



OEM AND SPECIALTY PRODUCTS

Founded in 1984, AFL is an international manufacturer providing end-to-end solutions to the energy, service provider, enterprise, hyperscale and industrial markets as well as several emerging markets.

AFL's products are in use in over 130 countries and include fiber optic cable and hardware, transmission and substation accessories, outside plant equipment, connectivity, test and inspection equipment, and fusion splicing systems.

AFL also offers a wide variety of services supporting data center, enterprise, wireless and outside plant applications.

AFL is dedicated to bringing our customers a quality product as well as delivering superior value.



Table of Contents

Fusion Splicers

| | |
|--|----|
| LZM-100 LAZERMaster® Laser Splicing System | 5 |
| FSM-100M and FSM-100P Fusion Splicers | 7 |
| LZM-125A+ Splicing System | 9 |
| LZM-125M+/LZM-125P+ Splicing System | 11 |
| LZM-125M/LZM-125P Splicing System | 13 |
| Fujikura 90S+ Fusion Splicer | 15 |
| Fujikura 45S Fusion Splicer | 18 |
| Fujikura 35S Fusion Splicer | 22 |
| Fujikura 90R Fusion Splicer | 26 |

Specialty Splicer Capabilities

| | |
|---|----|
| Specialty Fiber Optic Components and Services | 29 |
| Adiabatic Tapers | 30 |
| Endcap Technology | 31 |
| Fiber Combiners | 32 |
| Lensing Technologies | 33 |
| Mode Field Adapters | 34 |
| Multicore Fiber Fanouts | 35 |
| Over Cladding | 36 |
| Splicing/Cleaving Services | 37 |
| Service and Support | 38 |

Cleavers and Accessories

| | |
|---|----|
| CT16 Fiber Cleaver NEW | 39 |
| CT50 Fiber Cleaver | 41 |
| APM-101 and APM-102 Automatic Preparation Machine | 43 |
| PowerCleave® | 44 |
| Thermal Strippers | 45 |
| AFL PowerStrip® | 47 |
| High Tensile Stripper | 48 |
| USC-03 Ultrasonic Cleaner | 49 |
| FSR-05, FSR-06 and FSR-07 Optical Fiber Recoaters | 50 |
| PCS-100 Polyimide Coating Stripper | 53 |

Splicing Accessories

| | |
|--|----|
| Fiber Arrangement Tool | 54 |
| Ribbon Forming Adhesive | 54 |
| RT-02 Ribbonizing Tool | 55 |
| Splice Protection Sleeves | 56 |
| TJ-03 Temporary Joining Tool | 58 |

Fiber Optic Cable Assemblies

| | |
|--|----|
| Simplex Cable Assemblies | 59 |
| Duplex Cable Assemblies | 60 |
| LC Uniboot Cable Assemblies | 61 |
| Multi-Fiber Cable Assemblies | 62 |
| MPO Cable Assemblies | 64 |
| NodeFLEX® Cable Assembly | 66 |
| Node Cable Assemblies | 67 |
| Loose Tube and Riser Rated Indoor/Outdoor Cable Assemblies | 69 |
| Fanout Kits | 71 |

Connectors and Accessories

| | |
|--|----|
| Connector Specifications | 72 |
| FASTConnect® Field-Installable Connectors | 73 |
| FASTConnect® Universal Tool Kit | 75 |
| FUSEConnect® Field-Installable Connectors | 76 |
| FUSEConnect® MPO Splice-On Connectors with Heat Sleeve | 78 |
| FUSEConnect® Tool Kit and Accessories | 80 |
| Buildout Attenuators | 81 |
| SpliceConnect with Tool Kit | 82 |

Couplers and Modules

| | |
|--|-----|
| Wideband Couplers | 83 |
| Ruggedized Wideband Couplers | 84 |
| Optical Splitter Shelf | 85 |
| Optical FTTx Coupler Module | 86 |
| LGX® FTTx Splitter Modules | 87 |
| Optical Coupler Modules | 88 |
| Optical FTTx WDM Module | 90 |
| CWDM LGX Modules | 91 |
| CGM® PLUS | 94 |
| Card Guide Module (CGM®) | 95 |
| CWDM Single-channel OADM | 96 |
| DWDM LGX Modules | 98 |
| RFoG WDM Module | 101 |
| LGX® FTTx WDM Modules | 102 |

Rack Mount Panels

High Density Fiber Management

| | |
|---|-----|
| ASCEND® Fiber Housings | 103 |
| ASCEND® Optical Cassettes | 105 |
| ASCEND® Fanout Cassettes | 106 |
| ASCEND® Mesh Cassettes NEW | 108 |
| ASCEND® Patch Cassettes | 109 |
| ASCEND® Splice Cassettes | 110 |
| ASCEND® Conversion Cassettes | 111 |
| ASCEND® Tap Cassettes | 113 |
| ASCEND® Patch Cord Assemblies | 117 |
| ASCEND® Trunk Cable Assemblies | 118 |
| ASCEND® Outback Clip Management (OCM) Bracket | 120 |
| MTP® PRO Field Tool for Polarity/Pin Change | 121 |

LightLink LANSystem

| | |
|--|-----|
| 1RU Fiber Termination Patch/Splice Panel | 122 |
| 2RU Fiber Termination Patch/Splice Panel | 124 |
| 3RU Fiber Termination Patch Panel | 126 |
| 4RU Fiber Termination Patch Panel | 128 |
| 5RU Fiber Termination Patch Panel | 130 |
| 6RU Fiber Patch and Splice Panel | 132 |
| 7RU Fiber Patch and Splice Panel | 134 |
| 8RU Fiber Patch and Splice Panel | 136 |

Optical Interconnect Modules

| | |
|--|-----|
| Poli-MOD® Patch and Splice Module | 138 |
| Pigtail Assemblies for Patch and Splice Panels | 140 |
| XFM® MPO Optical Cassettes | 141 |

DIN Mount Enclosures

| | |
|---|-----|
| Mini DIN Rail Mounted Enclosure | 143 |
|---|-----|

Fiber Demarcation

| | |
|--|-----|
| OptiNID® Duo Optical Demarcation Enclosure | 144 |
| OptiNID® 500 Optical Demarcation Closure | 146 |
| OptiNID® 760XL Optical Demarcation Closure | 147 |

Industrial Fiber Optic Cable

| | |
|---|-----|
| Stainless Steel Fiber Optic Tubes | 148 |
| Fiber Optic Component for Umbilical Cable | 149 |
| Tactical Tight Buffered Cable | 150 |

Premise Fiber Optic Cable

Wrapping Tube Cable

| | |
|---|-----|
| Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®) | |
| 250 µm Fiber/250 µm Pitch | 152 |
| 200 µm Fiber/250 µm Pitch | 155 |
| Flame-Retardant | 157 |

Premise MicroCore®

| | |
|--|-----|
| Interconnect Premise MicroCore® Cable | 159 |
| Interconnect Premise MicroCore® Cable with SWR Technology | 161 |
| Sub-unitized Premise MicroCore® | |
| 3.0 Base-16 and Base-24 | 163 |
| 3.0 with SWR Technology | 165 |
| Indoor/Outdoor Riser Sub-unitized MicroCore Cable | 168 |
| Indoor/Outdoor Riser Sub-unitized MicroCore Cable with SWR | 170 |

Structured Cabling

| | |
|---|-----|
| Simplex Cable | 172 |
| Zipcord, Dual-link and Micro-Dual Cable | 174 |
| Multi-Unit Circular Premise Cable | 176 |
| Low Smoke Zero Halogen Distribution Cable | 178 |



Test and Inspection Equipment

OTDRs

FlexScan® FS300 Quad OTDR 180

FlexScan® FS200 Single-mode OTDR 187

OTDR Fiber Rings 193

NS and NSR Series Fiber Optic Network Simulators 197

Fiber Inspection

FOCIS Flex – Fiber Optic Connector Inspection System 198

FOCIS Lightning®2 Multi-Fiber Optic Connector Inspection System . . 202

FOCIS WiFi2® Fiber Optic Connector Inspection System 206

Optical Loss Testing

ROGUE® OLTS Certifier 210

Multi-Fiber Switch 214

Optical Loss Test Kits 216

OPM5 and OPM4 Optical Power Meters 220

Fiber Identifiers

MFIS Multi-Fiber Identification System 224

OFI-BIPM and OFI-BIPMe Optical Fiber Identifiers 228

OFI-400 Series Optical Fiber Identifiers 231

OFI-200 Optical Fiber Identifier 234

VF14 Visual Fault Identifier 237

Cleaning and Inspection

Push-Type Cleaners 239

One-Click® Cleaners 239

NEOCLEAN Cleaners 241

Cletop Optical Fiber Connector Cleaner 242

Cleaning Fluids and Wipes 243

FCC2 Enhanced Fiber Connector Cleaner and Preparation Fluid 243

Debris Destroyer® Fiber Cleaning Pen 244

Optical Cloth Wipes 245

CCT Connector Cleaning Tips 246

Cletop Adapter Cleaning Sticks (ACT) 247

Cleaning Kits 248





LZM -100

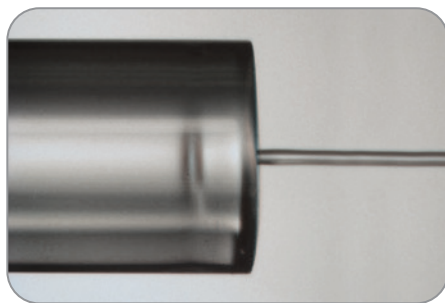
LAZERMaster® LZM-100 Splicing System

The LZM-100 LAZERMaster is a glass processing and splicing system that uses a CO₂ laser heat source to perform splicing, adiabatic tapering (to create MFAs or pump combiners), lensing, or other glass shaping operations with glass diameters of 2.3 mm or more. The high resolution optical analysis system works in conjunction with on-board firmware for fully automatic splicing, tapering and other glass shaping processes.

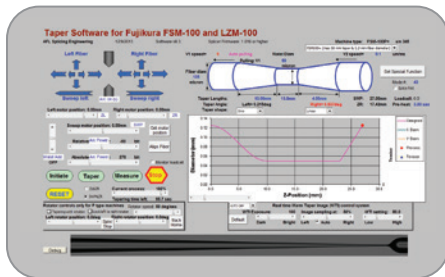
High precision glass processing is enabled by the intuitive and user-friendly on-board firmware (virtually identical to that of the Fujikura FSM-100 ARCMaster splicers). Operations may also be performed manually and by PC control. An FPS PC control GUI is supplied with the LZM-100 to provide additional features, greater flexibility and finer control. The FPS GUI is pre-installed on the All-in-one computer. Customers can also create proprietary PC control algorithms using a complete set of PC control commands.

Features

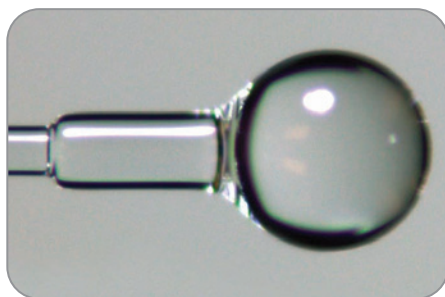
- CO₂ laser heat source eliminates electrode or filament maintenance, provides extremely stable operation and greatly reduces the need for periodic calibration
- Automated laser beam diameter control to fine tune the size of the heating area
- An advanced configurable system capable of producing tapers, ball lenses, combiners, MFAs, glass shaping and splicing
- Excellent performance for dissimilar diameter fiber splicing
- Ultra high strength splicing
- Redundant automated laser safety features
- 2.3 mm maximum fiber diameter (larger fibers may be spliced manually)
- Long travel / high resolution Z motion for long adiabatic tapers
- Automatic operation by on-board LZM-100 splicer firmware, manual operation or operation by PC (PC and FPS GUI included with the LZM-100 system)
- Intuitive FPS PC GUI: Easy to understand, navigate and operate
- Complete set of PC command codes enables users to develop proprietary processes



2 mm to 125 µm Splice



Advanced Adiabatic Tapering



Ball Lens 320 µm with
125 Splice to 80 µm Fiber

Ordering Information

| DESCRIPTION | ITEM NO. |
|--|----------|
| LAZERMaster LZM-100 Glass Processing & Splicing System (Standard baseline LZM-100 system. Includes AC adapters & cords and SpliceLab PC software) | S015871 |
| LAZERMaster LZM-100 (with dual theta motors) | S015872 |
| All-in-one Computer (includes keyboard and mouse, monitor stand for mounting all-in-one computer. SpliceLab software pre-installed.) (required) | S015242 |
| End-View Observation & Alignment Option | S015244 |
| Side Table Work Surface Option (Work surface to provide additional area for accessories such as fiber preparation equipment. May be attached to the left or right side of the LZM-100 or both. Folds down against the side of the LZM-100 chassis when not needed or to allow easy movement through narrow doorways.) | S015247 |
| Cylindrical Lens & Lens Holder (optional) | S015251 |
| LZM-100 Training (USA) | S015867 |
| LZM-100 Training (International) | S015868 |
| Splicer V-Groove Cleaning Kit | S014397 |

LAZERMaster[®]

LZM-100 Splicing System

Specifications

| | |
|--|---|
| Fiber Heating and Splicing Method | CO ₂ Laser |
| CO ₂ Laser Power | 30 W standard (Lasers expected lifetime is 20,000 hrs / 2.3 years before service is required.) |
| Laser Safety Features | <ul style="list-style-type: none"> • Metal cover with interlock, class 1 enclosure • Automatic actuation of safety shutter • Automatic laser power cutoff • Triple redundancy |
| Laser Beam Control | Proprietary feedback system assures laser beam power stability Laser beam size and shape may be customized to meet specific user requirements |
| Typical Splice Loss | 0.02 dB for SMF (ITU-T G.652) |
| Typical Splice Strength | 100 kpsi observed for SMF (ITU-T G.652) using appropriate fiber preparation equipment |
| Visible Field of View | 2.5 mm (H) X 2.0 mm (W) |
| Fiber Observation Methods | <ul style="list-style-type: none"> • PAS (Profile Alignment System) via transverse fiber observation. • WSI (Warm Splice Image) and WTI (Warm Taper Image) • End-view observation (Optional) |
| Applicable Fiber Diameter | 80 μm to 2300 μm for automatic alignment by PAS Larger diameter fibers may be aligned manually or by power meter feedback |
| V-Groove Clamping System | <ul style="list-style-type: none"> • Infinitely variable from 80 μm up to 2300 μm • Clamping bare fiber or fiber coating • Patented “split V-groove” system |
| Fiber Handling | Fujikura FSM-100, FSM-45 and FSM-40 splicer fiber holders Custom fixtures to meet specific customer requirements |
| Alignment Methods | <ul style="list-style-type: none"> • PAS (Profile Alignment System, automatic alignment by camera observation) • Manual • Other methods by PC control • Power meter feedback via GPIB (Optional) • End-view (Optional) |
| X/Y Alignment Resolution | Sub-micron |
| Maximum Z Travel Length | 150 mm (both left and right Z units) |
| Z Travel Resolution | Sub-micron |
| Maximum Taper Length | 130 mm |
| Maximum Taper Ratio | 10:1 standard (For uniform direction, one-pass tapering) Dual direction tapering offers greatly increased taper ratios, as does tapering with more than one tapering pass. |
| Maximum Taper Speed | 1 mm/sec standard (Optional 5 mm/sec) |
| Splicing Control | Internal firmware or operation by PC |
| Fiber Tapering & Glass Shaping Control | Internal firmware or operation by PC |
| PC Control | SpliceLab software will be provided Complete command set for PC control |
| PC Option | An all-in-one computer is required. Use of the SpliceLab software on a PC provides finer control and additional features compared to the LZM-100 internal firmware. Using another software application, the PC interface also allows for advanced maintenance functions such as the ability to confirm laser beam alignment, and align if required. |
| Interface Ports | USB 2.0 (For PC communications, data and image download, etc.) GPIB (Optional, for power meter feedback) |
| Electrical Power | 100-240 VAC |
| Operating/Storage Conditions | +10° to +30°C / +5° to +40°C |
| Rotation Motors | Optional: Provides theta rotational motion for PM alignment for both left and right sides |
| PM Fiber Alignment Methods | <ul style="list-style-type: none"> • PAS (For PANDA and other PM fibers) • IPA (Interrelation Profile Alignment, applicable to almost all PM fibers. Three distinct IPA methods available.) • End-view (Optional) • Power meter feedback (Requires polarizer and analyzer, as well as optional GPIB interface) • Manual • Other methods by PC control |
| End-View Observation & Alignment | Optional internal end-view system |

Preliminary Specifications, subject to revision and refinement

ARC Master™ FSM-100M and FSM-100P Fusion Splicers



FSM-100M



FSM-100P

Features

- Split V-groove clamping system
- “Plasma Zone” fiber positioning
- PAS and WSI
- New IPA alignment method for PM fibers
- Enhanced sweep arc technology
- Zero degree fiber handling for LDF
- Special functions for glass processing capability
- Fiber profile memory function
- New arc calibration technology
- Short cleave length capability
- Fast and accurate PANDA splice mode
- Ergonomic, production friendly design
- User selectable display on dual LCD monitors
- Internet firmware updates

Whether splicing similar fiber types or double clad LDF fibers for high power lasers, the ARCMaster series splicers provide multiple solutions for diverse production needs. With State of the ARC™ technology, the ARCMaster sets the standard for fusion splicing with a multitude of new features designed to make splicing easier.

The patent-pending “split V-groove” fiber clamping system accommodates optical fiber ranges from 60 to 2,000 μm for cladding or coating without changing V-grooves or fiber clamps. The “Plasma Zone” fiber positioning system incorporates multiple fiber and electrode positioning techniques to provide unprecedented versatility for splicing LDF, heat sensitive or small diameter fibers.

With a new fiber imaging technology, Interrelation Profile Alignment (IPA), alignment and splicing capabilities are possible with virtually any PM fiber type. Longer fiber tapering application is possible with Fujikura’s Sweep Arc technology. Incorporating PAS (cold fiber image) and WSI (warm image) technologies, the optical analysis system provides a number of advanced features including improved loss estimation capabilities, fiber image performance with both LDF, small or heat sensitive fibers.

Users can program multi-step glass processing operations to include non-splicing operations such as generating tapers or lenses. Dual LCD monitors provide enhanced data and graphical information that is user-selectable during each stage of the splicing process. Both units are designed with the needs for production in mind and are suitable for the most popular production workstations.

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| ARC Master FSM-100M Fusion Splicer (machine only) Includes: FH-100-250 fiber holders (pair), FH-100-900 fiber holders (pair), spare electrodes (pair), ADC-15 AC adapter, ACC-02 AC power cord, USB cable, dust cleaning swab set, operation manual and software on CD, transit case, and One year factory warranty | S014821 |
| ARC Master FSM-100M Fusion Splicer Kit * | S014822 |
| ARC Master FSM-100P Fusion Splicer (machine only) Includes: FH-100-250 fiber holders (pair), FH-100-400 fiber holders (pair), FH-100-900 fiber holders (pair), spare electrodes (pair), ADC-15 AC adapter, ACC-02 AC power cord, USB cable, dust cleaning swab set, operation manual and software on CD, transit case, and One year factory warranty | S014823 |
| ARC Master FSM-100P Fusion Splicer Kit * | S014824 |
| One year extended warranty (extends factory warranty by one year) | S012996 |
| Two year extended warranty (extends factory warranty by two years) | S013000 |

* Each splicer kit includes an RS01 Thermal Stripper, a CT52 Cleaver and a SPA-RS02-08 Spacer for RS01 in addition to the items listed above.



ARC Master™

FSM-100M and FSM-100P Fusion Splicers

Specifications

| PARAMETER | VALUE |
|-------------------------------|--|
| Applicable Fiber | Silica based Single-mode and Multimode glass fiber: SMF (G.652), MMF (G.651), NZDSF (G.655), EDF, DCF, LDF and PMF, etc. |
| Fiber Dimension | Cladding diameter: 60 to 500 µm Coating diameter: 100 to 2,000 µm |
| Cleave Length | Glass clamping: 8 to 10 mm (standard 9 mm) Coating clamping: 3 to 5 mm (standard 4 mm) |
| Typical Splice Loss | SMF: 0.03 dB MMF: 0.02 dB NZDSF/LDF: 0.05 dB PMF: 0.06 dB (FSM-100P) |
| Splicing Time | SMF/MMF: 15 sec. NZDSF/LDF: 25 sec. PMF (PANDA): 35 to 50 sec. (FSM-100P) PMF (IPA): 90 to 300 sec. (FSM-100P) |
| Polarization Cross-Talk | PMF (PANDA): -40 dB / 0.6 degree (FSM-100P) PMF (IPA): -32 dB / 1.4 degree (FSM-100P) |
| Return Loss | 60 dB or more |
| Heating Time | FP-40: 30 sec. FP-60: 35 sec. Micro sleeves: 55 sec. |
| Sweep Length | ±5 mm |
| Electrode Life | 2,500 Arc Discharges (SMF G.652 splicing at 1mm gap) |
| Electrode Gap | 1 to 3 mm |
| Electrode Offset | -0.3 to +0.1 mm |
| Proof Test | 1.96 N to 2.45 N |
| Dimensions (mm) | 311W x 232D x 160H |
| Weight (excluding AC adapter) | FSM-100M: 7.5 kg FSM-100P: 8.0 kg |
| Operation Temperature | 0°C to 40°C at 0 to 95% RH (Non-Dew) |
| Storage Temperature | -40°C to 80°C |
| Monitor Type | Dual 4.1 inch TFT color LCD monitors |
| Magnification | 125 µm: 187 to 300 X 250 µm: 58 to 300 X 400 µm: 58 to 93 X |

Accessories for the FSM-100M and FSM-100P

| DESCRIPTION | AFL NO. |
|---|---------|
| High Strength Accessories | |
| High Strength Preparation Kit Includes: USC-02, AFL PowerStrip and AFL PowerCleave | S013632 |
| Ultrasonic Cleaner (USC-02) | S014783 |
| HTS-12 High Tensile Stripper - includes 250 µm blades (400 µm available) | S012094 |
| AFL PowerStrip High Tensile Stripper | S012808 |
| AFL PowerCleave High Strength Cleaver | S009972 |
| Strippers | |
| RS01 Thermal Stripper | S016815 |
| RS03-80 Thermal Stripper | S016842 |
| SPA-RS02-08 Spacer | S016818 |
| Electrodes | |
| ELCT2-25 Spare Electrodes (pair) | S002068 |
| Cleavers | |
| CT52 Cleaver | S017078 |
| CT58 Cleaver (for 80 µm cladding) | S017097 |
| Fiber Holders (Pairs) | |
| FH-110-60 Fiber Holder | S018215 |
| FH-110-100 Fiber Holder | S018216 |
| FH-110-125 Fiber Holder | S018217 |
| FH-110-150 Fiber Holder | S018218 |
| FH-110-180 Fiber Holder | S018219 |
| FH-110-210 Fiber Holder | S018220 |
| FH-110-250 Fiber Holder | S018221 |
| FH-110-300 Fiber Holder | S018222 |
| FH-110-350 Fiber Holder | S018223 |
| FH-110-400 Fiber Holder | S018224 |
| FH-110-500 Fiber Holder | S018225 |
| FH-110-600 Fiber Holder | S018226 |
| FH-110-700 Fiber Holder | S018227 |
| FH-110-800 Fiber Holder | S018228 |
| FH-110-900 Fiber Holder | S018229 |
| Power and Cords | |
| ADC-15 AC Adapter (FSM-100M/P) | S014826 |
| ACC-02 AC Power Cord | S001171 |
| ADC-09A AC Adapter (RS01) | S016820 |
| ACC-09 AC Power Cord (for ADC-09) | S014390 |
| Miscellaneous | |
| CC-27 Transit Case (100 M/P) | S014825 |
| DCS-01 Dust Cleaning Swab | S014827 |
| HP Power Meter Coupling Adapter | S012180 |
| ILX Power Meter Coupling Adapter | S012184 |
| Fiber Holder Adapter for HP/ILX PM | S012188 |
| Splicer V-Groove Cleaning Kit | S014397 |

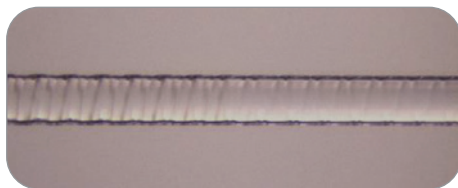


LAZERMasteR[®]

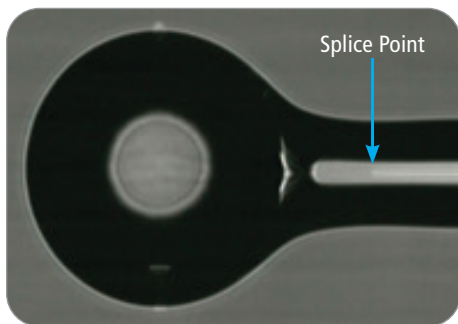
LZM-125A+ Splicing System

The LAZERMasteR LZM-125A+ is a splicing and glass processing system that uses a CO₂ laser heat source to perform splicing, tapering (to create MFAs), lensing, or other glass shaping operations with glass diameters of 2.0 mm or less. The high-resolution optical analysis system works in conjunction with on-board firmware for fully automatic splicing, tapering and other glass shaping processes.

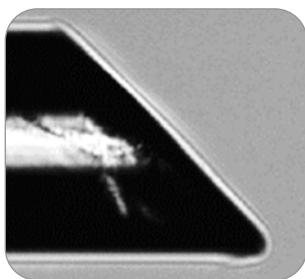
High precision glass processing is enabled by the intuitive and user-friendly on-board firmware (virtually identical to that of the Fujikura FSM-100 splicers). Operations may also be performed manually and by PC control. The FPS PC control GUI is supplied with the LZM-125A+ to provide additional features, greater flexibility, and finer control. The FPS GUI may be used on a PC chosen by the customer. Customers can also create proprietary PC control algorithms using a complete set of PC control commands.



Ablated Fiber Surface



Coreless Ball Lens to Collimate SMF Fiber



Ablated Fiber Surface

Features

- Fiber Ablation that can be used for cleaving, shaping, or custom mode stripping
- Splices and glass processing of fibers with 80 μm up to 2.0 mm diameter
- High resolution motion for precise control during splicing and glass processing operations
- Extensive library of applications which are transferable between the LZM and FSM family
- FPS PC GUI provides additional measurement capabilities and glass shaping control
- Clean modular laser heat source: Absolutely no deposits on fiber surface as might occur with filaments or electrodes.
- Substantially reduces maintenance and calibration requirements
- Proprietary feedback system ensures heating power stability
- No need for external process gas (as required with filament systems) or Vacuum systems
- Class 1 System with redundant automated laser safety features
- Motorized mirrors to automatically adjust the beam path

Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| LAZERMasteR LZM-125A+ Glass Processing and Splicing System (Standard baseline LZM-125 system. Includes AC adapters and cords and FPS PC software.) | S017800 |
| Optional Tablet PC (includes FPS software pre-installed) (recommended) | S016772 |
| LZM Training (Optional US based at customer locations) | S015867 |
| LZM Training (Optional International) | S015868 |
| Splicer V-groove Cleaning Kit | S014397 |

continued
→

LAZERMaster[®]

LZM-125A+ Splicing System

Specifications

| PARAMETER | CO ₂ LASER |
|---|---|
| Fiber Heating and Splicing Method | 30 W standard |
| CO ₂ Laser Power | Metal cover with multiple interlocks, class 1 enclosure, automatic actuation of shutter, automatic laser power cutoff |
| Laser Safety Features | Proprietary feedback system assures laser beam power stability |
| Laser Beam Control | Standard beam size is 4.5 mm X 2 mm and a minimum spot of 30 μm for ablations) |
| Typical Splice Loss | 0.02 dB for SMF (ITU-T G.652) |
| Typical Splice Strength | 100 kpsi for SMF (ITU-T G.652) using appropriate fiber preparation equipment |
| Camera Field of View | 2.3 mm |
| Fiber Observation Methods | PAS (Profile Alignment System) via transverse fiber observation WSI (Warm Splice Image) and WTI (Warm Taper Image) End-view observation |
| Applicable Fiber Diameter | End-view observation |
| V-Groove Clamping System | 80 μm to 2000 μm for automatic alignment by PAS Larger diameter endcaps may be aligned manually |
| Fiber Handling | Infinitely variable from 80 μm up to 2000 μm Clamping bare fiber or fiber coating in the "split V-groove" system |
| Alignment Methods | <ul style="list-style-type: none"> • PAS (Profile Alignment System, automatic alignment by camera observation) • Manual • PC control with Power Meter feedback via GPIB/USB • End-view |
| Endless Theta Rotation | 360° endless rotation, angle resolution 0.1° |
| X/Y Alignment Resolution | Sub-micron |
| Maximum Z Travel Length | 18 mm (both left and right Z units) as well as sweep with a total of 36 mm |
| Z Travel Resolution | 0.125 μm theoretical |
| Maximum Taper Length | 32 mm |
| Maximum Taper Ratio | 10:1 standard (For uniform direction, one-pass tapering) Dual direction tapering offers greatly increased taper ratios, as does tapering with more than one tapering pass. |
| Maximum Taper Speed | 1 mm/sec standard |
| Splicing Control | Internal firmware or operation by PC |
| Fiber Tapering and Glass Shaping Control | Internal firmware or operation by PC |
| PC Control | FPS software will be provided Complete command set for PC control |
| PC Option | Optional Tablet PC (includes FPS software pre-installed). Use of the FPS software on a PC provides finer control and additional features compared to the LZM-110 internal firmware |
| Interface Ports | USB 2.0 (For PC communications, data and image download, etc.) GPIB/USB (for power meter feedback) |
| Electrical Power | 100-240 VAC |
| Operating Conditions / Storage Conditions | 10 to 40°C / 5 to 60°C |
| Rotation Motors | For LZM-125A+, theta rotational motion is available for PM fiber alignment. |
| PM Fiber Alignment Methods | <ul style="list-style-type: none"> • PAS (For PANDA and other PM fibers) • IPA (Interrelation Profile Alignment, applicable to almost all PM fibers. Three distinct IPA methods available.) • End-view • Power meter feedback (Requires polarizer and analyzer, as well as GPIB interface) • Manual • Other methods by PC control |
| End-View Observation and Alignment | Internal end-view system |
| Flexibility for Customer Design Input | Customizable platform |

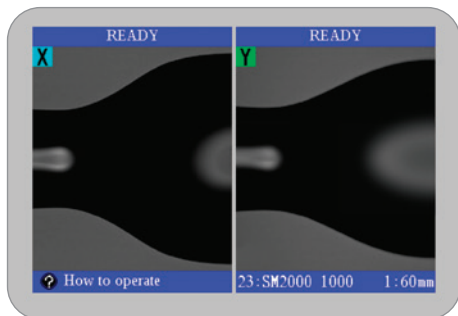


LAZERMasteR[®]

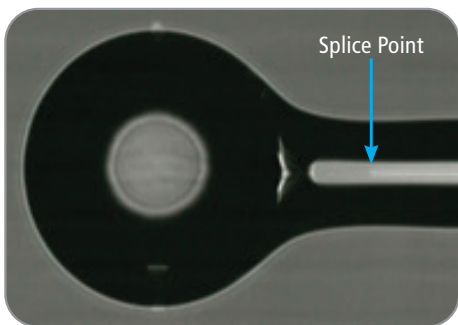
LXM-125M+/LXM-125P+ Splicing System

The LAZERMasteR LXM-125M+/LXM-125P+ is a splicing and glass processing system that uses a CO₂ laser heat source to perform splicing, tapering (to create MFAs), lensing, or other glass shaping operations with glass diameters of 2.0 mm or less. The high-resolution optical analysis system works in conjunction with on-board firmware for fully automatic splicing, tapering and other glass shaping processes.

High precision glass processing is enabled by the intuitive and user-friendly on-board firmware (virtually identical to that of the Fujikura FSM-100 splicers). Operations may also be performed manually and by PC control. The FPS PC control GUI is supplied with the LXM-125M+/LXM-125P+ to provide additional features, greater flexibility, and finer control. The FSP GUI may be used on a PC chosen by the customer. Customers can also create proprietary PC control algorithms using a complete set of PC control commands.



Coreless Ball Lens to Collimate SMF Fiber



Coreless Ball Lens to Collimate SMF Fiber



Tapered Probe with Small Ball End

Features

- Splices and glass processing of fibers with 80 μm up to 2.0 mm diameter
- High resolution motion for precise control during splicing and glass processing operations
- Extensive library of applications which are transferable between the LXM and FSM family
- FPS PC GUI provides additional measurement capabilities and glass shaping control
- Clean modular laser heat source: Absolutely no deposits on fiber surface as might occur with filaments or electrodes.
- Substantially reduces maintenance and calibration requirements
- Proprietary feedback system ensures heating power stability
- No need for external process gas (as required with filament systems) or Vacuum systems
- Class 1 System with redundant automated laser safety features
- Motorized mirrors to automatically adjust the beam path

Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| LAZERMasteR LXM-125M+ Glass Processing and Splicing System (Standard baseline LXM-125 system. Includes AC adapters, cords and FPS PC software) | S017802 |
| LAZERMasteR LXM-125P+ Glass Processing and Splicing System (Standard baseline LXM-125 system. Includes AC adapters, cords and FPS PC software) | S017804 |
| Optional Tablet PC (includes FPS software pre-installed) (recommended) | S016772 |

continued
→

LAZERMaster®

LZM-125M+/LZM-125P+ Splicing System

Specifications

| PARAMETER | VALUE |
|--|---|
| Fiber Heating and Splicing Method | CO ₂ Laser |
| CO ₂ Laser Power | 30 W standard |
| Laser Safety Features | Metal cover with multiple interlocks, class 1 enclosure, automatic actuation of shutter, automatic laser power cutoff |
| Laser Beam Control | Proprietary feedback system assures laser beam power stability |
| Typical Splice Loss | 0.02 dB for SMF (ITU-T G.652) |
| Typical Splice Strength | 100 kpsi for SMF (ITU-T G.652) using appropriate fiber preparation equipment |
| Camera Field of View | 2.3 mm |
| Fiber Observation Methods | PAS (Profile Alignment System) via transverse fiber observation WSI (Warm Splice Image) and WTI (Warm Taper Image) End-view observation |
| Applicable Fiber Diameter | 80 μm to 2000 μm for automatic alignment by PAS; Larger diameter endcaps may be aligned manually |
| V-groove Clamping System | Infinitely variable from 80 μm up to 2000 μm Clamping bare fiber or fiber coating Patented "split V-groove" system |
| Fiber Handling | Fujikura FSM-100, FSM-45, and FSM-40 splicer fiber holders |
| Alignment Methods | 4 methods for PM alignment: <ul style="list-style-type: none"> • PAS (Profile Alignment System, automatic alignment by camera observation) Manual • Other methods by PC control • Power meter feedback via GPIB • End-view |
| Endless Theta Rotation | 360° endless rotation for 125P+ model, angle resolution 0.1° (LZM-125P+ only) |
| X/Y Alignment Resolution | 0.1 μm |
| Maximum Z Travel Length | 18 mm (both left and right Z units) as well as sweep with a total of 36 mm |
| Z Travel Resolution | 0.125 μm theoretical |
| Maximum Taper Length | 32 mm |
| Maximum Taper Ratio | 10:1 standard (For uniform direction, one-pass tapering) Dual direction tapering offers greatly increased taper ratios, as does tapering with more than one tapering pass |
| Maximum Taper Speed | 1 mm/sec standard |
| Splicing Control | Internal firmware or operation by PC |
| Fiber Tapering and Glass Shaping Control | Internal firmware or operation by PC |
| PC Control | FPS software will be provided complete command set for PC control |
| PC Option | Tablet computer is available as an option. Use of the FPS software on a PC provides finer control and additional features compared to the LZM-125 internal firmware. |
| Interface Ports | USB 2.0 (For PC communications, data and image download, etc.) GPIB (for power meter feedback) |
| Electrical Power | 100-240 VAC |
| Operating/Storage Conditions | 10 to 40°C / 5 to 60°C |
| Rotation Motors | Optional (Provides theta rotational motion for PM fiber alignment) Available for both left and right fibers, or one side only (depending upon customer requirements) |
| PM Fiber Alignment Methods | <ul style="list-style-type: none"> • PAS (For PANDA and other PM fibers) • IPA (Interrelation Profile Alignment, applicable to almost all PM fibers. Three distinct IPA methods available.) • End-view • Power meter feedback (Requires polarizer and analyzer, as well as GPIB interface) • Manual • Other methods by PC control |
| End-View Observation and Alignment | Internal end-view system |
| Flexibility for Customer Design Input | Customizable platform |

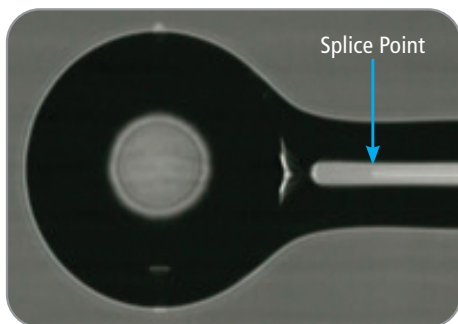


LAZERMaster®

LZM-125M/LZM-125P Splicing System

The LAZERMaster LZM-125M/LZM-125P is a splicing and glass processing system that uses a CO₂ laser heat source to perform splicing, tapering (to create MFAs), lensing, or other glass shaping operations with glass diameters of 2.0 mm or less. The high-resolution optical analysis system works in conjunction with on-board firmware for fully automatic splicing, tapering and other glass shaping processes.

High precision glass processing is enabled by the intuitive and user-friendly on-board firmware (virtually identical to that of the Fujikura FSM-100 splicers). Operations may also be performed manually and by PC control. The FPS PC control GUI is supplied with the LZM-125M/LZM-125P to provide additional features, greater flexibility, and finer control. The FSP GUI may be used on a PC chosen by the customer. Customers can also create proprietary PC control algorithms using a complete set of PC control commands.



Coreless Ball Lens to Collimate SMF Fiber

Features

- Splices and glass processing of fibers with 80 μm up to 2.0 mm diameter
- High resolution motion for precise control during splicing and glass processing operations
- Extensive library of applications which are transferable between the LZM and FSM family
- FPS PC GUI provides additional measurement capabilities and glass shaping control
- Clean modular laser heat source: Absolutely no deposits on fiber surface as might occur with filaments or electrodes.
- Substantially reduces maintenance and calibration requirements
- Proprietary feedback system ensures heating power stability
- No need for external process gas (as required with filament systems) or Vacuum systems
- Class 1 System with redundant automated laser safety features
- Motorized mirrors to automatically adjust the beam path



Tapered Probe with Small Ball End

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| LAZERMaster LZM-125M Glass Processing and Splicing System (Standard baseline LZM-125 system. Includes AC adapters, cords and FPS PC software) | S017801 |
| LAZERMaster LZM-125P Glass Processing and Splicing System (Standard baseline LZM-125 system. Includes AC adapters, cords and FPS PC software) | S017803 |
| Optional Tablet PC (includes FPS software pre-installed) (recommended) | S016772 |

continued
→

LAZERMaster[®]

LZM-125M/LZM-125P Splicing System

Specifications

| PARAMETER | VALUE |
|--|---|
| Fiber Heating and Splicing Method | CO ₂ Laser |
| CO ₂ Laser Power | 30 W standard |
| Laser Safety Features | Metal cover with multiple interlocks, class 1 enclosure, automatic actuation of safety shutter, automatic laser power cutoff |
| Laser Beam Control | Proprietary feedback system assures laser beam power stability |
| Typical Splice Loss | 0.02 dB for SMF (ITU-T G.652) |
| Typical Splice Strength | 100 kpsi for SMF (ITU-T G.652) using appropriate fiber preparation equipment |
| Camera Field of View | 2.3 mm |
| Fiber Observation Methods | PAS (Profile Alignment System) via transverse fiber observation WSI (Warm Splice Image) and WTI (Warm Taper Image) |
| Applicable Fiber Diameter | 80 μm to 2000 μm for automatic alignment by PAS Larger diameter endcaps may be aligned manually |
| V-groove Clamping System | Infinitely variable from 80 μm up to 2000 μm Clamping bare fiber or fiber coating Patented "split V-groove" system |
| Fiber Handling | Fujikura FSM-100, FSM-45, and FSM-40 splicer fiber holders |
| Alignment Methods | 3 methods for PM alignment: <ul style="list-style-type: none"> • PAS (Profile Alignment System, automatic alignment by camera observation) Manual • Other methods by PC control • Power meter feedback via GPIB |
| Endless Theta Rotation | 360° endless rotation for 125P model, angle resolution 0.1° |
| X/Y Alignment Resolution | 0.1 μm |
| Maximum Z Travel Length | 5 mm (both left and right Z units) as well as sweep with a total of 10 mm |
| Z Travel Resolution | 0.125 μm theoretical |
| Maximum Taper Length | 8 mm |
| Maximum Taper Ratio | 10:1 standard (For uniform direction, one-pass tapering) Dual direction tapering offers greatly increased taper ratios, as does tapering with more than one tapering pass. |
| Maximum Taper Speed | 1 mm/sec standard |
| Splicing Control | Internal firmware or operation by PC |
| Fiber Tapering and Glass Shaping Control | Internal firmware or operation by PC |
| PC Control | FPS software will be provided complete command set for PC control |
| PC Option | Tablet computer is available as an option. Use of the FPS software on a PC provides finer control and additional features compared to the LZM-125 internal firmware. |
| Interface Ports | USB 2.0 (For PC communications, data and image download, etc.) GPIB (for power meter feedback) |
| Electrical Power | 100-240 VAC |
| Operating/Storage Conditions | 10 to 40°C / 5 to 60°C |
| Rotation Motors | Optional (Provides theta rotational motion for PM fiber alignment in the LZM-125P model) |
| PM Fiber Alignment Methods | <ul style="list-style-type: none"> • PAS (For PANDA and other PM fibers) • IPA (Interrelation Profile Alignment, applicable to almost all PM fibers. Three distinct IPA methods available.) • Power meter feedback (Requires polarizer and analyzer, as well as GPIB interface) • Manual • Other methods by PC control |
| Flexibility for Customer Design Input | Customizable platform |



 Bluetooth®

90S+

Fujikura 90S+ Fusion Splicer

The Fujikura 90S+ core alignment fusion splicer solves common problems seen in the field—from splicing poor quality legacy fiber to automated equipment maintenance and upkeep. The Fujikura 90S+ can be use in multiple field splicing applications including bend-insensitive fibers in drop cables, long-haul terrestrial and submarine LEAF® fibers, loose buffer fiber, splice-on connectors, and the list goes on. The speed and accuracy of the 90S+ make it suitable for certain production and specialty environments where high output, tight packaging, and low loss requirements are required.

