $\mu$ m Fibers             | B      | 6754483-2   | 408-8925 |
|                | XG (850 nm LO 50/125 $\mu$ m) Multimode | Gray          | 900 $\mu$ m & 250 $\mu$ m Fibers             | —      | 6754483-3   | 408-8925 |
|                | 62.5/125 $\mu$ m Multimode              | Beige         | 900 $\mu$ m & 250 $\mu$ m Fibers             | B      | 6754483-1   | 408-8925 |
| Duplex LC      | Singlemode                              | Blue          | 900 $\mu$ m & 250 $\mu$ m Fibers             | —      | 6754484-1   | 408-8725 |
|                | 50/125 $\mu$ m Multimode                | Beige         | 900 $\mu$ m & 250 $\mu$ m Fibers             | —      | 6754485-2   | 408-8725 |
|                | XG (850 nm LO 50/125 $\mu$ m) Multimode | Gray          | 900 $\mu$ m & 250 $\mu$ m Fibers             | —      | 6754485-3   | 408-8725 |
|                | 62.5/125 $\mu$ m Multimode              | Beige         | 900 $\mu$ m & 250 $\mu$ m Fibers             | —      | 6754485-1   | 408-8725 |
| Simplex SC     | Singlemode                              | Blue          | 900 $\mu$ m & 250 $\mu$ m Fibers             | C      | 6693276-1   | 408-4471 |
|                | 50/125 $\mu$ m Multimode                | Beige         | 900 $\mu$ m & 250 $\mu$ m Fibers, 3 mm Cable | D      | 6278079-1   | 408-4471 |
|                | XG (850 nm LO 50/125 $\mu$ m) Multimode | Gray          | 900 $\mu$ m & 250 $\mu$ m Fibers, 3 mm Cable | —      | 6588291-1   | 408-4471 |
|                | 62.5/125 $\mu$ m Multimode              | Beige         | 900 $\mu$ m & 250 $\mu$ m Fibers, 3 mm Cable | D      | 5492643-1   | 408-4471 |
| Duplex SC      | Singlemode                              | Blue          | 900 $\mu$ m & 250 $\mu$ m Fibers             | —      | 6693278-1   | 408-8603 |
|                | 50/125 $\mu$ m Multimode                | Beige         | 900 $\mu$ m & 250 $\mu$ m Fibers, 3 mm Cable | —      | 6278080-1   | 408-8603 |
|                | XG (850 nm LO 50/125 $\mu$ m) Multimode | Gray          | 900 $\mu$ m & 250 $\mu$ m Fibers, 3 mm Cable | —      | 6588292-1   | 408-8603 |
|                | 62.5/125 $\mu$ m Multimode              | Beige         | 900 $\mu$ m & 250 $\mu$ m Fibers, 3 mm Cable | —      | 6278009-1   | 408-8603 |
| ST             | 50/125 $\mu$ m Multimode                | Metallic      | 900 $\mu$ m & 250 $\mu$ m Fibers, 3 mm Cable | E      | 6278082-1   | 408-4457 |
|                | 62.5/125 $\mu$ m Multimode              | Metallic      | 900 $\mu$ m & 250 $\mu$ m Fibers, 3 mm Cable | E      | 5492642-1   | 408-4457 |

**Note:** Highlighted part numbers are routinely stocked for shortest lead times.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Product Facts

- No epoxy needed
- Easy installation: strip, cleave, crimp and polish
- Each connector kit comes with accessories needed to terminate to 250  $\mu$ m fiber, 900  $\mu$ m tight-buffered fiber, and 3 mm cables
  - Duplex part numbers contain two connectors
- Multimode connectors are suitable for use with 50/125  $\mu$ m, XG (850 nm LO 50/125  $\mu$ m) and 62.5/125  $\mu$ m fibers
- Mates with standard couplers, adapters and adapter plates
- Meets TIA/EIA 568-B.3

### Performance Characteristics

**Insertion Loss** — 0.4 dB typical

**Temperature Range** —  
-40°C to 65°C

**Durability** — 500 cycles



| Description |            |                         | Figure | Part Number | IS Sheet |
|-------------|------------|-------------------------|--------|-------------|----------|
| Simplex SC  | Multimode  | Ceramic Ferrule         | A      | 5503692-1   | 408-4066 |
| Duplex SC   | Multimode  | Ceramic Ferrule         | —      | 5503693-1   | 408-4066 |
|             | Singlemode | Ceramic Ferrule         | B      | 5504000-1   | 408-9860 |
| ST          | Multimode  | Stainless Steel Ferrule | C      | 5504034-1   | 408-9860 |
|             |            | Ceramic Ferrule         | B      | 5504001-1   | 408-9860 |
|             |            | Polymer                 | —      | 5492168-1   | 408-9860 |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## CORELINK Optical Fiber Splices