Regardless of your scenario, the Fujikura 90S+ is designed to keep you in the field with an extended battery life of 300 splice and heat cycles. With its multiple automated and easy-to-use features, the 90S+ alleviates the need for traditional operation tasks such as frequent arc calibrations, cleaver blade rotations, cleaver usage tracking, and manual splicing operations. A redesigned work tray, cooling tray, and optional cable clamp make the 90S+ kit more versatile than its predecessors in adapting to varying work conditions and environments.

When splicing loose buffer fiber, additional sheath clamps are not needed. The standard universal sheath clamp now handles both loose and tight buffer fibers. The new Active Fusion Control (AFC) technology improves splice losses for fibers that possess a poor cleave angle. Combined with Active Blade Management between the splicer and cleaver, the Fujikura 90S+ contains a robust set of splicing features that will reduce the likelihood of poor splice installations or repairs.



In Work Tray



Wind Protector Open

Features

- Cleaver tracking and upkeep with wireless communication
- Improved real-time arc control for fibers with poor cleave angles
- Automated wind protector, sheath clamps and splice operation
- Loose and tight buffer with same sheath clamp
- Lithium-ion battery with 300 splices/shrinks per charge
- PC software and 90S+ manual downloaded from splicer
- Multi-function transit case with integrated workstation

Applications

- Distribution fiber repair
- Long-haul network installation
- Field termination with splice-on connectors
- Access network installation
- Fanout kits, pigtailed and splice cassettes
- OSP cable installation and repair
- Optical modules – splitters, couplers, MUXs, EDFAs and attenuators

STOCK ITEM

Fujikura 90S+ Fusion Splicer

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| 90S+ Fusion Splicer (machine only) Includes: ADC-20 AC Adapter, ACC-14 AC Cord, BTR-15 Battery, ELCT2-16B Spare Electrodes (pair), Sheath Clamps, SP-03 Fiber Holder Set Plates, USB-01 Cable, Alcohol Dispenser, Screwdriver, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Work Tray J-Plate, SS03 single fiber stripper, CC39 Transit Case with Carrying Strap and Two Year Warranty | S017519 |
| 90S+ Fusion Splicer Kit (with cleaver) Includes: CT50 Cleaver, ADC-20 AC Adapter, ACC-14 AC Cord, BTR-15 Battery, ELCT2-16B Spare Electrodes (pair), Sheath Clamps, SP-03 Fiber Holder Set Plates, USB-01 Cable, Alcohol Dispenser, Screwdriver, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Work Tray J-Plate, SS03 single fiber stripper, CC39 Transit Case with Carrying Strap and Two Year Warranty | S017521 |
| 90S+ Fusion Splicer without Bluetooth (machine only) Includes: ADC-20 AC Adapter, BTR-15 Battery, ACC-14 AC Cord, ELCT2-16B Spare Electrodes (pair), Sheath Clamps, SP-03 Fiber Holder Set Plates, USB-01 Cable, Alcohol Dispenser, Screwdriver, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Work Tray J-Plate, SS03 Single Fiber Stripper, CC39 Transit Case with Carrying Strap and Two Year Warranty | S017520 |
| One Year Extended Warranty | S012996 |
| Two Year Extended Warranty | S013000 |

Recommended Products for the 90S+

| DESCRIPTION | AFL NO. |
|--|---------|
| Cleavers | |
| CT-16 Cleaver | S018330 |
| CT-50 Cleaver | S017030 |
| Fiber Holders (pair) | |
| FH-70-250 (250 μm coated fiber) | S017111 |
| FH-70-900 (900 μm jacketed fiber) | S017113 |
| FH-70-160 (160 μm coated fiber) | S017095 |
| FH-70-200 (200 μm coated fiber) | S017711 |
| FH-60-LT900 (Loose buffer 900 μm fiber) | S015181 |
| FUSEConnect® Accessories | |
| FH-FC-20 (900 μm within 2.0 mm sheathing) (each) | S014696 |
| FH-FC-30 (900 μm within 3.0 mm sheathing) (pair) | S014695 |
| FH-FC-900 (900 μm cable) (each) | S014697 |
| CLAMP-FC-2000 (pair) | S014705 |
| CLAMP-FC-3000 (single holder) | S014704 |
| Power Supply Options and Equipment | |
| ADC-20 AC Adapter | S017513 |
| ACC-14 AC Power Cord | S014536 |
| BTR-15 Battery | S017512 |
| DCC-20 Power Cord (connects AC Adapter to cigarette lighter socket) | S017527 |
| DCC-21 Power Cord (connects AC Adapter to power source via alligator clips) | S017528 |

| DESCRIPTION | AFL NO. |
|---|---------|
| Miscellaneous | |
| SS03 Single fiber stripper (3 hole) | S017098 |
| SS01 Single fiber stripper (1 hole) | S017099 |
| ELCT2-16B Electrodes | S017103 |
| SP-03 Fiber Holder Set Plates | S017518 |
| S90 Universal Sheath Clamps | S017696 |
| Portable Tripod Workstation (see product profile for more detail) | S014773 |
| ASW-02 Splicing Workstation (see product profile for more detail) | S010532 |
| WT-09R Work Tray Right | S017515 |
| WT-09L Work Tray Left | S017516 |
| JP-09 Work Tray J-Plate | S017517 |
| JP-10 J-Plate (Cooling tray attaches to splicer) | S017522 |
| JP-10-FC J-Plate with Fiber Clamps | S017523 |
| TS-03 Tripod Screw (90 Series) | S017524 |
| ST-02 Fusion Splicer Strap | S017525 |
| CLAMP-DC-12 (Drop cable clamp for work tray) | S017550 |
| USB-01 Cable | S014777 |
| CC39 Transit Case | S017514 |
| Splicer V-Groove Cleaning Kit | S014397 |
| ST-03 Case and Work Tray Strap | S017549 |



Fiber Holders

- Wide range of sizes for various applications
- Loose & Tight Buffer options available



Portable Tripod Work Station

- Sturdy work tray supports the splicer, cleaver and accessories
- Tripod supports a load capacity of up to eleven pounds



V-Groove Cleaning Kit

- Removes environmental contamination from the v-groove of the splicer
- Maintains performance and ensures fiber alignment

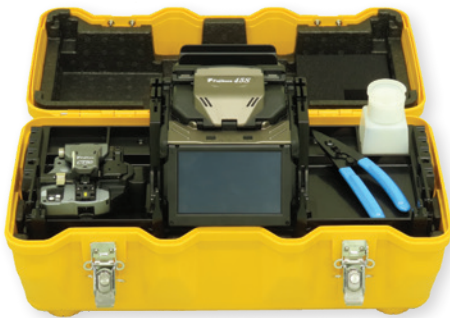
Fujikura 90S+ Fusion Splicer

Specifications

| PARAMETER | | VALUE |
|------------------------------|---------------------|--|
| Fiber Alignment Method | | Active core alignment |
| Fiber Count Can Be Spliced | | Single fiber |
| Applicable Fiber | Fiber Type | Single-mode optical fiber Multimode optical fiber |
| | Cladding Diameter | 80 to 150 μm |
| Applicable Coating | Sheath Clamp | Coating dia.: Max. 3,000 μm Cleave length: 5 to 16 mm |
| | Splice Loss | ITU-T G.652: Avg. 0.02 dB ITU-T G.651: Avg. 0.01 dB ITU-T G.653: Avg. 0.04 dB ITU-T G.654: Avg. 0.04 dB ITU-T G.655: Avg. 0.04 dB ITU-T G.657: Avg. 0.02 dB |
| Fiber Splice Performance | Splice Time | SM FAST mode: Avg. 8 to 10 sec. SMAUTO mode: Avg. 11 to 13 sec. AUTO mode: Avg. 14 to 16 sec. |
| | Sleeve Type | Heat-shrinkable sleeve |
| Applicable Protection Sleeve | Sleeve Length | Max. 66 mm |
| | Sleeve Dia. | Max. 6.0 mm before shrinking |
| Sleeve Heat Performance | Heat Time | 60 mm slim mode: Avg. 9 to 10 sec. 60 mm mode: Avg. 13 to 15 sec. |
| Fiber Tensile Test Force | | Approx. 2.0 N |
| Electrode Life | | Approx. 5,000 splices |
| Physical Description | Dimensions W | Approx. 170 mm without projection |
| | Dimensions D | Approx. 173 mm without projection |
| | Dimensions H | Approx. 150 mm without projection |
| | Weight | Approx. 2.8 kg including battery |
| Environmental Condition | Temperature | Operate: -10 to 50°C Storage: -40 to 80°C |
| | Humidity | Operate: 0 to 95% RH non-condensing Storage: 0 to 95% RH non-condensing |
| | Altitude | Max. 5,000 m |
| AC Adaptor | Input | AC100 to 240 V, 50/60 Hz, Max. 1.5 A |
| Battery Pack | Type | Rechargeable Lithium Ion |
| | Output | Approx. DC14.4V / 6,380 mAh |
| | Capacity | Approx. 300 splice and heat cycles |
| | Temperature | Recharge: 0 to 30°C Storage: -20 to 30°C |
| | Battery Life | Approx. 500 recharge cycles |
| Display | Recharge Time | Approx. 5-8 hours from empty |
| | LCD Monitor | TFT 5 inches with touch screen |
| Illumination | Magnification | 200 to 320x |
| | V-Grooves | LED lamp |
| Interface | PC | USB2.0 Mini B type |
| | External Led Lamp | USB2.0 A type, Approx. DC5V, 500 mA |
| | Ribbon Stripper | Mini DIN 6 pin, DC12V, Max. 1A |
| | Wireless | Bluetooth 4.1 LE |
| Data Storage | Splice Mode | 100 splice modes |
| | Heat Mode | 30 heat modes |
| | Splice Result | 20,000 splices |
| | Splice Image | 100 images |
| Screw Hole For Tripod | | 1/4-20 UNC |
| Other Features | Automatic Functions | Splice mode select by fiber type analysis |
| | | Discharge power calibration |
| | | Wind protector: open/close |
| | | Sheath clamp: open |
| | | Heater lid: open/close |
| Reference Guide | Sheath Clamp | Heater clamp: open/close |
| | | Video and PDF file stored in splicer |
| | | Easy sleeve positioning clamp |
| Electrode | | Replaceable without tool |



455



455 Standard Kit



455 on Tripod

Fujikura 455 Fusion Splicer

The 455 cladding alignment fusion splicer is changing the way people splice fiber in small to mid-fiber count applications. This Fujikura splicer debuts a landmark improvement to the fusion splicing process with the ability to prepare and load both fibers simultaneously. The hand-held fiber coating stripper, the SS-05, is capable of stripping two 250 μm coated fibers in the same pass, along with the CT-16A cleaver adapter plate which can likewise accommodate two bare fibers for cleaving. After preparation, the 455 patented sheath clamps enable loading both fibers simultaneously into the splicer with one fiber in each hand. The user can press down on the sheath clamp base to close it while positioning the fiber in the v-grooves. This enables one-handed operation.

Furthermore, the 455 sheath clamps are mechanically linked to the wind protector, so after splicing is finished, opening the wind protector also opens both sheath clamps for quick sleeve positioning and transfer to the tube heater. The 455 tube heater shrinks sleeves much faster than its predecessor with a nominal ~20 second heat time for 60 mm sleeves down from ~26 seconds. The simultaneous fiber preparation capability, automated sheath clamp opening, and a faster tube heater, combine to lower the overall fusion splicing cycle time by ~30% or more.

The 455 continues to benefit the user experience with improvements to fiber placement, battery access, and machine ergonomics. Previously, when using sheath clamps, if the cleaved fiber was accidentally set past the electrode centerline, the machine would send an error and require manual intervention. The 455 will now accept this mistake and reverse the fiber to correct position automatically. With a cube form factor, the 455 is easily transported and operated in space-constrained environments. The adjustable screen can alleviate glare from the sun and adjust with abnormal splicer positions confronted in challenging splice locations.

Backed by the best service team in the industry, the Fujikura 455 is the ideal splicer to use when portability, ruggedness, speed, and reliability are needed. If you'd like to see the 455 capabilities first-hand, please contact us at 1-800-235-3423 to arrange a product demonstration at your earliest convenience.

Applications

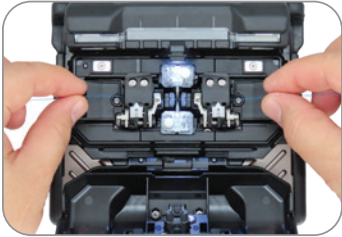
- 5G Small Cell Site
- FTTx drops and terminations
- MDF/IDF splices and terminations
- Rural fiber deployments and restorations

Features

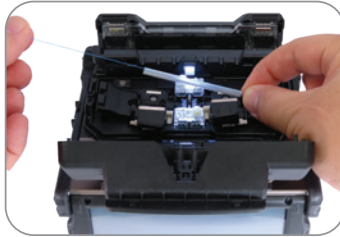
- Simultaneous fiber preparation with newly patented sheath clamp design
- Sheath clamps automatically opened with the wind protector
- Automatic fiber placement correction
- Active Fusion Control for arc optimization with every splice
- Active Blade Management for cleave quality monitoring and correction
- Easy-access battery, screen position adjustments, and ergonomic adaptations
- Fully ruggedized for shock, moisture and dust resistance

Fujikura 45S Fusion Splicer

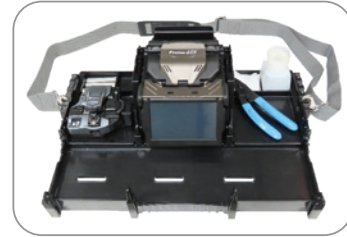
Features



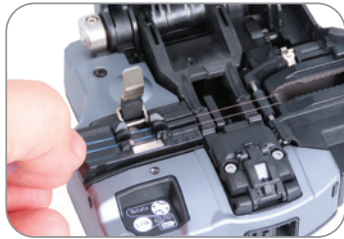
Simultaneous Fiber Loading



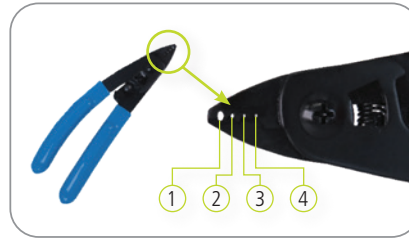
Sleeve Positioning



Work Tray with Neck Strap



CT-16A Adapter Plate on CT-50



Fiber stripper SS-05

- ① For 2.3 mm
- ② For 900 μ m
- ③ For 250 μ m
- ④ For 250 μ m

Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| Fujikura 45S Standard Kit Includes: CT-50 cleaver, SS-05 single fiber stripper, 1 pair each FH-70-250 and FH-70-900 fiber holders, SP-04 set plates, ELCT2-16B Spare Electrodes (Pair), ADC-21 AC Adapter, BTR-17 Battery Pack (installed), ACC-09 Power Cord, USB-01 USB Cable, AP-02 Alcohol Container, WT-10 work tray, ST-03 carrying case strap, TS-03 tripod screw, CC-45 Transit Case, 1 year factory warranty, and instruction manual downloaded from splicer | S018318 |
| Fujikura 45S Kit without Cleaver Includes: SS-05 single fiber stripper, 1 pair each FH-70-250 and FH-70-900 fiber holders, SP-04 set plates, ELCT2-16B Spare Electrodes (Pair), ADC-21 AC Adapter, BTR-17 Battery Pack (installed), ACC-09 Power Cord, USB-01 USB Cable, AP-02 Alcohol Container, WT-10 work tray, ST-03 carrying case strap, TS-03 tripod screw, CC-45 Transit Case, 1 year factory warranty, and instruction manual downloaded from splicer | S018319 |
| One Year Extended Warranty | S012996 |
| Two Year Extended Warranty | S013000 |

Recommended Accessories

| DESCRIPTION | AFL NO. |
|---|---------|
| Cleavers AND STRIPPERS | |
| CT-50 Fiber Cleaver | S017030 |
| CT-16 Fiber Cleaver | S018330 |
| SS-05 Dual Fiber Stripper | S018327 |
| Fiber Holders | |
| CLAMP-S35B Loose Buffer Sheath Clamp | S018333 |
| FH-70-250 (250 μ m single fiber) | S017111 |
| FH-70-200 (200 μ m single fiber) | S017711 |
| FH-70-900 Fiber Holders (900 μ m single fiber) | S017113 |
| FH-60-LT900 (900 μ m loose buffer tube) | S015181 |
| FUSEConnect® Accessories | |
| FH-FC-20 (900 μ m within 2.0 mm sheathing) (each) | S014696 |
| FH-FC-30 (900 μ m within 3.0 mm sheathing) (pair) | S014695 |
| FH-FC-900 (900 μ m cable) (each) | S014697 |
| CLAMP-FC-2000 (pair) | S014705 |
| CLAMP-FC-3000 (pair) | S014704 |

| DESCRIPTION | AFL NO. |
|---|---------|
| Power Supply Options | |
| BTR-17 Battery Pack | S018324 |
| ADC-21 AC Adapter | S018168 |
| ACC-09 Power Cord | S014390 |
| Miscellaneous | |
| WT-10 Work Tray | S018336 |
| TS-03 Tripod Screw | S017524 |
| ST-03 Carrying Case and Work Tray Strap | S017549 |
| CLAMP-DC-12 drop cable clamp on work tray | S017550 |
| ELCT2-16B Electrodes | S017103 |
| CC-45 Transit Case | S018326 |
| Splicer V-Groove Cleaning Kit | S014397 |
| USB-01 USB Cable | S014777 |
| SP-04 Fiber Holder Set Plates | S018332 |
| AD-16A Adapter Plate (CT-50 and CT-16 up to 900 μ m) | S018328 |
| Portable Tripod Workstation (see web listing for more detail) | S014773 |

Fujikura 45S Fusion Splicer

Specifications

| PARAMETER | | VALUE |
|--|---------------------------------|---|
| Fiber alignment method | | Active cladding alignment |
| Fiber count can be spliced | | Single fiber |
| Applicable fiber | Fiber type | Single-mode optical fiber Multimode optical fiber |
| | Cladding dia. | Approx. 125 µm |
| Applicable coating | Sheath Clamp | Coating diameter: Max. 3,000 µm Cleave length: 5 to 16 mm ^{*1} |
| | Fiber Holder | Coating diameter: 160 µm – 3,000 µm based on available fiber holder options Cleave length: Approx. 10 mm |
| Fiber splice performance | Splice loss ^{*2} | ITU-T G.652: Avg. 0.03dB |
| | | ITU-T G.651: Avg. 0.01dB |
| ITU-T G.653: Avg. 0.05dB | | |
| ITU-T G.655: Avg. 0.05dB | | |
| ITU-T G.657: Avg. 0.03dB | | |
| Splicing time ^{*3} | SM FAST mode: Avg. 6 to 7 sec. | |
| | SM AUTO mode: Avg. 8 to 10 sec. | |
| Applicable protection sleeve | Sleeve type | Heat shrinkable sleeve |
| | Sleeve length | Max. 66 mm |
| | Sleeve dia. | Max. 6.0 mm before shrinking |
| Sleeve heat performance | Heat time ^{*4} | 60 mm mode: Avg. 15 to 22 sec. |
| | | 60 mm slim mode: Avg. 15 to 17sec. |
| Fiber tensile test force | | Approx. 2.0 N |
| Electrode life ^{*5} | | Approx. 6,000 splices |
| Physical description | Dimensions W | Approx. 131 mm without projection |
| | Dimensions D | Approx. 123 mm without projection |
| | Dimensions H | Approx. 121 mm without projection |
| | Weight | Approx. 1.4 kg including battery |
| Environmental condition | Temperature | Operate : -10 to 50°C Storage : -40 to 80°C |
| | Humidity | Operate : 0 to 95% non-condensing Storage : 0 to 95% non-condensing |
| | Altitude | Max. 5,000 m |
| AC adaptor | Input | AC100 to 240V, 50/60Hz, Max. 1A |
| | Output | Approx. DC 19V, Max. 2.1A |
| Battery pack | Type | Rechargeable Lithium Ion |
| | Output | Approx. DC 14.4V / 3,190mAh |
| | Capacity ^{*6} | 60 mm heat mode: Approx. 200 splice & heat cycles |
| | | 60 mm slim heat mode: Approx. 230 splice & heat cycles |
| | Temperature | Operate: -10 to 50°C |
| Recharge : 0 to 40°C | | |
| Short term storage of 30 days: -20 to 50°C Long term storage: -20 to 30°C | | |
| Battery life ^{*7} | Approx. 500 recharge cycles | |
| Display | LCD monitor | TFT 4.95 inches with touch screen |
| | Magnification | Approx. 132 to 300X |
| Illumination | V-grooves | LED lamp |
| Interface | PC | USB2.0 MINI B type |
| | External LED lamp | USB 2.0 A type |
| | | Approx. DC5V, 500mA |
| Wireless ^{*8} | Bluetooth® 5.2 | |

Fujikura 45S Fusion Splicer

Specifications

| PARAMETER | | VALUE |
|-------------------------------|---------------------|--------------------------------------|
| Data storage | Splice mode | 100 splice modes |
| | Heat mode | 30 heat modes |
| | Splice result | 20,000 splices |
| | Fiber image | 100 images |
| Screw hole for tripod | | 1/4-20UNC |
| Other features | Automatic functions | Fusion control |
| | | Blade management and control |
| | | Splice start |
| | | Heater start |
| | Reference guide | PDF file stored on splicer |
| | Sheath clamp | Open with/without wind protector |
| | | Close when setting fiber |
| | | Easy sleeve positioning design |
| | Electrode | Tool-less replacement |
| | PC Software | Splicer firmware update via internet |
| Parameter Upload and download | | |

NOTES:

- *1 Cleave length range depending on fiber type
 5 – 16 mm: 125 μm cladding dia. And 250 μm coating dia.
 10 – 16 mm: 125 μm cladding dia. And 400 or 900 μm coating dia.
- *2 Measured with cut-back method relevant to ITU-T and IEC standard after splicing Fujikura identical fibers. The average splice loss changes depending on the environmental condition and fiber characteristics.
- *3 Measured at room temperature. The definition of splice time is from the fiber image appearing on the LCD monitor to the estimated splice loss. The average splice time changes depending on the environmental conditions, fiber type, and fiber characteristics.
- *4 Measured at room temperature with the AC adapter. The heat time is defined from the start beep sound to the finish beep sound. The average heat time changes depending on the environmental conditions, sleeve type, and battery pack condition. In addition, since the heating operation is constantly optimized, the average heating time changes depending on the usage conditions of the fusion splicer.
- *5 The electrode life changes depending on the environmental conditions, fiber type, and splice modes used.
- *6 Test Conditions
 Splice and heat time: 1 minute cycle
 Using the splicer power save settings, subject to our testing condition
 Using a new battery
 Room temperature
 The battery capacity changes when testing in different conditions than above
- *7 The battery capacity decreases to half after approx. 500 discharge and recharge cycles. The battery life is shortened further when using outside of the storage and operating temperature ranges, or if completely discharged when stored for an extended period without recharging.
- *8 Bluetooth mark and logos are registered trademarks of Bluetooth SIG, Inc.



35S



35S Standard Kit



CT-16 with AD-16A Adapter

Fujikura 35S Fusion Splicer

The 35S cladding alignment fusion splicer is changing the way people splice fiber in small to mid-fiber count applications. This Fujikura splicer debuts a landmark improvement to the fusion splicing process with the ability to prepare and load both fibers simultaneously. The hand-held fiber coating stripper, the SS-05, is capable of stripping two 250 μm coated fibers in the same pass, along with the CT-16 cleaver adapter plate which can likewise accommodate two bare fibers for cleaving. After preparation, the 35S patented sheath clamps enable loading both fibers simultaneously into the splicer with one fiber in each hand. The user can press down on the sheath clamp base to close it while positioning the fiber in the v-grooves. This enables a one-handed operation.

Furthermore, the 35S sheath clamps are mechanically linked to the wind protector, so after splicing is finished, opening the wind protector also opens both sheath clamps for quick sleeve positioning and transfer to the tube heater. The 35S tube heater shrinks sleeves much faster than its predecessor with a nominal ~20 second heat time for 60 mm sleeves down from ~26 seconds. The simultaneous fiber preparation capability, automated sheath clamp opening, and a faster tube heater, combine to lower the overall fusion splicing cycle time by ~30% or more.

The 35S continues to benefit the user experience with improvements to fiber placement, battery access, and machine ergonomics. Previously, when using sheath clamps, if the cleaved fiber was accidentally set past the electrode centerline, the machine would send an error and require manual intervention. The 35S will now accept this mistake and reverse the fiber to correct position automatically. With a cube form factor, the 35S is easily transported and operated in space-constrained environments. The adjustable screen can alleviate glare from the sun and adjust with abnormal splicer positions confronted in challenging splice locations.

Backed by the best service team in the industry, the Fujikura 35S is the ideal splicer to use when portability, ruggedness, speed, and reliability are needed. If you'd like to see the 35S capabilities first-hand, please contact us at 1-800-235-3423 to arrange a product demonstration at your earliest convenience.

Features

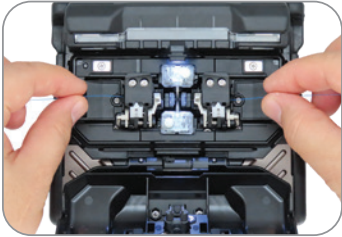
- Simultaneous fiber preparation with patented sheath clamp design.
- Sheath clamps automatically opened with the wind protector.
- Automatic fiber placement correction.
- Active Fusion Control for arc optimization with every splice.
- Easy-access battery, screen position adjustments, and ergonomic adaptations.
- Fully ruggedized for shock, moisture, and dust resistance.

Applications

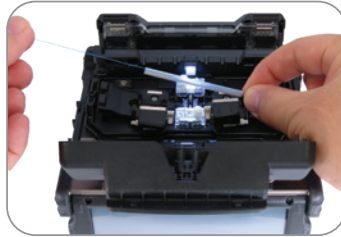
- 5G Small Cell Site
- FTTx drops and terminations
- MDF/IDF splices and terminations
- Rural fiber deployments and restorations

Fujikura 35S Fusion Splicer

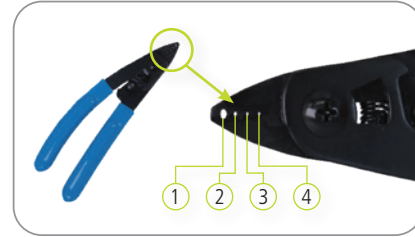
Features



Simultaneous Fiber Loading



Sleeve Positioning



Fiber stripper SS-05

- ① For 2.3 mm
- ② For 900 μm
- ③ For 250 μm
- ④ For 250 μm

Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| Fujikura 35S Standard Kit Includes: CT-16 cleaver, SS-05 single fiber stripper, 1 pair each FH-70-250 and FH-70-900 fiber holders, SP-04 set plates, ELCT2-16B Spare Electrodes (Pair), ADC-21 AC Adapter, BTR-17 Battery Pack (installed), ACC-09 Power Cord, USB-01 USB Cable, CC-44 Transit Case, 1 year factory warranty and instruction manual downloaded from splicer | S018314 |
| Fujikura 35S Kit without Cleaver Includes: SS-05 single fiber stripper, 1 pair each FH-70-250 and FH-70-900 fiber holders, SP-04 set plates, ELCT2-16B Spare Electrodes (Pair), ADC-21 AC Adapter, BTR-17 Battery Pack (installed), ACC-09 Power Cord, USB-01 USB Cable, 1 year factory warranty and instruction manual downloaded from splicer | S018316 |
| One Year Extended Warranty | S012996 |
| Two Year Extended Warranty | S013000 |

Recommended Accessories

| DESCRIPTION | AFL NO. |
|--|---------|
| Cleavers AND STRIPPERS | |
| CT-50 Fiber Cleaver | S017030 |
| CT-16 Fiber Cleaver | S018330 |
| SS-05 Dual Fiber Stripper | S018327 |
| Fiber Holders | |
| CLAMP-S35B Loose Buffer Sheath Clamp | S018333 |
| FH-70-250 (250 μm single fiber) | S017111 |
| FH-70-200 (200 μm single fiber) | S017711 |
| FH-70-900 Fiber Holders (900 μm single fiber) | S017113 |
| FH-60-LT900 (900 μm loose buffer tube) | S015181 |
| FUSEConnect® Accessories | |
| FH-FC-20 (900 μm within 2.0 mm sheathing) (each) | S014696 |
| FH-FC-30 (900 μm within 3.0 mm sheathing) (pair) | S014695 |
| FH-FC-900 (900 μm cable) (each) | S014697 |
| CLAMP-FC-2000 (pair) | S014705 |
| CLAMP-FC-3000 (pair) | S014704 |

| DESCRIPTION | AFL NO. |
|---|---------|
| Power Supply Options | |
| BTR-17 Battery Pack | S018324 |
| ADC-21 AC Adapter | S018168 |
| ACC-09 Power Cord | S014390 |
| Miscellaneous | |
| TS-03 Tripod Screw | S017524 |
| ELCT2-16B Electrodes | S017103 |
| CC-44 Transit Case | S018325 |
| Splicer V-Groove Cleaning Kit | S014397 |
| USB-01 USB Cable | S014777 |
| SP-04 Fiber Holder Set Plates | S018332 |
| AD-16A Adapter Plate (CT-50 & CT-16 up to 900um) | S018328 |
| AD-16B Adapter Plate (CT-50 & CT-16 up to 3mm) | S018331 |
| CB-09 Replacement Blade for CT-16 Cleaver | S018335 |
| Portable Tripod Workstation (see web listing for more detail) | S014773 |

Fujikura 35S Fusion Splicer

Specifications

| PARAMETER | VALUE | |
|--|--------------------------------|---|
| Fiber alignment method | Active cladding alignment | |
| Fiber count can be spliced | Single fiber | |
| Applicable fiber | Fiber type | Single mode optical fiber Multi mode optical fiber |
| | Cladding dia. | Approx. 125 μm |
| Applicable coating | Sheath Clamp | Coating diameter: Max. 3,000 μm Cleave length: 5 to 16 mm *1 |
| | Fiber Holder | Coating diameter: 160 μm – 3,000 μm based on available fiber holder options Cleave length: Approx. 10 mm |
| Fiber splice performance | Splice loss *2 | ITU-T G.652: Avg. 0.03dB |
| | | ITU-T G.651: Avg. 0.01dB |
| ITU-T G.653: Avg. 0.05dB | | |
| ITU-T G.655: Avg. 0.05dB | | |
| ITU-T G.657: Avg. 0.03dB | | |
| Splicing time*3 | SM FAST mode: Avg. 6 to 7 sec. | |
| | SM AUTO mode: Avg. 8 to 10sec. | |
| Applicable protection sleeve | Sleeve type | Heat shrinkable sleeve |
| | Sleeve length | Max. 66 mm |
| | Sleeve dia. | Max. 6.0 mm before shrinking |
| Sleeve heat performance | Heat time*4 | 60 mm mode: Avg. 15 to 22sec. |
| | | 60 mm slim mode: Avg. 15 to 17sec. |
| Fiber tensile test force | Approx. 2.0 N | |
| Electrode life*5 | Approx. 6,000 splices | |
| Physical description | Dimensions W | Approx. 131 mm without projection |
| | Dimensions D | Approx. 123 mm without projection |
| | Dimensions H | Approx. 121 mm without projection |
| | Weight | Approx. 1.4 kg including battery |
| Environmental condition | Temperature | Operate : -10 to 50°C Storage : -40 to 80°C |
| | Humidity | Operate : 0 to 95% non-condensing Storage : 0 to 95% non-condensing |
| | Altitude | Max. 5,000 m |
| AC adaptor | Input | AC100 to 240V, 50/60Hz, Max. 1A |
| | Output | Approx. DC 19V, Max. 2.1A |
| Battery pack | Type | Rechargeable Lithium Ion |
| | Output | Approx. DC 14.4V / 3,190mAh |
| | Capacity*6 | 60 mm heat mode: Approx. 200 splice & heat cycles |
| | | 60 mm slim heat mode: Approx. 230 splice & heat cycles |
| | Temperature | Operate: -10 to 50°C |
| Recharge : 0 to 40°C | | |
| Short term storage of 30 days: -20 to 50°C Long term storage: -20 to 30°C | | |
| Battery life*7 | Approx. 500 recharge cycles | |
| Display | LCD monitor | TFT 4.95 inches with touch screen |
| | Magnification | Approx. 132 to 300X |
| Illumination | V-grooves | LED lamp |
| Interface | PC | USB 2.0 MINI B type |
| | External LED lamp | USB 2.0 A type Approx. DC5V, 500mA |

Fujikura 35S Fusion Splicer

Specifications

| PARAMETER | | VALUE |
|----------------|--------------------------------------|----------------------------------|
| Data storage | Splice mode | 100 splice modes |
| | Heat mode | 30 heat modes |
| | Splice result | 20,000 splices |
| | Fiber image | 100 images |
| Other features | Automatic functions | Fusion control |
| | | Splice start |
| | | Heater start |
| | Reference guide | PDF file stored on splicer |
| | Sheath clamp | Open with/without wind protector |
| | | Close when setting fiber |
| | | Easy sleeve positioning design |
| | Electrode | Tool-less replacement |
| PC Software | Splicer firmware update via internet | |
| | Parameter Upload and download | |

NOTES:

- *1 Cleave length range depending on fiber type
 5 – 16 mm: 125 μm cladding dia. And 250 μm coating dia.
 10 – 16 mm: 125 μm cladding dia. And 400 or 900 μm coating dia.
- *2 Measured with cut-back method relevant to ITU-T and IEC standard after splicing Fujikura identical fibers. The average splice loss changes depending on the environmental condition and fiber characteristics.
- *3 Measured at room temperature. The definition of splice time is from the fiber image appearing on the LCD monitor to the estimated splice loss. The average splice time changes depending on the environmental conditions, fiber type, and fiber characteristics.
- *4 Measured at room temperature with the AC adapter. The heat time is defined from the start beep sound to the finish beep sound. The average heat time changes depending on the environmental conditions, sleeve type, and battery pack condition. In addition, since the heating operation is constantly optimized, the average heating time changes depending on the usage conditions of the fusion splicer.
- *5 The electrode life changes depending on the environmental conditions, fiber type, and splice modes used.
- *6 Test Conditions
 Splice and heat time: 1 minute cycle
 Using the splicer power save settings, subject to our testing condition
 Using a new battery
 Room temperature
 The battery capacity changes when testing in different conditions than above
- *7 The battery capacity decreases to half after approx. 500 discharge and recharge cycles. The battery life is shortened further when using outside of the storage and operating temperature ranges, or if completely discharged when stored for an extended period without recharging.



Bluetooth®

90R

Fujikura 90R Fusion Splicer

The Fujikura 90R is the mass fusion splicer workhorse of the splicing world. As data demand continues to rise, the solution to handle the increased traffic is to increase fiber counts. As a result, fiber counts being utilized in enterprise data centers, campus, and metro networks have grown enough to make single fiber splicing too costly and timely. High density cabling made possible by SpiderWeb Ribbon® (SWR®) and others like it are spurring ribbon splicing activity in places that have traditionally used loose fiber. The 90R is the answer to these changes in splicing demand. With automated splice start, tube heater, wind protector, cleave tracking, and blade rotations for up to 2 cleavers at a time, this splicer frees up operator time for other fiber preparation steps. New to the 90R, you can keep your splicer in the field longer with field replaceable V-grooves. When V-grooves can no longer be cleaned after extended use, or are accidentally damaged, you can resume splicing in minutes by installing the spare set included with your 90R kit. Put our 90R to the test by contacting us to see its capabilities first-hand, 1-800-235-3423.



In Work Tray



Wind Protector Open

Features

- Cleave tracking and upkeep with wireless communication
- Automated wind protector, tube heater and splice operation
- User replaceable v-grooves
- 200 μm and 250 μm SWR universal ribbon prep accessories
- Graphical User Interface with 5.0" Touchscreen
- PC software and 90R manual downloaded from splicer
- Multi-function transit case with integrated workstation

Applications

- Data Center cable installation
- High fiber count metro and campus networks
- Long-haul network installs and repair
- Trunk cable repair with Splice-on MPOs
- Ribbon splicing high density cables with 200 μm loose fiber

Fujikura 90R Fusion Splicer

Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| 90R Fusion Splicer (machine only) Includes: BTR-15 Battery, ADC-20 AC Adapter, ACC-14 AC Cord, ELCT2-16B Spare Electrodes (pair) with spare V-Grooves (VG12-01), FH-70-12 Fiber Holders (pair), USB Cable, Alcohol Dispenser, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Video Instruction Manual, Work Tray, CC-39 Transit Case with Carrying Strap and Two Year Warranty | S017509 |
| 90R Fusion Splicer Kit (with cleaver & thermal stripper) Includes: BTR-15 Battery, CT50 Cleaver, RS03 Stripper, ADC-20 AC Adapter, ACC-14 AC Cord, ELCT2-16B Spare Electrodes (pair) with spare V-Grooves (VG12-01), FH-70-12 Fiber Holders (pair), USB Cable, Alcohol Dispenser, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Video Instruction Manual, CC-39 Transit Case with Carrying Strap and Two Year Warranty | S017511 |
| 90R Fusion Splicer without Bluetooth (machine only) Includes: BTR-15 Battery, ADC-20 AC Adapter, ACC-14 AC Cord, ELCT2-16B Spare Electrodes (pair) with spare V-Grooves (VG12-01), FH-70-12 Fiber Holders (pair), USB Cable, Alcohol Dispenser, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Video Instruction Manual, CC-39 Transit Case with Carrying Strap and Two Year Warranty | S017540 |
| 90R Fusion Splicer Kit without Bluetooth (with cleaver & thermal stripper) Includes: BTR-15 Battery, CT50 Cleaver, RS01 Stripper, ADC-20 AC Adapter, ACC-14 AC Cord, ELCT2-16B Spare Electrodes (pair) with spare V-Grooves (VG12-01), FH-70-12 Fiber Holders (pair), USB Cable, Alcohol Dispenser, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Video Instruction Manual, CC-39 Transit Case with Carrying Strap and Two Year Warranty | S017510 |
| One Year Extended Warranty | S012996 |
| Two Year Extended Warranty | S013000 |

Recommended Products for the 90R

| DESCRIPTION | AFL NO. |
|--|---------|
| Cleavers and Strippers | |
| CT50 Cleaver | S017030 |
| RS01 Thermal Stripper | S016815 |
| RS02 Thermal Stripper | S016816 |
| RS03 Thermal Stripper | S016817 |
| Fiber Holders (pair) | |
| FH-70-2 | S017114 |
| FH-70-4 | S017115 |
| FH-70-6 | S017116 |
| FH-70-8 | S017117 |
| FH-70-10 | S017118 |
| FH-70-12 | S017119 |
| FH-70-12PC (pitch conversion holder for 200 µm loose fibers) | S017464 |
| FH-70-12-200 (200 µm pitch ribbons) | S017681 |
| FH-70-16 | S017533 |
| FH-70-250 (250 µm coated single fiber) | S017111 |
| FH-70-900 (900 µm jacketed single fiber) | S017113 |
| FH-60-LT900 (Loose buffer 900 µm fiber) | S015181 |
| FUSEConnect® Accessories | |
| FH-FC-20 (900 µm within 2.0 mm sheathing) (each) | S014696 |
| FH-FC-30 (900 µm within 3.0 mm sheathing) (pair) | S014695 |
| FH-FC-900 (900 µm cable) (each) | S014697 |
| CLAMP-FC-2000 (pair) | S014705 |
| Batteries and Power Cords | |
| ADC-20 AC Adapter | S017513 |
| BTR-15 Battery | S017512 |
| DCC-11 splicer to ribbon stripper power cord | S013852 |
| DCC-20 Power Cord | S017527 |
| Connects ADC-20 to cigarette lighter socket | |
| DCC-21 Power Cord | S017528 |
| Connects ADC-20 to power source via alligator clips | |
| ACC-14 AC Power Cord | S014536 |

| DESCRIPTION | AFL NO. |
|---|---------|
| Miscellaneous | |
| SS01 Single fiber stripper (1 hole) | S017099 |
| ELCT2-16B Electrodes | S017103 |
| Portable Tripod Workstation (see product profile for more detail) | S014773 |
| ASW-02 Splicing Workstation (see product profile for more detail) | S010532 |
| WT-09R Work Tray Right | S017515 |
| WT-09L Work Tray Left | S017516 |
| JP-09 Work Tray J-Plate | S017517 |
| JP-10 J-Plate (Cooling tray attaches to splicer) | S017522 |
| JP-10-FC J-Plate with Fiber Clamps | S017523 |
| TS-03 Tripod Screw (90 Series) | S017524 |
| ST-02 Fusion Splicer Strap | S017525 |
| CLAMP-DC-12 (Drop Cable clamp on work tray) | S017550 |
| FST-12 Fiber Separation Tool | S014012 |
| FAT-04 Fiber Arrangement Tool | S010212 |
| RT-02 Fiber Arrangement Tool | S017465 |
| VG12-01 12 fiber V-groove | S017548 |
| VG12-01-200 12 fiber V-groove (200µm pitch ribbons) | S017680 |
| VG04-01 4 fiber V-groove | S017551 |
| VG08-01 Spare 8 fiber V-grooves | S017508 |
| VG16-01 16 fiber V-groove | S017552 |
| FAA-03A Ribbon Forming Adhesive (4 oz. bottle) | S008720 |
| FAA-03A Ribbon Forming Adhesive (0.5 liter bottle) | S008622 |
| CC-39 Transit Case | S017514 |
| Splicer V-Groove Cleaning Kit | S014397 |
| ST-03 Case and Work Tray Strap | S017549 |



Fiber Arrangement Tool

- Features an easy-to-use fiber arrangement method utilizing linear travel
- Includes a spare paste applicator



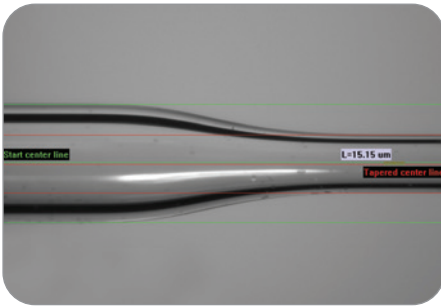
V-Groove Cleaning Kit

- Removes environmental contamination from the v-groove of the splicer
- Maintains performance and ensures fiber alignment

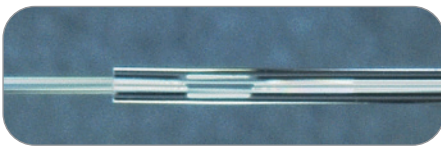
Fujikura 90R Fusion Splicer

Specifications

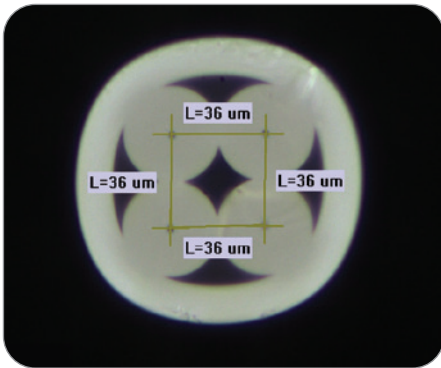
| PARAMETER | VALUE | |
|--------------------------------------|--|---|
| Fiber Alignment Method | Self cladding alignment with melting surface tension | |
| Fiber Count Can Be Spliced | Up to 16 fiber ribbon | |
| Applicable Fiber | Fiber Type | Single mode optical fiber Multi mode optical fiber |
| | Cladding Dia. | Approx. 125 μm |
| Applicable Coating | Fiber Holder | Coating shape. : Refer to fiber holder options Cleave length : 10 mm |
| Fiber Splice Performance | Splice Loss | ITU-T G.652 : Avg. 0.05 dB |
| | | ITU-T G.651 : Avg. 0.02 dB |
| ITU-T G.653 : Avg. 0.08 dB | | |
| ITU-T G.655 : Avg. 0.08 dB | | |
| ITU-T G.657 : Avg. 0.05 dB | | |
| Splice Time | SM FAST mode : Avg. 14 to 15 sec. | |
| | SM AUTO mode : Avg. 19 to 20 sec. | |
| Applicable Protection Sleeve | Sleeve Type | Heat-shrinkable sleeve |
| | Sleeve Length | Max. 66 mm |
| | Sleeve Dia. | Max. 6.0 mm before shrinking |
| Sleeve Heat Performance | Heat Time | 40 mm FP-05 mode : Avg. 38 to 40 sec. |
| | | 40 mm FP-04T mode : Avg. 17 to 19 sec. |
| | | Single 60 mm mode: Avg. 13 to 15 sec. |
| Fiber Tensile Test Force | Approx. 2.0 N | |
| Electrode Life | Approx. 1,500 splices | |
| Physical Description | Dimensions W | Approx.170 mm without projection |
| | Dimensions D | Approx.173 mm without projection |
| | Dimensions H | Approx.150 mm without projection |
| | Weight | Approx. 2.6 kg including battery |
| Environmental Condition | Temperature | Operate : -10 to 50°C |
| | | Storage : -40 to 80°C |
| | Humidity | Operate : 0 to 95% RH non-condensing |
| Storage : 0 to 95% RH non-condensing | | |
| Altitude | Max. 3,700 m | |
| Ac Adaptor | Input | AC100 to 240 V, 50/60 Hz, Max. 1.5 A |
| Battery Pack | Type | Rechargeable Lithium Ion |
| | Output | Approx. DC14.4V / 6,380 mAh |
| | Capacity | Approx. 165 splice and heat cycles |
| | Temperature | Recharge : 0 to 30°C |
| | | Storage : -20 to 30°C |
| | Battery Life | Approx. 500 recharge cycles |
| Recharge Time | Approx. 5 – 8 hours from empty | |
| Display | LCD Monitor | TFT 5 inches with touch screen |
| | Magnification | Approx. 20X : 12 Ribbon to 60X : Single |
| Illumination | V-Grooves | LED lamp |
| Interface | PC | USB2.0 Mini B type |
| | External Led Lamp | USB2.0 A type, Approx. DC5V, 500 mA |
| | Ribbon Stripper | Mini DIN 6 pin, DC12V, Max. 1A |
| | Wireless | Bluetooth 4.1 LE |
| Data Storage | Splice Mode | 100 splice modes |
| | Heat Mode | 30 heat modes |
| | Splice Result | 10,000 splices |
| | Splice Image | 100 images |
| Screw Hole For Tripod | | 1/4-20 UNC |
| Other Features | Automatic Functions | Splice mode select by fiber type analysis |
| | | Discharge power calibration |
| | | Wind protector : open/close |
| | | Sheath clamp : open |
| | | Heater lid : open/close |
| Reference Guide | Heater clamp : open/close | |
| | Video and PDF file stored in splicer | |
| | Electrode | Replaceable without tool |



Adiabatic Taper



125 μ m over clad



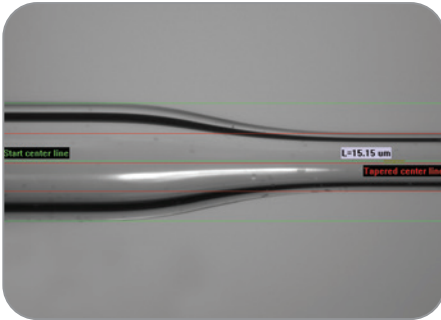
Core to core Multicore Fiber Fan-outs

Specialty Fiber Optic Components and Services

As optical fiber processing technologies and specialty fiber research advances, an entirely new generation of fiber optic components has developed. With technologically-advanced high precision glass processing platforms, components such as ball lenses, tapers, combiners and more can be produced at mass production quantities.

AFL is at the forefront of innovation with fiber optic component and specialty splicing services offering:

- **Adiabatic Tapers**—ensure light remains confined within the core/cladding or cladding, adiabatic tapers are produced.
- **Endcap Technology**—as high-powered fiber lasers have emerged, endcap technology has advanced.
- **Fiber Combiners**—used in the fiber laser industry, fiber combiners provide pumping energy for active fiber lasers which allows the largest amount of light into the lasing cavity with the least amount of loss.
- **Lensing Technologies**—optical fiber can be transformed to various lens shapes through today’s advanced technologies.
- **Mode Field Adapters (MFA)**—modify a fiber’s optical properties to match the fiber that it is being spliced to which allows a lower loss at the splice point.
- **Multicore Fiber Fanouts (MCF)**—provide the ability to launch and retrieve signals to and from individual fiber cores.
- **Over Cladding**—process of placing a fiber into a capillary tube and collapsing the capillary tube until it fuses with the fiber.
- **Splicing and Cleaving Services**—AFL has the capability to provide custom engineering services for specialty splicing or fiber preparation applications.



Adiabatic Tapers

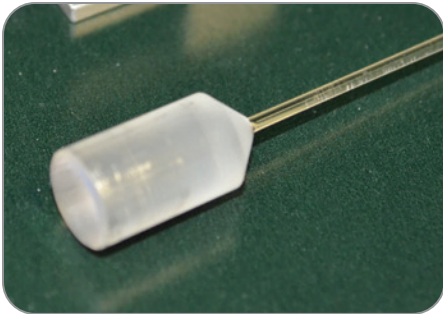
To ensure light remains confined within the core/cladding or cladding, adiabatic tapers are produced. AFL offers fiber components for applications including mode field adapting to minimize splice loss; producing combiners to increase the power in a fiber; creating fiber sensors that utilize the interaction of an external material coming near or in contact with the evanescent wave of a severally tapered fiber; tapering of capillary tubes for unique applications.

Features

- Low Loss
- Tapers up to 130 mm in length
- Linear, Parabolic, sinusoidal tapers
- Unlimited taper ratios
- Tapering large fibers up to 2 mm

Applications

- Sensing
- Fiber lasers
- Applicable to SM, MM, LMA, PCF and other fiber types

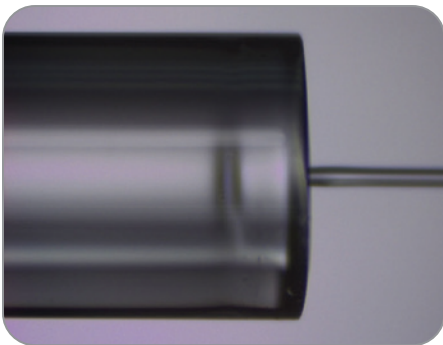
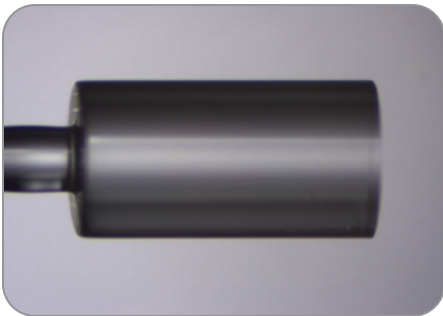


Endcap Technology

As high-powered fiber lasers have emerged, endcap technology has advanced.

The energy density at the output end of a fiber laser can be extremely high. By using an endcap, high density energy can be allowed to diverge in a controlled manner. As light emerges, it is refocused onto the work surface with free-spaced optics. However, the endcap diameter can be 4 to 8 times larger than the actual fiber output from the laser. This poses a challenge for some heating methods used to fuse the fiber to the endcap.

By using a CO₂ laser as the heat source, the CO₂ laser works through absorption of photons into the silica which heats proportionally based on the surface area and thermal mass of the object being heated. Because the endcap has a much larger thermal mass than the smaller fiber connected to it, the two fibers heat at roughly the same rate when exposed to the energy from the CO₂ laser. Therefore, CO₂ lasers provide the most reliable splicing technology.

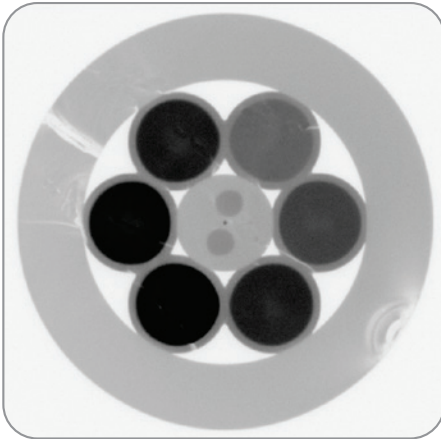


Features

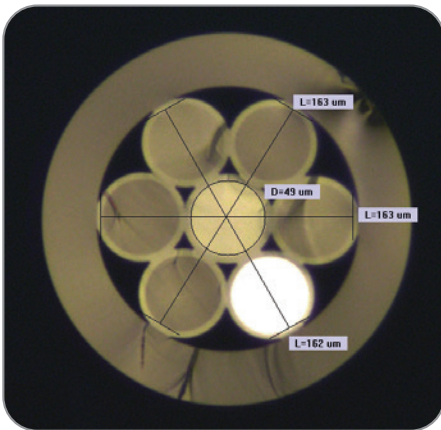
- M² value preserved
- Low pointing error
- With or without AR coatings
- Applicable to large fiber endcap diameters
- Various endcap materials and structures

Applications

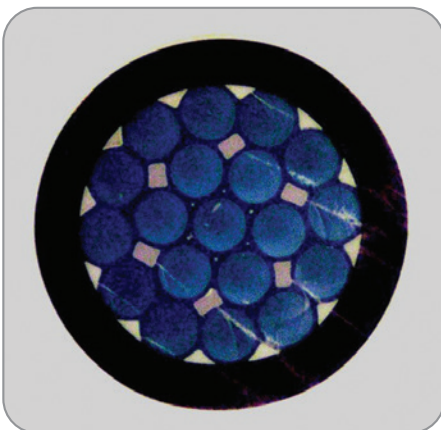
- High power fiber lasers
- Output beam control
- Medical applications



6+1 into 1 Combiner



7 into 1 Combiner



19 into 1 Combiner

Fiber Combiners

Used in the fiber laser industry, fiber combiners provide pumping energy for active fiber lasers which allows the largest amount of light into the lasing cavity with the least amount of loss. By tapering several fibers together, the energy from the pump diodes can be coupled into a single fiber and spliced to the active fiber to create a lasing cavity.

AFL creates fiber combiners that ensure low loss with a large amount of light. The AFL processes are adiabatic in design and free from contamination since combiners are sensitive to both.

Fiber Combiner Types Offered by AFL include:

7 into 1

6 + 1 into 1

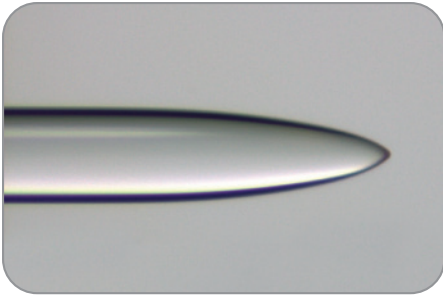
19 into 1

Features

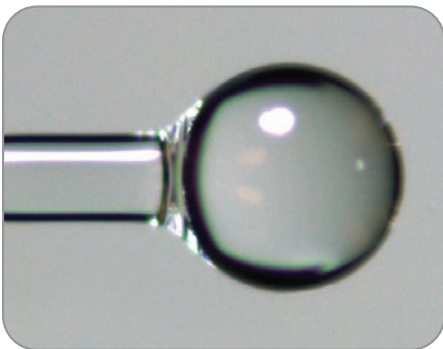
- Low loss
- Customizable by fiber size and number of fibers
- Unique packaging options
- May include single fiber such as 6x1 into 1 configurations

Applications

- Combines multiple pumps into a single output fiber
- Fiber lasers
- High power amplifiers



Axicon Lens



Ball Lens

Lensing Technologies

Optical fiber can be transformed to various lens shapes through today's advanced technologies. From medical applications to lasers, lensing is being used in hospitals, in military applications, in research and development and more. AFL produces two types of lenses.

Axicon Lens

An Axicon lens is used to increase the efficiency of coupling lasers and LED's into fibers at the chip level. Produced by either polishing the tip of the fiber with a special polishing process or by using a CO2 laser to ablate the fiber end to remove the cladding material in a conical shape, an Axicon lens can be produced with either method and with similar looking results and similar performing components.

The tapered Axicon is produced by heating and drawing the fiber to an abrupt tip. Although the shape of the lens is formed at a much less steep angle, the optical performance is almost exactly the same as the other two techniques.

Ball Lens

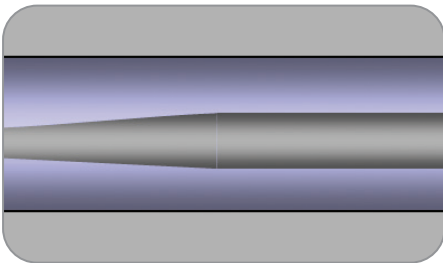
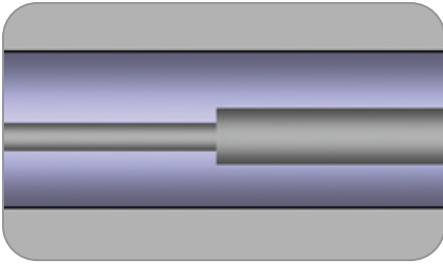
Ball lenses are used in the medical field for the purposes of detecting and treating cancers as well as destroying kidney stones. Ball lenses can be produced using several methods. The most common method is splicing a coreless fiber onto an existing launch fiber to form the ball at a fixed distance from the end of the launch fiber. As the beam begins to diverge into the coreless fiber, the distance and size of the ball can be constructed in such a way as to create converging, diverging or a collimated beam exiting the ball.

Features

- Customizable for spot size, focal length, divergence angle, etc.
- High divergence angle can create diffusers
- Increased coupling efficiency from devices to fibers

Applications

- Coupling to devices such as lasers and detectors
- Optical switching
- Medical applications
- Sensing
- Ablation



Mode Field Adapters

Mode field adapters (MFA) modify a fiber's optical properties to match the fiber that it is being spliced to which allows a lower loss at the splice point. This can be accomplished in one of two ways:

1. The larger core can be tapered down to match the smaller core size.
2. The smaller core can be expanded by heating it before or during the splice.

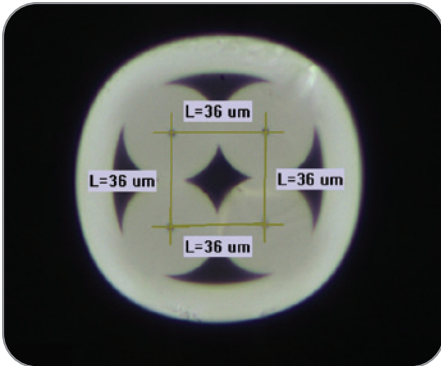
In the most extreme example, splicing a single-mode fiber to a multimode fiber will typically induce 20 dB of loss when going from the multimode to the single-mode fiber. Using MFA's, the loss can be lowered to below 1 dB or less. AFL has the capability to provide this service.

Features

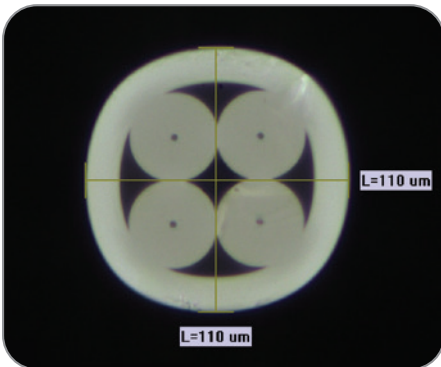
- Low loss
- Coupling large to small cores
- Custom packaging
- Custom pigtail lengths

Applications

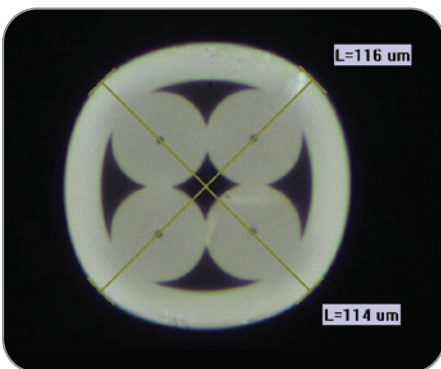
- Fiber lasers
- Double clad and triple clad fiber splicing for loss measurements
- Mode field matching and coupling



Core to core



Flat to flat



Point to point

Multicore Fiber Fanouts

Multicore Fiber (MCF) fan-outs provide the ability to launch and retrieve signals to and from individual fiber cores.

Multicore fibers are used for sensing applications and for increasing the transmission density of a single fiber in long haul applications. In a MCF fan out, a bundle of fibers matching the number of cores are placed together and tapered until the core spacing matches that of the MCF. This fused structure is then cleaved and spliced onto the end of a multicore fiber, providing a method to access the individual cores at both the input and output ends of the multicore fiber.

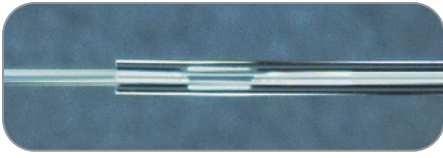
The core alignment must be maintained on a sub-micron scale and requires a very uniform heating and tapering process to ensure the taper is adiabatic and that the core spacing remains uniform. AFL has the capability to produce 4-fiber and 7-fiber multicore fiber fanouts through this process.

Features

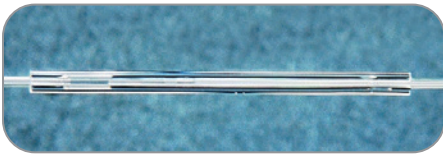
- Low loss
- Custom geometries for the number of cores and core distribution
- Easy access to individual cores
- Connectorization available

Applications

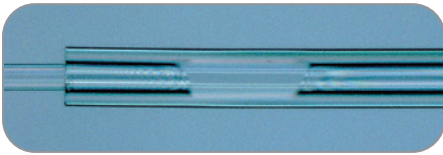
- Long haul telecommunications
- Sensing



125 μm over clad



400 μm over clad



400 μm over clad

Over Cladding

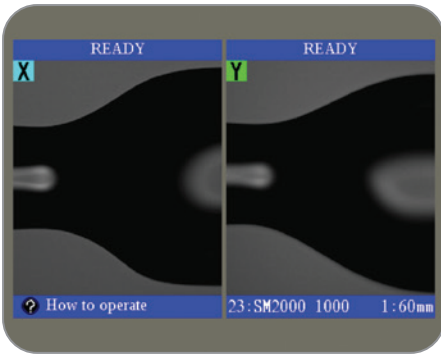
Over cladding is the process of placing a fiber into a capillary tube and collapsing the capillary tube until it fuses with the fiber. This process can also be used to provide a hermetic seal between a fiber and a capillary tube or to combine the over cladding with an inverse tapered fiber to increase the core coupling. After creating this taper, the fiber is cleaved in the expanded region, placed in a capillary tube, and the tube is collapsed to create a hermetic seal. This process allows high energy light to be launched into the larger core diameter that was created, and then for the core to reduce to its normal size adiabatically without losing substantial energy.

Features

- Customizable for size and glass composition
- Applicable to single and multi-fiber designs
- Can be used with two fibers to form a Fabry Perot cavity
- Single or multipoint surface contacts

Applications

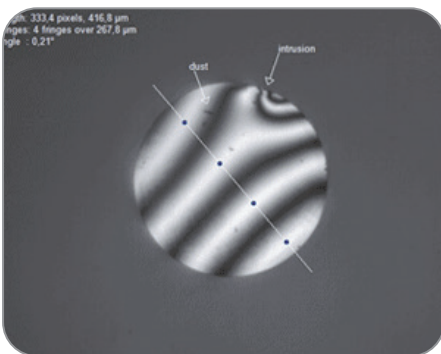
- Hermetic sealing of fibers and devices
- Mode stripping
- NA conversion
- Sensing



Splicing/Cleaving Services

AFL has the capability to provide custom engineering services for specialty splicing or fiber preparation applications. These services include custom hardware or software design, process improvement consultation, advanced splicer training and maintenance service agreements.

If you need a new optical component and/or require a critical splice, AFL can fabricate spliced components including dissimilar fiber splicing, ball lens, tapers, TEC, combiners and MFAs to accelerate your time to market.



Features

- Splicing parameter optimization
- High reliability splice performance
- Dissimilar fiber splicing
- Low loss splicing
- Highly consistent cleaving performance
- Cleaving fibers from 50-1200 μm

Applications

- Medical devices
- Telecommunications
- Military applications
- Fiber lasers
- Fiber sensors

Service and Support

AFL operates the only authorized repair facility for Fujikura splicing products in the U.S. AFL technicians are fully trained in repair and adjustment procedures in strict accordance with Fujikura specifications. When you choose a Fujikura splicing solution, AFL provides 24/7 technical support as well as complimentary on-site training with every splicer purchased.

AFL employs a world-class team of Fujikura qualified engineers and technicians to provide both product and technical support along with maintenance that surpasses anyone in the industry. Our technicians have the know-how and experience to troubleshoot splicer problems over the telephone, often avoiding the inconvenience and expense of having to send a unit in. In the event that a repair is needed, our splicer repair shop stocks all of the necessary components to repair and ship splicers in less than one day in the vast majority of cases, meaning that if repairs are needed, our customers will go without their splicers for only hours.

Our customers have easy access to discuss commercial and technical issues with our engineers, repair technicians, and product managers.

Technical support is available 24 hours a day, seven days a week by dialing one of the numbers below.

Maintenance & Technical Support:

8:00AM to 5:00PM (EST)

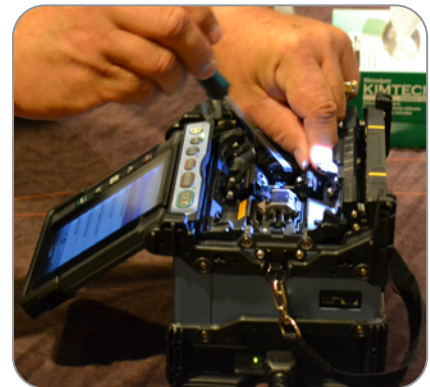
+1 (800) 866-3602

Technical Support:

(Nights & Weekends)

+1 (864) 680-6880

At AFL, we believe that the relationship with our customer is only just beginning with the delivery of one of our splicers. We are with you whenever you need us, just call.





CT16 Fiber Cleaver

The CT16 fiber cleaver from Fujikura was designed for FTTH or other space constrained applications where ergonomics and durability are key. It is compact, can be operated ambidextrously, and features a unique fiber adapter, allowing users to cleave two bare fibers simultaneously when paired with the dual fiber stripper, the SS-05. The scrap collector and fiber adapter side can be swapped by the user for left or right-handed preference, or as environmental constraints dictate. Furthermore, the thumbwheel on the bottom of the cleaver is utilized for blade rotations as opposed to previous tedious processes to rotate a cleaver blade. The top lever opens past vertical allowing for easy viewing, cleaning, and adjustment of the cleave length. The blade is retracted when the top lever is opened and the blade activates to score the fiber when it is closed, making this a true one-step cleaver. Like its predecessor, this cleaver can withstand a 30" drop from any of six different orientations and still maintain factory specified cleave angle performance. The cleaver blade and fiber clamping mechanisms are easy to replace in the field, mitigating the need to send this cleaver in for service.



Features

- Dual fiber adapter plate for single or two fiber cleaving
- Ambidextrous operation available
- Field replaceable fiber clamp pads and cleaver blade
- Shock resistant for drops up to 30" in any of six different orientations
- Compact form factor and tool-less blade rotations

Applications

- Small cell site
- FTTH drops and terminations
- MDF/IDF splices and terminations
- Rural fiber deployments and restorations

Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| CT16 Fiber Cleaver includes: FDB-06 scrap collector, AD-16A fiber adapter, HEX-01 hex wrench (1.5 mm), M-CT16-E instruction manual, CC-46 carrying case | S018330 |
| FDB-06 Scrap Collector | S018329 |
| CB-09 Replacement Cleaver Blade | S018335 |
| ARM-CT16-01 Replacement Fiber Clamp Pads | S018373 |
| AD-16A Fiber Adapter (up to 900um coating) | S018328 |
| AD-16B Fiber Adapter (up to 3.0mm jacket) | S018331 |
| CC-46 Carrying Case | S018374 |

continued
→

CT16 Fiber Cleaver

Specifications

| PARAMETER | | VALUE |
|----------------------------|--|---|
| Applicable Fiber | Fiber type | Single-mode optical fiber Multimode optical fiber |
| | Fiber count | 2 single fibers |
| | Cladding diameter | Approx. 125 μm |
| Applicable Coating | Adapter plate | AD-16A: Max 900 μm coating diameter single fiber or 250 μm coating diameter for two fibers AD-16B: Max. 3 mm jacket diameter |
| | Fiber holders | FH-60 and FH-70 series – coating diameter dictated by specific fiber holder |
| Cleave Length | Adapter plate | AD-16A: 5 – 20 mm ^{*1} AD-16B: Coating diameter – 250 μm or less: 5-20 mm ^{*1} 251 μm -900 μm : 10-20 mm 901 μm -3 mm: 14-20 mm |
| | Fiber holder | Approx. 10 mm |
| Cleave Angle ^{*2} | Single fiber | Avg. 0.3 to 0.9 degrees |
| Blade Life ^{*3} | | Approx. 48,000 fiber cleaves |
| Physical description | Dimensions W | Approx. 106 mm without projection ^{*4} |
| | Dimensions D | Approx. 95.5 mm without projection ^{*4} |
| | Dimensions H | Approx. 49 mm without projection ^{*4} |
| | Weight | Approx. 190 g including AD-16A |
| Environmental condition | Temperature | Operate: -10 to 50°C Storage: -40 to 80°C |
| | Humidity | Operate: 0 to 95%RH non-condensing Storage: 0 to 95%RH non-condensing |
| Other features | Blade rotation | Manual dial underneath cleaver |
| | Replaceable items | Cleaver blade Fiber clamp pads |
| | Fiber adapter base and scrap collector | Can be swapped position for ambidextrous operation |
| | Cleave count | Up to two individual bare fibers |

Notes

- When the cleave length is less than 10 mm, the coating diameter should be 250 μm or less. Also, a blade height adjustment is required before cleaving. The average cleave angle is worse than the specification above when the cleave length is less than 10 mm.
- Measured with an interferometer at room temperature, not with a splicer. A new blade was used to cleave the single fibers. The average cleave angle changes depending on the environmental conditions, blade condition, operating method, and cleanliness.
- The blade life changes depending on the environmental conditions, operating method, and the fiber type cleaved.
- Measured with the top lever closed.



Bluetooth



Shown in CC-37 Carrying Case

Features

- Motorized blade rotation
- Bluetooth communication
- Shock resistant
- Simple one-step operation
- 60,000 cleave blade life
- Field serviceable



CT50 Fiber Cleaver

The CT50 features automated blade rotation, unprecedented durability, and simplistic maintenance unseen with any other cleaver. Paired with a Bluetooth enabled Fujikura splicer, cleaver blade positions can be automatically advanced when needed based on cleave count or cleave quality. If automated rotation is not desired, the blade position can be advanced at the touch of a button, no tools required. The easy to read blade position indicator clearly displays the selected position. The Bluetooth® feature, along with simplified mechanical operation, increases overall productivity and reliability. The fiber clamp opens beyond 90 degrees and readies the blade for cleaving in the same motion. This allows easy viewing of the distance scale used to gauge cleave length. The 16-position blade yields 60,000 single-fiber cleaves, or 5,000 12-fiber ribbon cleaves. The built-in scrap collector conveniently stores fiber shards until they can be safely discarded.

The CT50 is an industry first cleaver ruggedized to withstand severe shock, including drops up to 30 inches. If needed, the CT50 is field serviceable with all precision components easily replaced in the field.

Specifications

| ITEM | VALUE | |
|---------------------------------|-------------------|--|
| Applicable Fiber | Fiber type | Single-mode optical fiber |
| | Fiber count | Multimode optical fiber |
| | Cladding dia. | Single up to 16 fibers |
| Applicable Coating | Fiber plate | Approx. 125 μm |
| | Fiber holder | AD-10-M24 : Max. 900 μm coating diameter AD-50 : Max. 3 mm coating diameter |
| Cleave Length | Fiber plate | FH- 50, FH-60, FH-70, FH-100 and FH-110 series holders |
| | Fiber holder | AD-10-M24 : 5 to 20 mm for CD ≤ 250 μm AD-50 [CD = coating diameter] CD= 250μm or less : 5 to 20 mm 250 μm < CD < 1000μm : 10 to 20 mm 1000 μm < CD < 3 mm : 14 to 20 mm |
| Cleave Angle | Single fiber | Approx. 10 mm |
| | Fiber ribbon | Avg. 0.3 to 0.9 degrees |
| Blade Life | | Avg. 0.3 to 1.2 degrees |
| Physical description | Dimensions W | Approx. 60,000 fiber cleaves |
| | Dimensions D | Approx. 120 mm when closing the lever |
| | Dimensions H | Approx. 95 mm when closing the lever |
| | Weight | Approx. 58 mm when closing the lever |
| Environmental condition | Temperature | Approx. 305 g including battery and AD-10-M24 |
| | Humidity | Operate : -10 to 50°C Storage : -40 to 80°C |
| Battery | | Operate : 0 to 95% non-condensing Storage : 0 to 95% non-condensing |
| Wireless interface ¹ | | 2 pieces of LR03/AAA dry battery |
| Screw hole for tripod | | Bluetooth 4.1 LE |
| Other features | Blade rotation | 1/4-20UNC |
| | Replaceable parts | Motorized rotation |
| | | Manual rotation dial |
| | Blade | |
| | Clamp arm | |

1. The CT50 No Bluetooth option has the wireless interface permanently disabled.

continued
→

CT50 Fiber Cleaver

Ordering Information

| DESCRIPTION | APPLICATION | FIBER HANDLING SYSTEM | CLEAVE LENGTH | AFL NO. |
|-------------------|------------------------|--|---|---------|
| CT50 | Single or Ribbon Fiber | AD-10-M24 adapter plate for single fibers or fiber holders for ribbons | See Specifications table on previous page | S017030 |
| CT50 No Bluetooth | Single or Ribbon Fiber | AD-10-M24 adapter plate for single fibers or fiber holders for ribbons | See Specifications table on previous page | S018020 |

Accessories

| DESCRIPTION | AFL NO. |
|---------------------------------|---------|
| CB-08 Replacement Blade | S017076 |
| FDB-05 Scrap Collector Box | S017121 |
| AD-50 Adapter Plate | S017010 |
| AD-10-M24 Fiber Plate | S017335 |
| ARM-CT50-01 Replacement Arm Set | S017122 |
| BRW-CT08-01 Blade Rotary Wheel | S017110 |
| SC-CT50-01 Side Cover | S017108 |
| CC-37 Transit Case | S017077 |
| SPA-CT-08-10 Spacer | S017011 |

Splice+ is a smartphone application that works in cooperation with Fujikura's splicers, cleavers and ribbon fiber strippers which have Bluetooth capability.

Get the **Splice+** app at the Apple App store or at Google Play.





APM-101 and APM-102 Automatic Preparation Machine

The APM-101 and APM-102 provide fiber optic preparation automation for assembly operations in a factory environment. Both perform all the operational steps required to strip, clean and cleave the fiber, automatically and with high repeatability. This includes stripping the fiber without degrading fiber quality, cleaning fiber with alcohol to remove coating residue, and cleaving consistently at a right angle to the fiber axis. The entire process is complete in as little as 21 seconds.

The APM-101 is designed to accept the FH-100-250 fiber holder that is a component of Fujikura's FSM-100 series and LZM-100 splicing platforms. It can also accept the FH-40/45-250 fiber holder used with the FSM-40/45F and FSM-40/45PM splicing platforms. The APM-102 is designed to accept the FH-70-250 fiber holder used with Fujikura models 70S, 19S and 12S.

Features

- **Automatic cleaning** – main components in the machine are automatically cleaned allowing a continuous sequence of fiber preparation operations.
- **Automatic residue collector** – coating residue and glass scraps are collected in separate containers.
- **Alcohol circulation system** – alcohol for cleaning is circulated in a closed system enabling a lengthy refill-free operation.
- **Diamond blade** – a diamond blade is used for cleaving in the tension method cleaving process and provides consistent cleave quality.
- **Reliable stripping method** – contact of the stripping blade to the fiber is prevented using guides in conjunction with the blade, minimizing damage to fiber during the stripping process.
- **Production-friendly design** – provides ergonomic, smooth and simple operation.

Specifications

| PARAMETER | VALUE |
|------------------------------|---|
| Applicable fiber | Single-mode and Multimode glass fiber |
| Applicable cladding diameter | 125 µm |
| Applicable coating | UV curable resin coating |
| Applicable coating diameter | 250 µm |
| Fiber clamping for APM-101 | FH-100-250 series or FH-70-250 fiber holder |
| Fiber clamping for APM-102 | FH-70-250 |
| Cleave length | 3 to 10 mm |
| Cleave angle | Typical 0.5° |
| Operating time | Typical 23 seconds (in the case of 125 µm diameter fiber with 250 µm coating) |
| Daily maintenance | Typically every 150 cycles |
| Operation action | 1 step (Press start button only) |
| Air pressure | 4 bar |
| Operating Condition | 0 to 40°C at 0 to 95% RH (non-dew) |
| Storage condition | -40 to 80°C at 0 to 95% RH (non-dew) |
| Dimensions | 170W x 370D x 120 H (MM) |
| Weight | 5.1 kg |

Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| APM-101 Automatic Preparation Machine (requires FH-100-250 or FH-70-250 Fiber Holders) Includes: ADC-15 AC Adapter, ACC-02 Power Cord, ALC-01 Alcohol Container and REG-01 Air Pressure Regulator | S014974 |
| APM-102 Automatic Preparation Machine (requires FH-70-250 Fiber Holder) Includes: ADC-15 AC Adapter, ACC-02 Power Cord, ALC-01 Alcohol Container and REG-01 Air Pressure Regulator | S015904 |

Optional Accessories

| DESCRIPTION | AFL NO. |
|-------------------------------|---------|
| ADC-15 AC Adapter | S014826 |
| ACC-02 AC Cord | S001171 |
| CSB-250 Coating Strip Blade | S017348 |
| CB-04A Cleaver Blade | S015030 |
| ALC-01 Alcohol Container | S015026 |
| REG-01 Air Pressure Regulator | S015028 |



PowerCleave®

To complement the line of world class splicing systems, AFL's PowerCleave combines the precision of an ultrasonic cleaver with the ease and improved fiber management of the Fujikura fiber holder system. The PowerCleave utilizes the tensile stress method to avoid touching or damaging the bare glass surface during cleaving, ensuring highly robust, reliable and durable splice results. The PowerCleave provides consistent flat ends even at cleave lengths as short as 3 mm. Specially designed for use with Fujikura's specialty market splicers, this advanced cleaving system allows for more reliability and greater splicing consistency with less dependence on operator technique.

Features

- Tensile cleaving with ultrasonic blade
- Consistent, low-angle cleaves of short cleave-length fibers
- Fiber holder system reduces fiber handling
- Clean, reliable quality

Specifications

| PARAMETER | VALUE |
|------------------------|---|
| Fibers Cleaved | 80 μm - 200 μm (cladding diameter) |
| Minimum Cleave Length | 3 mm |
| Cleave Angle | <0.6 typical |
| Blade | Diamond with an estimated life of over 20,000 cleaves |
| Clamping System | Compatible with Fujikura specialty market fiber holder systems |
| Case | ABS impact resistant with non-slip feet and a 6.25 mm (.24 inch) BSW thread tripod mount for hard mounting to a workstation |
| Battery | 9V alkaline (MN 1604), battery life approximately 10,000 cleaves |
| Dimensions (L x W x D) | 75 mm x 153 mm x 150 mm (3.0 x 6.0 x 5.9 inches) |
| Weight | 1.1 kg (2.4 lbs) |
| Operating Temperature | 0°C to 45°C (32°F to 113°F) |
| Storage Temperature | -20°C to 60°C (-4°F to 140°F) |

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| PowerCleave Kit Includes: PowerCleave, Instruction manual, 2.5 mm x 60 mm Screwdriver and 2 mm Allen wrench | S009972 |



Thermal Strippers

The RS01, RS02, RS03 and RS03-80 Thermal Strippers provide superior stripping performance for both single and multi-fiber stripping. The fast heating time of 3 seconds speeds productivity. The ergonomic design, combined with the low level of force needed for stripping, makes the RS series comfortable and easy to use for high fiber count applications. The strippers are also capable of stripping 200 µm coated fibers and ribbons. An audible beep and illuminated LED signal indicate that the proper heating temperature has been reached. A temperature selection switch permits easy field optimization for different fibers or operating conditions. These strippers accept all Fujikura field and factory style fiber holders.

Bluetooth® capabilities on the RS02 and RS03 models provide a convenient way to program the stripper for user preferences via an Android or iOS smartphone app. The RS03 model includes a powerful Lithium-Ion battery that delivers enough power for 600 stripping cycles. The RS03-80 is offered for stripping 80 µm cladding fiber applications.

For those situations and locations where Bluetooth-enabled devices are not permitted, the RS01 model is available with all of the features of the RS02 model but without the Bluetooth technology.

Features

- 3 Second heating time with beep and LED notification
- Low pulling force needed for stripping
- Stripping capability for 200 µm coated fibers and ribbons
- Ergonomic design
- Bluetooth capable for wireless connection with smartphones (RS02, RS03 and RS03-80)
- High capacity battery provides approximately 600 stripping cycles (RS03 and RS03-80)

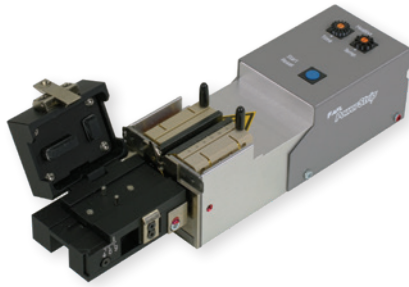
Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| Strippers | |
| RS01 Thermal Stripper Includes: RS01 Thermal Stripper, DCC-11 and Instruction manual | S016815 |
| RS02 Thermal Stripper Includes: RS02 Thermal Stripper, DCC-11, HEX-01 Hex Wrench, BRS-02 Brush and Instruction manual | S016816 |
| RS03 Thermal Stripper Includes: RS03 Thermal Stripper, BTR-12 Battery Pack, ADC-09A AC Adapter for RS Series Thermal Strippers, ACC-09 AC Power Cord (for ADC-09A), HEX-01 Hex Wrench, BRS-02 Brush and Instruction manual | S016817 |
| RS03-80 Thermal Stripper Includes: RS03-80 Thermal Stripper, BTR-12 Battery Pack, ADC-09A AC Adapter for RS Series Thermal Strippers, ACC-09 AC Power Cord (for ADC-09A), HEX-01 Hex Wrench, BRS-02 Brush and Instruction manual | S016842 |
| POWER SUPPLY | |
| ADC-09A AC Adapter (RS01/RS02/RS03) | S016820 |
| ACC-09 Power cord | S014390 |
| BTR-12 Battery (RS03) | S016832 |
| Miscellaneous | |
| SPA-RS02-08 SPACER | S016818 |

Thermal Strippers

Specifications

| MODEL | RS01 | RS02 | RS03 | RS03-80 |
|--------------------------|---|--|--|---------------|
| Applicable optical fiber | Glass optical fibers, capillary | | | |
| Fiber count | 1 to 16 | | | Single |
| Cladding diameter | 125 µm | | | 80 µm |
| Coating diameter | | 200 to 400 µm | | 150 to 250 µm |
| Stripping length | Up to 35 mm | | | |
| Typical heating time | 3 sec. 5 sec. at Eco mode | | | |
| Heating temperature | 85° - 140°C | | | |
| Fiber holder | All FH-40, FH-50, FH-60, FH-70, and FH-100 series fiber holders (except FH-50-250 and FH-50-900) | | | |
| Wireless connectivity | N/A | Bluetooth®4.1 LE*1 OS:Android 5.0 or above , iOS 8.0 or above (iPhone6 or above) | | |
| Dimensions | 155.5 (W) × 48.7 (D) × 32.5 (H) mm | | 155.5 (W) × 48.7 (D) × 36.8 (H) mm | |
| Weight | 185 g | | 265 g (with Battery) | |
| Power supply | AC Adaptor Input: 100 to 240V, 50/60 Hz, Max – 0.58 A Output: Approx. DC 12 V, Max 2A DC External Supply: DC10 to 17V, Max – 1A | | AC Adaptor Input: 100 to 240V, 50/60 Hz, Max – 0.58 A Output: Approx. DC 12 V, Max 2 A DC External Supply: DC10 to 17 V, Max – 1 A BTR-12 Battery: DC7.2 V, 1840 mAh (Rechargeable Lithium Ion) | |
| Battery capacity | N/A | | Approx. 600 strips with Eco mode | |
| Recharge Time | | | Approx. 2 hr from empty | |
| Battery Life | | | Approx. 500 recharge cycles | |
| Operating conditions | Temperature: -10 to 50°C, Humidity: 0 to 95% RH (Non-condensing) | | | |
| Storage conditions | Temperature: -20 to 60°C, Humidity: 0 to 95% RH (Non-condensing) | | | |



AFL PowerStrip®

AFL PowerStrip is a thermal stripper used in high strength splicing. Using the proven blade and centering design of the Schleuniger FiberStrip 7030 in addition to the fiber holder system, the AFL PowerStrip automatically centers the fiber, heats the buffer or coating and strips the buffer at a controlled rate with perfect alignment. The fiber holder system reduces fiber handling, making this tool ideal for any production environment.