### Product Facts

- Each CORELINK splice mates two 900 µm tight-buffered fibers or two 250 µm coated fibers
- Easy to install
- Reusable
- No bench tool required
- Splices sold in packs of 12
  - Includes 2 actuator keys
- Optional CORELINK installation tool shown below
- Designed to TIA/EIA 568-B.3



### Performance Characteristics

Mean Splice Loss — < 0.3dB

Mean Return Loss — -26dB

Temperature Range —  
-0°C to 60°C

| Description                      |            |       | Part Number |
|----------------------------------|------------|-------|-------------|
| CORELINK Splice                  | Singlemode | Clear | 503577-1    |
|                                  | Multimode  | Blue  | 503901-1    |
| 2 Replacement keys in key holder |            |       | 503681-1    |

**Note:** Highlighted part numbers are routinely stocked for shortest lead times.

### Instruction Sheet

408-4019

### Corelink Splice Workstation

Part Number 503605-1

### Product Facts

- Optional tool for installing CORELINK mechanical splices
- Convenient fiber and splice holder for easy installation
- Works with singlemode and multimode CORELINK mechanical splices



### Instruction Sheet

408-4131

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**Tooling**

**Tool Kit Compatibility Chart**

|                                                                | Part Number | MT-RJ<br>Jacks | MT-RJ SECURE<br>Jacks | MT-RJ<br>Plugs | LIGHTCRIMP PLUS |    |    | LIGHTCRIMP |    | Epoxy/Polish   |    |    |    |     |      |
|----------------------------------------------------------------|-------------|----------------|-----------------------|----------------|-----------------|----|----|------------|----|----------------|----|----|----|-----|------|
|                                                                |             |                |                       |                | LC              | SC | ST | SC         | ST | LC             | SC | ST | FC | FSD | FSMA |
| Deluxe Premises Termination Tool Kit                           | 1278949-2   | X              | X                     |                | X               | X  | X  | X          | X  |                |    |    |    |     |      |
| MT-RJ Jack Tool Kit                                            | 1278346-1   | X              | X                     |                |                 |    |    |            |    |                |    |    |    |     |      |
| LIGHTCRIMP PLUS No Epoxy/<br>No Polish Universal Tool Kit      | 1278118-4   | X              | X                     |                | X               | X  | X  |            |    |                |    |    |    |     |      |
| MT-RJ Plug Termination Kit                                     | 1278745-1   |                |                       | X              |                 |    |    |            |    |                |    |    |    |     |      |
| LIGHTCRIMP PLUS No Epoxy/<br>No Polish LC Tool Kit             | 1754845-1   |                |                       |                | X               |    |    |            |    |                |    |    |    |     |      |
| LIGHTCRIMP PLUS No Epoxy/<br>No Polish SC Tool Kit             | 1278022-1   |                |                       |                |                 | X  |    |            |    |                |    |    |    |     |      |
| LIGHTCRIMP PLUS No Epoxy/<br>No Polish ST Tool Kit             | 492697-1    |                |                       |                |                 |    | X  |            |    |                |    |    |    |     |      |
| LIGHTCRIMP SC/ST<br>No Epoxy/Polish Tool Kits                  | 503957-1    |                |                       |                |                 |    |    | X          | X  |                |    |    |    |     |      |
|                                                                | 503957-3    |                |                       |                |                 |    |    | X          | X  |                |    |    |    |     |      |
|                                                                | 492543-1    |                |                       |                |                 |    |    | X          | X  |                |    |    |    |     |      |
| LIGHTCRIMP SC No Epoxy/<br>Polish Tool Kits                    | 503706-1    |                |                       |                |                 |    |    | X          |    |                |    |    |    |     |      |
|                                                                | 503706-2    |                |                       |                |                 |    |    | X          |    |                |    |    |    |     |      |
| LIGHTCRIMP ST No Epoxy/<br>Polish Tool Kits                    | 503330-1    |                |                       |                |                 |    |    |            | X  |                |    |    |    |     |      |
|                                                                | 503330-3    |                |                       |                |                 |    |    |            | X  |                |    |    |    |     |      |
|                                                                | 492322-1    |                |                       |                |                 |    |    |            | X  |                |    |    |    |     |      |
| Pro-installer Epoxy/<br>Polish Tool Kits                       | 501258-7    |                |                       |                |                 |    |    |            |    | X <sup>1</sup> | X  | X  | X  | X   | X    |
|                                                                | 501258-8    |                |                       |                |                 |    |    |            |    | X <sup>1</sup> | X  | X  | X  | X   | X    |
|                                                                | 501258-9    |                |                       |                |                 |    |    |            |    | X <sup>1</sup> | X  | X  | X  | X   | X    |
| Epoxy/Polish SC/FC Tool Kit<br>(no microscope, no curing oven) | 503746-7    |                |                       |                |                 |    |    |            |    | X <sup>2</sup> | X  |    | X  |     |      |
| Epoxy/Polish ST Tool Kit<br>(no microscope, no curing oven)    | 503746-1    |                |                       |                |                 |    |    |            |    | X <sup>2</sup> |    | X  |    |     |      |
| Epoxy/Polish FSMA Tool Kit<br>(no microscope, no curing oven)  | 503746-2    |                |                       |                |                 |    |    |            |    | X <sup>2</sup> |    |    |    |     | X    |
| Epoxy/Polish FSD Tool Kit<br>(no microscope, no curing oven)   | 503746-6    |                |                       |                |                 |    |    |            |    | X <sup>2</sup> |    |    |    | X   |      |

<sup>1</sup> For LC terminations, also order Part Number 1754462-1.