Features

- 250 µm and 900 µm fiber capability
- Short cycle time
- Lightweight and portable

Specifications

| PARAMETER | VALUE |
|---|--|
| Fibers Stripped - Single Buffered Fiber | Cladding diameter: 125 µm standard, 80 µm optional Coating diameter: 250 µm and 900 µm standard, 160 µm and 400 µm optional |
| Clamping System | Fujikura fiber holder clamp; compatible with FSM-45F/PM and 100 series fiber holders |
| Stripping Length | Up to 35 mm |
| Heater Temperature Range | 110°C to 150°C (230°F to 302°F) |
| Heating Time | 1.5 to 13 seconds |
| Cycle Time | Approximately 5 seconds/cycle (after heating) |
| Power Supply | Input: 100 to 240 V AC, 50/60 ± 3 Hz; Output: 12 V DC, 12 W, 1 A |
| Dimensions (L x W x D) | 209 mm x 57 mm x 45 mm (8.25 x 2.25 x 1.8 inches) |
| Weight | 0.7 kg (1.5 lbs) |

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| AFL PowerStrip Kit Carrying case, fiber holder clamping system, blades and centralizers for 125/250 µm and 125/900 µm fiber, power supply 230 V AC or 100/120 V AC, power cord 2 m (6.5 feet), cleaning brush and tool set (hex keys, adjustment screwdriver) | S012808 |
| Coating Blades | |
| 80/125 µm | S014859 |
| 80/160 µm | S012656 |
| 125/250 µm | S012596 |
| 125/400 µm | S012628 |
| 125/500 µm | S014865 |
| 125/900 µm | S012604 |
| 204/360 µm | S014734 |
| 220/350 µm | S017002 |
| 230/500 µm | S014863 |
| 250/400 µm | S014400 |
| 250/900 µm | S014866 |
| 400/600 µm | S014719 |
| 420/550 µm | S018023 |
| 500/615 µm | S017003 |
| 600/800 µm | S014736 |
| 660/800 µm | S017086 |
| 1000/1400 µm | S014737 |

| Blade Removal Tool | |
|-------------------------------|---------|
| PowerStrip Blade Removal Tool | S012704 |

| Centralizers | |
|--------------|---------|
| 125 µm | S014860 |
| 160 µm | S012652 |
| 200 µm | S017889 |
| 250 µm | S012600 |
| 360 µm | S014738 |
| 400 µm | S012624 |
| 450 µm | S014739 |
| 500 µm | S014864 |
| 600 µm | S014718 |
| 680 µm | S017009 |
| 800 µm | S014740 |
| 900 µm | S012608 |
| 1400 µm | S014741 |

| Power Supply | |
|---------------------|---------|
| 12 V DC W/PLUG ADPT | S015185 |

* Custom blades and centralizers available on request.



High Tensile Stripper

The Fujikura high tensile stripper HTS-12 provides excellent strength performance when removing 250 μm and 400 μm buffer from optical fibers. Heating temperature and duration are fully adjustable for a variety of buffer materials. Self centering blades eliminate the need for an external guide and make replacement quick and easy. Designed for use with the FSM-40F/PM fiber holder system, the HTS-12 is an ideal solution for stripping when high strength fusion splices are a must.

Specifications

| PARAMETER | VALUE |
|--------------------------|--|
| Applicable Fiber: | |
| Cladding Diameter | 125 μm (80 μm optional with 160 μm coating) |
| Coating Diameter | 250 μm (160 μm / 400 μm optional) |
| Fiber Count | Single |
| Stripping Length | 35 mm max |
| Temperature Settings | 120°, 140°, 160°, or 180° C (adjustable) |
| Heating Time | 3 seconds approximate |
| Applicable Fiber Holders | FH-40 & FH-100 series |
| Power Supply | 100 to 240 VAC (50 to 60 Hz) |
| Dimensions (W x D x H) | 140 x 60 x 60 (mm) / 5.51 x 2.36 x 2.36 (inches) |
| Weight | 600 g / 1.3 lbs |

Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| HTS-12 High Tensile Stripper w/ 250 μm Blades and One year factory warranty | S012094 |
| 80/160 μm Blade for HTS-12 | S016841 |
| 125/400 μm Blade for HTS-12 | S011946 |
| 125/250 μm Blade for HTS-12 | S011942 |
| ADC-08 AC Adapter | S010996 |
| ACC-09 AC Power Cord | S014390 |



USC-03 Ultrasonic Cleaner

The Fujikura ultrasonic cleaner model USC-03 provides a simple and cost effective method for cleaning optical fibers when high strength fusion splices are required. This ultrasonic cleaner readily accepts all FH-40-XXX, FH-50-XXX, FH-70-XXX and FH-100-XXX series fiber holders. The Universal Fiber Holder Adapter, available as an optional accessory, enables the use of FH-XXX series fiber holders.

The high frequency ultrasonic action cleans debris and coating residue without damaging the exposed cladding and a built-in timer ensures that the required cleaning time is consistently used for all fibers processed. This cleaner, when used in conjunction with high strength stripping and cleaving accessories, produces outstanding results for the most demanding high strength applications.

Features

- Built-in timer assures correct cleaning time
- Adjustable high intensity vibratory cleaning action
- Adjustment knob allows fine-tuning of fiber submersion depth
- Alcohol bath lid prevents cleaning fluid evaporation when machine is idle



Included Accessories

Specifications

| PARAMETER | VALUE |
|--------------------------|---|
| Applicable Fibers | Single optical fiber |
| Applicable Fiber Holders | FH-40, 50, 70 and 100 series |
| Recommended Fluid | ≥99% Ethyl alcohol or Isopropyl alcohol |
| Tank Capacity | 43 - 53 cm ³ |
| Ultrasonic Frequency | 50 kHz |
| Fiber Cleaning Length | 49 mm (max), adjustable |
| Output Power | 3.0 W (max) |
| Timer Range | 1 to 99 seconds |
| Power Requirement | AC 100 to 240 V / 50 Hz to 60 Hz |
| Operating Environment | 0°C to 40°C, 0 to 95% RH, non-condensing |
| Storage Environment | -20°C to 60°C, non-condensing humidity |
| Dimensions (W x D x H) | 95 x 190 x 162 (mm) / 3.74 x 7.48 x 6.38 (inches) |
| Weight | 1 kg / 2.2 lbs |

Ordering Information

| DESCRIPTION | AFL NO. |
|--------------------------------|---------|
| USC-03 | S014783 |
| Universal Fiber Holder Adapter | S013568 |
| ADC-10 Power Adapter | S012548 |
| ACC-09 Power Cord | S014390 |



FSR-05



FSR-06



FSR-07

Features

- Easy mold, resin and pump exchange
- Quartz molds for high-quality, consistent recoating
- Wide selection of available mold sizes
- Automated operation
- Bubble elimination system
- Programmable resin injection
- Selectable proof-tester
- PC interface with USB

FSR-05, FSR-06 and FSR-07 Optical Fiber Recoaters

AFL offers a complete lineup of high quality fiber recoaters to address the small packaging needs of the fiber optic industry. The FSR series recoaters provide automatic operation with an easily exchangeable, low cost, mold design. A quick change resin bottle and pump assembly make messy, cumbersome, and time consuming acrylate changes a thing of the past. The pump system also provides a purge cavity for elimination of bubbles in the acrylate material. A programmable resin injection system provides an exact volume of resin to the mold cavity to ensure consistent and repeatable recoat performance. While the base model FSR-05 provides only recoating functions, the FSR-06 and FSR-07 also provide programmable rate and force proof-testing capabilities up to 2 kgf or 10 kgf respectively. All of the recoaters are compatible with special recoating resins to provide higher stiffness recoating for 900 μ m jacketed fibers, as well as specialty low-index resins for recoating of double-clad fibers. A USB - PC interface allows the user to control and store key parameters associated with the recoating process. The quartz mold technology provides very consistent recoating quality and have an estimated lifetime of 10,000 recoats per mold set.

Specifications

| PARAMETER | FSR-05 | FSR-06 | FSR-07 |
|--------------------------|---|---|--------------------|
| Applicable fiber coating | Colored and non-colored | | |
| Recoating diameter | See mold options below | | |
| Recoating length | 4 to 50 mm | | |
| Recoating time | Injection 20 sec/Curing 4 sec (Jacket diameter 250 μ m with 280 μ m MOLD) | | |
| Resin injection | Volume and speed are programmable | | |
| Recoat material | UV curable Acrylate Recommended specification for other viscosity 2000-6000 cps Curing wavelength 365 \pm 15 nm DSM Desotech DesoLite(R) 950-200 recommended | | |
| Material of mold | Quartz | | |
| Recoat modes | 100 modes All variables programmable | | |
| Proof-test modes | — | 30 modes Speed, force, time programmable | |
| Load application | — | Linear Clamp | Mandrel |
| Tension | — | 0.5 kgf ~ 2.0 kgf | 0.5 kgf ~ 10.0 kgf |
| Dimensions | 252 mm (W) x 135 mm (D) x 169 mm (H) | 252 mm (W) x 175 mm (D) x 169 mm (H) | |
| Weight | 2.9 kg | 4.3 kg | 4.5 kg |
| Power source | AC 100 to 240 C /50 to 60 Hz (External AC adaptor ADC-19) | | |
| LCD monitor | 4.7 inch, Tilt angle | | |
| PC interface | USB 2.0 Type B mini | | |
| Operating condition | 10 to 30°C, 0 to 90% (non dew) | | |
| Storage condition | -40 to 60°C (non dew, no resin) | | |

FSR-05, FSR-06 and FSR-07 Optical Fiber Recoaters

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| FSR-05 with 255 µm mold Includes: 255 µm mold, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable and M-FSR05 instruction manual. | S017436 |
| FSR-05 with 280 µm mold Includes: 280 µm mold, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable and M-FSR05 instruction manual. | S016103 |
| FSR-05 with 320 µm mold Includes: 320 µm mold, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable and M-FSR05 instruction manual. | S016833 |
| FSR-05 with 450 µm mold Includes: 450 µm mold, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable and M-FSR05 instruction manual. | S016276 |
| FSR-05 with 600 µm mold Includes: 600 µm mold, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable and M-FSR05 instruction manual. | S016834 |
| FSR-05 with 650 µm mold Includes: 650 µm mold, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable and M-FSR05 instruction manual. | S016946 |
| FSR-05 with 670 µm mold Includes: 670 µm mold, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable and M-FSR05 instruction manual. | S017385 |
| FSR-05 with 850 µm mold Includes: 850 µm mold, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable and M-FSR05 instruction manual. | S016949 |
| FSR-05 with 1000 µm mold Includes: 1000 µm mold, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable and M-FSR05 instruction manual. | S016998 |
| FSR-06 with 280 µm mold Includes: 280 µm mold, 2 kgf Proof Tester, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable, PC-02 Fiber protect cover and M-FSR05 instruction manual. | S016104 |
| FSR-06 with 320 µm mold Includes: 320 µm mold, 2 kgf Proof Tester, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable, PC-02 Fiber protect cover and M-FSR05 instruction manual. | S016835 |
| FSR-06 with 330 µm mold Includes: 330 µm mold, 2 kgf Proof Tester, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable, PC-02 Fiber protect cover and M-FSR05 instruction manual. | S016859 |
| FSR-06 with 450 µm mold Includes: 450 µm mold, 2 kgf Proof Tester, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable, PC-02 Fiber protect cover and M-FSR05 instruction manual. | S016186 |
| FSR-06 with 600 µm mold Includes: 600 µm mold, 2 kgf Proof Tester, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable, PC-02 Fiber protect cover and M-FSR05 instruction manual. | S016836 |
| FSR-06 with 700 µm mold Includes: 700 µm mold, 2 kgf Proof Tester, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable, PC-02 Fiber protect cover and M-FSR05 instruction manual. | S017507 |
| FSR-06 with 1000 µm mold Includes: 1000 µm mold, 2 kgf Proof Tester, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable, PC-02 Fiber protect cover and M-FSR05 instruction manual. | S017001 |
| FSR-07 with 280 µm mold Includes: 280 µm mold, 10 kgf Proof Tester, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable, PC-03 Fiber protect cover and M-FSR05 instruction manual. | S016105 |
| FSR-07 with 600 µm mold Includes: 600 µm mold, 10 kgf Proof Tester, ADC-19 AC adapter, ACC-09 AC power cord, USB-01 USB Cable, PC-03 Fiber protect cover and M-FSR05 instruction manual. | S016999 |

FSR-05, FSR-06 and FSR-07 Optical Fiber Recoaters

Accessories

| DESCRIPTION | AFL NO. |
|------------------|---------|
| MOLDS | |
| FSR-05-MOLD-195 | S016133 |
| FSR-05-MOLD-255 | S016134 |
| FSR-05-MOLD-280 | S016106 |
| FSR-05-MOLD-300 | S017710 |
| FSR-05-MOLD-320 | S016829 |
| FSR-05-MOLD-330 | S016895 |
| FSR-05-MOLD-450 | S016135 |
| FSR-05-MOLD-600 | S016830 |
| FSR-05-MOLD-650 | S016947 |
| FSR-05-MOLD-670 | S016136 |
| FSR-05-MOLD-700 | S017477 |
| FSR-05-MOLD-850 | S016950 |
| FSR-05-MOLD-1000 | S016137 |

| DESCRIPTION | AFL NO. |
|---------------------------------------|---------|
| MISCELLANEOUS | |
| Fiber protect cover for FSR-06: PC-02 | S016107 |
| Fiber protect cover for FSR-07: PC-03 | S016108 |
| Tube set: FSR-05-TUBE-01 | S016109 |
| Pump head: FSR-05-PUMP-01 | S016110 |
| UV resin bottle: FSR-05-BTL-01 | S016112 |
| Force gauge adaptor: FGA-02 | S016113 |
| AC adapter ADC-19 | S015523 |
| AC power cord ACC-09 | S014390 |

Recoaters & Splice Protection

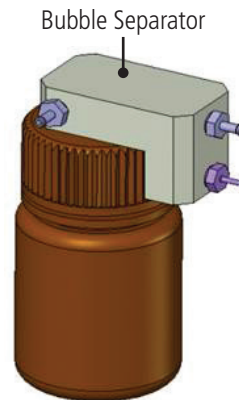


Mold exchange

- Easy mold, resin and pump exchange
- Factory installation is not required



Resin and pump exchange



Bubble Separator Performance



Spare Pump for quickly changing UV resin type: FSR-05-pump-01



PCS-100 Polyimide Coating Stripper

Polyimide coated optical fiber are now widely used in the oil and gas and medical industries. The polyimide coating has superior heat and chemical resistance to conventional UV curable coating material, but the coating requires additional care to remove. Dangerous chemical stripping using hot sulfuric acid or burning the coating off are common methods to strip the fiber due to the thin coating and strong coating adhesion to the fiber cladding. AFL's PCS-100 Polyimide Fiber Coating Stripper is the first tool that uses a mechanical stripping method, providing a safe, consistent and quick stripping solution.

Features

- Quick stripping** – A razorblade is applied to the fiber with specific tension and the coating is precisely planed along the fiber automatically. The process requires less time than the conventional methods of acid or heat. For a 125 µm fiber, 4 stripping passes at 90° rotational positions are typically required, and complete stripping is accomplished within 25 seconds. Larger fiber sizes require more stripping passes (at smaller rotational angle increments).
- Safe, high quality stripping** – Because hot acid is not used, the operation is much safer. In addition, the fiber quality degradation is kept at a minimum as the glass surface is not damaged by oxidization of the coating during burning or arcing.
- Flexible** – Many parameters, such as the razor blade position and stroke, and fiber rotation angle are all adjustable for various fiber sizes and coating materials.

Specifications

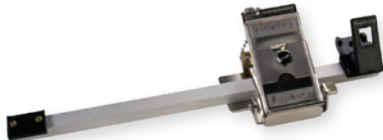
| STRIPPING PERFORMANCE | |
|----------------------------------|--|
| Applicable Fiber | Silica based Single-mode and Multimode glass fiber |
| Fiber Count | Single |
| Applicable Coating | Polyimide coating and UV curable resin coating |
| Cladding Diameter Range | 60 to 1200 µm |
| Coating Diameter Range | 60 to 1,500 µm |
| Fiber Clamping | Adaptable to range of fiber/coating sizes by selection of applicable pair of FH-100-XXX series fiber holders |
| Strip Length | 1 to 35 mm (Window stripping: 1 to 33 mm) |
| Stripping Time | 4 stripping passes: 20 seconds |
| | 8 stripping passes: 35 seconds |
| | 12 stripping passes: 50 seconds |
| Blade Life | 350 fibers / blade (In the case of 4 strips per fiber) |
| Stripping Modes | 30 user-programmable modes |
| Proof Modes | 30 user-programmable modes |
| PROOF TEST FUNCTION | |
| Maximum Proof Test Force | 2 kgf |
| Typical Proof Test Cycle Time | 3 seconds |
| DIMENSIONAL DATA | |
| Dimensions | 230 mm (W) x 214 mm (D) x 151 mm (H) |
| Weight | 5.0 kg excluding AC adapter |
| POWER SOURCE | |
| Power Input | AC100 to 240 V (50 Hz to 60 Hz) |
| OPERATION AND STORAGE CONDITIONS | |
| Operating Conditions | Temperature: 0 to 40°C, Humidity: 0 to 95% RH (Non-condensing) |
| Storage Conditions | Temperature: -40 to 80°C, Humidity: 0 to 95% RH (Non-condensing) |

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| PCS-100 Polyimide Coating Stripper Includes: FH-100-150, ADC-15 AC Adapter, ACC-02, Instruction manual and PCB-01 replacement blades | S014973 |

Accessories

| DESCRIPTION | AFL NO. |
|--------------------|---------|
| FH-100-150 | S014861 |
| ADC-15 | S014826 |
| ACC-02 | S001171 |
| PCB-01 (Box of 50) | S015018 |



FAT-04

Fiber Arrangement Tool

The FAT-04 features an easy-to-use fiber arrangement method utilizing linear travel. The FAT-04 includes a spare paste applicator to allow ribbon making to continue even if one of the paste applicators needs cleaning.

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| FAT-04 Fiber Arrangement Tool* | S010212 |
| SP-1 Foam Pads for FAT-04 (One set = 5 sheets of 25 pads each) | S009016 |
| Paste Applicator Blocks for FAT-04 (2 pieces) | S010952 |

* FAT-04 includes 4 oz. FAA-03A ribbon forming adhesive, paste applicator blocks, cleaning swabs, CL-02 clips and SP-1 foam pads



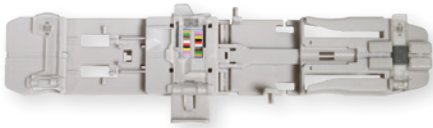
FAA-03A

Ribbon Forming Adhesive

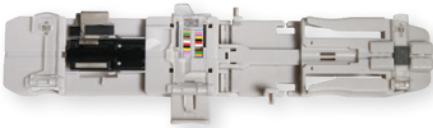
A key advantage of our fiber arrangement tool is the use of the ribbon forming adhesive. Ribbons formed with this adhesive have excellent stripability, especially compared to ribbonizing methods using tape. Unlike tape methods, the paste does not “gum-up” the stripping tool and cause broken fibers. The paste holds the stripped coating residue into a single piece of debris that is easily cleaned from the stripper. If needed, the ribbon can be easily separated into individual fibers using alcohol.

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| FAA-03A ribbon-forming adhesive (0.5 liter bottle) | S008622 |
| FAA-03A ribbon-forming adhesive (4 oz. dispensing bottle) | S008720 |



RT-02



RT-02 with FH-70-12PC

RT-02 Ribbonizing Tool

The RT-02 is the latest ribbonizing tool from Fujikura, and the first universal ribbonizing tool on the market suitable for forming a temporary ribbon from loose 200 μm or 250 μm fibers. This is also the first tool that features a glue-less process for ribbonizing and splicing 12 fiber ribbons. This saves time and money by eliminating operating inefficiencies such as cure time and contamination of splicing equipment. Simply choose the applicable fiber holder in conjunction with the RT-02 to ribbonize 200 μm or 250 μm fibers. With this tool, you can now realize the benefits of mass fusion splicing when installing the latest generation of loose fiber micro cables.

Features

- No glue required
- 200 μm and 250 μm compatible
- Loading with color code sequence not required
- Fibers load directly into fiber holder
- Left and right fiber holder color codes printed on tool

Applications

- Ribbonizing 200 μm and 250 μm loose fibers
- 200 μm and 250 μm MPO termination
- Mass fusion splicing loose fiber cables

Ordering Information

| DESCRIPTION | AFL NO. |
|---|---------|
| RT-02 (tool only) | S017465 |
| FH-70-12PC (pair of pitch conversion holders for 200 μm loose fibers) | S017464 |
| FH-70-12 (pair – standard 12F ribbon holders) | S017119 |

Splice Protection Sleeves

AFL offers a wide selection of fiber protection sleeves to meet any application. The FP series is the industry standard for durable and lasting protection of single fiber splices in field installations, while the FP-04(T) and FP-05 provide the same durable protection for 8 and 12 fiber ribbon respectively.

The FPS01 and FPS04 series are specially designed for optical components, where small packaging is a priority. These micro sleeves provide the known reliability of Fujikura sleeves in the smallest possible lengths. This easy and cost effective method is a great alternative to recoating. The FPS01 and FPS04 series offer a wide range of options to accommodate various coating sizes, and are manufactured in a variety of lengths. This gives great flexibility in designing optical modules.

Standard Sleeves: Dimensions & Applicable Fiber

SLEEVES FOR SINGLE FIBERS 250 MICRONS TO 900 MICRONS

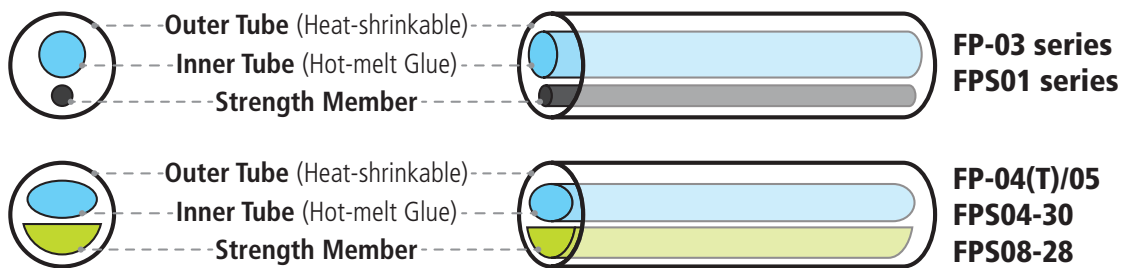
| DESCRIPTION | SLEEVE LENGTH | FIBER CLEAVE LENGTH | SLEEVE DIAMETER AFTER SHRINK | MOQ & MOM | AFL NO. |
|------------------------------|---------------|---------------------|------------------------------|-------------|---------|
| FP-40 Slim Protection Sleeve | 40 mm | 10 mm | 2.3 mm (max.) | 1,000 & 100 | S018262 |
| FP-60 Slim Protection Sleeve | 60 mm | 10 mm | 2.3 mm (max.) | 1,000 & 100 | S018263 |
| FP-60 | 60 mm | 10 mm | 3.1 mm (max.) | 1,000 & 100 | S015915 |
| FP-40 | 40 mm | 10 mm | 3.1 mm (max.) | 1,000 & 100 | S015916 |

SLEEVES FOR UP TO 250 MICRON COATED RIBBON

| DESCRIPTION | FIBER COUNT | SLEEVE LENGTH | FIBER CLEAVE LENGTH | SLEEVE DIAMETER AFTER SHRINK | MOQ & MOM | AFL NO. |
|-------------|-----------------|---------------|---------------------|------------------------------|-------------|---------|
| FP-04(T) | Up to 8 fibers | 40 mm | 10 mm | 4.0 mm (max.) | 250 & 250 | S002105 |
| FP-05 | Up to 12 fibers | 40 mm | 10 mm | 4.5 X 4.0 mm (max.) | 250 & 250 | S003027 |
| FP-05-28 | Up to 12 fibers | 28 mm | 10 mm | 4.5 mm (max.) | 5,000 & 250 | S014720 |
| FPS04-30 | Up to 4 fibers | 30 mm | 10 mm | 2.4 mm (max.) | 250 & 250 | S010848 |
| FPS08-28 | Up to 8 fibers | 28 mm | 10 mm | 3.3 X 2.7 mm (max.) | 500 & 500 | S013560 |
| FPS24-40 | Up to 24 fibers | 40 mm | 10 mm | 8.0 X 4.0 mm (max.) | 200 & 200 | S013004 |

Specifications

| PARAMETER | DESCRIPTION | VALUE |
|------------------------------------|--------------------|------------------------------------|
| Outer tube | FP-60/40/03 series | Polyolefin based on Polyethylene |
| | FPS-04(T) / FP-05 | Ethylene-Vinyl Acetate |
| Inner Tube | ALL | Ethylene-Vinyl Acetate |
| Strength member | FP-60/40/03 series | Stainless steel |
| | FP-04(T) / FP-05 | Heat-resistant glass |
| Operation condition (after shrink) | | -10 to 50°C, 0 to 95% RH (Non dew) |
| Storage condition (before shrink) | | -40 to 60°C, Non dew |



Splice Protection Sleeves

Micro Sleeves: Dimensions & Applicable Fiber

FPS01-400 SERIES FOR SINGLE FIBERS UP TO 400 MICRON FIBER

| DESCRIPTION | SLEEVE LENGTH | FIBER CLEAVE LENGTH | SLEEVE DIAMETER AFTER SHRINK | PACKAGING | AFL NO. |
|--------------|---------------|---------------------|------------------------------|-----------|---------|
| FPS01-400-12 | 12 mm | 4 mm | 1.5 mm | 50 Pack | S014088 |
| FPS01-400-15 | 15 mm | 5 mm | 1.5 mm | 50 Pack | S012668 |
| FPS01-400-20 | 20 mm | 8 mm | 1.5 mm | 50 Pack | S012672 |
| FPS01-400-25 | 25 mm | 10 mm | 1.5 mm | 50 Pack | S012676 |
| FPS01-400-34 | 34 mm | 15 mm | 1.5 mm | 50 Pack | S012680 |
| FPS01-400-40 | 40 mm | 16 mm | 1.5 mm | 1,250 Box | S011914 |

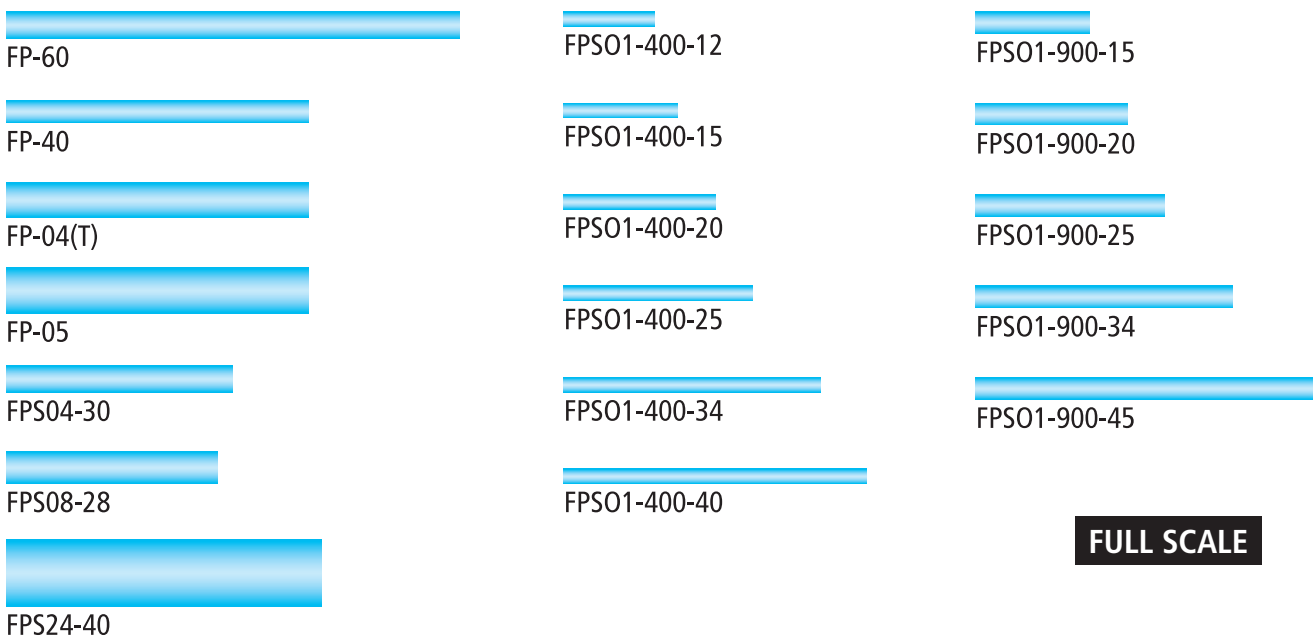
FPS01-900 SERIES FOR SINGLE FIBERS UP TO 900 MICRON FIBER

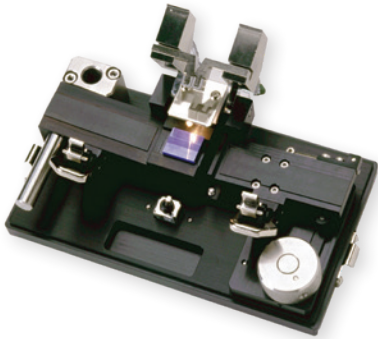
| DESCRIPTION | SLEEVE LENGTH | FIBER CLEAVE LENGTH | SLEEVE DIAMETER AFTER SHRINK | PACKAGING | AFL NO. |
|--------------|---------------|---------------------|------------------------------|-----------|---------|
| FPS01-900-15 | 15 mm | 4 mm | 2.3 mm | 50 Pack | S012684 |
| FPS01-900-20 | 20 mm | 6 mm | 2.3 mm | 50 Pack | S012688 |
| FPS01-900-25 | 25 mm | 6 mm | 2.3 mm | 50 Pack | S011954 |
| FPS01-900-34 | 34 mm | 13 mm | 2.3 mm | 50 Pack | S012692 |
| FPS01-900-45 | 45 mm | 16 mm | 2.3 mm | 50 Pack | S012696 |

Specifications

| PARAMETER | DESCRIPTION | VALUE |
|------------------------------------|---|------------------------------------|
| Outer tube | FPS01 series / FPS04-30 / FPS08-28 / FPS24-40 | Polyolefin based on Polyethylene |
| Inner Tube | ALL | Ethylene-Vinyl Acetate |
| Strength member | FPS01 series | Stainless steel |
| | FPS04-30 / FPS08-28 / FPS24-40 | Heat-resistant glass |
| Operation condition (after shrink) | | -10 to 50°C, 0 to 95% RH (Non dew) |
| Storage condition (before shrink) | | -40 to 60°C, Non dew |

Type Variations





TJ-03 Temporary Joining Tool

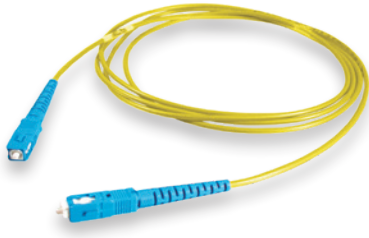
The TJ-03 is a temporary mechanical fiber splice for fiber and cable connections to test equipment such as OTDRs or fiber optic cable reels. The TJ-03 uses a precision ceramic V-groove to align up to 12 fibers simultaneously. The fibers are prepared for joining by using standard mass fusion fiber preparation tools (fiber holders, thermal stripper, and cleaver.) Using the TJ-03 in conjunction with an OTDR equipped with an optical switch provides rapid one button optical tests of 12 fibers.

Features

- Precision ceramic V-groove alignment
- Built-in magnifier and lamp to inspect fiber placement in V-grooves

Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| TJ-03 Temporary Splice Kit Includes: Fiber Holders (1 pair) FH-50-12N, CT50 Cleaver, RS02 Thermal Stripper, ADC-09A AC Adapter for RS02 and the ACC-09 Power Cord | S012772 |
| TJ-03 Temporary Splice (without fiber preparation tools) | S010456 |



Simplex Cable Assemblies

Simplex cable assemblies are offered with a variety of combinations. Connectors include SC, FC, ST and LC. 3.0 mm, 2.0 mm, 1.6 mm and 900 µm simplex cables in riser and plenum are available.

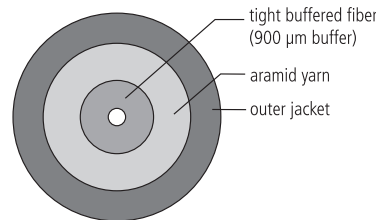
Features

- 3.0 mm, 2.0 mm, 1.6 mm, and 900 µm cable diameter available
- Riser, Plenum and LSZH rated cables available

Applications

- Building interconnections (campus LAN)
- Trunking lines direct to telecommunications closet
- Fiber patch panels within communications closets
- Links between electronic equipment and fiber patch panels

Cable Components



Ordering Information

ASC

Connector End A

Single-mode

ASC = Angle SC
AFC = Angle FC
ALC = Angle LC
USC = Ultra SC
UFC = Ultra FC
UST = Ultra ST
ULC = Ultra LC

Multimode

PSC = SC MM
PFC = FC MM
PLC = LC MM
PST = ST MM

ASC

Connector End B

Single-mode

ASC = Angle SC
AFC = Angle FC
ALC = Angle LC
USC = Ultra SC
UFC = Ultra FC
UST = Ultra ST
ULC = Ultra LC
XXX = No connector

Multimode

PSC = SC MM
PFC = FC MM
PLC = LC MM
PST = ST MM
XXX = No connector

RS

Cable Type

RS = 3.0 mm Riser
PS = 3.0 mm Plenum
KR = 3.0 mm I/O Riser
RT = 2.0 mm Riser
PT = 2.0 mm Plenum
RM = 1.6 mm Riser
PM = 1.6 mm Plenum
JH = 900 µm

001

Fiber Count

001 = 1

Q

Fiber Type

Q = Single-mode*
2 = Multimode 62.5/125 OM1
L = Multimode 50/125 OM3
C = Multimode 50/125 OM4

0010

Cable Length (meters)

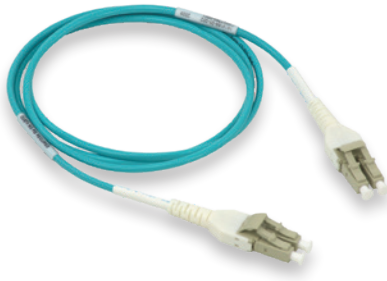
0010 = 10 meters
(specify length)

NOTES: * All Single-mode cable assemblies use the ITU G.657.A1 standard.

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|-------------------|--------------------------------|
| Telcordia | GR-409 GR-326 | Cable Connectors |
| RoHS | Compliant | Cable |
| ITU | G.652.D, G.657.A1 | Single-mode optical fiber only |

Contact AFL for further details.



Duplex Cable Assemblies

Zipcord cables are used to meet the requirements for two-fiber cable assemblies, utilizing SC, FC, ST and LC connectors.

Features

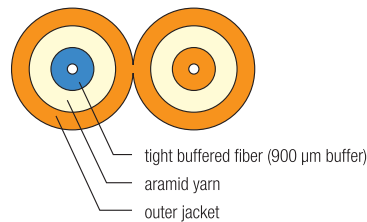
- Flexible, 2-fiber design
- Riser, Plenum and LSZH* rated cables available (*contact AFL)

Applications

- Private networks
- Data centers
- High-density applications
- Interconnect and cross-connect
- Premise installations

Cable Components

Zipcord



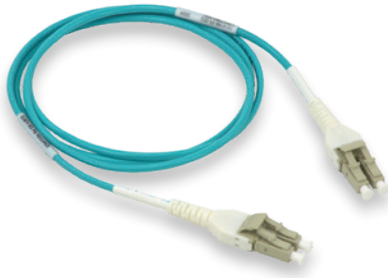
Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|-------------------|--------------------------------|
| Telcordia | GR-409 GR-326 | Cable Connectors |
| RoHS | Compliant | Cable |
| ITU | G.652.D, G.657.A1 | Single-mode optical fiber only |

Contact AFL for further details.

Ordering Information

| UST | UST | RZ | 002 | Q | 0010 |
|---|---|---|-------------|---|---|
| Connector End A | Connector End B | Cable Type | Fiber Count | Fiber Type | Cable Length (meters) |
| Single-mode AFC = Angle FC UFC = Ultra FC }* UST = Ultra ST ADL = Angled LC Duplex ASF = Angled SC Duplex USF = Ultra SC Duplex UDL = Ultra LC Duplex Multimode PFC = FC MM }* PST = ST MM }* PSF = SC Duplex MM PDL = LC Duplex MM | Single-mode AFC = Angle FC UFC = Ultra FC }* UST = Ultra ST ADL = Angled LC Duplex ASF = Angled SC Duplex USF = Ultra SC Duplex UDL = Ultra LC Duplex XXX = No connector Multimode PFC = FC MM }* PST = ST MM }* PSF = SC Duplex MM PDL = LC Duplex MM XXX = No connector | Zipcord RZ = 3.0 mm Riser PZ = 3.0 mm Plenum R20Z = 2.0 mm Riser P20Z = 2.0 mm Plenum R16Z = 1.6 mm Riser P16Z = 1.6 mm Plenum | 002 = 2 | Q = Single-mode** 2 = Multimode 62.5/125 OM1 L = Multimode 50/125 OM3 C = Multimode 50/125 OM4 | XXXX (specify length) 0010 = 10 meters |
| NOTES: 1. Refer to Connector Specifications page. * Single connector options, quantity two per end. Duplex connectors are assembled with removable clip. ** All Single-mode cable assemblies use the ITU G.652.D/G.657.A1 standard. *** LC Connectors available on 2.0 mm Zipcord cable. | | | | | |

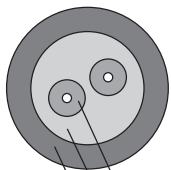


LC Uniboot Cable Assemblies

AFL's LC Uniboot cable assemblies offer a more compact design when compared to traditional duplex zipcord assemblies. These assemblies contain two LC connectors encased in a common housing with one boot, terminated on a single, round, two-fiber cable. Utilizing AFL's DUAL-Link 2.0 and 2.4 mm premise cable, LC Uniboot assemblies condense the cable management to half the space used by regular zipcord assemblies. AFL's LC Uniboot cable assemblies offer the best solution for high-density applications.

Cable Components

DUAL-Link



tight buffered fiber (900µm buffer)
aramid yarn
outer jacket

Features

- LC Uniboot connector uses a single housing and single boot and is field-reversible for polarity
- 2.0 and 2.4 mm DUAL-Link cable

Applications

- Private networks
- Data centers
- High density applications
- Interconnect and cross-connect
- Premise installations

Specifications

| PARAMETER | VALUE |
|--------------------------|--------------------------|
| Insertion Loss (typical) | 0.15 dB (SM/MM) |
| Return Loss (typical) | -55 dB (SM), -30 dB (MM) |
| Durability | 500 cycles |
| Operating Temperature | 0°C to +70°C |
| Ferrule | Zirconia |

Ordering Information

2.0 mm Plenum DUAL-Link Cable Assemblies

| FIBER TYPE | AFL NO. |
|--------------------------|---------------|
| Single-mode | CS011378-XXXX |
| Multimode 62.5/125 (OM1) | CS011381-XXXX |
| Multimode 50/125 (OM3) | CS010640-XXXX |
| Multimode 50/125 (OM4) | CS011386-XXXX |

2.4 mm Plenum DUAL-Link Cable Assemblies

| FIBER TYPE | AFL NO. |
|--------------------------|---------------|
| Single-mode | CS011389-XXXX |
| Multimode 62.5/125 (OM1) | CS011394-XXXX |
| Multimode 50/125 (OM3) | CS011397-XXXX |
| Multimode 50/125 (OM4) | CS011400-XXXX |

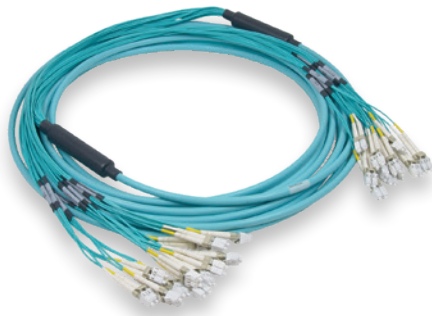
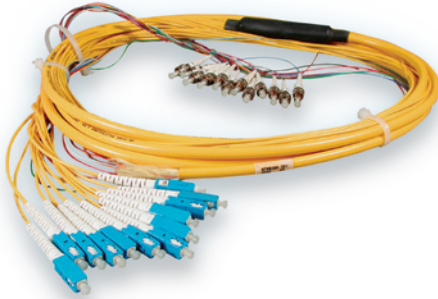
XXXX = Length (meters)

Example: 0010 = 10

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|-------------------|---------------------|
| Telcordia | GR-326 GR-409 | Connectors Cable |
| EIA/TIA | 604-10A(FOCIS 10) | Connectors |
| RoHS | | Cable |

Contact AFL for further details.



Multi-Fiber Cable Assemblies

Multi-fiber cable assemblies provide safe and cost effective installation for many applications. These assemblies help eliminate labor-intensive field termination, yet guarantee reliable performance. These assemblies feature a unified construction for easy fiber identification and rapid installation.