<sup>2</sup> For LC terminations, also order Part Number 1754603-1.

**Epoxy/Polish Connector Consumables/Compatibility Chart**

|               | Epoxies             |                     |                   | Polishing Films   |                  |                          |                    | Final Polishing Film<br>502748-2 | Consumable<br>Package* |
|---------------|---------------------|---------------------|-------------------|-------------------|------------------|--------------------------|--------------------|----------------------------------|------------------------|
|               | EPO-TEK<br>504035-1 | TRA-CON<br>501195-4 | HYSOL<br>502418-1 | 9 µm<br>1374484-1 | 5 µm<br>228433-8 | Diamond Film<br>503887-1 | 0.3 µm<br>228433-5 |                                  |                        |
| LC Singlemode | X                   | X                   | X                 | X                 | X                | X                        | X                  | —                                | 502306-4               |
| LC Multimode  | X                   | X                   | X                 | X                 | X                | X                        | X                  | —                                | 502306-4               |
| SC Singlemode | X                   | X                   | X                 | —                 | X                | —                        | X                  | X                                | 502306-2               |
| SC Multimode  | X                   | X                   | X                 | —                 | X                | —                        | X                  | X                                | 502306-2               |
| ST Singlemode | —                   | X                   | X                 | —                 | X                | —                        | X                  | X                                | 502306-2               |
| ST Multimode  | —                   | X                   | X                 | —                 | X                | —                        | X                  | —                                | 502306-1               |

\*Epoxy & film for » 100 connectors.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**Deluxe Premises Termination Tool Kit**  
Part Number 1278949-2

**Product Facts**

- Includes all tools need for installing popular field-installable connectors
  - MT-RJ and MT-RJ SECURE Jacks
  - LIGHTCRIMP PLUS SC, LC and ST connectors
  - LIGHTCRIMP SC and ST connectors
- Convenient carrying case
- Includes consumables for LIGHTCRIMP connector terminations
  - For additional LIGHTCRIMP connector terminations, order additional polishing films 228433-9, 228433-8, 228433-7 and 228433-5 (page 76)
- Includes instructional CD-ROM video



**MT-RJ Jack Termination Tool Kit**  
Part Number 1278346-1

**Product Facts**

- Includes all tools needed for installing MT-RJ and MT-RJ SECURE Jacks



**MT-RJ Plug Termination Tool Kit**  
Part Number 1278745-1

**Product Facts**

- Includes all tools needed to terminate MT-RJ Plug in handy plastic case
- Contents: Cleave pen, Jacket/Buffer/Coating Stripper, KEVLAR Shears, Strip Template, Cable Clamps, Cure Fixtures, Crimp Tool, Die Sets, Epoxy Dispensers

**LIGHTCRIMP PLUS Termination Tool Kits**



**Product Facts**

- Includes all tools needed for installing the listed type LIGHTCRIMP PLUS no epoxy/no polish connectors, MT-RJ and MT-RJ SECURE Jacks
- LIGHTCRIMP PLUS Connector Termination Video CD-Rom also available separately, Part Number 1374503-1
- Convenient carrying case

| Description                                                           | Part Number |
|-----------------------------------------------------------------------|-------------|
| Universal LIGHTCRIMP PLUS No epoxy/No polish Tool Kit (SC, LC and ST) | 1278118-4   |
| LIGHTCRIMP PLUS LC Connector Termination Tool Kit                     | 1754845-1   |
| LIGHTCRIMP PLUS SC Connector Termination Tool Kit                     | 1278022-1   |
| LIGHTCRIMP PLUS ST Connector Termination Tool Kit                     | 492697-1    |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**No Epoxy/No Polish  
Upgrade and Adaptive  
Termination Tool Kits**

**Tooling** (Continued)

**Product Facts**

- Upgrade Tool Kit supplements existing LIGHTCRIMP PLUS Tool Kits with tools needed to install LC connectors

- Adaptive Tool Kits supplements existing fiber optic tool kits with the tools needed to terminate

**LIGHTCRIMP PLUS connectors**

- Saves money on full tool kit by reusing tools from currently owned tool kits

| Description                              | Terminates                | Includes                                                                                    | Cost Savings                                  | Part Number |
|------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------|-------------|
| LC LIGHTCRIMP PLUS Upgrade Kit           | LIGHTCRIMP PLUS LC        | LC Die Set and Cable Holder                                                                 | Low Cost Upgrade for Current Tool Kit         | 1754847-1   |
| LC LIGHTCRIMP PLUS Adaptive Kit          | LIGHTCRIMP PLUS LC        | Crimp Tool, LC Die Set, LC Cable Holder, Cleave Tool and Instruction Sheet                  | Fiber and Cable Strippers in Current Tool Kit | 1754846-1   |
| SC LIGHTCRIMP PLUS Adaptive Kit          | LIGHTCRIMP PLUS SC        | Crimp Tool, SC Die Set, SC Cable Holder, Cleave Tool and Instruction Sheet                  | Fiber and Cable Strippers in Current Tool Kit | 1754737-1   |
| Combination LIGHTCRIMP PLUS Adaptive Kit | LIGHTCRIMP PLUS SC and ST | Crimp Tool, SC and ST Die Sets, SC and ST Cable Holders, Cleave Tool and Instruction Sheets | Fiber and Cable Strippers in Current Tool Kit | 1754739-1   |
| ST LIGHTCRIMP PLUS Adaptive Kit          | LIGHTCRIMP PLUS ST        | Crimp Tool, ST Die Set, ST Cable Holder, Cleave Tool and Instruction Sheet                  | Fiber and Cable Strippers in Current Tool Kit | 1754738-1   |

**LIGHTCRIMP PLUS  
Cable Holders**

**Product Facts**

- Used in LIGHTCRIMP PLUS connector terminations (included in LIGHTCRIMP PLUS Tool Kits)



| Description | Figure | Part Number |
|-------------|--------|-------------|
| LC          | —      | 1754138-1   |
| SC          | B      | 1278023-1   |
| ST          | A      | 492703-1    |

**Fiber Optic Cleave Tool  
Part Number 492674-1**



**Product Facts**

- Cleave fibers for LIGHTCRIMP PLUS connectors, MT-RJ and MT-RJ SECURE Jacks
- One is included in most tool kits for MT-RJ Jacks and LIGHTCRIMP PLUS connectors (not the LC Upgrade Kit)
- Easy to use: clamp, score and bend
- Blade life-span is » 1000 cleaves

**“New” Fiber Optic  
Cleave Tool  
Part Number 1871696-1**



**Product Facts**

- Operator independent
- Cleaving length 4mm, 6mm and 8mm
- More than 10k cleaves
- Cleaved surface angle < 1.5 degree
- No fracture
- No roll off
- No lip



**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**Tooling** (Continued)

**LIGHTCRIMP Termination Tool Kits**

**Product Facts**

- Includes all tools needed for installing the listed type LIGHTCRIMP no epoxy/polish connectors
- Convenient carrying case
- Includes consumables for installing 60 LIGHTCRIMP connectors
  - For additional LIGHTCRIMP terminations, order additional polishing films 228433-9, 228433-8, 228433-7 and 238433-5 (page 76)
- Note: photo is representative of kits — contents may vary by Part Number



| Description          |                 | Microscope (if listed) | Part Number |
|----------------------|-----------------|------------------------|-------------|
| LIGHTCRIMP SC        | Termination Kit | —                      | 503706-1    |
|                      |                 | Premium Microscope     | 503706-2    |
| LIGHTCRIMP ST        | Termination Kit | —                      | 503330-1    |
|                      |                 | Premium Microscope     | 503330-2    |
|                      | Mini Tool Kit   | —                      | 492322-1    |
|                      |                 | —                      | 503957-1    |
| LIGHTCRIMP SC and ST | Termination Kit | Premium Microscope     | 503957-2    |
|                      | Mini Tool Kit   | —                      | 492543-1    |

**LIGHTCRIMP Cleave Tool**  
Part Number 503705-1

**Product Facts**

- Used in both SC and ST LIGHTCRIMP Connector terminations
- Included in the Deluxe and LIGHTCRIMP Tool Kits



**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

## Pro-Installer Epoxy/Polish Connector Termination Tool Kits

### Product Facts

- Includes all tools necessary to install SC, ST, and FC Connectors
  - For LC terminations, also order Part Number 1754462-1
- Tool kits include:
  - Pro-Crimper II Hand Tool and crimping dies
  - Polishing bushings
  - Polishing film (also sold separately, page 76)
  - Cable and fiber strippers
  - Scissors
  - Scribe tool
- Includes polishing films to install 60 epoxy/polish connectors
  - Epoxy is sold separately (see page 75)
- Kits available with curing oven and microscope or without
- Convenient carrying case
- Photo is representative of kits — contents vary by Part Number



### Professional Installer Kit

| Description                           | Part Number |
|---------------------------------------|-------------|
| With 110 V Curing Oven and Microscope | 501258-7    |
| With 220 V Curing Oven and Microscope | 501258-8    |
| Without Curing Oven or Microscope     | 501258-9    |