Features

- 4-144 fibers with aramid yarn reinforcement for rugged protection
- Available with 900 μm tight buffered fibers or sub-unitized design with twelve 250 μm fibers per tube
- Highly flexible for ease of routing
- Riser, Plenum and LSZH rated cables available
- Pre-installed pulling eye kits available on certain products

Applications

- Headend termination to a fiber "backbone"
- Termination of fiber rack systems
- Multi-floor deployment where select fibers are used at each floor
- Intra-building "backbones"
- Data center systems

Specifications

| PARAMETER | SINGLE-MODE ASSEMBLIES | | | | MULTIMODE ASSEMBLIES | |
|--------------------------------|------------------------|--------|-------|--------|----------------------|------|
| | LC | | SC | | LC | SC |
| | ULTRA | ANGLED | ULTRA | ANGLED | | |
| Insertion Loss (Typical dB)*** | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| Insertion Loss (Maximum dB) | 0.3 | 0.3 | 0.3 | 0.3 | 0.5 | 0.5 |
| Return Loss (Typical dB)*** | -60 | -70 | -60 | -70 | -35 | -35 |
| Return Loss (Minimum dB) | -55 | -65 | -55 | -65 | -30 | -30 |

*** Typical values based on equal quality connectors.

continued
→

Multi-Fiber Cable Assemblies

Ordering Information

| ASC | ASC | RC | 012 | Q | 0010 | NN |
|---|--|---|---|--|---|--|
| Connector End A | Connector End B | Cable Type | Fiber Count | Fiber Type | Cable Length (meters) | Leg Diameter |
| Single-mode ASC = Angle SC AFC = Angle FC USC = Ultra SC UFC = Ultra FC UST = Ultra ST ULC = Ultra LC UDL = Ultra LC Duplex Multimode PSC = SC MM PFC = FC MM PLC = LC MM PST = ST MM PDL = LC Duplex MM* PSF = SC Duplex MM* | Single-mode ASC = Angle SC AFC = Angle FC USC = Ultra SC UFC = Ultra FC UST = Ultra ST ULC = Ultra LC XXX = No connector Multimode PSC = SC MM PFC = FC MM PLC = LC MM PST = ST MM XXX = No connector | RC = Riser (CPC) PC = Plenum (CPC) PL = Plenum MicroCore® | 004 = 4 006 = 6 012 = 12 024 = 24 036 = 36 048 = 48 072 = 72 096 = 96 144 = 144 | Q = Single-mode ITU G.652D/ G.657.A1 2 = Multimode 62.5/125 μm OM1 L = Multimode 50/125 μm OM3 C = Multimode 50/125 μm OM4 | XXXX (specify length) 0010 = 10 meters | Leg Diameter N = 900 μm End A / XXX End B NN = 900 μm End A and B F = Furcated End A / XXX End B FF = Furcated Ends A and B FN = Furcated Ends A / 900 μm End B NF = 900 μm End A / Furcated Ends B |

NOTES:

1. Refer to Connector Specifications page.
2. Duplex SC and LC available

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|-----------------------|---------------------|
| EIA/TIA | 568-A | Cable |
| Telcordia | GR-409-CORE GR-326 | Cable Connectors |
| RoHS | Compliant | Cable |

Temperature Specifications

| | |
|-------------------|----------------|
| Temperature Range | -40°C to +85°C |
|-------------------|----------------|

Contact AFL for further details.



MPO Cable Assemblies



MPO Fanout Cable Assemblies

MPO Cable Assemblies

MPO cable assemblies provide a high performance plug-and-play solution for premise installations where space is a premium. Used to interconnect panels or cassettes, the small diameter MicroCore® cable construction reduces the required pathway space and provides a flexible outer jacket in both single-mode and multimode configurations. Multiple breakout options are also available including LC, SC, ST, or FC single fiber connectors.

Features

- High density, plug and play fiber optic interconnects
- Pre-terminated cable assemblies eliminate field termination time and guarantee optical performance
- Available with a wide variety of cable and connector options
- Standard and low loss connectors
- Single-mode and laser-optimized multimode fiber available
- Pulling eye option available upon request

Applications

- Data center systems wiring
- MPO-MPO or MPO-Fanouts
- Headend termination to a fiber "backbone"
- Termination of fiber rack systems
- Multi-floor deployment
- Intra-building "backbones"

Specifications

| PARAMETER | SINGLE-MODE ASSEMBLIES | | | | | MULTIMODE ASSEMBLIES | | |
|--------------------------------|------------------------|--------|-------|--------|--------|----------------------|------|-------------------|
| | LC | | SC | | MPO | LC | SC | MPO (LOW LOSS) |
| | ULTRA | ANGLED | ULTRA | ANGLED | ANGLED | | | |
| Insertion Loss (Typical dB)*** | 0.15 | 0.15 | 0.15 | 0.15 | 0.35 | 0.15 | 0.15 | 0.15 |
| Insertion Loss (Maximum dB) | 0.3 | 0.3 | 0.3 | 0.3 | 0.75 | 0.5 | 0.5 | 0.2 |
| Return Loss (Typical dB)*** | -60 | -70 | -60 | -70 | -65 | -35 | -35 | -30 |
| Return Loss (Minimum dB) | -55 | -65 | -55 | -65 | -55 | -30 | -30 | -20 |
| Operation Temperature | 0°C to 70°C | | | | | | | |
| Durability Cycles | 500 | 500 | 500 | 500 | 200 | 500 | 500 | 200 |

*** Typical values based on equal quality connectors.

continued
→

MPO Cable Assemblies

Ordering Information

MPO-MPO Assemblies

(Female MPOs on both ends – no pins)

(Polarity: Key Up/Key Up, Straight Through)

| FIBER COUNT | FIBER TYPE | PULLING EYE | AFL NO. |
|-------------|--------------------------------------|-------------|---------------|
| 12 | Single-mode, Single Jacket | No | CS017463-XXXX |
| 12 | Single-mode | No | CS009980-XXXX |
| 12 | Single-mode | Yes | CS009981-XXXX |
| 24 | Single-mode | No | CS009984-XXXX |
| 24 | Single-mode | Yes | CS009985-XXXX |
| 72 | Single-mode | No | CS009996-XXXX |
| 72 | Single-mode | Yes | CS009997-XXXX |
| 12 | 50 µm 10gig 300 (OM3), Single Jacket | No | CS003695-XXXX |
| 12 | 50 µm 10gig 300 (OM3) | No | CS010649-XXXX |
| 12 | 50 µm 10gig 300 (OM3) | Yes | CS010650-XXXX |
| 24 | 50 µm 10gig 300 (OM3) | No | CS003700-XXXX |
| 24 | 50 µm 10gig 300 (OM3) | Yes | CS009912-XXXX |
| 72 | 50 µm 10gig 300 (OM3) | No | CS003720-XXXX |
| 72 | 50 µm 10gig 300 (OM3) | Yes | CS010016-XXXX |
| 12 | 50 µm 10gig 550 (OM4), Single Jacket | No | CS013364-XXXX |
| 12 | 50 µm 10gig 550 (OM4) | No | CS008420-XXXX |
| 12 | 50 µm 10gig 550 (OM4) | Yes | CS010165-XXXX |
| 24 | 50 µm 10gig 550 (OM4) | No | CS010100-XXXX |
| 24 | 50 µm 10gig 550 (OM4) | Yes | CS010066-XXXX |
| 72 | 50 µm 10gig 550 (OM4) | No | CS010101-XXXX |
| 72 | 50 µm 10gig 550 (OM4) | Yes | CS010067-XXXX |

NOTE: XXXX is length in meters.

Contact AFL Customer Service for additional polarity schemes available.

Qualifications

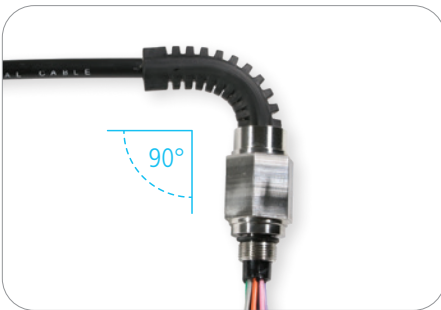
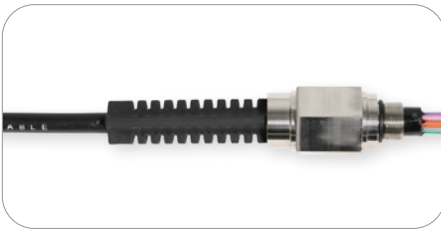
| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|-------------------------------|---------------------|
| Telcordia | GR-326/GR-1435 GR-409-CORE | Connectors Cable |
| EIA/TIA | 568-A | Cable |

Contact AFL for further details.

MPO Fanout Assemblies

(Male MPOs — Duplex Connectors)

| FIBER COUNT | FIBER TYPE | PULLING EYE | AFL NO. | |
|-------------|-----------------------|-------------|--------------------|--------------------|
| | | | MALE MPO-LC DUPLEX | MALE MPO-SC DUPLEX |
| 12 | Single-mode | No | CS009521-XXXX | CS010020-XXXX |
| 12 | Single-mode | Yes | CS0010017-XXXX | CS010021-XXXX |
| 24 | Single-mode | No | CS003796-XXXX | CS010022-XXXX |
| 24 | Single-mode | Yes | CS010018-XXXX | CS010023-XXXX |
| 72 | Single-mode | No | CS003811-XXXX | CS010024-XXXX |
| 72 | Single-mode | Yes | CS010019-XXXX | CS010025-XXXX |
| 12 | 50 µm 10gig 300 (OM3) | No | CS011510-XXXX | CS010030-XXXX |
| 12 | 50 µm 10gig 300 (OM3) | Yes | CS010027-XXXX | CS010031-XXXX |
| 24 | 50 µm 10gig 300 (OM3) | No | CS003795-XXXX | CS010032-XXXX |
| 24 | 50 µm 10gig 300 (OM3) | Yes | CS010028-XXXX | CS010033-XXXX |
| 72 | 50 µm 10gig 300 (OM3) | No | CS003810-XXXX | CS010034-XXXX |
| 72 | 50 µm 10gig 300 (OM3) | Yes | CS010029-XXXX | CS010035-XXXX |
| 12 | 50 µm 10gig 550 (OM4) | No | CS009519-XXXX | CS010073-XXXX |
| 12 | 50 µm 10gig 550 (OM4) | Yes | CS010068-XXXX | CS010074-XXXX |
| 24 | 50 µm 10gig 550 (OM4) | No | CS010069-XXXX | CS010075-XXXX |
| 24 | 50 µm 10gig 550 (OM4) | Yes | CS010070-XXXX | CS010076-XXXX |
| 72 | 50 µm 10gig 550 (OM4) | No | CS010071-XXXX | CS010077-XXXX |
| 72 | 50 µm 10gig 550 (OM4) | Yes | CS010072-XXXX | CS010078-XXXX |



NodeFLEX® Cable Assembly

The AFL NodeFLEX cable assemblies are used to link the Optical Distribution Network (ODN) to Hybrid Fiber-Coaxial (HFC) Nodes. The NodeFLEX fitting includes a flexible boot with integrated steel wires that allow installers to flex the boot to an angle up to 90° and hold that position for applications where 90° entry is required. This eliminates the need for separate straight and 90° node cables, thus reducing inventory and ordering complexity. The SCTE 5/8-24 UNEF threaded fitting of the assembly provides a water-tight seal for up to 3 meters of static waterhead. The fitting materials are machined from stainless steel to ensure long life in the outside plant environment.

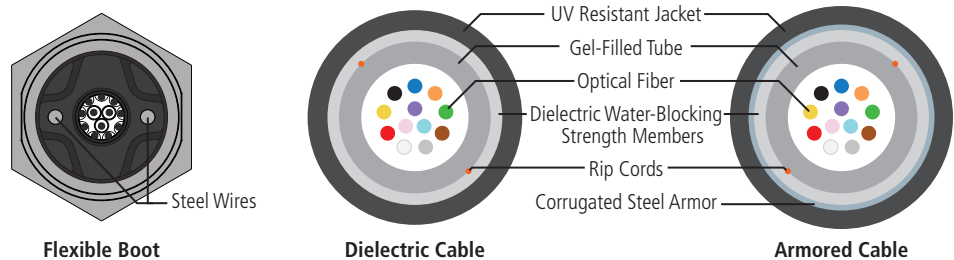
Specifications

| PARAMETER | VALUE |
|---|------------------------|
| Operating Temperature °F (°C) | -40 to 158 (-40 to 70) |
| Cable Retention lbf (N) | 100 (445) |
| Fiber Count | 2-24 |
| Maximum Insertion Loss (dB) | 0.30 |
| Return Loss (dB) | ≥55 (UPC), ≥65 (APC) |
| Fitting Material | Stainless Steel |
| Fitting Threads | 5/8-24 UNEF |
| Hex Nut Size (in.) | 1 |
| Cable Diameter, Armored, 2-12 Fiber in. (mm) | 0.32 (8.2) |
| Cable Diameter, Dielectric, 2-24 Fiber in. (mm) | 0.26 (6.7) |
| Cable Diameter, Armored, 24 Fiber in. (mm) | 0.33 (8.4) |

Features

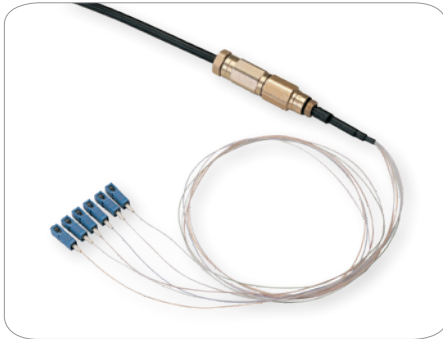
- An assortment of industry standard connector styles are available such as SC/APC, SC/UPC, FC/APC, FC/UPC and LC/UPC
- Available from 2 to 24 fibers
- Available with 900 μm, 1.6 mm or 2.0 mm color-coded furcation at various lengths to accommodate all applications
- Dielectric or armored outside plant cables available
- IP68 rated up to 3 meters of water head
- Unbody design allows for installation into the node without twisting the cable
- Stainless steel fitting with UV-stabilized rubber boot

Cable Components



Ordering Information

| ASC | XXX | NC | 012 | Q | 0010FT | F2041 |
|---|--------------------|---|--|-----------------|---|--|
| Connector End A | Connector End B | Cable Type | Fiber Count | Fiber Type | Cable Length (meters) | Leg Diameter |
| ASC = Angled SC AFC = Angled FC USC = Ultra SC UFC = Ultra FC UST = Ultra ST ULC = Ultra LC ALC = Angled LC | XXX = No connector | NC = Dielectric Round Drop AN = Armored Round Drop | 002 = 2 004 = 4 006 = 6 008 = 8 012 = 12 024 = 24 | Q = Single-mode | XXXX (specify length) 0010 = 10 meters 0010FT = 10 feet | N = 900 μm End A 41 inches length F1624 = 1.6 mm End A 24 inches length F1636 = 1.6 mm End A 36 inches length F1641 = 1.6 mm End A 41 inches length (F16XX required for 24 fiber) F2041 = 2.0 mm End A 41 inches length (Default 41 inches length) |



Node Cable Assemblies

AFL's Node Cable Assemblies are factory tested to meet stringent installation performance requirements. These assemblies make splicing from an optical node to a closure fast, easy and reliable. This connection is critical to the installation and requires an environmental seal between the cable and the node housing. AFL's assembly comes with a node fitting pre-installed on the cable, featuring an anti-twist design enabling easy mounting without twisting the cable. The mounting thread is an industry standard size of 5/8-24 UNEF.

Node Assemblies from AFL feature loose tube outdoor cable with a water-blocked cable design. An assortment of industry standard connector styles are available such as SC/APC, SC/UPC, FC/APC, FC/UPC and LC/UPC. Standard or custom breakout lengths are available in fiber counts of 1-12 terminations and with all fibers color coded for quick/easy fiber identification.

Features

- Field proven, durable, connecting hardware
- High-quality optical terminations meet all geometric and optical performance requirements
- Ordering flexibility; available in standard and custom lengths and connector counts
- Mini-central core type cable ≤12 fibers; stranded cable >12 fibers
- Installed hard-line entry connector with anti-twist design
- Individualized serial numbers for easy identification
- SC/UPC, FC/UPC, SC/APC, FC/APC, LC/UPC
- Rugged polyurethane riser-rated indoor/outdoor loose tube single-mode Uniflex cable or armored polyethylene jacket
- 900 μm or 2.0 mm upjacketed color-coded furcation

Specifications

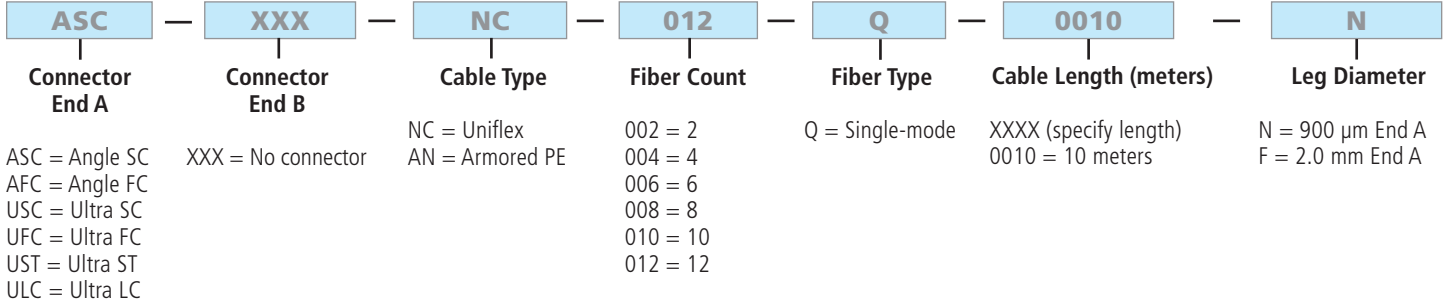
| PARAMETER | VALUE |
|--|--|
| Crush Resistance lbs (kg) | 1000 (453.5 kg) |
| Impact Resistance | 25 lbs @ 2.2 lbs per foot (11.25 kg @ 0.99 kg) |
| Flexing | 25 lbs @ 5 in. (11.25 kg @ 12.7 kg) |
| Fiber Core Diameter (microns) | 8.3 |
| Maximum Insertion Loss (dB) | 0.25 (UPC), 0.35 (APC) |
| UPC Return Loss (dB) | -55 |
| APC Return Loss (dB) | -65 |
| Outer Jacket Material | Riser-rated PU / PE |
| Finish | Aluminum, Anodized |
| Cable Pullout Tensile Strength lbs (kg) | 247 (112.04) |
| Entry Threads in. | 0.625 x 24 |
| Operating and Storage Temperatures °F (°C) | -40 to 158 (-40 to +70) |
| Dimensions in. (cm) | 4.25 long x 0.875 diameter (10.8 x 2.22) |

| GROMMET SPECIFICATIONS – STANDARD D | |
|--|--------------------|
| Inner Diameter | 0.375" |
| Active Pull Test | 35 lbs |
| Overall length | 45 mm |
| Hex Nut Size | 7/8" |
| Length from Hex Nut to end of front body | 6 mm |
| Material | Aluminum, Anodized |

continued
→

Node Cable Assemblies

Ordering Information



| COLOR FURCATION – FIBER NUMBER REFERENCE | | | | | |
|--|--------|---|-------|----|--------|
| 1 | Blue | 5 | Slate | 9 | Yellow |
| 2 | Orange | 6 | White | 10 | Violet |
| 3 | Green | 7 | Red | 11 | Rose |
| 4 | Brown | 8 | Black | 12 | Aqua |



Loose Tube and Riser Rated Indoor/Outdoor Loose Tube Cable Assemblies

High fiber count Loose Tube and Riser Rated Indoor/Outdoor Loose Tube Cable assemblies provide a safe and proven method of utilizing preterminated connector technology for outside plant applications. These assemblies help control cost by eliminating labor-intensive field termination and provide the same factory terminated reliability the industry has trusted for many years. Cable assemblies are available in Indoor/Outdoor Loose Tube, suitable for use in both indoor and outdoor applications.

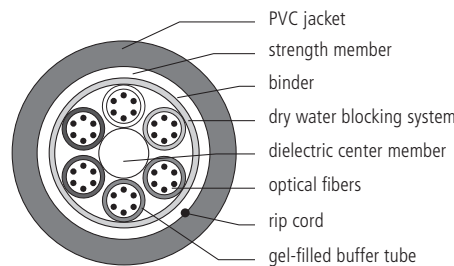
Applications

- Outdoor Cabinets
- External-Building Runs
- Vaults
- CEVs
- Duct and lashed applications

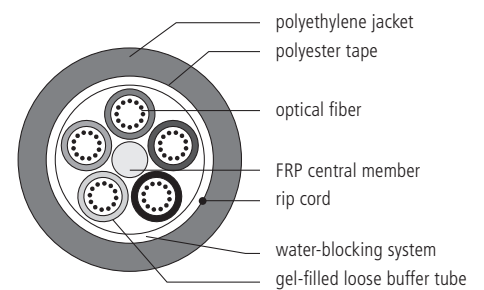
Features

- Fiber counts from 6 to 144 fibers (up to 432 for Loose Tube)
- Available with ST, SC, FC, and LC connectors single-mode
- Pigtail assemblies, standard configuration (nonstandard configurations available)
- ST, SC, FC and LC connectors available in both single-mode and multimode
- Pre-installed pulling eye kits available
- 1 meter standard breakout length
- 2.4 mm standard furcation for SC, FC, ST
- 1.6 mm standard furcation for LC
- UV resistant outer jacket
- S-Z stranded for easy mid-span access
- Gel-filled loose buffer tubes (RL), Gel-filled Loose Tube (LT)

Cable Components

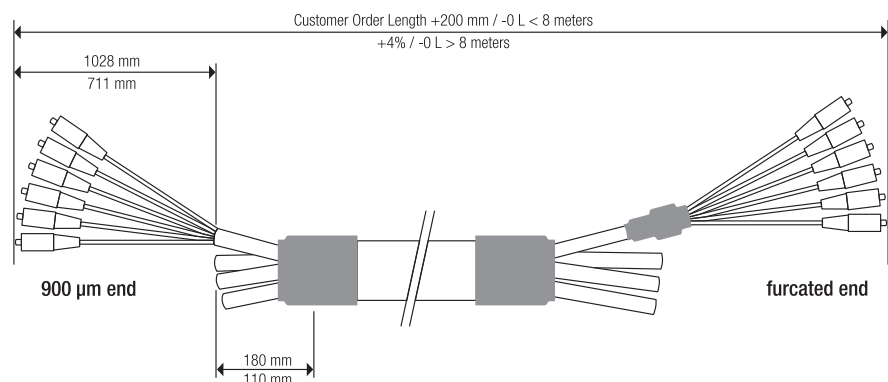


Riser Rated Indoor/Outdoor Loose Tube



Loose Tube

Dimensions



continued
→

Loose Tube and Riser Rated Indoor/Outdoor Loose Tube Cable Assemblies

Ordering Information

| ASC | ASC | LT | 024 | Q | 0010 | NN |
|--|--|--|--|--|---|---|
| Connector End A | Connector End B | Cable Type | Fiber Count | Fiber Type | Cable Length (meters) | Leg Diameter |
| Single-mode ASC = Angle SC AFC = Angle FC USC = Ultra SC UFC = Ultra FC UST = Ultra ST ULC = Ultra LC | Single-mode ASC = Angle SC AFC = Angle FC USC = Ultra SC UFC = Ultra FC UST = Ultra ST ULC = Ultra LC XXX = No connector | LT= Loose Tube RL=Riser Rated Indoor/Outdoor Loose Tube | 006 = 6 012 = 12 024 = 24 036 = 36 048 = 48 072 = 72 096 = 96 144 = 144 | Q = Single-mode X = Single-mode ITU-T G.657A BIF | XXXX (specify length) 0010 = 10 meters | N = 900 μm End A / XXX End B NN = 900 μm End A and B F = Furcated End A / XXX End B FF = Furcated Ends A and B FN = Furcated Ends A / 900 μm End B NF = 900 μm End A / Furcated Ends B |

Lengths Available

Cable lengths are dependent on fiber cable type and count.
Consult customer service for maximum lengths available.

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|----------------------|----------------------------------|
| Telcordia | GR-326 GR-20-CORE | Connectors Cable |
| EIA/TIA | | Loose Tube Cable |
| UL | 1666 OFNR | Riser Rated I/O Loose Tube Cable |
| REA/RUS | PE-90 | Loose Tube Cable |

Temperature Range

| | Riser Rated I/O Loose Tube | Loose Tube |
|--------------|----------------------------|----------------|
| Operating | -40°C to +70°C | -40°C to +70°C |
| Storage | -40°C to +75°C | -40°C to +75°C |
| Installation | 0°C to +70°C | -30°C to +70°C |

Contact AFL for further details.



Fanout Kits

Fanout kits route 250 μm fibers into 900 μm buffer tubes ready for termination. These kits require no special tools and accommodate input cables from 2.0-3.8 mm in diameter. Fanout kits feature a clear, removable cover which is VFL-compatible and does not require epoxy. Color-coded 900 μm buffer tubes allow for easy identification of individual fiber channels.



Features

- Accepts 2.0-3.8 mm input cable
- Epoxy-free installation
- Clear, removable cover works with Visual Fault Locators (VFL)
- Protects sensitive 250 μm fibers
- Compatible with FUSEConnect® and FASTConnect® field-installable connectors

Applications

- Routing 250 μm fibers into 900 μm buffer tubes for termination

Specifications

| PARAMETER | VALUE |
|------------------|--------------------|
| Fiber Count | 12 |
| Environment | Indoor |
| Input Cable Size | 2.0 - 3.8 mm |
| Length | 1 meter or 3 meter |








Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|--------------|
| Operation | -0°C to 70°C |

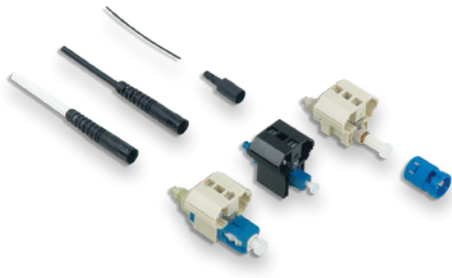
Ordering Information

| AFL NO. | DESCRIPTION |
|-----------------|--|
| FAN1-9-012-A-01 | Fanout kit, 1 position base, 900 μm , 12 tubes, A, 1M |
| FAN1-9-012-A-03 | Fanout kit, 1 position base, 900 μm , 12 tubes, A, 3M |

Connector Specifications

| PARAMETER | CONNECTOR | | | | | | | | | | | | | |
|-------------------------------|---|--------|---|--------|---|-------|---|--------|--|--------|---|-------|---|-------|
| | SC | | FC | | ST | | LC | | MTP | | MT-RJ | | MU | |
| Single-mode Assemblies | | | | | | | | | | | | | | |
| Image |  | |  | |  | |  | |  | |  | |  | |
| | Ultra | Angle | Ultra | Angle | Ultra | Angle | Ultra | Angle | Flat | Angle | Ultra | Angle | Ultra | Angle |
| Insertion loss (dB) | | | | | | | | | | | | | | |
| Maximum | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | — | 0.3 | 0.3 | — | 0.75 | 0.5 | — | 0.3 | — |
| Typical | 0.15 | 0.2 | 0.25 | 0.2 | 0.15 | — | 0.15 | 0.15 | — | 0.35 | 0.25 | — | 0.2 | — |
| Return Loss (dB) | | | | | | | | | | | | | | |
| Minimum | -55 dB | -65 dB | -55 dB | -65 dB | -55 dB | — | -55 dB | -65 dB | — | -55 dB | -35 dB | — | -55 dB | — |
| Temp Range (°C) | -40 to +85 | | -40 to +85 | | -40 to +85 | | -40 to +85 | | -40 to +75 | | -40 to +75 | | -40 to +85 | |
| Durability Cycles | 500 | | 500 | | 500 | | 500 | | 200 | | 200 | | 500 | |

| Multimode Assemblies | | | | | | | | | | | | | | |
|-----------------------------|--|--|--|--|--|--|--|--|------------|---|------------|---|------------|---|
| Insertion loss (dB) | | | | | | | | | | | | | | |
| Maximum | 0.5 | — | 0.5 | — | 0.5 | — | 0.3 | — | 0.75 | — | 0.5 | — | 0.5 | — |
| Typical | 0.25 | — | 0.25 | — | 0.25 | — | 0.25 | — | 0.35 | — | 0.25 | — | 0.25 | — |
| Return Loss (dB) | | | | | | | | | | | | | | |
| Minimum | -30 dB | — | -30 dB | — | -30 dB | — | -30 dB | — | -20 dB | — | -20 dB | — | -30 dB | — |
| Temp Range (°C) | -40 to +85 | | -40 to +85 | | -40 to +85 | | -40 to +85 | | -40 to +75 | | -40 to +75 | | -40 to +85 | |
| Durability Cycles | 500 | | 500 | | 500 | | 500 | | 200 | | 200 | | 500 | |
| Cable Options | Simplex/Duplex 900 µm 1.6 mm 2.0 mm 2.4 mm 3.0 mm | Simplex/Duplex 900 µm 1.6 mm 2.0 mm 2.4 mm 3.0 mm | Simplex/Duplex 900 µm 1.6 mm 2.0 mm 2.4 mm 3.0 mm | Simplex/Duplex 900 µm 1.6 mm 2.0 mm 2.4 mm 3.0 mm | Simplex/Duplex 900 µm 1.6 mm 2.0 mm | Bare Ribbon Jacketed Ribbon 8-12 Fiber Count | Bare Ribbon Jacketed Ribbon Dual Link Zipcord | 900 µm 2.0 mm | | | | | | |
| Applications | Telephony CATV/Broadband Telco Backplanes LAN/WAN | Telephony CATV/Broadband Telco Backplanes LAN/WAN | Telephony CATV/Broadband Telco Backplanes LAN/WAN | Telephony CATV/Broadband Telco Backplanes LAN/WAN | Telephony CATV/Broadband Telco Backplanes LAN/WAN | Telephony CATV/Broadband Telco Backplanes LAN/WAN | Telephony CATV/Broadband Telco Backplanes LAN/WAN | Telephony CATV/Broadband Telco Backplanes LAN/WAN | | | | | | |



Features

- No epoxy, no Polish
- Low insertion loss
- Fiber can be reinserted up to three times
- 4.8 mm (SC only) cordage compatibility
- VFI accessory to confirm proper installation

Applications

- Premise/Enterprise Networks
- LAN/WAN Connections
- Patch Panels
- Equipment Termination
- FTTx Applications
- Field Repair/Replacement
- Equipment Test Leads

FASTConnect® Field-Installable Connectors

FASTConnect are factory pre-polished, field-installable connectors that completely eliminate the need for hand polishing in the field. Proven mechanical splice technology ensuring precision fiber alignment, a factory pre-cleaved fiber stub and a proprietary index-matching gel combine to offer an immediate low loss termination to either single-mode or multimode optical fibers. FASTConnect are compatible with 250 μm and 900 μm optical fibers, as well as 4.8 mm (SC only) cordage.

All primary fiber types are supported, and each connector is color coded per industry standard requirements to aid in identification during and after installation. A factory-installed wedge clip (included with each connector) is removed and discarded upon completion of the termination. Incorporated into this device is an innovative, translucent wedge enabling the use of a common VFI to provide a "pass/fail" signal once physical contact is achieved.

Specifications

| PARAMETER | TYPE | VALUE |
|---------------------------------|-------------------|----------------------------------|
| Insertion Loss: | Single-mode - UPC | Average: 0.2 dB, Maximum: 0.5 dB |
| | Single-mode - APC | Average: 0.3 dB, Maximum: 0.6 dB |
| | Multimode - PC | Average: 0.1 dB, Maximum: 0.5 dB |
| Return Loss at Room Temperature | Single-mode - UPC | Average: -50 dB, Maximum: -45 dB |
| | Single-mode - APC | Average: -55 dB, Maximum: -50 dB |
| | Multimode | Average: -25 dB, Maximum: -20 dB |

Ordering Information

| FIBER TYPE | HOUSING COLOR | CABLE SIZE | AFL NO. | |
|---|---------------|-------------------|------------------|--------------------|
| | | | PACKAGE OF 6 | PACKAGE OF 100 |
| FASTCONNECT SC | | | | |
| Multimode 62.5/125 μm , OM1 | Beige | 900 μm | FAST-SC-MM62.5-6 | FAST-SC-MM62.5-100 |
| Multimode 50/125 μm , OM2 | Black | | FAST-SC-MM50-6 | FAST-SC-MM50-100 |
| Multimode 50/125 μm , OM3/OM4 compatible | Aqua | | FAST-SC-MM50L-6 | FAST-SC-MM50L-100 |
| Single-mode, UPC | Blue | | FAST-SC-SM-6 | FAST-SC-SM-100 |
| Single-mode, APC | Green | | FAST-SC-SMAU-6 | FAST-SC-SMAU-100 |
| Single-mode, APC | Green | | 4.8 mm | FAST-SC48-SMAU-6 |
| FASTCONNECT ST | | | | |
| Multimode 62.5/125 μm , OM1 | Beige | 900 μm | FAST-ST-MM62.5-6 | FAST-ST-MM62.5-100 |
| Multimode 50/125 μm , OM2 | Black | | FAST-ST-MM50-6 | FAST-ST-MM50-100 |
| Multimode 50/125 μm , OM3/OM4 compatible | Aqua | | FAST-ST-MM50L-6 | FAST-ST-MM50L-100 |
| Single-mode, UPC | Blue | | FAST-ST-SM-6 | FAST-ST-SM-100 |
| FASTCONNECT LC | | | | |
| Multimode 62.5/125 μm , OM1 | Beige | 900 μm | FAST-LC-MM62.5-6 | FAST-LC-MM62.5-100 |
| Multimode 50/125 μm , OM2 | Black | | FAST-LC-MM50-6 | FAST-LC-MM50-100 |
| Multimode 50/125 μm , OM3/OM4 compatible | Aqua | | FAST-LC-MM50L-6 | FAST-LC-MM50L-100 |
| Single-mode, UPC | Blue | | FAST-LC-SM-6 | FAST-LC-SM-100 |
| Single-mode, APC | Green | | FAST-LC-SMAU-6 | FAST-LC-SMAU-100 |

continued



FASTConnect® Field-Installable Connectors

Accessories

| DESCRIPTION | | | AFL NO. | AFL NO. |
|---|-------------|------------|-----------------|-------------------|
| BOOT KITS FOR 2 MM AND 3 MM CORDAGE | COLOR | CABLE SIZE | PACK OF 6 | PACK OF 100 |
| 2 mm Boot Kit, SC/LC/ST | Black | 2 mm | FAST-BOOT-2MM-6 | FAST-BOOT-2MM-100 |
| 3 mm Boot Kit, SC/LC/ST | Black | 3 mm | FAST-BOOT-3MM-6 | FAST-BOOT-3MM-100 |
| DUPLEX CLIPS | | | | |
| LC Duplex Clip (LC only) | Transparent | | CS010437-06 | CS010437-100 |
| TOOL KITS | | | | AFL NO. |
| FASTConnect High Precision Tool Kit with CT50 Cleaver | | | | CS001201 |
| FASTConnect High Precision Tool Kit with CT16 Cleaver | | | | CS010975 |
| VISUAL FAULT IDENTIFIERS | | | | AFL NO. |
| VF14 visual fault identifier with 2.5 mm and 1.25 mm adapters | | | | VF14-01-0900PR |
| 2.5 mm Universal for VFI port | | | | 2900-50-0013MR |
| 1.25 mm Universal for VFI port | | | | 2900-50-0012MR |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|------------------------|
| EIA/TIA | 568-C.3 604 (FOCIS) |

Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|----------------|
| Operating Temperature | -40°C to +75°C |

Patents

| COUNTRY | PATENT NUMBER(S) |
|---------|---|
| U.S. | 5,963,699 5,984,532 6,179,482 7,003,208 7,258,496 |

Contact AFL for further details.



Tool Kit Contents

FASTConnect® Universal Tool Kit

Now available with the CT50 or CT16 Cleaver!

The FASTConnect Universal Tool Kits provide all the necessary installation tools required for fiber preparation of 250 μm or 900 μm fibers, or 900 μm, 2 mm or 3 mm cordage for AFL's pre-polished FASTConnect. Featuring either the CT50 or CT16 fiber cleaver, the FASTConnect Universal Tool Kit contains all the industry standard termination tools required for fiber preparation. Additionally, the carrying case has adequate storage for extra FASTConnects for on-site convenience.

Kit Features

- Industry standard fiber preparation tools
- Compact design, flexible yet rugged case
- Complete instructions provided

Applications

- Premise environments
- LAN Fiber to the Desk environments
- Patch panel/wiring closets
- FTTx applications
- Quick repair/replacement areas



CT50 Cleaver

Ordering Information

| DESCRIPTION | AFL NO. |
|---|-------------|
| FASTConnect High Precision Tool Kit with CT50 Cleaver | CS001201 |
| FASTConnect High Precision Tool Kit without cleaver | CS001201-NC |
| FASTConnect High Precision Tool Kit with CT16 Cleaver | CS010975 |

Tool Kits include: Cleaver, FAST Assembly Tool, 3 mm Cable Clamp, 2 mm Cable Clamp, 0.25/0.9 mm Cable Clamp, Fiber Stripper, Kevlar Scissors, Fiber Preparation Fluid, Lint-free Cloth Wipes, Marker Pen, Installation Instructions, Strip Length Template and a Carrying Case.



CT16 Cleaver

CT50 Cleaver Features

- Motorized blade rotation
- Bluetooth communication
- Shock resistant
- Simple one-step operation
- 60,000 cleave blade life
- Field serviceable

CT16 Cleaver Features

- Dual fiber adapter plate for single or two fiber cleaving
- Ambidextrous operation available
- Field replaceable fiber clamp pads and cleaver blade
- Shock resistant for drops up to 30" in any of six different orientations
- Compact form factor and tool-less blade rotations

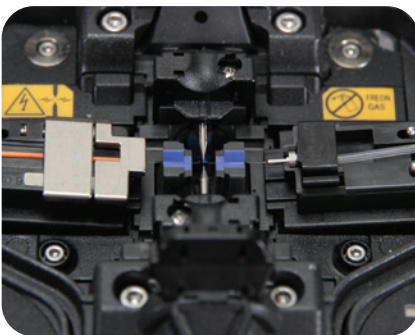


FUSEConnect Connectors (SC, FC, LC, ST)

FUSEConnect® Fusion-Spliced, Field-Installable Connectors

AFL's FUSEConnect fusion-spliced, field installable connectors are uniquely designed and feature only four to five components. The factory pre-polished ferrule eliminates the need for polishing, adhesives, and crimping in the field, which minimizes the potential for operator error and expensive connector scrap.

FUSEConnect utilizes a fusion splicer to terminate the connector in the field, addressing return loss concerns present in analog optical networks. This advanced process yields true APC performance for SC/APC and LC/APC configurations. FUSEConnect is compatible with Fujikura fusion splicers and most other fiber holder-based fusion splicing platforms.



FUSEConnect in Fusion Splicer

Features

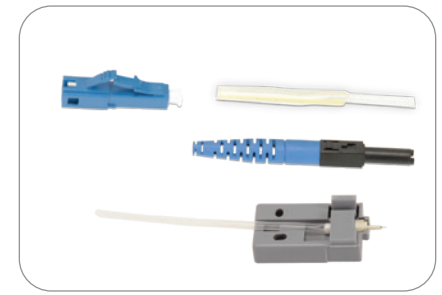
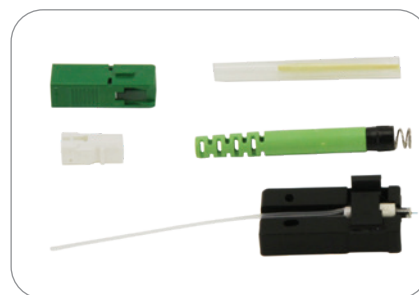
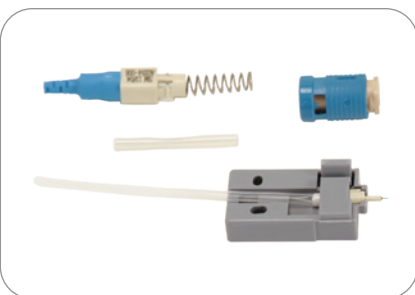
- Field installable
- No adhesives, crimping or polishing
- True APC performance
- Compatible with most fusion splicers

Applications

- Connectorization in:
 - RF-overlay FTTP networks
 - Cable TV backbone networks
 - Outside plant
 - FTTH
 - MDU FTTP Cabling
- Central office connector replacement
- Data center installation

Specifications

| PARAMETER | VALUE |
|----------------|---|
| Connector Type | SC, LC, FC, ST |
| Cable Type | 900 μm, 2 mm, 3 mm, 4.8 mm (SC only) |
| Polish | APC, UPC, PC |
| Insertion Loss | SM: 0.15 dB (average), 0.25 dB (maximum) / MM: 0.10 dB (average), 0.25 dB (maximum) |
| Return Loss | SM: ≤ -65 dB (APC), ≤ -55 dB (UPC) / MM: ≤ -35 dB (PC) |



FUSEConnect Kits—ST (blue), SC (green), LC (blue)

continued
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FUSEConnect® Fusion-Spliced, Field-Installable Connectors

Ordering Information

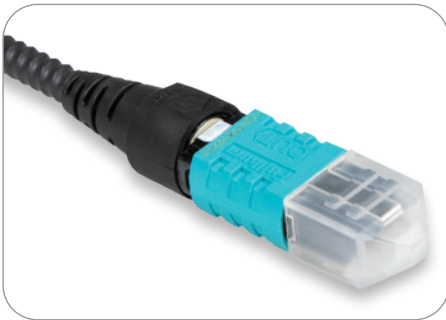
| CONNECTOR TYPE | BOOT TYPE | AFL NO.* | | | | |
|----------------|-----------|---------------|----------------|-----------------------|---------------------|--------------------------|
| | | UPC SM (Blue) | APC SM (Green) | PC 62.5 μm MM (Beige) | PC 50 μm MM (Black) | PC 50 μm LOMMF (AQUA) ** |
| SC | 900 μm | FUSE-SC9SMU-6 | FUSE-SC9SMA-6 | FUSE-SC9M62-6 | FUSE-SC9M50-6 | FUSE-SC9M50L-6 |
| | 3 mm | FUSE-SC3SMU-6 | FUSE-SC3SMA-6 | FUSE-SC3M62-6 | FUSE-SC3M50-6 | FUSE-SC3M50L-6 |
| | 4.8 mm | — | FUSE-SC48SMA-6 | — | — | — |
| LC | 900 μm | FUSE-LC9SMU-6 | FUSE-LC9SMA-6 | FUSE-LC9M62-6 | FUSE-LC9M50-6 | FUSE-LC9M50L-6 |
| | 2 mm | FUSE-LC2SMU-6 | FUSE-LC2SMA-6 | FUSE-LC2M62-6 | FUSE-LC2M50-6 | FUSE-LC2M50L-6 |
| FC | 900 μm | FUSE-FC9SMU-6 | FUSE-FC9SMA-6 | FUSE-FC9M62-6 | FUSE-FC9M50-6 | FUSE-FC9M50L-6 |
| | 2 mm | FUSE-FC2SMU-6 | — | FUSE-FC2M62-6 | FUSE-FC2M50-6 | FUSE-FC2M50L-6 |
| | 3 mm | FUSE-FC3SMU-6 | — | FUSE-FC3M62-6 | FUSE-FC3M50-6 | FUSE-FC3M50L-6 |
| ST | 900 μm | FUSE-ST9SMU-6 | — | FUSE-ST9M62-6 | FUSE-ST9M50-6 | FUSE-ST9M50L-6 |
| | 2 mm | FUSE-ST2SMU-6 | — | FUSE-ST2M62-6 | FUSE-ST2M50-6 | FUSE-ST2M50L-6 |
| | 3 mm | FUSE-ST3SMU-6 | — | FUSE-ST3M62-6 | FUSE-ST3M50-6 | FUSE-ST3M50L-6 |

* AFL NO. is for one pack of 6 pieces

** Laser Optimized MM Fiber (LOMMF) compatible with OM3 and OM4 fibers

Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|----------------|
| Operating Temperature | -40°C to +75°C |



FUSEConnect MPO Connectors, Cable



FUSEConnect MPO Connectors, Ribbon

FUSEConnect® MPO Splice-On, Field-Installable Connectors with Heat Sleeve

AFL's FUSEConnect MPO splice-on, field-installable connectors are uniquely designed and feature just six components. The innovative factory pre-polished ferrule allows for a field-termination process that eliminates the need for polishing, adhesives and crimping in the field and minimizes the potential for operator error and expensive connector scrap. FUSEConnect MPO is part of the FUSEConnect splice-on connector family which includes SC, LC, ST and FC style connectors.