## Epoxy/Polish Connector Termination Tool Kits

### Product Facts

- Includes all tools necessary to install the listed epoxy/polish connectors
  - For LC terminations, also order Part Number 1754603-1
- Tool kits include:
  - Pro-Crimper II Hand Tool and crimping dies
  - Polishing bushings
  - Polishing film (also sold separately, page 76)
  - Cable and fiber strippers
  - Scissors
  - Scribe tool
- Includes polishing films to install » 60 epoxy/polish connectors
  - Epoxy is sold separately (see page 75)
- Does not include curing oven or microscope
- Convenient carrying case



| Description | Part Number |
|-------------|-------------|
| SC and FC   | 503746-7    |
| ST          | 503746-1    |
| FSMA        | 503746-2    |
| FSD         | 503746-6    |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**Cable Stripper**

Part Number 1375317-1

**Tooling** (Continued)

**Product Facts**

- Cyclops Stripper ideal for stripping twisted pair (UTP and STP) and fiber optic cables up to 10.92 [0.43] diameter



**Sapphire-Tipped Scribe Tool and Accessories**

**Product Facts**

- Long-lasting sapphire blade
- Pen-type casing
- Used to install all Epoxy/Polish Connectors
- Included in Epoxy/Polish Tool Kits



| Description                 | Part Number |
|-----------------------------|-------------|
| Sapphire-tipped Scribe Tool | 504064-1    |
| Replacement Blades          | 504290-1    |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Epoxy/Polish LC Termination Accessories

#### Product Facts

- Supplement epoxy/polish tool kits on page 73 with these components to terminate LC Epoxy/Polish Connectors

- Different polishing films are required for LC polishing (see table on page 69 and films on page 76)

| Description                             | Part Number |
|-----------------------------------------|-------------|
| LC Polishing Puck — Polymer             | 1915196-1   |
| LC Polishing Puck — Metal               | 1754074-1   |
| LC Cable Preparation Template           | 1588756-1   |
| LC Hand Tool and Die Set                | 1588176-1   |
| LC 1.25mm Ferrule Microscope Adapter    | 1278997-1   |
| LC Oven Block Assembly                  | 1457628-1   |
| LC Adaptive Kit — Anaerobic Epoxy Style | 1754603-1   |
| LC Adaptive Kit — Heat Cure             | 1754462-1   |

### EPO-TEK 353ND Epoxy Part Number 504035-1



#### Product Facts

- For use with SC and LC Connectors
- Pre-measured two-part packets for consistent results
- Long pot life once mixed (4 hours)
- Heat-cured epoxy
- Supplied in 4-gram packets
- Cures in 15 minutes at 115° C

### TRA-CON Epoxies Part Number 501195-4



#### Product Facts

- For use with SC, LC, ST, FSD, FC, and FSMA Connectors
- Pre-measured two-part packets for consistent results
- Can be heat-cured or cured at ambient temperature
- Supplied in 2-gram packets
- Each packet terminates » 250 connectors
- 25 packets per pack
- Pot life = 30 minutes
- Cures in:
  - 24 hours @ 25° C
  - 2 hours @ 65° C
  - 10 minutes @ 110° C

### HYSOL Epoxy-Tubes Part Number 502418-1



#### Product Facts

- For use with SC, LC, ST, FSD, FC, and FSMA Connectors
- Two-part epoxy in two tubes
- Heat-cured epoxy
- Terminates » 400 connectors
- One set of two (2) tubes per part number
- Pot life = 30 minutes
- Cures in 30 minutes at 100° C

### QC Quick Cure Adhesive Product Facts

- One-part adhesive eliminates the hassle and mess of mixing
- Applies easily and cures in minutes without heat or UV light
- Works with standard multimode epoxy-style connectors without performance degradation
- Faster procedure for time-saving productivity and lower installed costs
- Not for use with singlemode terminations



| Tube Size | Typical Connector Terminations Per Tube* | Part Number |
|-----------|------------------------------------------|-------------|
| 3 grams   | 100                                      | 492508-1    |

\*Your individual termination techniques will affect the number of terminations per tube.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

**Tooling** (Continued)

**Epoxy Applicator Syringe**  
Part Number 501473-3

**Product Facts**

- 3 cc capacity



**Epoxy Curing Oven**

**Product Facts**

- Reduces time required to cure epoxy
- Provides a uniform, controlled curing environment
- Used for all epoxy/polish connectors
- Comes equipped to cure up to four Duplex Connectors and 12 Simplex Connectors at once
  - Optional blocks reconfigure to 8 Duplex or 24 Simplex Connectors
- Variable temperature control (60°C to 125°C)
- Includes thermometer and cable support bracket
- Two voltage options
- Curing sleeves on page 79



| Description                                                                        | Part Number |
|------------------------------------------------------------------------------------|-------------|
| 110 VAC                                                                            | 502134-1    |
| 220 VAC                                                                            | 502134-2    |
| Adapter Block for 8 Duplex Connectors                                              | 502222-1    |
| Adapter Block for 24 Single Connectors                                             | 502129-1    |
| Block Assembly for 1.6, 2.0 & 2.4mm SC and FC (metal crimp body) and LC Connectors | 1757628-1   |