This updated design for the FUSEConnect MPO replaces the mechanical clamp splice protector with a heat protection sleeve utilizing the on-board splicer heater eliminating the need for a separate mechanical clamp tool. The connector is designed for use with the new RT-02 ribbonizing tool which does not require ribbonizing glue resulting in a cleaner termination process.

FUSEConnect MPO performs as an equivalent to the standard factory terminated MPO/MTP® assemblies. Designed to utilize standard ribbon, SpiderWeb Ribbon®, or loose tube cable, this connector helps minimize the complexity involved in the termination of a multi-fiber connection, allowing for a reliable and repeatable termination in field applications. AFL offers a tool kit as well as a variety of accessories designed to meet all your installation needs for your FUSEConnect MPO application.

Features

- Field installable splice-on connector
- Heat sleeve style splice protector
- Utilizes RT-02 ribbonizing tool for glueless termination process
- Only six components
- No adhesives, crimping or polishing
- Field MPO polarity customization
- Includes 3.0 mm round and flat ribbon boots in each pack

Applications

- Connectorization in:
 - RF-overlay FTTP networks
 - Cable TV backbone networks
 - Outside plant
 - MDU FTTP Cabling
- Connector restoration in the field
- Data center installation
- Patch cord customization in the field

Specifications

| PARAMETER | | VALUE |
|----------------|-----------------------------|--------------------------------|
| Insertion Loss | Single-mode (OS1) | Average: 0.25 dB; Max: 0.75 dB |
| | Single-mode (OS1), Low Loss | Average: 0.10 dB; Max: 0.35 dB |
| | 62.5/125 (OM1) | Average: 0.10 dB; Max: 0.35 dB |
| | 50/125 (OM4) | Average: 0.10 dB; Max: 0.35 dB |
| Return Loss | Single-mode (OS1) | >65 dB |
| | 62.5/125 (OM1) | >30 dB |
| | 50/125 (OM4) | >30 dB |

continued
→

FUSEConnect® MPO Splice-On, Field-Installable Connectors with Heat Sleeve

Ordering Information

| AFL NO.* | CONNECTOR TYPE | FIBER TYPE | POLISH | CABLE SIZE | | HOUSING COLOR |
|----------------------|-----------------------------|-----------------------------|--------|------------|--------|---------------|
| | | | | ROUND | FLAT | |
| FUSEMPO-S-SMA-3-F-6 | MPO, Female (No Guide Pins) | Single-mode (OS1) | APC | 3.0 mm | 250 µm | Green |
| FUSEMPO-S-SMA-3-M-6 | MPO, Male (Guide Pins) | Single-mode (OS1) | APC | 3.0 mm | 250 µm | Green |
| FUSEMPO-S-LSMA-3-F-6 | MPO, Female (No Guide Pins) | Single-mode (OS1), Low Loss | APC | 3.0 mm | 250 µm | Mustard |
| FUSEMPO-S-LSMA-3-M-6 | MPO, Male (Guide Pins) | Single-mode (OS1), Low Loss | APC | 3.0 mm | 250 µm | Mustard |
| FUSEMPO-S-MM6-3-F-6 | MPO, Female (No Guide Pins) | Multimode 62.5 µm (OM1) | PC | 3.0 mm | 250 µm | Beige |
| FUSEMPO-S-MM6-3-M-6 | MPO, Male (Guide Pins) | Multimode 62.5 µm (OM1) | PC | 3.0 mm | 250 µm | Beige |
| FUSEMPO-S-OM4-3-F-6 | MPO, Female (No Guide Pins) | Multimode , 50 µm (OM4) | PC | 3.0 mm | 250 µm | Aqua |
| FUSEMPO-S-OM4-3-M-6 | MPO, Male (Guide Pins) | Multimode , 50 µm (OM4) | PC | 3.0 mm | 250 µm | Aqua |

*Pack of 6 pieces

Ordering Information – Accessories

| DESCRIPTION | AFL NO. |
|--|------------------------|
| TOOL KIT | |
| FUSEConnect MPO Tool Kit | FUSEMPO-TL-KT |
| ACCESSORIES | |
| FUSEConnect Stripping Tool (3.0 mm, 2.8 mm, 2.0 mm and 1.6 mm) | FUSE-ST-TL |
| FUSEConnect MPO Heater Attachment Tool | FUSE-HT-TL |
| MPO Boot Kit for 3.8 mm diameter cable (Pack of 144) | FUSEMPO-BOOT-3.8MM-144 |
| MPO Boot Kit for Jacketed Ribbon (Pack of 6) | FUSEMPO-BOOT-JK-6 |

Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|----------------|
| Operating Temperature | -40°C to +75°C |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| TIA | 604-5-C |
| IEC | 61754-7 |
| EIA/TIA | 568-C.3 |
| FOCIS | FOCIS-5 |

Contact AFL for further details.



FUSEConnect Tool Kit Contents



FUSEConnect Accessory Kit



Cord Splitter Tool

FUSEConnect® Tool Kit and Accessories

The FUSEConnect tool kit provides all the necessary installation tools required for fiber preparation of 900 μm fiber, 2 mm or 3 mm cordage for AFL's FUSEConnect Fusion Spliced Field Installable Connectors except for a fusion splicer and precision cleaver. Included in the kit are standard fiber preparation tools and cleaning supplies as well as a FUSEConnect accessory kit and cord splitter tool, which can be bought separately from the tool kit. The cord splitter tool is uniquely designed to open the cordage of 2 mm and 3 mm cable allowing the termination of the ST and FC type connectors on simplex cordage.

Features

- Industry standard fiber preparation tools
- Compact design, flexible yet rugged case

Applications

- Premise environments
- LAN Fiber to the Desk environments
- Patch panel/wiring closets
- FTTx applications
- Quick repair/replacement areas

Ordering Information

| DESCRIPTION | AFL NO. |
|--|-------------------|
| FUSECONNECT TOOL KIT (INCLUDES ITEMS BELOW) | FUSE-TL-KT |
| Tool Case | CS001202 |
| Fiber Stripper | CS001205 |
| Kevlar Scissors | C095257 |
| Lint-Free Wipes | FM000413 |
| Fiber Preparation Fluid | FPF1-00-0900 |
| Permanent Marker | C015830 |
| Cord Splitter Tool | FUSE-ST-TL |
| FUSEConnect Accessory Kit | FUSE-AC-KT |

| FUSEConnect Accessory Kit (includes items below) | FUSE-AC-KT |
|---|-------------------|
| Utility Storage Box | CS012351 |
| Clamp for holding 3 mm Simplex Cordage | S014704 |
| Clamp for holding 2 mm Simplex Cordage | S014705 |
| 250 μm / 900 μm Fiber Clamp | CS004442 |
| 3 mm FUSEConnect Fiber Holder | S014695 |
| 2 mm FUSEConnect Fiber Holder | S014696 |
| 900 μm FUSEConnect Fiber Holder | S014697 |
| CLAMP-S70D Sheath Clamp | S015862 |
| CLAMP-S31B Sheath Clamp | S017101 |

| Cord Splitter Tool | FUSE-ST-TL |
|---------------------------|-------------------|
|---------------------------|-------------------|

| Legacy Splicer Accessories (Required for Fanout Splicing) | |
|--|---------|
| CLAMP-S21B Sheath Clamp | S016853 |
| CLAMP-S60D Sheath Clamp | S014750 |



Buildout Attenuators

Buildout attenuators provide superior performance for all single-mode in-line attenuation requirements. Standard attenuation values are 5, 10, 15, and 20 dB, available in SC, FC, ST, and LC connector styles. Using no air gap, filters, or light path discontinuities, attenuation is achieved by controlled absorption of light energy. This results in a polarization insensitive device with high power handling capability, environmentally stable, and exceptionally responsive, across a wide bandpass range.

Features

- SC, FC, ST, and LC connector styles (Ultra & Angled Polish)
- Long-term reliability
- Low ripple, wavelength independent attenuation
- Certified to >125 mW continuous power handling capability with no performance degradation
- Polarization insensitive

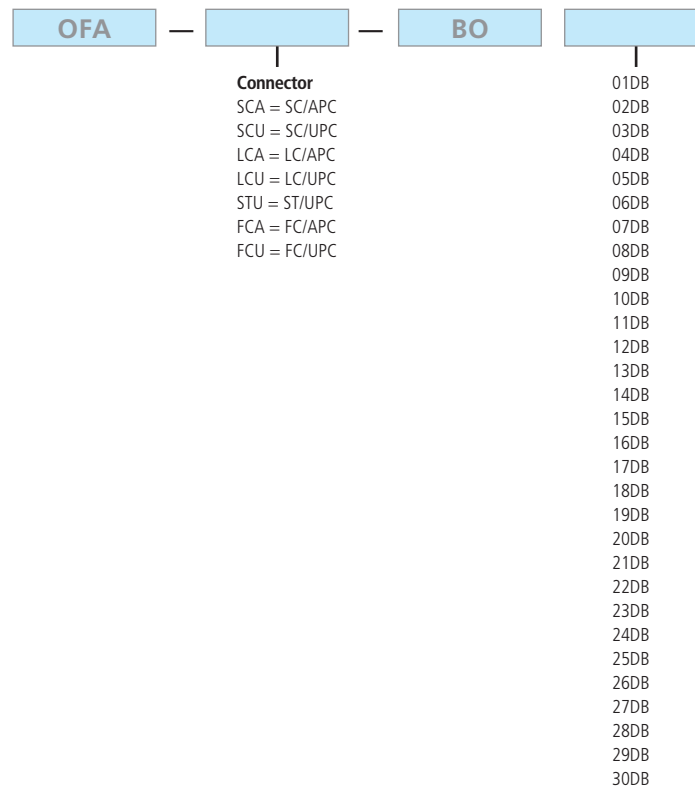
Application

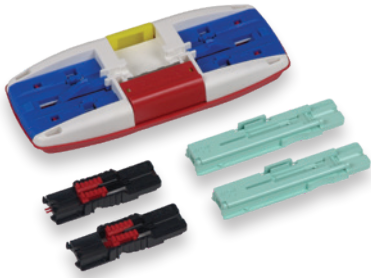
- Broadband Network
- Fiber in the Loop
- Local Area Networks (LAN)
- Long Haul Telecommunications (CLEC, CAPS)
- Network Testing
- Passive Optical Networks
- Telco

Specifications

| PARAMETER | VALUE |
|------------------------------|-------------------------|
| Standard Attenuation Values | 5, 10, 15 and 20 dB |
| Attenuation Tolerance | Standard at 10% |
| Vibration resistance | <0.1X attenuation value |
| Operating Temperature Range: | -40°C to +75°C |
| Storage Temperature Range: | -40°C to +85°C |

Ordering Information





SpliceConnect with Tool Kit

AFL's SpliceConnect is a mechanical splice that provides an inexpensive, quick alternative to mating fibers. Using V-groove technology, this splice maintains physical contact between the fibers. An assembly tool is used to ensure the fibers are mated correctly, resulting in <math><0.1\text{ dB}</math> insertion loss (typical for single-mode). The SpliceConnect secures both fiber and coating independently with the U-shaped sleeve, enhancing the strength against fiber twist.

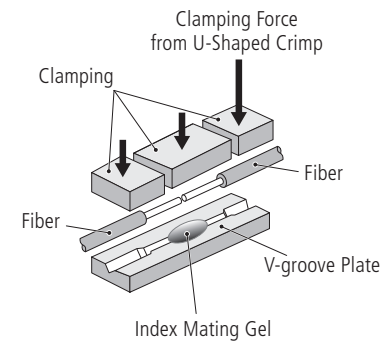
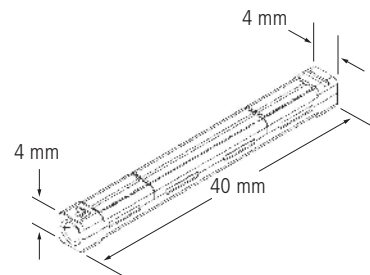
Features

- Quick splicing time
- Minimal tools
- 250 μm and/or 900 μm fiber capabilities
- Both fiber and coating are secured independently

Applications

- Restoration
- Premise environments
- Fiber-to-the-Subscriber (FTTx) applications

Dimensions and Structure



Ordering Information

| DESCRIPTION | AFL NO. |
|--|----------|
| SpliceConnect Mechanical Splices (Bag of 6) | CS004154 |
| SpliceConnect Mechanical Splice Tool Kit <i>Kit Includes:</i> | CS004162 |
| SpliceConnect Mechanical Splicing Tool | CS004155 |
| Fiber Holder, 250 μm x2 | CS004442 |
| Fiber Holder, 900 μm x2 | CS004443 |
| Instruction Manual | CS004159 |
| Carrying Case | CS004161 |
| Template, Strip/Cleave Length | CS004573 |
| SpliceConnect Mechanical Splicing Tool | CS004155 |
| Fiber Holder, 250 μm | CS004442 |
| Fiber Holder, 900 μm | CS004443 |



Wideband Couplers

The dual window Wideband Couplers (WBC) split or couple optical power in two wavelength regions while maintaining a very broad operating bandwidth. Split and coupling ratios are available from 5% to 50%. WBCs are widely considered one of the most cost-effective solutions to optical power management. The WBC is an all-fiber device, based on AFL's fused biconic technology, and is designed and manufactured to meet military and Telcordia® requirements.

Features

- Dual window wideband operation
- Low insertion loss over entire bandwidth and temperature (typical IL change $< \pm 0.1$ dB)
- Ultra-low PDL and temperature sensitivity
- High directivity
- Compact design
- Environmentally stable, over 10 years of proven field reliability

Applications

- Telecommunications
- CATV
- LAN
- Monitoring of Networks

Specifications

STANDARD AND PREMIUM GRADES

| PARAMETER | VALUE |
|-----------------------|-------------------------------|
| Operating Wavelength | 1310 nm + 50 and 1550 nm + 50 |
| Return Loss | 55 dB |
| Directivity | 55 dB |
| Package Dimension | 3.2 mm (dia.) x 55 mm (L) |
| Operating Temperature | -40° to +85°C |
| Storage Temperature | -40° to +85°C |

Ordering Information

SINGLE-MODE PREMIUM GRADE SPECIFICATIONS (MAX. INSERTION LOSS AND MAX. PDL)

| RATIO | SPECIFICATIONS (DB) | | AFL NO. |
|-------|------------------------|----------|-----------|
| | PRIMARY/SECONDARY PORT | PDL (DB) | |
| 50/50 | 3.6/3.6 | 0.15 | C198364-P |
| 55/45 | 3.2/4.1 | 0.15 | C198358-P |
| 60/40 | 2.7/4.7 | 0.14 | C198353-P |
| 65/35 | 2.3/5.3 | 0.14 | C198349-P |
| 67/33 | 2.2/5.7 | 0.14 | C198904-P |
| 70/30 | 2.0/6.0 | 0.13 | C198346-P |
| 75/25 | 1.8/6.8 | 0.13 | C198340-P |
| 80/20 | 1.3/7.8 | 0.10 | C198335-P |
| 85/15 | 1.0/9.2 | 0.10 | C198331-P |
| 90/10 | 0.8/11.2 | 0.10 | C198328-P |
| 95/5 | 0.5/14.4 | 0.10 | C198322-P |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------------|
| Telcordia | GR-1209 and GR-1221 |



Ruggedized Wideband Couplers

Enhancing AFL's wideband coupler offering are two package styles for ruggedized versions of these reliable, standardized couplers – 3 mm and 900 μm furcated pigtail options and a variety of connector styles. All AFL couplers conform to stringent environmental and mechanical standards to provide high reliability in a variety of customer applications.



Features

- Dual window wideband operation
- Low insertion loss
- Low PDL
- High Directivity
- Long term field application
- Environmentally stable

Applications

- Telecommunications
- CATV
- LAN
- Fiber in the Loop
- Network monitoring

Specifications

| PARAMETER | VALUE |
|-----------------------|-----------------------------------|
| Operating Wavelength | 1310 nm +/- 40 and 1550 nm +/- 40 |
| Return Loss | 55 dB |
| Directivity | 55 dB |
| Operating Temperature | -40° to +85°C |
| Storage Temperature | -40 to +85°C |

Ordering Information

| WBC | 1x2 | 50/50 | 900 | ULC | 1M | ULC | 1M |
|-----|-------------------------|---|----------------------|---|----------------------------|---|----------------------------|
| | Inputs x Outputs | Split Ratio (%/%) | Leg Diameter | Input Connector | Input Length | Output Connector | Input Length |
| | 1x2 2x2 | 50/50 55/45 60/40 65/35 70/30 75/25 80/20 85/15 90/10 95/5 | 900=900 μm 3=3 mm | ULC = LC/UPC ALC = LC/APC USC = SC/UPC ASC = SC/APC UFC = FC/UPC AFC = FC/APC NC = No Connector | 1M 2M 3M 4M 5M | ULC = LC/UPC ALC = LC/APC USC = SC/UPC ASC = SC/APC UFC = FC/UPC AFC = FC/APC NC = No Connector | 1M 2M 3M 4M 5M |



Optical Splitter Shelf

The LightLink LanSystem™ Optical Splitter Shelf provides a convenient in-rack solution to combine/split optical signals in a passive optical network. With 1x16, 1x32 and 2x32 options available, the splitter shelf also features a Planar Lightwave Circuit (PLC) allowing a signal to be split into either 16 or 32 channels in a 1U rack-mountable housing. The 2x32 option provides a filter WDM concatenated to a PLC, which allows 1310/1490/1550 nm signal management evenly across 32 channels.

Features

- Telcordia® GR-63 NEBS tested housing
- Aluminum Material per ASTM B209
- Universal Mounting Bracket WECO, EIA
- 19" and 23" Rack Mountable
- Rugged construction, ensuring environmental, mechanical and optical integrity
- WDM and PLC fully compliant to Telcordia GR-1209 and GR-1221
- Low Excess loss
- Low Polarization Dependent Loss

Applications

- PON-FTTx Networks
- CATV links
- DWDM and CWDM systems
- Wide area networks
- Outside plant requirements

Specifications

| PARAMETER | 1x16 | 1x32 | 2x32 | |
|---------------------|----------------|----------------|-----------------------------------|-----------------------------|
| Insertion Loss | 13.5 ~ 14.3 dB | 17.5 - 18.5 dB | 17.5 - 19 dB | |
| Uniformity | 1.5 dB Typical | 1.8 dB Typical | 1.8 dB Typical | |
| PDL | ≤ 0.3 dB | <0.45 dB | <0.45 dB | |
| Return Loss | ≥ 55 dB | ≥ 55 dB | ≥ 40 dB | |
| Directivity | ≥ 55 dB | ≥ 55 dB | ≥ 50 dB | |
| Fiber Type | SMF-28e | SMF-28e | SMF-28e | |
| Operating Temp | -40°C to +85°C | -40°C to +85°C | -40°C to +70°C | |
| Storage Temp | -40°C to +85°C | -40°C to +85°C | -40°C to +85°C | |
| Operating Bandwidth | 1260 ~ 1650 | 1260 ~ 1650 | 1550 nm Band - Port 1 (Pass) | 1550 - 1560 nm |
| | | | 1310 + 1490 nm - Port 2 (Reflect) | 1260-1360 nm & 1480-1500 nm |

Ordering Information

| DESCRIPTION | AFL NO. |
|---|----------|
| 1x16 Optical Splitter Shelf, ASC inputs/outputs, 1U, textured White | FM001000 |
| 1x32 Optical Splitter Shelf, ASC inputs/outputs, 1U, textured White | FM000775 |
| 2x32 Optical Splitter Shelf, ASC inputs/outputs, 1U, textured White | FM000622 |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|--------------------------------|
| ASTM | ASTM B209 |
| Telcordia | GR-63NEBS, GR-1209 and GR-1221 |



Optical FTTx Coupler Module

AFL's Optical FTTx Coupler Module is designed to satisfy requirements utilizing 1550 nm bandwidths in FTTx applications and is specified for FTTx video installations. The module features a compact footprint with adapter ports consisting of SC/APC adapter outputs.

Specifications

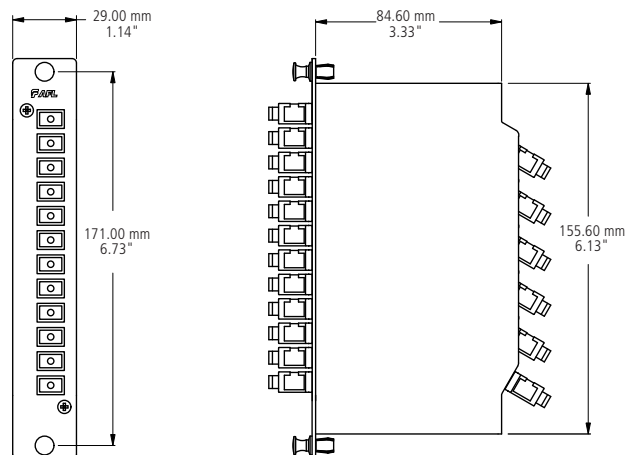
| PARAMETER | VALUE |
|-----------------------|---------------|
| Performance | |
| Wavelength | 1540-1560 nm |
| Insertion Loss | 1550 < 3.9 dB |
| PDL | <0.2 dB |
| PMD | < 0.05 ps |
| Return Loss | > 55 dB |
| Directivity | > 55 dB |
| Operating Temperature | -40 to +75°C |
| Storage Temperature | -40 to +85 °C |
| Relative Humidity | 0 to 90% |
| Optical Power | 500 mW |

| PACKAGING | |
|------------------|---|
| Packaging Size | Standard Single Width LGX® Rack Module |
| Fiber Type | Low-Water-Peak Non-Dispersion Shifted SMF-28e |
| Connector Type | All ports – SC/APC, Green |

Ordering Information

| DESCRIPTION | AFL NO. |
|-----------------------------|----------|
| Optical FTTx Coupler Module | CM000072 |

Dimensions



LGX is a registered trademark of Furukawa Electric North America, Inc.



LGX[®] FTTx Splitter Modules

The PON / FTTx splitters provide a convenient in-rack solution to combine or split optical signals in an optical network. Based on PLC technology, these modules offer the network operator high port-to-port uniformity and low insertion loss, as well as a wide operating wavelength range to accommodate future growth needs with new and emerging optical technologies. These products are available in LGX compatible modules.

Features

- Low excess loss
- Low polarization dependent loss
- Flexible LGX packaging options
(*see ordering information below for product size information)
- SC/APC Connectors

Applications

- PON - FTTx Networks
- Access Networks
- CATV Links
- Wide Area Networks

Performance Specifications

| PARAMETER | 1X4 | 1X8 | 1X16 | 1X32 |
|-----------------------|-------------|-------------|-------------|-------------|
| Insertion Loss (dB) * | <7.4 | <10.5 | <13.9 | <17.2 |
| Uniformity (dB) *, ** | <0.5 | <0.8 | <1.1 | <1.5 |
| PDL (dB) *, ** | <0.3 | | | |
| Return Loss (dB) | >55 | | | |
| Directivity (dB) | >55 | | | |
| Package | LGX, 1 Slot | LGX, 2 Slot | LGX, 3 Slot | LGX, 3 Slot |

*Operating wavelength range (1260-1650 nm) guaranteed by design. Test report provided at 1310 and 1550 nm.

** Value does not include connector loss.

Ordering Information

| DESCRIPTION | AFL NO. |
|--|----------|
| 1x4 Optical Splitter Module, 1260~1650 nm, Single slot LGX, Black, SC/APC | CM000474 |
| 1x8 Optical Splitter Module, 1260~1650 nm, Dual slot LGX, Black, SC/APC | CM000475 |
| 1x16 Optical Splitter Module, 1260~1650 nm, Triple slot LGX, Black, SC/APC | CM000476 |
| 1x32 Optical Splitter Module, 1260~1650 nm, Triple slot LGX, Black, SC/APC | CM000477 |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|-----------------|
| Telcordia | GR-1209, GR1221 |

Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|----------------|
| Operation Temperature | -40°C to +85°C |
| Storage Temperature | -40°C to +85°C |

Contact AFL for further details.



Optical Coupler Modules

The optical coupler module offers management of optical power and wavelength, packaged in the LGX® design. Each module is comprised of Telcordia®-compliant PLC or concatenated fused biconic components. Once assembled and terminated, the module is fully tested for environmental, mechanical, and optical integrity.

Features

- Telcordia GR-1209 & GR-1221 compliant
- Telcordia GR-326 compliant connectors and adapters
- Telcordia GR-20 compliant singlemode optical fiber
- RoHS compliant
- Packaged individually / tamper-proof seal

Applications

- CATV
- Telco
- Wide Area Networks
- Fiber Monitoring Systems
- Military systems

Specifications

| PARAMETER | VALUE | |
|--|--------------------|--------|
| | Single-mode | |
| | Ultra | Angled |
| Return Loss (Minimum dB) | > -45 | > -50 |
| Directivity | > -55 | |
| Operating Temperature/ Relative Humidity | -40 to +85°C / 90% | |
| Storage Temperature/ Relative Humidity | -40 to +85°C / 90% | |

Ordering Information

| I/O PORTS | I/O CONN | AFL NO. | OPTICAL BANDPASS | OUTPUT PORT COUPLING RATIO (PORT) | | INSERTION LOSS (IL) PORT 01 | | INSERTION LOSS (IL) PORT 02 | |
|-----------|----------|----------|-----------------------------|-----------------------------------|----|-----------------------------|------|-----------------------------|-----|
| | | | | 01 | 02 | TYP | MAX | TYP | MAX |
| 1 x 2 | USC | CM000165 | 1310 ± 40 nm / 1550 ± 40 nm | 50 | 50 | 3.3 | 4.0 | 3.3 | 4.0 |
| 1 x 2 | USC | CM000166 | 1310 ± 40 nm / 1550 ± 40 nm | 40 | 60 | 4.3 | 5.2 | 2.5 | 3.3 |
| 1 x 2 | USC | CM000167 | 1310 ± 40 nm / 1550 ± 40 nm | 30 | 70 | 5.5 | 6.4 | 1.5 | 2.4 |
| 1 x 2 | USC | CM000168 | 1310 ± 40 nm / 1550 ± 40 nm | 20 | 80 | 7.3 | 8.3 | 1.3 | 1.8 |
| 1 x 2 | USC | CM000169 | 1310 ± 40 nm / 1550 ± 40 nm | 10 | 90 | 10.3 | 11.5 | 0.8 | 1.1 |
| 1 x 2 | USC | CM000170 | 1310 ± 40 nm / 1550 ± 40 nm | 5 | 95 | 13.3 | 14.6 | 0.5 | 0.8 |
| 1 x 2 | ASC | CM000171 | 1310 ± 40 nm / 1550 ± 40 nm | 50 | 50 | 3.3 | 4.0 | 3.3 | 4.0 |
| 1 x 2 | ASC | CM000172 | 1310 ± 40 nm / 1550 ± 40 nm | 40 | 60 | 4.3 | 5.2 | 2.5 | 3.3 |
| 1 x 2 | ASC | CM000173 | 1310 ± 40 nm / 1550 ± 40 nm | 30 | 70 | 5.5 | 6.4 | 1.5 | 2.4 |
| 1 x 2 | ASC | CM000174 | 1310 ± 40 nm / 1550 ± 40 nm | 20 | 80 | 7.3 | 8.3 | 1.3 | 1.8 |
| 1 x 2 | ASC | CM000175 | 1310 ± 40 nm / 1550 ± 40 nm | 10 | 90 | 10.3 | 11.5 | 0.8 | 1.1 |
| 1 x 2 | ASC | CM000176 | 1310 ± 40 nm / 1550 ± 40 nm | 5 | 95 | 13.3 | 14.6 | 0.5 | 0.8 |
| 1 x 2 | ULC | CM000315 | 1310 ± 40 nm / 1550 ± 40 nm | 50 | 50 | 3.3 | 4.0 | 3.3 | 4.0 |
| 1 x 2 | ULC | CM000325 | 1310 ± 40 nm / 1550 ± 40 nm | 40 | 60 | 4.3 | 5.2 | 2.5 | 3.3 |
| 1 x 2 | ULC | CM000323 | 1310 ± 40 nm / 1550 ± 40 nm | 30 | 70 | 5.5 | 6.4 | 1.5 | 2.4 |
| 1 x 2 | ULC | CM000321 | 1310 ± 40 nm / 1550 ± 40 nm | 20 | 80 | 7.3 | 8.3 | 1.3 | 1.8 |
| 1 x 2 | ULC | CM000319 | 1310 ± 40 nm / 1550 ± 40 nm | 10 | 90 | 10.3 | 11.5 | 0.8 | 1.1 |
| 1 x 2 | ULC | CM000317 | 1310 ± 40 nm / 1550 ± 40 nm | 5 | 95 | 13.3 | 14.6 | 0.5 | 0.8 |
| 1 x 2 | ALC | CM000310 | 1310 ± 40 nm / 1550 ± 40 nm | 50 | 50 | 3.3 | 4.0 | 3.3 | 4.0 |
| 1 x 2 | ALC | CM000324 | 1310 ± 40 nm / 1550 ± 40 nm | 40 | 60 | 4.3 | 5.2 | 2.5 | 3.3 |
| 1 x 2 | ALC | CM000322 | 1310 ± 40 nm / 1550 ± 40 nm | 30 | 70 | 5.5 | 6.4 | 1.5 | 2.4 |
| 1 x 2 | ALC | CM000320 | 1310 ± 40 nm / 1550 ± 40 nm | 20 | 80 | 7.3 | 8.3 | 1.3 | 1.8 |
| 1 x 2 | ALC | CM000318 | 1310 ± 40 nm / 1550 ± 40 nm | 10 | 90 | 10.3 | 11.5 | 0.8 | 1.1 |
| 1 x 2 | ALC | CM000316 | 1310 ± 40 nm / 1550 ± 40 nm | 5 | 95 | 13.3 | 14.6 | 0.5 | 0.8 |

LGX is a registered trademark of Furukawa Electric North America, Inc.

Telcordia is a registered trademark of Telcordia Technologies, Inc.

Optical Coupler Modules

Ordering Information (cont.)

| I/O PORTS | I/O CONN | AFL NO. | OPTICAL BANDPASS | OUTPUT PORT COUPLING RATIO (%) EACH PORT | INSERTION LOSS (dB) EACH PORT | |
|-----------|----------|----------|-----------------------------|--|-------------------------------|-----|
| | | | | | TYP | MAX |
| 1 x 3 | USC | CM000177 | 1310 ± 40 nm / 1550 ± 40 nm | 33.0 | 5.1 | 6.2 |
| 1 x 3 | ASC | CM000178 | 1310 ± 40 nm / 1550 ± 40 nm | 33.0 | 5.1 | 6.2 |
| 1 x 3 | ULC | CM000326 | 1310 ± 40 nm / 1550 ± 40 nm | 33.0 | 5.1 | 6.2 |
| 1 x 3 | ALC | CM000311 | 1310 ± 40 nm / 1550 ± 40 nm | 33.0 | 5.1 | 6.2 |

| I/O PORTS | I/O CONN | AFL NO. | OPTICAL BANDPASS | OUTPUT PORT COUPLING RATIO (%) EACH PORT | INSERTION LOSS (dB) EACH PORT | |
|-----------|----------|----------|-----------------------------|--|-------------------------------|-----|
| | | | | | TYP | MAX |
| 1 x 4 | USC | CM000179 | 1310 ± 40 nm / 1550 ± 40 nm | 25.0 | 6.3 | 7.7 |
| 1 x 4 | ASC | CM000180 | 1310 ± 40 nm / 1550 ± 40 nm | 25.0 | 6.3 | 7.7 |
| 1 x 4 | ULC | CM000327 | 1310 ± 40 nm / 1550 ± 40 nm | 25.0 | 6.3 | 7.7 |
| 1 x 4 | ALC | CM000312 | 1310 ± 40 nm / 1550 ± 40 nm | 25.0 | 6.3 | 7.7 |

| I/O PORTS | I/O CONN | AFL NO. | OPTICAL BANDPASS | OUTPUT PORT COUPLING RATIO (%) EACH PORT | INSERTION LOSS (dB) EACH PORT | |
|-----------|----------|----------|------------------|--|-------------------------------|------|
| | | | | | TYP | MAX |
| 1 x 8 | USC | CM000181 | 1260 - 1650 nm | 12.5 | 9.3 | 11.4 |
| 1 x 8 | ASC | CM000182 | 1260 - 1650 nm | 12.5 | 9.3 | 11.4 |
| 1 x 8 | ULC | CM000346 | 1260 - 1650 nm | 12.5 | 9.3 | 11.4 |
| 1 x 8 | ALC | CM000347 | 1260 - 1650 nm | 12.5 | 9.3 | 11.4 |

| I/O PORTS | I/O CONN | AFL NO. | OPTICAL BANDPASS | OUTPUT PORT COUPLING RATIO (%) EACH PORT | INSERTION LOSS (dB) EACH PORT | |
|-----------|----------|----------|------------------|--|-------------------------------|------|
| | | | | | TYP | MAX |
| 1 x 16 | ASC | CM000476 | 1260 - 1650 nm | 6.25 | 13.1 | 13.8 |

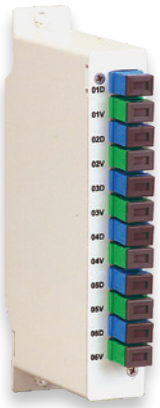
| I/O PORTS | I/O CONN | AFL NO. | OPTICAL BANDPASS | OUTPUT PORT COUPLING RATIO (%) EACH PORT | INSERTION LOSS (dB) EACH PORT | |
|-----------|----------|----------|------------------|--|-------------------------------|------|
| | | | | | TYP | MAX |
| 1 x 32 | ASC | CM000477 | 1260 - 1650 nm | 3.125 | 16.2 | 16.8 |

Insertion loss (IL) includes connector loss and Polarization Dependent Loss (PDL) across operating temperature over the Optical Bandpass.

*** Additional split ratios available upon request.

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|------------------------------------|
| RoHS | ? |
| Telcordia | GR-1209, GR-1221, GR-326 and GR-20 |



Optical FTTx WDM Module

The Optical FTTx WDM Module is designed to satisfy requirements utilizing 1310, 1490 and 1550 nm bandwidths in FTTx applications. The module features a compact footprint with adapter ports consisting of SC (UPC or APC) outputs.

Specifications

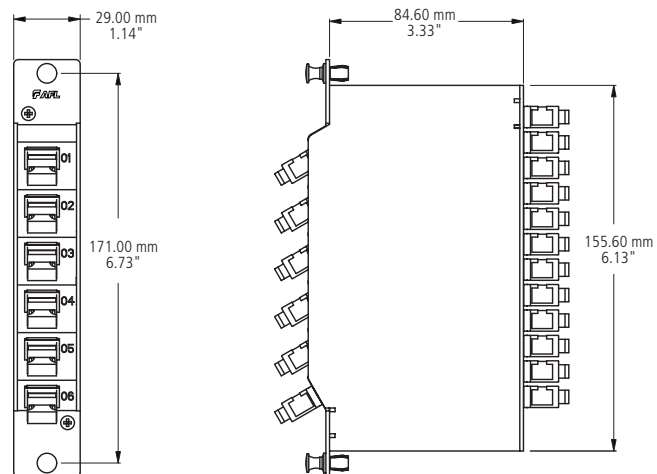
| PARAMETER | VALUE |
|-------------------------------------|---------------------------------------|
| 1550 Band – Port 1 (Pass) | 1550-1560 nm |
| 1310 + 1490 Band – Port 2 (Reflect) | 1260-1360 & 1480-1500 nm |
| Insertion Loss | 1550 < 1.2 dB 1310 + 1490 < 1.2 dB |
| Isolation | 1550 > 25 dB 1310 + 1490 > 20 dB |
| PDL | <0.2 dB |
| PMD | < 0.2 ps |
| Return Loss | > 50 dB |
| Directivity | > 50 dB |
| Operating Temperature | -40 to +75°C |
| Storage Temperature | -40 to +85°C |
| Relative Humidity | 0 to 90% |
| Optical Power | 500 mW |

| PACKAGING | |
|----------------|---|
| Packaging Size | Standard Single Width LGX® Rack Module |
| Fiber Type | Low-Water-Peak Non-Dispersion Shifted SMF-28e |
| Connector Type | Port 3 (Common) – SC/APC Port 1 (Data) – SC/UPC Port 2 (Video) – SC/APC |

Ordering Information

| AFL NO. | DESCRIPTION |
|----------|-------------------------|
| CM000043 | Optical FTTx WDM Module |

Dimensions



LGX is a registered trademark of Furukawa Electric North America, Inc.



Double-width LGX 118 package shown

CWDM LGX Modules

AFL's Coarse WDM modules are designed using proven thin-film filter technology providing high isolation, 20 nm channel separation and a high level of thermal stability. CWDM modules are available in 2, 4, 8, and 16 channel configurations and are factory assembled in a thin cassette or rugged LGX® cassette with industry standard connector options to meet varying system requirements. An optional 1310 nm Mux/Demux Upgrade Port is available to allow seamless integration of legacy voice, video, and data services.

Features

- 20 nm channel spacing
- 2, 4, 8, and 16 channel configurations
- Most industry standard connectors
- Low insertion loss
- High isolation
- Custom configurations upon request

Applications

- CATV Systems
- Sensor Systems
- 10G Ethernet Systems
- Metro Optical Networks
- Metro Access Networks

Specifications

| PARAMETER | VALUE | | | |
|--------------------------------|----------------------|------------------|------------------|-------------------|
| Ports | 2 | 4 | 8 | 16 |
| Center Wavelength | 1271-1611 nm | | | |
| Passband @ 0.5 dB | > 14 nm | | | |
| Passband | ± 6.5 nm | | | |
| Passband Flatness | < 0.5 dB | | | |
| Insertion Loss (Typ.) | 1.4 dB | 1.6 dB | 1.8 dB | 4.3 dB |
| Insertion Loss (Max.) | 1.8 dB | 2.0 dB | 2.5 dB | 5.0 dB |
| Adjacent Channel Isolation | > 30 dB | | | |
| Non-Adjacent Channel Isolation | > 45 dB | | | |
| Wavelength Thermal Stability | < 0.002 nm/°C | | | |
| IL Thermal Stability | < 0.005 dB/°C | < 0.005 dB/°C | < 0.007 dB/°C | < 0.008 dB/°C |
| Return Loss | > 45 dB | | | |
| PMD | < 0.10 ps | < 0.10 ps | < 0.15 ps | < 0.15 ps |
| PDL | < 0.10 dB | < 0.15 dB | < 0.20 dB | < 0.25 dB |
| Directivity | > 50 dB | | | |
| LGX 118 Package | Single-width | Single-width | Double-width | Triple-width |
| Thin Cassette Package | 88.9 x 50.8 x 8.3 mm | 120 x 80 x 13 mm | 130 x 87 x 13 mm | 150 x 115 x 13 mm |
| Options | 2% Tap, 1310 Upgrade | | | |
| 1310 Channel Wavelength | 1260-1360 nm | | | |
| 1310 Channel Isolation | 40 dB minimum | | | |
| 1310 Channel Insertion Loss | 1.3 dB maximum | | | |

* Includes Connectors

continued
→

CWDM LGX Modules

Ordering Information

| CWDM | 04 | 5 | 1271 | 1331 | B | ASC | ISP |
|------|-----------------|---------------------------------------|-----------------------|---------------------|--|--------------|-------------------|
| | Channel Count | Package/Pigtail | Start Wavelength (nm) | End Wavelength (nm) | Options | Connectors | |
| | 02 = 2 Channel | 1 = Thin Cassette, 1 Meter Pigtail | 1271 | 1291 | U = 1310 Upgrade Port | ASC = SC/APC | |
| | 04 = 4 Channel | 3 = Thin Cassette, 3 Meter Pigtail | 1291 | 1311 | T = 2% Tap Port | USC = SC/UPC | |
| | 08 = 8 Channel | 5 = Thin Cassette, 5 Meter Pigtail | 1311 | 1331 | X = No Option | ALC = LC/APC | |
| | 16 = 16 Channel | L = LGX 118 | 1331 | 1351 | B = 1310 Upgrade Port and 2% Tap Port | ULC = LC/UPC | X = No connectors |
| | | | 1351 | 1371 | | | |
| | | | 1371 | 1391 | | | |
| | | | 1391 | 1411 | | | |
| | | | 1411 | 1431 | | | |
| | | | 1431 | 1451 | | | |
| | | | 1451 | 1471 | | | |
| | | | 1471 | 1491 | | | |
| | | | 1491 | 1511 | | | |
| | | | 1511 | 1531 | | | |
| | | | 1531 | 1551 | | | |
| | | | 1551 | 1571 | | | |
| | | | 1571 | 1591 | | | |
| | | | 1591 | 1611 | | | |

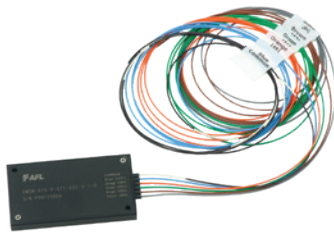
Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------|-----------|
| Telcordia | Compliant | Cable |

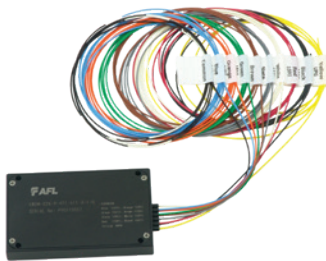
Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|----------------|
| Operation Temperature | -5°C to +65°C |
| Storage Temperature | -40°C to +85°C |

Contact AFL for further details.