**Polishing Films**

| Description                                     | Part Number |              |               |          |          |          |                |           |
|-------------------------------------------------|-------------|--------------|---------------|----------|----------|----------|----------------|-----------|
|                                                 | FSMA        | Multimode ST | Singlemode ST | FC       | FSD/RSD  | SC       | LIGHTCRIMP XTC | LC        |
| <b>Hand Polishing Film: (Pack of 10 sheets)</b> |             |              |               |          |          |          |                |           |
| 15µm                                            | —           | —            | —             | —        | —        | —        | 228433-9       | —         |
| 9 mm***                                         | —           | —            | —             | —        | —        | —        | —              | 1374484-1 |
| 5µm                                             | 228433-8    | 228433-8     | 228433-8      | 228433-8 | 228433-8 | 228433-8 | 228433-8       | 228433-8  |
| 1µm                                             | 228433-7    | 228433-7     | —             | —        | 228433-7 | —        | 228433-7       | —         |
| <b>Fine Diamond Film*</b>                       |             |              |               |          |          |          |                |           |
| 0.3µm                                           | 228433-5    | 228433-5     | 228433-5      | 228433-5 | 228433-5 | 228433-5 | 228433-5       | 228433-5  |
| <b>Final Polish Film*</b>                       |             |              |               |          |          |          |                |           |
| —                                               | —           | —            | 502748-2      | 502748-2 | —        | 502748-2 | —              | —         |
| <b>Consumables Kit**</b>                        |             |              |               |          |          |          |                |           |
| —                                               | 502306-1    | 502306-1     | 502306-2      | 502306-2 | 502306-1 | 502306-2 | —              | —         |

\*Pack of 5.

\*\*Contains all consumable supplies for at least 100 connectors.

\*\*\*Pack of 15.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Inspection Microscope

#### Product Facts

- Optimal visual examination of terminated ends
  - 500um field of view
- Dual illumination
  - Coaxial for inspecting polish quality
  - Oblique for general conditions
- Pre-centered, threaded adapter mount provides easy focusing and changing of connectors
- Field and laboratory examination for multimode and singlemode fibers
- Portable
- Integral infrared filter for safety
  - Do NOT use any microscope to view active fiber signals
- Disposable, Type LR44 batteries
- Long-life LED (approximately 100,000 hours of operation)
- Each Kit includes:
  - 10-power objective microscope with an impact resistant ergonomic rubber shell and high quality glass optics
  - 20-power eyepiece
  - Padded carrying case with an integrated belt loop and internal adapter storage pocket
  - Neck lanyard with safety breakaway feature
  - Universal 2.5mm ferrule adapter (for SC, ST and FC)
- Other adapters available are:
  - Universal 1.25mm (adapts LC and MU)
  - MT-RJ
  - MPO
  - MPO APC
  - MPX
  - MPX APC



| Description           |                   |               | Part Number |
|-----------------------|-------------------|---------------|-------------|
| Inspection Microscope |                   |               | 1754767-1   |
| Adapters              | 1.25 mm Universal | LC and MU     | 1754765-1   |
|                       | 2.5 mm Universal  | SC, ST and FC | 1754766-1   |
|                       | MT-RJ             |               | 1754768-1   |

**DANGER:** Active fibers should never be viewed through a microscope.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Inspection Microscope Kits

The Inspection Microscope is designed specifically for visual examination of terminated or cleaved ends of singlemode and multimode fibers in both field and laboratory applications. This portable, hand-held unit provides magnification for optimum detection of flaws. It operates on battery power. The complete microscope kit includes a handy carrying case, tripod stand, and all adapters needed to inspect the following connectors: FSMA, FSD, ST, FC, F07 and SC.

See chart below for specific Microscope Part Numbers.

### Tooling (Continued)

#### Product Facts

- **Pre-centered adapter mount provides quick, easy focusing, and changing of connectors**
- **Kg-3 infrared filter to protect the user**
- **Durable, lightweight A.B.S. plastic microscope body**
- **Lockable, high-density polyethylene, double-well carrying case with anti-static foam cutouts**



#### Microscope with 10x Objective Kits

| Components Description                  | Part Number | Qty. | Adapter Markings | Microscope Kit |          |
|-----------------------------------------|-------------|------|------------------|----------------|----------|
|                                         |             |      |                  | 502970-1       | 502970-3 |
| 100x Microscope (10x Eyepiece)          | 502978-1    | 1    | —                | yes            | —        |
| 200x Microscope (20x Eyepiece)          | 502978-2    | 1    | —                | —              | yes      |
| FSMA                                    | 502971-1    | 1    | FSMA             | yes            | yes      |
| D4                                      | 502975-1    | 1    | D4               | yes            | yes      |
| Universal 2.5 mm**                      | 502977-1    | 1    | —                | yes            | yes      |
| LC 1.25 ferrule adapter                 | 1278997-1   | 1    | —                | —              | —        |
| FC/APC adapter (not included with kit)  | 504617-1    | 1    | —                | —              | —        |
| SC/APC adapter (not included with kit)  | 504618-1    | 1    | —                | —              | —        |
| <b>Batteries</b>                        |             |      |                  |                |          |
| "AA" Alkaline                           | —           | 2    | —                | yes            | yes      |
| Bulb, 2.8V Lamp Red on/off Switch       | 502964-1    | 1    | —                | yes            | yes      |
| Bulb, 2.5V Lamp Green on/off Switch     | 1278471-1   | 1    | —                | —              | —        |
| Tripod                                  | 502965-1    | 1    | —                | yes            | yes      |
| Carrying Case                           | —           | 1    | —                | yes            | yes      |
| <b>Accessories</b>                      |             |      |                  |                |          |
| 20x Eyepiece                            | 502969-2    | —    | —                | —              | Included |
| 10-20x Zoom Eyepiece                    | 502969-3    | —    | —                | —              | —        |
| 10x Eyepiece                            | 502969-1    | —    | —                | Included       | —        |
| <b>Adapters 100x Microscope Version</b> |             |      |                  |                |          |
| F07                                     | 492547-1    | —    | —                | —              | —        |
| MT-RJ                                   | 492749-1    | —    | —                | —              | —        |
| MPO                                     | 492414-1    | —    | —                | —              | —        |
| MPO APC                                 | 492415-1    | —    | —                | —              | —        |
| LIGHTRAY MPX Connectors                 | 492526-1    | —    | —                | —              | —        |
| LIGHTRAY MPX APC Connectors             | 492527-1    | —    | —                | —              | —        |
| ESCON                                   | 492477-1    | —    | —                | —              | —        |

\*\* Inspects ST, SC, FC, FSD and RSD connectors.

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

Hand Tools

**Tooling** (Continued)



**PRO-CRIMPER II Hand Tool**

Instruction Sheet 408-4020

**PRO-CRIMPER II Hand Tool**

| Connector                               | Cable Jacket Diameter (mm) | Part Number          |                |                   |
|-----------------------------------------|----------------------------|----------------------|----------------|-------------------|
|                                         |                            | Hand Tool w/ Die Set | Hand Tool Only | Die Set Only      |
| FSMA                                    | 3.0                        | 58551-1              | 58532-1        | 58552-1 (hex die) |
| ST Ceramic                              | 3.0                        | 58433-4              | 58532-1        | 58424-1           |
| ST Stainless Steel                      | 3.0                        | 58433-4              | 58532-1        | 58424-1           |
| ST Polymer Composite                    | 3.0                        | 58433-4              | 58532-1        | 58424-1           |
| ST Ceramic Used with Loose Tube         | 3.8                        | —                    | 58532-1        | 503890-1          |
| ST Stainless Steel (504XXX series only) | 3.0                        | 58551-1              | 58532-1        | 58552-1           |
| SC/FC (Polymer crimp body)              | 3.0                        | 503911-1             | 58532-1        | 503910-1          |
|                                         | 2.4 & 3.0                  | 492026-1             | 58532-1        | 492025-1          |
| SC, FC (Metal crimp body)               | 1.6-2.0, 2.4               | 1588176-1            | 58532-1        | 1588175-1         |
| SC/FC (Metal crimp body)                | 3.0                        | —                    | 58532-1        | 492131-1          |
| MPO                                     |                            | 1588698-1            | —              | —                 |
| FSD - Ceramic                           | DUALAN & LDD               | 58519-1              | 58532-1        | 58510-1           |
| FSD - Polymer                           | DUALAN & LDD               | 58519-1              | 58532-1        | 58510-1           |
| FSD/MC - Ceramic                        | DUALAN & LDD               | 58519-1              | 58532-1        | 58510-1           |
| FSD Breakout Kit                        | DUALAN & Protection Kit    | 58519-1              | 58532-1        | 58510-1           |
| LIGHTCRIMP Plus and LIGHTCRIMP ST       | 3.0                        | 492623-1             | 58532-2        | 492622-1          |
| LIGHTCRIMP Plus and LIGHTCRIMP SC       | 3.0                        | 492782-1             | 58532-2        | 492783-1          |
| LIGHTCRIMP Plus LC                      |                            | 1754137-1            | 58532-1        | 1754136-1         |
| MT-RJ Plug                              | 1.8                        | 1278632-1            | 58532-1        | 1278627-1         |
| LC                                      | 3.0, 2-4, 1.6-2.0          | 1588176-1            | 58532-1        | 1588175-1         |