CWDM 4-Channel Mini Module



CWDM 8-Channel Mini Module

Thin Film Filter (TFF) Compact Series CWDM

AFL's TFF compact series CWDM modules deliver reliable performance and flexibility in every network application – from cellular backhaul and metro Ethernet to access and security. With its reduced package size, this new outside plant CWDM module has added flexibility, making deployment options more convenient.

This CWDM series is based on proven Thin Film Filter technology, offering low insertion loss and high thermal stability over the entire outside plant operating temperature range. Numerous configurations are available to meet unique needs and support new or existing network architectures. Typical options include a variety of configurations (mux, demux, and balanced), upgrade ports (1310, C-Band, and others), test/monitoring ports and multiple termination options.

Features

- Low insertion loss
- Compact size
- High thermal stability

Applications

- CWDM systems
- Metro Ethernet / access networks
- Cellular backhaul networks

Specifications

| PARAMETER | UNIT | WITHOUT UPGRADE PORT | | WITH 1310 NM UPGRADE PORT | |
|-------------------------------------|------|-------------------------|-----------|---------------------------|-----------|
| | | 4 Channel | 8 Channel | 4 Channel | 8 Channel |
| Operating Wavelength | nm | 1471~1611 | | | |
| Channel Spacing | nm | 20 | | | |
| Center Wavelength | nm | Customer specified | | | |
| Pass Band | nm | ± 6.5 | | | |
| 1310 Upgrade Port Pass Band | nm | — | | 1270~1350 | |
| 1310 Upgrade Port Insertion Loss | dB | — | | 1.0 | |
| CWDM Channel Insertion Loss | dB | ≤ 2.0 | ≤ 2.5 | ≤ 2.6 | ≤ 3.4 |
| CWDM Adjacent Channel Isolation | dB | ≥ 30 | | | |
| CWDM Non-adjacent Channel Isolation | dB | ≥ 45 | | | |
| PDL | dB | ≤ 0.2 | | | |
| PMD | ps | ≤ 0.1 | | ≤ 0.25 | |
| Return Loss | dB | ≥ 45 | | | |
| Directivity | dB | ≥ 50 | | | |
| Maximum Input Power | mW | ≤ 300 | | | |
| Package Size | Mm | 60 (l) x 35 (w) x 6 (d) | | 70 (l) x 45 (w) x 9 (d) | |

* Actual optical specifications will vary based on product configuration
 1. Higher and lower channel counts available

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------|-----------|
| Telcordia | GR-1221-CORE | Cable |
| RoHS | 6/6 Compliant | Cable |

Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|------------------|
| Operation Temperature | -40°C ~ to +85°C |

Contact AFL for further details.



CGM PLUS



CGM PLUS Open



CGM PLUS Interior

CGM® PLUS

The CGM Plus is a high-density rack-mount panel designed for Wavelength Division Multiplexing (WDM) applications. The CGM Plus can hold LGX® and CGM® devices interchangeably.

The panel features a hinged tray system that extends from the front of the panel and conveniently folds out of the way for unobstructed access to installed modules.

Routing rings on the front of the tray provide enhanced fiber management, allowing cable assemblies to enter and exit comfortably.

Features

- Galvannealed Steel construction
- Textured white powder coat finish
- 4RU panel height
- Universal 19"/23" rack compatibility
- Hinged tray system for increased access to modules
- Compatible with CGM (Card Guide Module) and LGX products
- Adjustable mounting depth

Applications

- Wavelength Division Multiplexing (WDM)
- Headends/Central Offices
- Service Provider
- Telecommunications
- Data Centers

Ordering Information

| DESCRIPTION | CAPACITY | | AFL NO. |
|---|----------|------|----------|
| | LGX* | CGM* | |
| CGM PLUS, 4RU, Empty, White, Front Access | 12 | 24 | FM004158 |

* Based on single-wide product

Specifications

| DEPTH | WIDTH | HEIGHT | WEIGHT |
|-------|---------|--------|---------|
| 12.5" | 17.375" | 6.875" | 23 Lbs. |



Card Guide Module (CGM®)

Card Guide Modules (CGM) are panel-mount WDM devices for high-density applications. These modules are pre-terminated plug and play products in a space efficient design. Using proven thin-film filter technology, Card Guide Modules feature low insertion loss, high isolation and superior environmental stability.

Available with up to 40 DWDM channels, Card Guide Modules can also be configured with optional Express, Upgrade or Test ports.

Features

- Space efficient design
- Mux/demux options
- LC/UPC or LC/APC adapters
- Up to 40 DWDM channels
- 50/100/200 GHz ITU channel spacing
- Optional Express, Upgrade or Test ports

Specifications

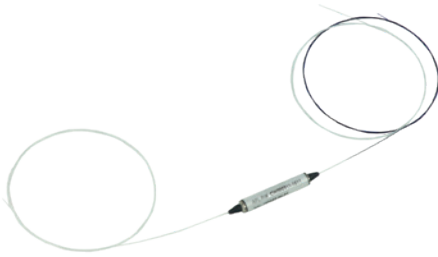
| PARAMETER | UNIT | VALUE | | |
|------------------------------------|-------|----------------------------------|---------|---------|
| Channels | ea | 8 | 20 | 40 |
| CGM Size | Width | Single | Dual | Quad |
| Center Wavelength | nm | Per ITU-T G.694.1 Grid | | |
| Channel Spacing | GHz | 100 | | |
| Passband | nm | ± 0.11 | | |
| Passband @ 0.5 dB | nm | > 14 | | |
| Passband Ripple | dB | < 0.5 | | |
| Insertion Loss (IL) (Typ.) ** | dB | 2.6 | 5.3 | 6.0 |
| Insertion Loss (IL) (Max.) ** | dB | 3.2 | 5.8 | 6.5 |
| Isolation (Adjacent Channel) | dB | ≥ 25 | | |
| Isolation (Non-Adjacent Channel) | dB | ≥ 40 | | |
| Return Loss (RL) | dB | ≥ 45 | | |
| Directivity | dB | ≥ 50 | | |
| Polarization Mode Dispersion (PMD) | ps | ≤ 0.15 | | |
| Polarization Dependent Loss (PDL) | dB | ≤ 0.25 | | |
| Wavelength Thermal Stability | nm/°C | < 0.001 | | |
| Insertion Loss Thermal Stability | dB/°C | < 0.007 | < 0.007 | < 0.008 |
| Optical Power (Max.) | mW | 300 | | |
| Options | Port | Express, Upgrade, Tap, Mux/Demux | | |

* Optical specifications do not include optional ports

** Includes Connectors

Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|----------------|
| Operating Temperature | -5°C to +70°C |
| Storage Temperature | -40°C to +85°C |



CWDM Single-channel OADM

The CWDM Single-channel OADM is designed to add/drop a single CWDM channel from an optical fiber. This product is hardened and designed to perform in OSP applications, but can also be used in splice trays or similar structures in Inside Plant or similar environments. While 250 μm leads are most commonly desired, these products can also be supplied with color-coded 900 μm leads and terminated with virtually any common single-fiber optical connector.

Features

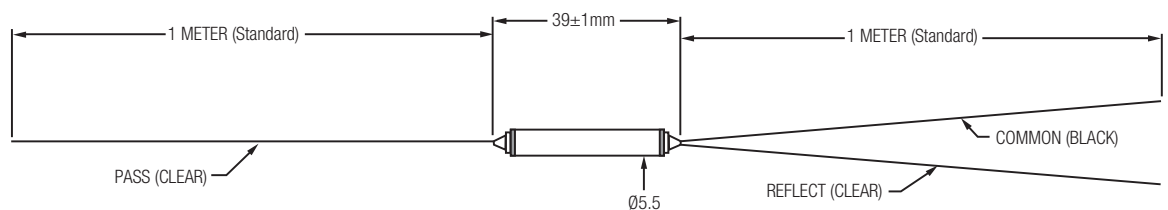
- Hardened for OSP use
- Low Excess Loss
- Low PDL
- Color coded 900 μm leads available

Applications

- Metro Ethernet / Cellular Backhaul
- Access Networks
- CWDM Systems
- CATV Links

Specifications

| PARAMETER | UNIT | VALUE |
|----------------------------------|------------------------|-----------------------|
| Center Wavelength | nm | ITU-T Grid |
| Channel Passband | nm | ITU-T Grid \pm 6.5 |
| Passband Flatness | dB | < 0.5 |
| Bandwidth (@ -5dB) | nm | >14 |
| Insertion Loss (Pass Channel) | dB | < 1.0 |
| Insertion Loss (Reflect Channel) | dB | < 0.6 |
| Adjacent Channel Isolation | dB | > 30 |
| Non-Adjacent Channel Isolation | dB | > 45 |
| Isolation (Reflect Channel) | dB | > 13 |
| Return Loss | dB | > 45 |
| PDL | dB | < 0.1 |
| Directivity | dB | > 50 |
| IL Thermal Stability | dB/ $^{\circ}\text{C}$ | < 0.005 |
| Wavelength Thermal Stability | nm/ $^{\circ}\text{C}$ | < 0.002 |
| Operation Humidity | % RH | 5 to 95 not condensed |
| Storage Humidity | % RH | 0 to 95 not condensed |



continued
→

CWDM Single-channel OADM

Ordering Information

| AFL NO. | MODEL CODE | PASSBAND |
|---------------|--|----------|
| CW000311-1431 | CWDM TFF, 3-Port, 1431nm, 250um leads, NC, OSP | 1431 |
| CW000311-1451 | CWDM TFF, 3-Port, 1451nm, 250um leads, NC, OSP | 1451 |
| CW000311-1471 | CWDM TFF, 3-Port, 1471nm, 250um leads, NC, OSP | 1471 |
| CW000311-1491 | CWDM TFF, 3-Port, 1491nm, 250um leads, NC, OSP | 1491 |
| CW000311-1511 | CWDM TFF, 3-Port, 1511nm, 250um leads, NC, OSP | 1511 |
| CW000311-1531 | CWDM TFF, 3-Port, 1531nm, 250um leads, NC, OSP | 1531 |
| CW000311-1551 | CWDM TFF, 3-Port, 1551nm, 250um leads, NC, OSP | 1551 |
| CW000311-1571 | CWDM TFF, 3-Port, 1571nm, 250um leads, NC, OSP | 1571 |
| CW000311-1591 | CWDM TFF, 3-Port, 1591nm, 250um leads, NC, OSP | 1591 |
| CW000311-1611 | CWDM TFF, 3-Port, 1611nm, 250um leads, NC, OSP | 1611 |

* Additional configuration available upon request. Contact AFL Customer Service.

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------|-----------|
| RoHS | Compliant | Cable |

Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|----------------|
| Operation Temperature | -40°C to +85°C |
| Storage Temperature | -40°C to +85°C |

Contact AFL for further details.



DWDM LGX Modules

AFL's DWDM LGX modules provide scalable wavelength management for new deployments and network upgrades, providing increased bandwidth over a single common fiber. Passive circuit design utilizes proven thin-film filter technology featuring low insertion loss, high isolation, and superior environmental stability. Modules can be installed in standard LGX chassis and are available with LC bulkheads in select configurations from 4 to 40 channels, including both single and dual circuit package designs. SC bulkhead modules are available in single circuit packages from 4 to 20 channels.

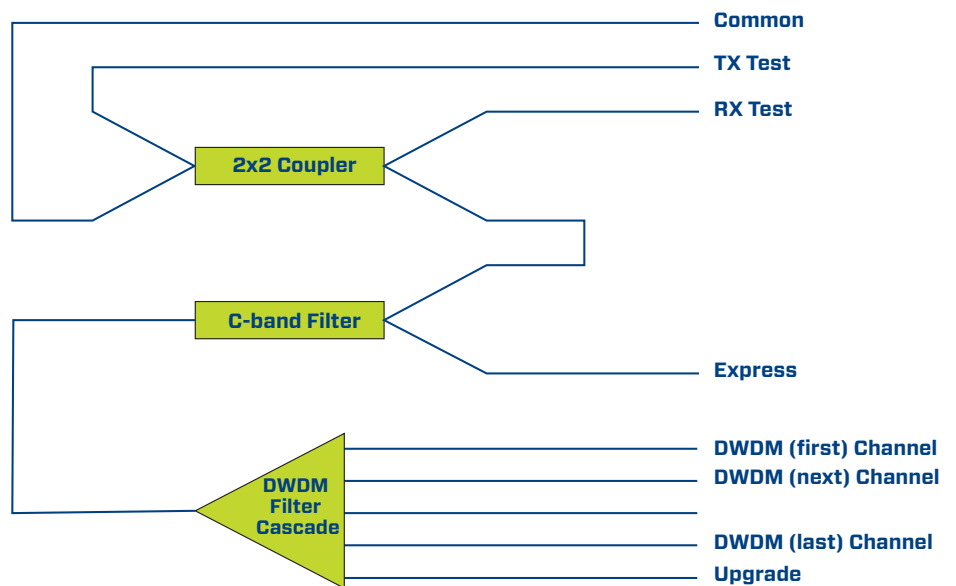
Features

- 50 GHz and 100 GHz ITU-T channel spacing
- Low insertion loss/high isolation
- Epoxy-free optical path
- Express, upgrade and Tx/Rx test ports

Applications

- CATV Systems
- Carrier Infrastructure
- Access Networks
- Small Cell

Diagram



Ordering Information

| Model | Specification | ITU Channel Plan | Channel Count | Package Size | Connectors | Channel | Network & Test Options** |
|---------------|--------------------------------------|---------------------------|--|--|--|---|---|
| D | C | 1 | S08 | L01 | ALCO | Cxx | F |
| D = Dense WDM | C = Commercial A = AFL Standard * | 5 = 50 GHz 1 = 100 GHz | S04 = Single Circuit, 4 Channels D04 = Dual Circuit, 4 Channels S08 = Single Circuit, 8 Channels D08 = Dual Circuit, 8 Channels S10 = Single Circuit, 10 Channels D10 = Dual Circuit, 10 Channels S12 = Single Circuit, 12 Channels D12 = Dual Circuit, 12 Channels S16 = Single Circuit, 16 Channels D16 = Dual Circuit, 16 Channels S20 = Single Circuit, 20 Channels D20 = Dual Circuit, 20 Channels S40 = Single Circuit, 40 Channels D40 = Dual Circuit, 40 Channels | L01 = Single Wide LGX Module L02 = Double Wide LGX Module L03 = Triple Wide LGX Module L04 = Quad Wide LGX Module | ALCO = LC/APC Bulkhead ULCO = LC/UPC Bulkhead ASCO = SC/APC Bulkhead * USCO = SC/UPC Bulkhead * | Replace xx with Channel Number listed in DWDM ITU Channels table on last page of spec sheet. C19 = Channel 19 with 191,900 GHz and 1562.23 nm center wavelength | 0 = No Options 1 = Express 2 = Upgrade 3 = Express & Upgrade D = Express & Dual Test F = Express, Upgrade, & Dual Test |

* SC bulkheads only available in AFL STANDARD (A) specification and single circuit channel counts of 4 to 20 channels.

** Additional options available, contact AFL for details.

continued

DWDM LGX Modules

Optical Specifications * ITU-T G.694.1 Configuration F (Express, Upgrade and Dual Test Ports)

| PARAMETER | REQUIREMENT | | | | | | | | | | | | | | COMMENT/COMMERCIAL SPEC VARIATION | |
|---|--|-------------|-------------|-------------|-------------|-------------|-------------|---|-------------|-------------|-------------|-------------|-------------|-----------|-----------------------------------|--|
| | 100 GHz | | | | | | | 50 GHz | | | | | | | | |
| Temperature and Input Power | | | | | | | | | | | | | | | | |
| OT/H – Inside Plant | -10°C to 65°C; 5 to 95% RH | | | | | | | | | | | | | | -20°C to 65°C; 5 to 95% RH | |
| OT/H – Outside Plant | -40°C to 85°C; 5 to 95% RH | | | | | | | | | | | | | | | |
| Storage Temperature/Humidity | -40°C to 85°C; 5 to 95% RH | | | | | | | | | | | | | | | |
| Max. Input Power Rating | 300 mW | | | | | | | | | | | | | | | |
| Optical Passband | | | | | | | | | | | | | | | | |
| DWDM Channel Center Wavelength | per ITU 100 GHz Grid | | | | | | | per ITU 50 GHz Grid | | | | | | | | |
| DWDM Channel Passband @ 0.5 dB | ± 0.125 nm (ITU Channel Center Wavelength) | | | | | | | ± 0.06 nm (ITU Channel Center Wavelength) | | | | | | | | |
| DWDM Channel Passband Ripple | < 0.5 | | | | | | | | | | | | | | | |
| Upgrade Port Optical Passband | 1528.65 nm to 1566.44 nm | | | | | | | | | | | | | | | |
| Express Port Optical Passband | 1260 nm to 1520 nm and 1570 nm to 1635 nm | | | | | | | | | | | | | | | |
| RX Test Optical Passband | 1260 nm to 1635 nm | | | | | | | | | | | | | | | |
| TX Test Optical Passband | ± 0.125 nm (ITU Channel Center Wavelength) | | | | | | | ± 0.06 nm (ITU Channel Center Wavelength) | | | | | | | | |
| Insertion Loss (New Product, 20°C to 25°C) *** | | | | | | | | | | | | | | | | |
| Max IL (dB) – Common to DWDM Ch. | 4 Ch | 8 Ch | 10 Ch | 12 Ch | 16 Ch | 20 Ch | 40 Ch | 4 Ch | 8 Ch | 10 Ch | 12 Ch | 16 Ch | 20 Ch | 40 Ch | SC Bulkheads 4-20 channel only | |
| | 2.0 | 3.0 | 3.5 | 3.5 | 4.0 | 4.0 | 4.0 | 2.0 | 3.0 | 3.5 | 4.0 | 4.0 | 4.0 | 4.0 | | |
| Max DWDM Channel Uniformity | 2.0 dB | | | | | | | | | | | | | | | |
| Max IL (dB) – Common to Upgrade | 1.5 | 2.5 | 3.0 | 3.5 | 3.5 | 3.5 | 3.5 | 1.5 | 2.5 | 3.0 | 3.5 | 3.5 | 3.5 | 3.5 | 3.0 dB ** | |
| Max IL – Common to Express | 1.0 dB | | | | | | | | | | | | | | | |
| Common to RX Test | ≤21.0 dB | | | | | | | | | | | | | | | |
| Express to TX Test | ≤22.0 dB | | | | | | | | | | | | | | | |
| Isolation | | | | | | | | | | | | | | | | |
| Min DWDM Adjacent Channel Isolation | 30 dB | | | | | | | 25 dB | | | | | | | | |
| Min DWDM Non-Adjacent Ch. Isolation | 45 dB | | | | | | | 35 dB | | | | | | | | |
| Min Express Isolation | 12 dB | | | | | | | | | | | | | | | |
| Max Polarization Dependent Loss (PDL) | 0.3 dB | | | | | | | | | | | | | | 0.25 dB | |
| Max Polarization Mode Dispersion (PMD) | 0.3 dB | | | | | | | | | | | | | | 0.15 dB | |
| Directivity | | | | | | | | | | | | | | | | |
| DWDM Port Min Directivity | 50 dB | | | | | | | | | | | | | | 55 dB | |
| Express Port Min Directivity | 45 dB | | | | | | | | | | | | | | | |
| Test Port Min Directivity | 50 dB | | | | | | | | | | | | | | | |
| Min Return Loss (all ports) | 45 dB | | | | | | | | | | | | | | | |
| Insertion Loss Thermal Stability | | | | | | | | | | | | | | | | |
| Insertion Loss Thermal Stability – New Prod. | ≤0.005 dB/C | | | | | | | | | | | | | | | |
| Insertion Loss Thermal Stability – Service Life | ≤0.010 dB/C | | | | | | | | | | | | | | < 0.005 dB/C | |
| Wavelength Thermal Stability | ≤0.001 nm/C | | | | | | | | | | | | | | | |
| LGX 118 Package (Slot Width) | 4 Ch | 8 Ch | 10 Ch | 12 Ch | 16 Ch | 20 Ch | 40 Ch | | | | | | | | | |
| LC UPC/APC Bulkhead Mod. – Single Circ. | Single Slot | Single Slot | Single Slot | Single Slot | Single Slot | Single Slot | Single Slot | Single Slot | Single Slot | Single Slot | Single Slot | Single Slot | Single Slot | Dual Slot | | |
| LC UPC/APC Bulkhead Mod. – Dual Circ. | Single Slot | Dual Slot | Dual Slot | Dual Slot | Dual Slot | Dual Slot | Dual Slot | Dual Slot | Dual Slot | Dual Slot | Dual Slot | Dual Slot | Dual Slot | Quad Slot | | |
| SC UPC/APC Bulkhead Mod. – Single Circ. | Dual Slot | Dual Slot | Triple Slot | Triple Slot | Triple Slot | Triple Slot | Triple Slot | Quad Slot | Quad Slot | Quad Slot | Quad Slot | Quad Slot | Quad Slot | N/A | | |

NOTES:
 * Unless otherwise noted, optical specification applies across operating temperature and optical bandpass.
 ** Includes connector loss.
 *** Unless noted, 0.40 dB per mated connector loss is EXCLUDED.

continued
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DWDM LGX Modules

DWDM ITU Channels

| CHANNEL NO. | FREQUENCY (GHz) | CENTER WAVELENGTH (nm) | CHANNEL NO. | FREQUENCY (GHz) | CENTER WAVELENGTH (nm) | CHANNEL NO. | FREQUENCY (GHz) | CENTER WAVELENGTH (nm) | CHANNEL NO. | FREQUENCY (GHz) | CENTER WAVELENGTH (nm) |
|-------------|-----------------|------------------------|-------------|-----------------|------------------------|-------------|-----------------|------------------------|-------------|-----------------|------------------------|
| C1 | 190,100 | 1577.03 | C19 | 191,900 | 1562.23 | C37 | 193,700 | 1547.72 | C55 | 195,500 | 1533.47 |
| H1 | 190,150 | 1576.61 | H19 | 191,950 | 1561.83 | H37 | 193,750 | 1547.32 | H55 | 195,550 | 1533.07 |
| C2 | 190,200 | 1576.20 | C20 | 192,000 | 1561.42 | C38 | 193,800 | 1546.92 | C56 | 195,600 | 1532.68 |
| H2 | 190,250 | 1575.78 | H20 | 192,050 | 1561.01 | H38 | 193,850 | 1546.52 | H56 | 195,650 | 1532.29 |
| C3 | 190,300 | 1575.37 | C21 | 192,100 | 1560.61 | C39 | 193,900 | 1546.12 | C57 | 195,700 | 1531.90 |
| H3 | 190,350 | 1574.95 | H21 | 192,150 | 1560.20 | H39 | 193,950 | 1545.72 | H57 | 195,750 | 1531.51 |
| C4 | 190,400 | 1574.54 | C22 | 192,200 | 1559.79 | C40 | 194,000 | 1545.32 | C58 | 195,800 | 1531.12 |
| H4 | 190,450 | 1574.13 | H22 | 192,250 | 1559.39 | H40 | 194,050 | 1544.92 | H58 | 195,850 | 1530.72 |
| C5 | 190,500 | 1573.71 | C23 | 192,300 | 1558.98 | C41 | 194,100 | 1544.53 | C59 | 195,900 | 1530.33 |
| H5 | 190,550 | 1573.30 | H23 | 192,350 | 1558.58 | H41 | 194,150 | 1544.13 | H59 | 195,950 | 1529.94 |
| C6 | 190,600 | 1572.89 | C24 | 192,400 | 1558.17 | C42 | 194,200 | 1543.73 | C60 | 196,000 | 1529.55 |
| H6 | 190,650 | 1572.48 | H24 | 192,450 | 1557.77 | H42 | 194,250 | 1543.33 | H60 | 196,050 | 1529.16 |
| C7 | 190,700 | 1572.06 | C25 | 192,500 | 1557.36 | C43 | 194,300 | 1542.94 | C61 | 196,100 | 1528.77 |
| H7 | 190,750 | 1571.65 | H25 | 192,550 | 1556.96 | H43 | 194,350 | 1542.54 | H61 | 196,150 | 1528.38 |
| C8 | 190,800 | 1571.24 | C26 | 192,600 | 1556.56 | C44 | 194,400 | 1542.14 | C62 | 196,200 | 1527.99 |
| H8 | 190,850 | 1570.83 | H26 | 192,650 | 1556.15 | H44 | 194,450 | 1541.75 | H62 | 196,250 | 1527.60 |
| C9 | 190,900 | 1570.42 | C27 | 192,700 | 1555.75 | C45 | 194,500 | 1541.35 | C63 | 196,300 | 1527.22 |
| H9 | 190,950 | 1570.01 | H27 | 192,750 | 1555.34 | H45 | 194,550 | 1540.95 | H63 | 196,350 | 1526.83 |
| C10 | 191,000 | 1569.59 | C28 | 192,800 | 1554.94 | C46 | 194,600 | 1540.56 | C64 | 196,400 | 1526.44 |
| H10 | 191,050 | 1569.18 | H28 | 192,850 | 1554.54 | H46 | 194,650 | 1540.16 | H64 | 196,450 | 1526.05 |
| C11 | 191,100 | 1568.77 | C29 | 192,900 | 1554.13 | C47 | 194,700 | 1539.77 | C65 | 196,500 | 1525.66 |
| H11 | 191,150 | 1568.36 | H29 | 192,950 | 1553.73 | H47 | 194,750 | 1539.37 | H65 | 196,550 | 1525.27 |
| C12 | 191,200 | 1567.95 | C30 | 193,000 | 1553.33 | C48 | 194,800 | 1538.98 | C66 | 196,600 | 1524.89 |
| H12 | 191,250 | 1567.54 | H30 | 193,050 | 1552.93 | H48 | 194,850 | 1538.58 | H66 | 196,650 | 1524.50 |
| C13 | 191,300 | 1567.13 | C31 | 193,100 | 1552.52 | C49 | 194,900 | 1538.19 | C67 | 196,700 | 1524.11 |
| H13 | 191,350 | 1566.72 | H31 | 193,150 | 1552.12 | H49 | 194,950 | 1537.79 | H67 | 196,750 | 1523.72 |
| C14 | 191,400 | 1566.31 | C32 | 193,200 | 1551.72 | C50 | 195,000 | 1537.40 | C68 | 196,800 | 1523.34 |
| H14 | 191,450 | 1565.90 | H32 | 193,250 | 1551.32 | H50 | 195,050 | 1537.00 | H68 | 196,850 | 1522.95 |
| C15 | 191,500 | 1565.50 | C33 | 193,300 | 1550.92 | C51 | 195,100 | 1536.61 | C69 | 196,900 | 1522.56 |
| H15 | 191,550 | 1565.09 | H33 | 193,350 | 1550.52 | H51 | 195,150 | 1536.22 | H69 | 196,950 | 1522.18 |
| C16 | 191,600 | 1564.68 | C34 | 193,400 | 1550.12 | C52 | 195,200 | 1535.82 | C70 | 197,000 | 1521.79 |
| H16 | 191,650 | 1564.27 | H34 | 193,450 | 1549.72 | H52 | 195,250 | 1535.43 | H70 | 197,050 | 1521.40 |
| C17 | 191,700 | 1563.86 | C35 | 193,500 | 1549.32 | C53 | 195,300 | 1535.04 | C71 | 197,100 | 1521.02 |
| H17 | 191,750 | 1563.45 | H35 | 193,550 | 1548.91 | H53 | 195,350 | 1534.64 | H71 | 197,150 | 1520.63 |
| C18 | 191,800 | 1563.05 | C36 | 193,600 | 1548.52 | C54 | 195,400 | 1534.25 | C72 | 197,200 | 1520.25 |
| H18 | 191,850 | 1562.64 | H36 | 193,650 | 1548.11 | H54 | 195,450 | 1533.86 | H72 | 197,250 | 1519.86 |

NOTES:

1. See Channel column to determine frequency and center wavelength values.
2. 100 GHz channels begin Cxx and 50 GHz channels begin with Cxx or Hxx.
3. Channels C16 (1564.68 nm) through C63 (1527.22 nm) reference C-BAND filter passband.

Temperature Specifications *

| | 50 GHz & 100 GHz DWDM | COMMERCIAL SPEC VARIATION |
|--|-----------------------------|----------------------------|
| Operation Temperature, Relative Humidity Inside Plant | -10°C to +65°C; 5 to 95% RH | -20°C to 65°C; 5 to 95% RH |
| Outside Plant | -40°C to 85°C; 5 to 95% RH | |
| Storage Temperature, Relative Humidity | -40°C to 85°C; 5 to 95% RH | |

* Unless otherwise noted, optical specification applies across operating temperature and optical bandpass.

Contact AFL for further details.



RFOG WDM Module

The RFOG WDM module is designed to satisfy wavelength management requirements where 1310, 1490, 1550, 1590 / 1610 nm wavelengths are used in passive optical network applications. This unit is available in traditional LGX® module packaging with virtually all connector options supported. Also available is a high density platform delivering unsurpassed ports per rack unit for applications requiring the most efficient use of available rack space.

Features

- Flexible packaging options
- Low Excess Loss
- Low PDL
- Monitoring/Tap ports available

Applications

- PON – FTTx Networks
- Access Networks
- CATV Links

Specifications

| PARAMETER | UNIT | SPECIFICATION | | |
|------------------------------|---------------------------------|----------------------|-------------|-------------|
| | | MIN | MAX | |
| Wavelength Range | 1310 Band | nm | 1270 | 1350 |
| | 1490 Band | | 1480 | 1500 |
| | 1550 Band | | 1540 | 1570 |
| | 1590/1610 Band | | 1584.5 | 1620 |
| Insertion Loss | 1310+1490 Port | dB | – | 1.2 |
| | 1550 Port | | | 1.4 |
| | 1590/1610 Port | | | 1.5 |
| Band Isolation | 1310/1490 Port @ 1550 | dB | 40 | |
| | 1310/1490 Port @ 1590/1610 | | 40 | |
| | 1550 Port @ 1310/1490 | | 30 | |
| | 1550 Port @ 1590 | | 15 | |
| | 1590/1610 Port @ 1310/1490/1550 | | 35 | |
| Wavelength Thermal Stability | nm/°C | | | 0.002 |
| Directivity | dB | 50 | | |
| PDL | dB | | | 0.15 |
| PMD | ps | | | 0.10 |
| Return Loss | dB | 45 | | |
| Optical Power Handling | mW | 300 | | |
| Operation Humidity | % RH | 5 ~ 95 not condensed | | |
| Storage Humidity | % RH | 0 ~ 95 not condensed | | |

Ordering Information

| DESCRIPTION | AFL NO. |
|--|----------|
| FILTER WDM, 1310+1490/1550+1590/1610,SC/APC | CM000150 |
| DUAL FILTER WDM, 1310+1490/1550+1590/1610,LC/APC | CM000151 |

* Additional configuration available upon request. Contact AFL Customer Service.

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| RoHS | Compliant |

Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|----------------|
| Operation Temperature | -5°C to +70°C |
| Storage Temperature | -40°C to +85°C |

Contact AFL for further details.



LGX[®] FTTx WDM Modules

The FTTx WDM Modules are designed to satisfy 1310, 1490 and 1550 nm wavelength management requirements in FTTx passive optical networks. Based on proven thin-film filter technology, these modules offer low overall insertions loss, high wavelength thermal stability and high band isolation, all of which add to network reliability. These products are available in LGX compatible modules of scaling density to meet varying density objectives.

Features

- Low excess loss
- Low polarization dependent loss
- Flexible LGX packaging options
(*see ordering information below for product size and density information)
- SC/APC Connectors

Applications

- PON - FTTx Networks
- Access Networks
- CATV Links
- Wide Area Networks

Performance Specifications

| PARAMETER | | UNIT | SPECIFICATION | |
|------------------------------|-----------------------|-------|---------------|---------|
| | | | MINIMUM | MAXIMUM |
| Wavelength Range | 1310 Band | nm | 1260 | 1360 |
| | 1490 Band | nm | 1480 | 1500 |
| | 1550 Band | nm | 1550 | 1560 |
| Insertion Loss | 1310+1490 Port | dB | | 1.2 |
| | 1550 Port | dB | | 1.4 |
| Band Isolation | 1310/1490 Port @ 1550 | dB | 40 | |
| | 1550 @ 1310/1490 Port | dB | 30 | |
| Wavelength Thermal Stability | | nm/°C | | 0.002 |
| Directivity | | dB | 50 | |
| PDL | | dB | | 0.15 |
| PMD | | ps | | 0.1 |
| Return Loss | | dB | 45 | |
| Optical Power Level | | mW | 300 | |
| Operation Humidity | | % RH | 5 to 90 | |
| Storage Humidity | | % RH | 0 to 95 | |

Ordering Information

| DESCRIPTION | AFL NO. |
|--|----------|
| PON WDM Module, 1X, 1310/1490+1550, Single slot LGX, Black, SC/APC | CM000478 |
| PON WDM Module, 2X, 1310/1490+1550, Single slot LGX, Black, SC/APC | CM000479 |
| PON WDM Module, 4X, 1310/1490+1550, Dual slot LGX, Black, SC/APC | CM000480 |
| PON WDM Module, 6X, 1310/1490+1550, Triple slot LGX, Black, SC/APC | CM000481 |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|-----------------|
| Telcordia | GR-1209, GR1221 |

Temperature Specifications

| TEMPERATURE RANGE | |
|-----------------------|---------------|
| Operation Temperature | -5°C to +70°C |
| Storage Temperature | 40°C to +85°C |

LGX is a registered trademark of Furukawa Electric North America, Inc.
Telcordia is a registered trademark of Telcordia Technologies, Inc.

Contact AFL for further details.



ASCEND Fiber Housings in Rack

Features

- High Density: 1RU/144F, 2RU/288F and 4RU/576F
- Designed for 19" rack. Optional 23" rack mount kit available.
- Galvannealed steel construction
- Hinged front and rear doors and removable back cover
- BASE-8, BASE-12, BASE-24 and WDM compatibility
- Interchangeable cassette options for multiple applications
- Cassettes install independently from front or rear of housing; WDM cassettes install from front only
- Trunk cable management area accommodates ASCEND Trunk Cable Assemblies equipped with integrated cable mounting clip
- Compatible with all ASCEND Cassettes

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks
- Wavelength Division Multiplexing (WDM)

ASCEND® Fiber Housings

ASCEND fiber housings are available in 1RU, 2RU and 4RU sizes with densities of up to 144, 288, and 576 fibers for LC connections, respectively. Designed to support incremental growth or a full-scale deployment, ASCEND housings provide the ultimate in ease-of-use and fiber management features.

ASCEND housings are 19" or 23" (separate kit) rack-mountable and constructed using galvannealed steel for an extended service life. The front and rear doors are both hinged on the bottom, while the rear section of the housing cover is removable on the 1RU and 2RU for unobstructed access to all connector interfaces. The 4RU Housing features a fixed top equipped with lance positions to accommodate additional trunk cable assemblies, enabling both bottom and top cable entry and flexible routing options. Integrated routing rings at the front of the trays enable secure and organized routing of patch cords which facilitates efficient Moves, Adds and Changes (MACs).

The rear of the housing incorporates a trunk cable management area which features multiple trunk cable outback clip mounting positions that are designed to securely manage slack while allowing the trays to slide in/out for installation and service.

NOTE: A separate external cable mounting bracket is required if non-ASCEND cable assemblies are going to be installed in ASCEND Fiber Housings.

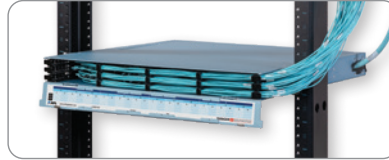
Ordering Information

| PANEL TYPE | DESCRIPTION | AFL NO. |
|------------|------------------------------------|------------------|
| BASE-8 | ASCEND HOUSING, 1RU, BASE-8 TRAYS | ASCEND-1RU-8-RT |
| | ASCEND HOUSING, 2RU, BASE-8 TRAYS | ASCEND-2RU-8-RT |
| | ASCEND HOUSING, 4RU, BASE-8 TRAYS | ASCEND-4RU-8-RT |
| BASE-12 | ASCEND HOUSING, 1RU, BASE-12 TRAYS | ASCEND-1RU-12-RT |
| | ASCEND HOUSING, 2RU, BASE-12 TRAYS | ASCEND-2RU-12-RT |
| | ASCEND HOUSING, 4RU, BASE-12 TRAYS | ASCEND-4RU-12-RT |
| BASE-24 | ASCEND HOUSING, 1RU, BASE-24 TRAYS | ASCEND-1RU-24-RT |
| | ASCEND HOUSING, 2RU, BASE-24 TRAYS | ASCEND-2RU-24-RT |
| | ASCEND HOUSING, 4RU, BASE-24 TRAYS | ASCEND-4RU-24-RT |

ASCEND® Fiber Housings



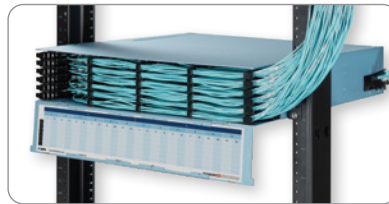
ASCEND 1RU



ASCEND 1RU front



ASCEND 2RU



ASCEND 2RU front



ASCEND 4RU



ASCEND 4RU front

Specifications

| PARAMETER | MODEL | | |
|----------------------------------|---|--|---|
| | ASCEND 1RU | ASCEND 2RU | ASCEND 4RU |
| Rack Space | 1 RU | 2 RU | 4 RU |
| Fiber Density (BASE-12, BASE-24) | 144 (LC), 864 (MPO) | 288 (LC), 1,728 (MPO) | 576 (LC), 3,456 (MPO) |
| Fiber Density (BASE-8) | 144 (LC), 576 (MPO) | 288 (LC), 1,152 (MPO) | 576 (LC), 2,304 (MPO) |
| Number of Trays | 3 | 6 | 12 |
| Cassette Capacity | 18 x BASE-8 Cassettes (6 per tray) 12 x BASE-12 Cassettes (4 per tray) 6 x BASE-24 Cassettes (2 per tray) | 36 x BASE-8 Cassettes (6 per tray) 24 x BASE-12 Cassettes (4 per tray) 12 x BASE-24 Cassettes (2 per tray) | 72 x BASE-8 Cassettes (6 per tray) 48 x BASE-12 Cassettes (4 per tray) 24 x BASE-24 Cassettes (2 per tray) |
| WDM Module Capacity* | 12 x WDM 1/4 Size Modules (4 per tray) 6 x WDM 1/2 Size Modules (2 per tray) 3 x WDM Full Size Modules (1 per tray) | 24 x WDM 1/4 Size Modules (4 per tray) 12 x WDM 1/2 Size Modules (2 per tray) 6 x WDM Full Size Modules (1 per tray) | 48 x WDM 1/4 Size Modules (4 per tray) 24 x WDM 1/2 Size Modules (2 per tray) 12 x WDM Full Size Modules (1 per tray) |
| Dimensions (HxWxD) | 44.5 x 438.2 x 501.6 mm 1.75 x 17.25 x 19.75 in. | 88.9 x 438.2 x 501.6 mm 3.5 x 17.25 x 19.75 in. | 177.8 x 438.2 x 501.6 mm 7.0 x 17.25 x 19.75 in. |
| Weight | 7.5 kg (16.6 lbs) | 10.2 kg (22.4 lbs) | 15.7 kg (34.6 lbs) |
| Color | Blue | Blue | Blue |
| Material | Metal Components: 16 GA Galvannealed Sheet Steel per ASTM A653 | Metal Components: 16 GA Galvannealed Sheet Steel per ASTM A653 | Metal Components: 16 GA Galvannealed Sheet Steel per ASTM A653 |

* WDM Module sizes may be combined in same tray. For example, 1/4 size module (QTY 2) and 1/2 size module (QTY 1).

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| RoHS | Compliant |



ASCEND® Optical Cassettes

ASCEND optical cassettes are the building blocks of the high density platform and are available in a wide range of configurations for multiple applications in BASE-8, BASE-12 and BASE-24 configurations.

Available in single-mode and multimode fiber types, ASCEND optical cassettes feature low loss MPO connectors and VFL-compatible shuttered LC adapters.

ASCEND cassettes are compatible with all ASCEND housings and can be independently installed from the front or rear of the housing onto a sliding tray system. This allows access to individual connections while minimizing disruption to other fiber connections.

Features

- Wide variety of cassettes for multiple applications
 - Fanout
 - Patch
 - Splice
 - WDM
- BASE-8, BASE-12 and BASE-24 configurations
- SM, MM (OM3) and MM (OM4)
- Low loss MPO connectors
- VFL-compatible shuttered LC adapters
- Install independently from front or rear of housing
- Compatible with all ASCEND housings

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks



ASCEND® Fanout Cassettes

ASCEND Fanout Cassettes are pre-terminated plug-and-play breakout modules designed to transition a trunk cable into individual connector ports. Available in single-mode and multimode fiber types, Fanout Cassettes feature low-loss MPO connectors and VFL-compatible shuttered LC adapters. All cassettes are offered in BASE-8, BASE-12 and BASE-24 configurations.