**Polishing Bushing, Curing Sleeves and Strip Card Kits**

| Connector                          | Cable Jacket Diameter (mm) | Part Number               |                                  |                |
|------------------------------------|----------------------------|---------------------------|----------------------------------|----------------|
|                                    |                            | Polishing Bushing         | Curing Sleeves/Pieces            | Strip Card Kit |
| <b>FSMA</b>                        | 3.0                        | 228025-1                  | 502249-1 (12 pcs.)               | 501818-1       |
| <b>ST</b>                          |                            |                           |                                  |                |
| Ceramic, Stainless Steel           | 3.0                        | 503337-1 (Metal)          | 502259-1 (12 pcs.)               | 501818-1       |
|                                    |                            | 503304-1 (Black Polymer)  |                                  |                |
| Polymer Composite                  | 3.0                        | 503304-1 (Beige Polymer)  | 502259-1 (12 pcs.)               | 501818-1       |
| <b>FC</b>                          | 3.0                        | 504862-1                  | 502862-2 (6 pcs.)                | 1754636-1      |
| <b>SC</b>                          | 3.0                        | 502631-1 (Black Polymer)  | 502656-1 (1 pc.)                 | 1754636-1      |
| <b>LC</b>                          |                            | 1754074-1 (Metal)         | 1457630-X <sup>1</sup> (12 pcs.) | 1588756-1      |
|                                    |                            | 1918196-1 (Black Polymer) |                                  |                |
| <b>FSD - Ceramic &amp; Polymer</b> | <b>DUALAN &amp; LDD</b>    | 501795-1*                 | 502023-1**                       | 501818-1       |

\* Curing Assembly Kit with polishing bushing.

\*\* Curing Assembly Kit without polishing bushing.

<sup>1</sup> -1 LC 900µm

-2 LC jacketed cable

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

### Product Facts

- Tested to Telecordia GR-1435
- Push Pull Latching
- 4, 8, 12, OR 24 fibers
- Color-coded housings differentiate singlemode and multimode:
  - Multimode - Beige
  - Singlemode - Green
- Manufactured to IEC Standards 1754-7 and TIA/EIA 604-5

### Industry Standard

### Performance Characteristics

#### Singlemode

Insertion Loss (Typ) — 0.25 dB

Insertion Loss (Max) — 0.75 dB

Return Loss — > 55 dB

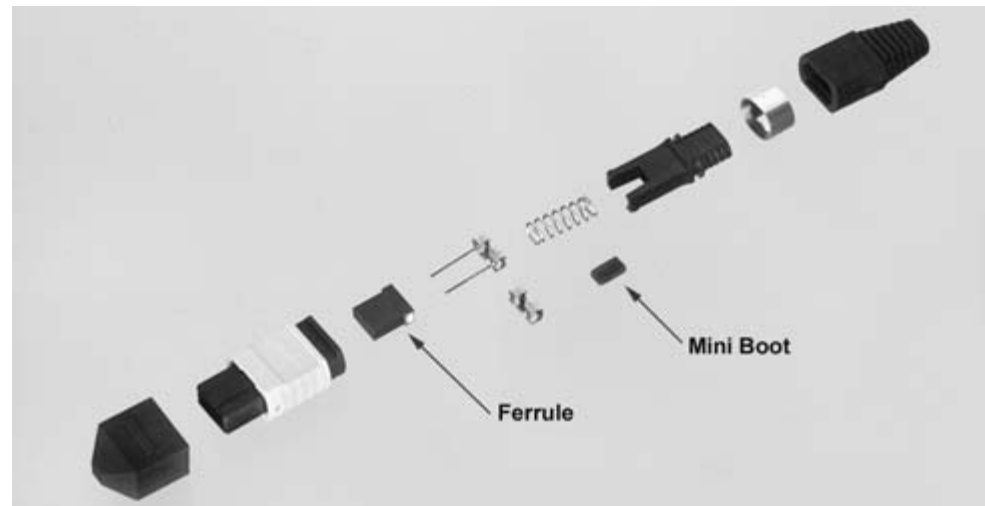
#### Multimode

Insertion Loss (Typ) — 0.2 dB

Insertion Loss (Max) — 0.5 dB

Return Loss — > 20 dB

## MPO Connectors



### MPO Connector Kit Selection - Plug Kits

| Fiber Type | Female (no pins) | Male (with pins) |
|------------|------------------|------------------|
| Singlemode | 6457981-1        | 6457981-2        |
| Multimode  | 6457983-1        | 6457983-2        |

**Note:** Ferrules and Mini-Boots are sold separately. See chart below for proper part numbers.



### MPO Ferrule Kit with Mini-Boot

| Fiber Type | 4 Position | 8 Position | 12 Position |
|------------|------------|------------|-------------|
| Singlemode | 5492221-1  | 5492221-2  | 5492221-3   |
| Multimode  | 5503839-1  | 5503839-2  | 5503839-3   |

### Crimping Tool with Dieset

1588698-1



### MPO Adapters

| Adapter Type                | Single Pack | 50 pc Bulk Pack |
|-----------------------------|-------------|-----------------|
| Adapter w/flange            | 1588172-1   | 1588172-5       |
| Adapter w/flange and clip   | 1588172-2   | 1588172-6       |
| Adapter w/o flange          | 1588172-3   | 1588172-7       |
| Adapter w/o flange and clip | 1588172-4   | 1588172-8       |

**Note:** Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.