Fanout Cassettes are compatible with all standard ASCEND housings and can be independently installed from the front or rear onto a sliding tray system. This allows access to individual connections while minimizing disruption to other fiber connections.

Optical Performance Data

| PARAMETER | Single-mode Fiber (OS2) | Single-mode Fiber (OS2) | Multimode Fiber (OM3/4) |
|-------------------------|-------------------------|-------------------------|-------------------------|
| | LC/UPC - MPO | LC/APC - MPO | LC/PC - MPO |
| Max IL (dB) | 0.55 | 0.60 | 0.45 |
| Typical IL (dB) | 0.35 | 0.35 | 0.30 |
| Reflectance (dB) | -55 | -60 | -20 |
| Dimensions (L x W) (mm) | 132.5 x 94 | 132.5 x 94 | 132.5 x 94 |
| Color | Blue - Black | Green - Black | Aqua - Black |

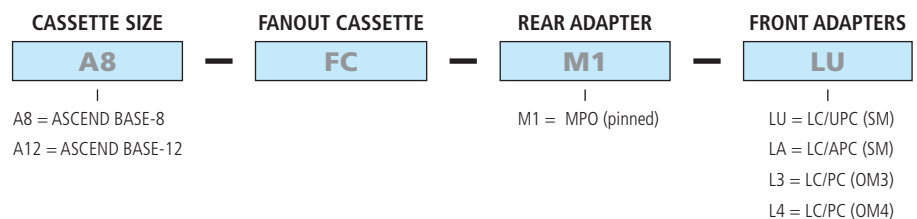
Features

- Plug and Play
- BASE-8, BASE-12 or BASE-24 configurations
- SM, MM (OM3) and MM (OM4)
- VFL-compatible shuttered Quad LC adapters
- Low loss MPO connectors
- Compatible with all ASCEND housings
- Install independently from front or rear of housing

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

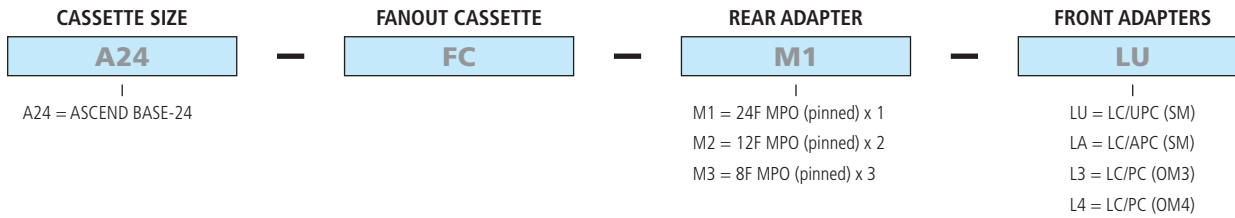
Ordering Information (BASE-8 and BASE-12)



| CATEGORY | DESCRIPTION | AFL NO. |
|---------------------------------|---|--------------|
| BASE-8 FANOUT CASSETTES | ASCEND-8 FANOUT CASSETTE, BASE-8, PINNED MPO-LC/UPC, SM | A8-FC-M1-LU |
| | ASCEND-8 FANOUT CASSETTE, BASE-8, PINNED MPO-LC/APC, SM | A8-FC-M1-LA |
| | ASCEND-8 FANOUT CASSETTE, BASE-8, PINNED MPO-LC/PC, OM3 | A8-FC-M1-L3 |
| | ASCEND-8 FANOUT CASSETTE, BASE-8, PINNED MPO-LC/PC, OM4 | A8-FC-M1-L4 |
| BASE-12 FANOUT CASSETTES | ASCEND-12 FANOUT CASSETTE, BASE-12, PINNED MPO-LC/UPC, SM | A12-FC-M1-LU |
| | ASCEND-12 FANOUT CASSETTE, BASE-12, PINNED MPO-LC/APC, SM | A12-FC-M1-LA |
| | ASCEND-12 FANOUT CASSETTE, BASE-12, PINNED MPO-LC/PC, OM3 | A12-FC-M1-L3 |
| | ASCEND-12 FANOUT CASSETTE, BASE-12, PINNED MPO-LC/PC, OM4 | A12-FC-M1-L4 |

ASCEND® Fanout Cassettes

Ordering Information (BASE-24)



| CATEGORY | DESCRIPTION | AFL NO. |
|-------------------------------------|---|--------------|
| BASE-24 FANOUT CASSETTES | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 24F MPO-LC/UPC, SM | A24-FC-M1-LU |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 24F MPO-LC/APC, SM | A24-FC-M1-LA |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 24F MPO-LC/PC, OM3 | A24-FC-M1-L3 |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 24F MPO-LC/PC, OM4 | A24-FC-M1-L4 |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 12F MPO-LC/UPC, SM | A24-FC-M2-LU |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 12F MPO-LC/APC, SM | A24-FC-M2-LA |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 12F MPO-LC/PC, OM3 | A24-FC-M2-L3 |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 12F MPO-LC/PC, OM4 | A24-FC-M2-L4 |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 8F MPO-LC/UPC, SM | A24-FC-M3-LU |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 8F MPO-LC/APC, SM | A24-FC-M3-LA |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 8F MPO-LC/PC, OM3 | A24-FC-M3-L3 |
| | ASCEND-24 FANOUT CASSETTE, BASE-24, PINNED 8F MPO-LC/PC, OM4 | A24-FC-M3-L4 |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| RoHS | Compliant |



ASCEND® Mesh Cassettes

ASCEND Mesh Cassettes offer a way to switch ports without using LC connectivity. These cassettes are offered with four 8-fiber MPO adapters in the rear of the cassette and four 8-fiber MPO adapters in the front of the cassette with an internal fanout assembly that breaks out the rear 40G ports to each front MPO connector. This solution allows for a higher fiber density per RU.

Features

- Higher Density Connectivity, 32 fibers per cassette compared to 12 fibers using LC
- Compatible with all Base-12 ASCEND Housings
- Plug and Play
- Low Loss MPO connectors
- Quick installation

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Optical Performance Data

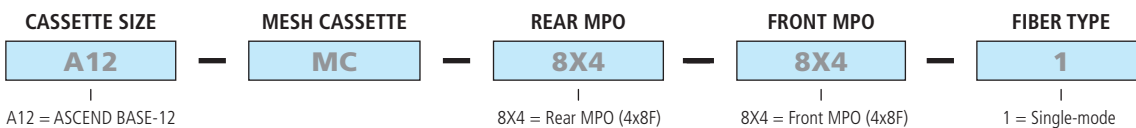
| OPERATING WAVELENGTHS | INSERTION LOSS * | REFLECTANCE |
|---|--|------------------------|
| SM: 1310 and 1550 nm MM: 850 and 1300 nm | Typical IL (dB): 0.35 dB Max IL (dB): 0.55 dB | SM: 50 dB MM: 20 dB |

* For grade B MPOs, the mean IL is ≤ 0.12 dB and max IL ≤ 0.25 dB for 97% of samples. Elite MTPs maintain max IL ≤ 0.25 dB for 98% of samples. The probability of both two mated pairs in a module being less than 0.25 dB each is 96%.

Temperature Specifications

| | |
|-----------------------|----------------|
| Operating Temperature | -20°C to +75°C |
| Storage Temperature | -40°C to +85°C |

Ordering Information



| DESCRIPTION | AFL NO. |
|--|------------------|
| ASCEND-12 Mesh Cassette, Base-12, 8X4 MPO Rear, 8X4 MPO Front, Single-mode | A12-MC-8X4-8X4-1 |



ASCEND® Patch Cassettes

ASCEND Patch Cassettes are pre-loaded with MPO adapters or VFL-compatible shuttered LC adapters. Available in BASE-8 and BASE-12 configurations, Patch Cassettes install easily from the front or rear of any standard ASCEND housing. Each cassette independently mounts onto a sliding tray which allows access to individual connections while minimizing disruption to other fiber connections.

Features

- Plug and Play
- Install independently from front or rear of housing
- Compatible with all ASCEND housings
- Standard Duplex MPO or VFL-compatible shuttered Quad LC adapters

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Ordering Information

| | | | | |
|--|---|-----------------------|---|--|
| CASSETTE SIZE | — | PATCH CASSETTE | — | ADAPTERS |
| A8 | | PC | | LU |
| A8 = ASCEND BASE-8 A12 = ASCEND BASE-12 | | | | LU = LC/UPC (SM) LA = LC/APC (SM) L3 = LC/PC (OM3) L4 = LC/PC (OM4) M1 = MPO |

| CATEGORY | DESCRIPTION | ADAPTERS/ FIBER COUNT | AFL NO. |
|--|--|--------------------------|-----------|
| BASE-8 PATCH CASSETTES | ASCEND-8 PATCH CASSETTE, BASE-8, LC/UPC, SM | 8 LC/UPC (8 Fibers) | A8-PC-LU |
| | ASCEND-8 PATCH CASSETTE, BASE-8, LC/APC, SM | 8 LC/APC (8 Fibers) | A8-PC-LA |
| | ASCEND-8 PATCH CASSETTE, BASE-8, LC/PC, OM3 | 8 LC/PC (8 Fibers) | A8-PC-L3 |
| | ASCEND-8 PATCH CASSETTE, BASE-8, LC/PC, OM4 | 8 LC/PC (8 Fibers) | A8-PC-L4 |
| | ASCEND-8 PATCH CASSETTE, BASE-8, MPO | 4 MPO (48 Fibers) | A8-PC-M1 |
| BASE-12 PATCH CASSETTES | ASCEND-12 PATCH CASSETTE, BASE-12, LC/UPC, SM | 12 LC/UPC (12 Fibers) | A12-PC-LU |
| | ASCEND-12 PATCH CASSETTE, BASE-12, LC/APC, SM | 12 LC/APC (12 Fibers) | A12-PC-LA |
| | ASCEND-12 PATCH CASSETTE, BASE-12, LC/PC, OM3 | 12 LC/PC (12 Fibers) | A12-PC-L3 |
| | ASCEND-12 PATCH CASSETTE, BASE-12, LC/PC, OM4 | 12 LC/PC (12 Fibers) | A12-PC-L4 |
| | ASCEND-12 PATCH CASSETTE, BASE-12-MPO (4 MPO Only) | 4 MPO (48 Fibers) | A12-PC-M4 |
| | ASCEND-12 PATCH CASSETTE, BASE-12, MPO | 6 MPO (72 Fibers) | A12-PC-M1 |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| RoHS | Compliant |



ASCEND® Splice Cassettes

ASCEND Splice Cassettes include 250 micron pre-terminated single fiber pigtails, or one SpiderWeb Ribbon® (SWR®) pigtail, that are loaded within the cassette and can be spliced directly to loose (or ribbon) fiber cable.

All Splice Cassettes feature VFL-compatible shuttered LC adapters with up to 12-fiber capacity. Available in single-mode and multimode fiber types, cassettes leverage a snap-in splice sleeve cradle to securely manage both single and ribbon fiber arrangements. A clear, removable cover allows for easy fiber viewing and access.

Splice Cassettes are compatible with all BASE-12 ASCEND housings and can be independently installed easily from the front or rear onto a sliding tray system. This allows access to individual connections while minimizing disruption to other fiber connections.

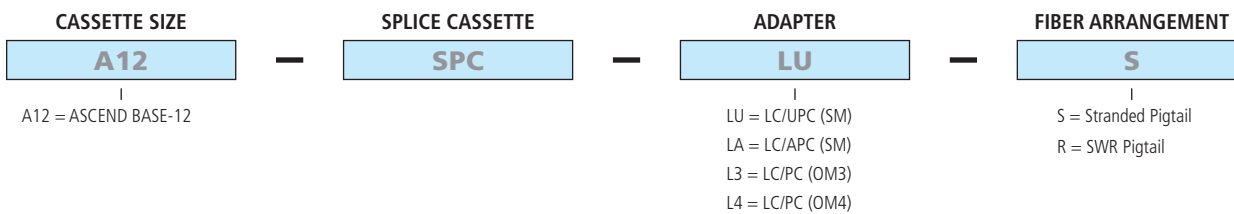
Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Features

- Up to 12-fiber interconnection capacity
- SM, MM (OM3) and MM (OM4)
- 250 µm color-coded single fibers or SWR options
- VFL-compatible shuttered Quad LC adapters
- Clear, removable cover for viewing and access
- Inventive splice sleeve cradle
- Organized fiber routing
- BASE-12 configurations only
- Install independently from front or rear of housing

Ordering Information



| STRANDED FIBER | | |
|----------------|---|--------------|
| CATEGORY | DESCRIPTION | AFL NO. |
| Single-mode | ASCEND-12 SPLICE CASSETTE, LC/UPC, SM, STRANDED PIGTAIL | A12-SPC-LU-S |
| | ASCEND-12 SPLICE CASSETTE, LC/APC, SM, STRANDED PIGTAIL | A12-SPC-LA-S |
| Multi-Mode | ASCEND-12 SPLICE CASSETTE, LC/PC, OM3, STRANDED PIGTAIL | A12-SPC-L3-S |
| | ASCEND-12 SPLICE CASSETTE, LC/PC, OM4, STRANDED PIGTAIL | A12-SPC-L4-S |

| SPIDERWEB RIBBON FIBER | | |
|------------------------|--|--------------|
| CATEGORY | DESCRIPTION | AFL NO. |
| Single-mode | ASCEND-12 SPLICE CASSETTE, LC/UPC, SM, SWR PIGTAIL | A12-SPC-LU-R |
| | ASCEND-12 SPLICE CASSETTE, LC/APC, SM, SWR PIGTAIL | A12-SPC-LA-R |
| Multi-Mode | ASCEND-12 SPLICE CASSETTE, LC/PC, OM3, SWR PIGTAIL | A12-SPC-L3-R |
| | ASCEND-12 SPLICE CASSETTE, LC/PC, OM4, SWR PIGTAIL | A12-SPC-L4-R |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| RoHS | Compliant |



BASE-24 to BASE-8 Cassette
AFL No. A8-CC-24X1-8X3-1-1



BASE-12 to BASE-8 Cassette (Single Circuit)
AFL No. A12-CC-24X1-8X3-1-1



BASE-12 to BASE-8 Cassette (Dual Circuit)
AFL No. A12-CC-12X2-8X3-2-1

ASCEND® Conversion Cassettes

AFL's Conversion Cassettes provide an effective solution to transition from one BASE platform to another.

The cassettes fully utilize each fiber in a BASE-12 or BASE-24 array by breaking out the MTP/ MPO adapters at the rear of the cassette into a corresponding number of BASE-8 adapters at the front.

Features

- Accommodates 12 or 24 fiber MTP/MPO connections at the rear of the cassette and effectively transitions to 8 fiber MTP/MPO connections at the front of the cassette
- Compatible with all ASCEND Housings and installed easily from the front or rear of a corresponding BASE-8 or BASE-12 tray

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Specifications

| OPERATING WAVELENGTHS | INSERTION LOSS * | REFLECTANCE |
|---|--|------------------------|
| SM: 1310 and 1550 nm MM: 850 and 1300 nm | Typical IL (dB): 0.35 dB Max IL (dB): 0.55 dB | SM: 50 dB MM: 20 dB |

* For grade B MPOs, the mean IL is ≤ 0.12 dB and max IL ≤ 0.25 dB for 97% of samples. Elite MTPs maintain max IL ≤ 0.25 dB for 98% of samples. The probability of both two mated pairs in a module being less than 0.25 dB each is 96%.

Temperature Specifications

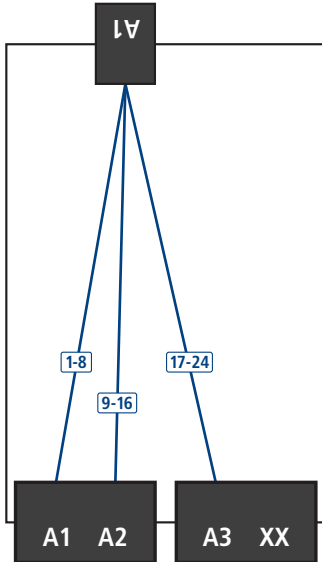
| | |
|-----------------------|----------------|
| Operating Temperature | -20°C to +75°C |
| Storage Temperature | -40°C to +85°C |

ASCEND® Conversion Cassettes

Schematics

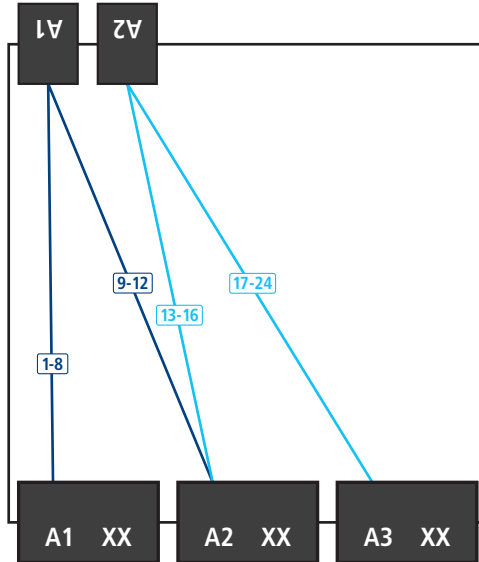
BASE-24 to BASE-8

- A8-CC-24X1-8X3-1-1
- A8-CC-24X1-8X3-1-3
- A8-CC-24X1-8X3-1-4



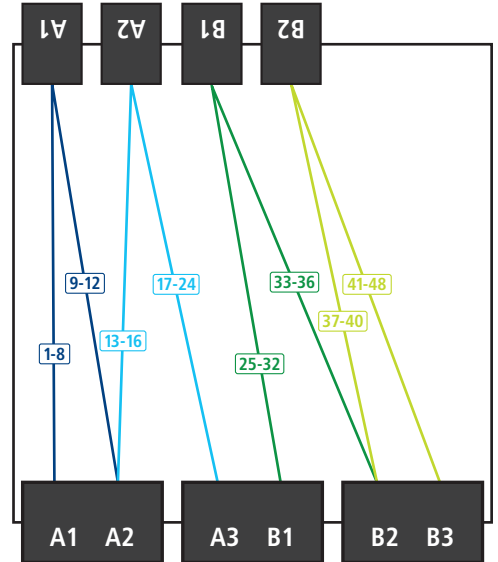
BASE-12 to BASE-8 (Single Circuit)

- A12-CC-12X2-8X3-1-1
- A12-CC-12X2-8X3-1-3
- A12-CC-12X2-8X3-1-4



BASE-12 to BASE-8 (Dual Circuit)

- A12-CC-12X2-8X3-2-1
- A12-CC-12X2-8X3-2-3
- A12-CC-12X2-8X3-2-4



Ordering Information

| BASE-24 TO BASE-8 CONVERSION CASSETTE OPTIONS | | |
|---|---|--------------------|
| CATEGORY | DESCRIPTION | AFL NO. |
| BASE 8 | ASCEND-8 CONVERSION CASSETTE,BASE-8,24X1 MPO REAR,8X3 MPO FRONT,1 CIRCUIT,SM | A8-CC-24X1-8X3-1-1 |
| | ASCEND-8 CONVERSION CASSETTE,BASE-8,24x1 MPO REAR,8X3 MPO FRONT,1 CIRCUIT,OM3 | A8-CC-24X1-8X3-1-3 |
| | ASCEND-8 CONVERSION CASSETTE,BASE-8,24X1 MPO REAR,8X3 MPO FRONT,1 CIRCUIT,OM4 | A8-CC-24X1-8X3-1-4 |

| BASE-12 TO BASE-8 CONVERSION CASSETTE OPTIONS | | |
|---|---|--------------------|
| CATEGORY | DESCRIPTION | AFL NO. |
| BASE 12 | ASCEND-8 CONVERSION CASSETTE,BASE-8,24X1 MPO REAR,8X3 MPO FRONT,1 CIRCUIT,SM | A8-CC-24X1-8X3-1-1 |
| | ASCEND-8 CONVERSION CASSETTE,BASE-8,24x1 MPO REAR,8X3 MPO FRONT,1 CIRCUIT,OM3 | A8-CC-24X1-8X3-1-3 |
| | ASCEND-8 CONVERSION CASSETTE,BASE-8,24X1 MPO REAR,8X3 MPO FRONT,1 CIRCUIT,OM4 | A8-CC-24X1-8X3-1-4 |
| | ASCEND-8 CONVERSION CASSETTE,BASE-8,24X1 MPO REAR,8X3 MPO FRONT,1 CIRCUIT,SM | A8-CC-24X1-8X3-1-1 |
| | ASCEND-8 CONVERSION CASSETTE,BASE-8,24x1 MPO REAR,8X3 MPO FRONT,1 CIRCUIT,OM3 | A8-CC-24X1-8X3-1-3 |
| | ASCEND-8 CONVERSION CASSETTE,BASE-8,24X1 MPO REAR,8X3 MPO FRONT,1 CIRCUIT,OM4 | A8-CC-24X1-8X3-1-4 |

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|-----------------------------------|---------------------------------------|
| EIA/TIA | 568 | Connectors |
| ITU-T | G.652.D and G.657-A1 | Single Mode Fiber |
| IEC | 60793-2-10 Type A1 | OM1, OM2, OM3, OM4 Multimode Fiber |
| Telcordia | GR-20 | Fiber |
| | GR-1435 | Connectors |
| RoHS | Compliant Directive 2001/65/EU | Fiber and Connectors |



BASE-8 Tap Cassette—Front and Rear Access
MPO Rear Input LC Input/ Output/Tap



BASE-12 Tap Cassette—Total Front Access
LC Input/ Output/Tap



BASE-12 Tap Cassette—Front and Rear Access
MPO Rear Input/ Output Front LC Tap ports

ASCEND® Tap Cassettes

High demands placed on modern fiber optic networks requires effective monitoring to maintain optimal performance and troubleshoot system security or other signal issues.

AFL's Tap Cassettes enable access points for monitoring live traffic signals in any fiber optic network.

Available with a variety of options to accommodate different split ratios for tap/ pass thru and input/ output configurations, it is quick and easy to tap and route network signals for any application.

Features

- Elite MPO connectors and adapters
- LC Shuttered Adapters
- Available with 50/50 and 30/70 Split Ratios to accommodate various Tap/ Pass Thru requirements
- Installs into all ASCEND Housings from the front or rear
- ITU-T G.657.D and G.652.A1 Compatible (SM)

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Temperature Specifications

| | |
|-----------------------|----------------|
| Operating Temperature | -20°C to +75°C |
| Storage Temperature | -40°C to +85°C |

ASCEND® Tap Cassettes

Specifications: Single-mode (SM)

| OPTICAL WAVELENGTHS | POLARIZATION DEPENDENT LOSS (PDL) | CASSETTE TYPE | MAX INSERTION LOSS (IL) THRU PORT (dB) INCLUDING CONNECTORS | MAX INSERTION LOSS (IL) TAP PORT (dB) INCLUDING CONNECTORS | MIN RETURN LOSS (RL) (dB) |
|--|-----------------------------------|---------------|---|--|---------------------------|
| 1310 nm +/- 40 nm 1550 nm +/- 40 nm | ≤ 0.3 dB | 50% Tap Port | 4.1 | 4.1 | 50 |
| | | 30% Tap Port | 2.6 | 6.5 | 50 |

Specifications: Multimode (MM)

| OPTICAL WAVELENGTHS | CASSETTE TYPE | MAX INSERTION LOSS (IL) THRU PORT (dB) INCLUDING CONNECTORS | MAX INSERTION LOSS (IL) TAP PORT (dB) INCLUDING CONNECTORS | MIN RETURN LOSS (RL) (dB) |
|---------------------|---------------|---|--|---------------------------|
| 850 nm +/- 20 nm | 50% Tap Port | 4.1 | 4.1 | 20 |
| 1300 nm +/- 20 nm | 30% Tap Port | 2.6 | 6.5 | 20 |

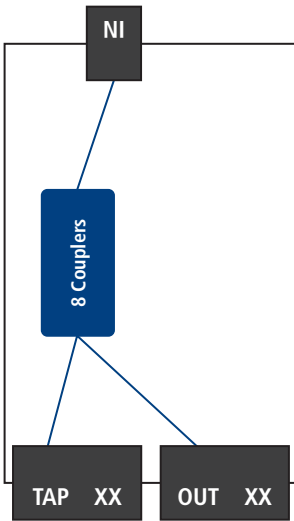


ASCEND® Tap Cassettes

Schematics

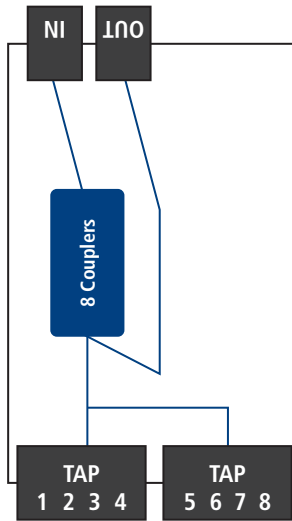
BASE-8

A8-TC-1-1-XXX-50-1
 A8-TC-1-1-XXX-30-1
 A8-TC-4-1-XXX-50-1
 A8-TC-4-1-XXX-30-1



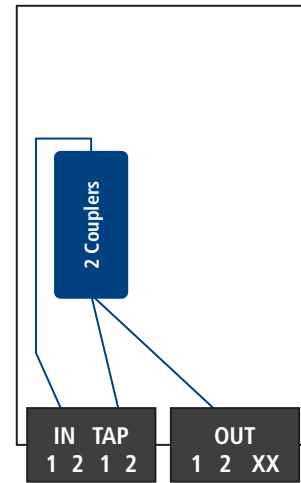
BASE-8

A8-TC-1-2-ULC-50-1
 A8-TC-1-2-ULC-30-1
 A8-TC-1-2-ALC-50-1
 A8-TC-1-2-ALC-30-1
 A8-TC-4-2-PLC-50-1
 A8-TC-4-2-PLC-30-1



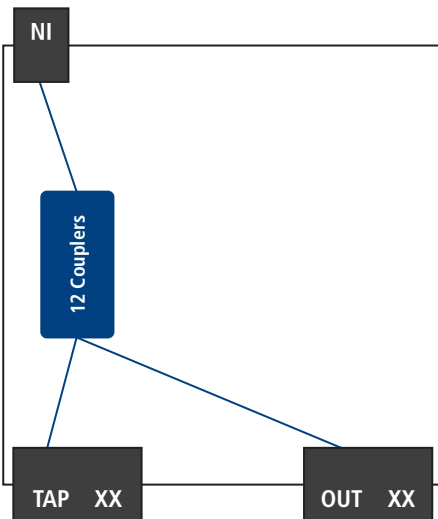
BASE-8

A8-TC-1-3-ULC-50-1
 A8-TC-1-3-ULC-30-1
 A8-TC-1-3-ALC-50-1
 A8-TC-1-3-ALC-30-1
 A8-TC-4-3-PLC-50-1
 A8-TC-4-3-PLC-30-1



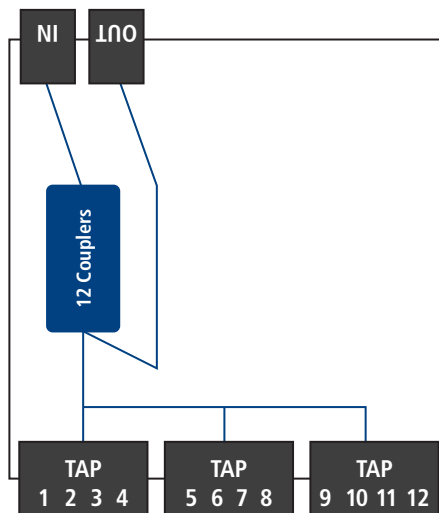
BASE-12

A12-TC-1-1-XXX-50-1
 A12-TC-1-1-XXX-30-1
 A12-TC-4-1-XXX-50-1
 A12-TC-4-1-XXX-30-1



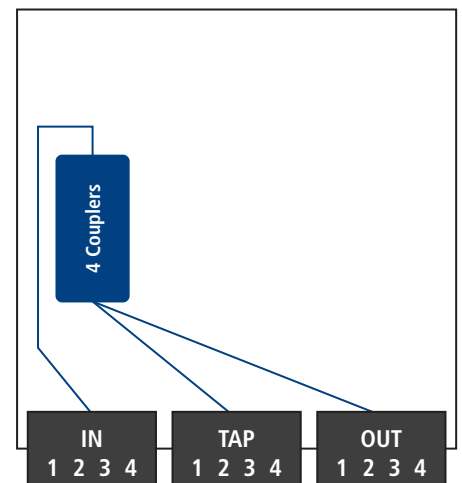
BASE-12

A12-TC-1-2-ULC-50-1
 A12-TC-1-2-ULC-30-1
 A12-TC-1-2-ALC-50-1
 A12-TC-1-2-ALC-30-1
 A12-TC-4-2-PLC-50-1
 A12-TC-4-2-PLC-30-1



BASE-12

A12-TC-1-3-ULC-50-1
 A12-TC-1-3-ULC-30-1
 A12-TC-1-3-ALC-50-1
 A12-TC-1-3-ALC-30-1
 A12-TC-4-3-PLC-50-1
 A12-TC-4-3-PLC-30-1



ASCEND® Tap Cassettes

Ordering Information

| 50/50 (TAP/ PASS THRU) SPLIT RATIO CONFIGURATIONS | | |
|---|---|---------------------|
| CATEGORY | DESCRIPTION | AFL NO. |
| BASE-8 | ASCEND TAP CASSETTE, BASE-8, SM, MTP FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A8-TC-1-1-XXX-50-1 |
| | ASCEND TAP CASSETTE, BASE-8, SM, LC/UPC FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A8-TC-1-2-ULC-50-1 |
| | ASCEND TAP CASSETTE, BASE-8, SM, LC/APC FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A8-TC-1-2-ALC-50-1 |
| | ASCEND TAP CASSETTE, BASE-8, SM, LC/UPC FRONT, 50% TAP SPLIT, SINGLE | A8-TC-1-3-ULC-50-1 |
| | ASCEND TAP CASSETTE, BASE-8, SM, LC/APC FRONT, 50% TAP SPLIT, SINGLE | A8-TC-1-3-ALC-50-1 |
| | ASCEND TAP CASSETTE, BASE-8, MM, MTP FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A8-TC-4-1-XXX-50-1 |
| | ASCEND TAP CASSETTE, BASE-8, MM, LC/PC FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A8-TC-4-2-PLC-50-1 |
| | ASCEND TAP CASSETTE, BASE-8, MM, LC/PC FRONT, 50% TAP SPLIT, SINGLE | A8-TC-4-3-PLC-50-1 |
| BASE-12 | ASCEND TAP CASSETTE, BASE-12, SM, MTP FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A12-TC-1-1-XXX-50-1 |
| | ASCEND TAP CASSETTE, BASE-12, SM, LC/UPC FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A12-TC-1-2-ULC-50-1 |
| | ASCEND TAP CASSETTE, BASE-12, SM, LC/APC FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A12-TC-1-2-ALC-50-1 |
| | ASCEND TAP CASSETTE, BASE-12, SM, LC/UPC FRONT, 50% TAP SPLIT, SINGLE | A12-TC-1-3-ULC-50-1 |
| | ASCEND TAP CASSETTE, BASE-12, SM, LC/APC FRONT, 50% TAP SPLIT, SINGLE | A12-TC-1-3-ALC-50-1 |
| | ASCEND TAP CASSETTE, BASE-12, MM, MTP FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A12-TC-4-1-XXX-50-1 |
| | ASCEND TAP CASSETTE, BASE-12, MM, LC/PC FRONT, MTP REAR, 50% TAP SPLIT, SINGLE | A12-TC-4-2-PLC-50-1 |
| | ASCEND TAP CASSETTE, BASE-12, MM, LC/PC FRONT, 50% TAP SPLIT, SINGLE | A12-TC-4-3-PLC-50-1 |

| 30/70 (TAP/ PASS THRU) SPLIT RATIO CONFIGURATIONS | | |
|---|---|---------------------|
| CATEGORY | DESCRIPTION | AFL NO. |
| BASE-8 | ASCEND TAP CASSETTE, BASE-8, SM, MTP FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A8-TC-1-1-XXX-30-1 |
| | ASCEND TAP CASSETTE, BASE-8, SM, LC/UPC FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A8-TC-1-2-ULC-30-1 |
| | ASCEND TAP CASSETTE, BASE-8, SM, LC/APC FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A8-TC-1-2-ALC-30-1 |
| | ASCEND TAP CASSETTE, BASE-8, SM, LC/UPC FRONT, 30% TAP SPLIT, SINGLE | A8-TC-1-3-ULC-30-1 |
| | ASCEND TAP CASSETTE, BASE-8, SM, LC/APC FRONT, 30% TAP SPLIT, SINGLE | A8-TC-1-3-ALC-30-1 |
| | ASCEND TAP CASSETTE, BASE-8, MM, MTP FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A8-TC-4-1-XXX-30-1 |
| | ASCEND TAP CASSETTE, BASE-8, MM, LC/PC FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A8-TC-4-2-PLC-30-1 |
| | ASCEND TAP CASSETTE, BASE-8, MM, LC/PC FRONT, 30% TAP SPLIT, SINGLE | A8-TC-4-3-PLC-30-1 |
| BASE-12 | ASCEND TAP CASSETTE, BASE-12, SM, MTP FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A12-TC-1-1-XXX-30-1 |
| | ASCEND TAP CASSETTE, BASE-12, SM, LC/UPC FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A12-TC-1-2-ULC-30-1 |
| | ASCEND TAP CASSETTE, BASE-12, SM, LC/APC FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A12-TC-1-2-ALC-30-1 |
| | ASCEND TAP CASSETTE, BASE-12, SM, LC/UPC FRONT, 30% TAP SPLIT, SINGLE | A12-TC-1-3-ULC-30-1 |
| | ASCEND TAP CASSETTE, BASE-12, SM, LC/APC FRONT, 30% TAP SPLIT, SINGLE | A12-TC-1-3-ALC-30-1 |
| | ASCEND TAP CASSETTE, BASE-12, MM, MTP FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A12-TC-4-1-XXX-30-1 |
| | ASCEND TAP CASSETTE, BASE-12, MM, LC/PC FRONT, MTP REAR, 30% TAP SPLIT, SINGLE | A12-TC-4-2-PLC-30-1 |
| | ASCEND TAP CASSETTE, BASE-12, MM, LC/PC FRONT, 30% TAP SPLIT, SINGLE | A12-TC-4-3-PLC-30-1 |

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|--------------------------------|------------------------------------|
| EIA/TIA | 568 | Connectors |
| ITU-T | G.652.D and G.657-A1 | Single-mode Fiber |
| IEC | 60793-2-10 Type A1 | OM1, OM2, OM3, OM4 Multimode Fiber |
| Telcordia | GR-20 | Fiber |
| | GR-1435 | Connectors |
| RoHS | Compliant Directive 2001/65/EU | Fiber and Connectors |



ASCEND® Patch Cord Assemblies

ASCEND patch cord assemblies are constructed with AFL's Micro Dual-Link cable and terminated with a field-reversible LC Uniboot connector.

This round cable design, coupled with the Uniboot LC connector, minimizes the front-side cabling footprint and reduces the impact on airflow up and down the rack, and between racks.

In addition to being field-reversible, the Uniboot LC connector also features an extended push-pull latching mechanism to improve finger access in high density applications.

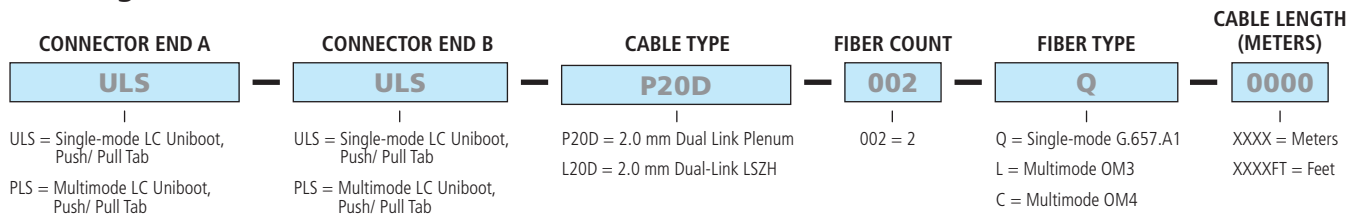
Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Features

- Uniboot LC connector comes pre-terminated with A to B polarity and is field-reversible
- No tools required
- Extended push-pull latching mechanism
- Round 2.0 mm plenum-rated jacket
- SM, MM (OM3) and MM (OM4)
- Bend insensitive fiber (G.657.A1)

Ordering Information



Specifications

| PARAMETER | SM | MM |
|--------------------------|----------------|---------|
| Insertion Loss (Typical) | 0.10 dB | 0.10 dB |
| Insertion Loss (Max) | 0.30 dB | 0.30 dB |
| Reflectance (Typical) | -55 dB | -30 dB |
| Durability | 500 Cycles | |
| Operating Temperature | -40°C to +75°C | |
| Ferrule | Zirconia | |

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------|--------------------------------|
| ITU | G.657.A1 | Single-mode optical fiber only |
| Telcordia | GR-409 | Cable |
| | GR-326 | Connectors |
| RoHS | Compliant | Cable |



Integrated mounting clip

ASCEND® Trunk Cable Assemblies

ASCEND trunk cable assemblies provide a high performance plug-and-play solution for premise installations where space is a premium.

The small-diameter MicroCore® cable construction provides industry leading fiber density and offers the installer many advantages over traditional cable options – higher tolerance to bends during and after installation; requires less space in cable trays, raceways, ducts and conduits; and enables more efficient airflow in congested, high density cabling applications.

ASCEND trunk cable assemblies feature the MTP® PRO* connector on multimode assemblies which allows for field-reversible polarity and gender with no housing removal, exposed fibers, or loose pins. All trunk cable assemblies have a predefined breakout length which eliminates guesswork and guarantees a clean and well-organized installation.

ASCEND trunk cable assemblies also include an integrated cable mounting clip, or "Outback Clip (OBC)" which mates directly with the trunk cable management area in the rear of all ASCEND housings. There are two Outback Clip options: the "Rock and Lock" which mates to the housing using a lever, and the "Hook and Loop" which mates to the housing using Velcro®. These clips eliminate the need for additional cable clamps and securely position the incoming cable while eliminating unwanted stress during installation.

NOTE: A separate external cable mounting bracket is required if non-ASCEND cable assemblies are going to be installed in ASCEND Fiber Housings.

Features

- 12-288 fibers in BASE-8 and BASE-12 configurations
- SM, MM (OM3) and MM (OM4)
- Bend-insensitive fiber (G.657.A1)
- Reduced-diameter MicroCore® cable with 2.0 mm subunits (up to 144)
- Plenum or LSZH options available
- Low loss MTP® PRO* connectors with field-reversible polarity and gender
- Single-mode terminations provided with Elite® performance
- Integrated cable mounting clip eliminates the requirement for external clamps for all ASCEND housings
- Pulling eye option available

Applications

- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

* MTP® PRO connectors are a trademark of US Conec (For MM connectors only)

ASCEND® Trunk Cable Assemblies

Specifications

| CONNECTOR | Connector Ordering Code | Connector Housing Color | Fiber Type | Cable Jacket Color | IL (Typical dB) | IL (MAX. DB) | Reflectance (Typical dB) |
|--------------------------|-------------------------|-------------------------|----------------------------|--------------------|-----------------|--------------|--------------------------|
| 8F MTP Elite (unpinned) | EEF | Yellow | Single-mode G.657.A1 (BIF) | Yellow | 0.1 | 0.35 | -60 |
| 8F MTP Elite (pinned) | EEM | Yellow | Single-mode G.657.A1 (BIF) | Yellow | 0.1 | 0.35 | -60 |
| 8F MTP Pro (unpinned) | PFEF | Aqua | 50 µm OM3, OM4 | Aqua | 0.1 | 0.35 | -20 |
| 8F MTP Pro (pinned) | PFEM | Aqua | 50 µm OM3, OM4 | Aqua | 0.1 | 0.35 | -20 |
| 12F MTP Elite (unpinned) | ETF | Yellow | Single-mode G.657.A1 (BIF) | Yellow | 0.1 | 0.35 | -60 |
| 12F MTP Elite (pinned) | ETM | Yellow | Single-mode G.657.A1 (BIF) | Yellow | 0.1 | 0.35 | -60 |
| 12F MTP Pro (unpinned) | PFTF | Aqua | 50 µm OM3, OM4 | Aqua | 0.1 | 0.35 | -20 |
| 12F MTP Pro (pinned) | PFTM | Aqua | 50 µm OM3, OM4 | Aqua | 0.1 | 0.35 | -20 |

Ordering Information

CONNECTOR END A — **CONNECTOR END B** — **CABLE TYPE** — **FIBER COUNT** — **FIBER TYPE** — **CABLE LENGTH** — **PULLING EYE** — **POLARITY** — **OBC** — **BASE SELECTION** — **PLATFORM**

ETF — **ETF** — **PL** — **012** — **Q** — **0001** — **PE** — **MF** — **RS** — **12** — **ASCEND**

EEF = MPO-SM Elite, 8 fiber, Female
 EEM = MPO-SM Elite, 8 fiber, Male
 PFEF = MTP PRO-MM, 8 fiber, Female
 PFEM = MTP PRO-MM, 8 fiber, Male
 ETF = MPO-SM Elite, 12 fiber, Female
 ETM = MPO-SM Elite, 12 fiber, Male
 PFTF = MTP PRO-MM, 12 fiber, Female
 PFTM = MTP PRO-MM, 12 fiber, Male
 XXX = No Connector (Pigtail)
 *For connector End B only

Options for Trunk & Pigtail Assemblies:
 PL = Plenum MicroCore (250 µm)
 GE = LSZH MicroCore (250 µm)
 Options for Pigtail Assemblies Only:
 GQS = 2.0 mm Plenum MicroCore (SWR)
 GES = 2.0 mm LSZH MicroCore (SWR)

008 = 8
 012 = 12
 024 = 24
 048 = 48
 072 = 72
 096 = 96
 144 = 144
 288 = 288

Q = Single-mode G.657A BIF
 L = Multimode OM3
 C = Multimode OM4

XXXX = Meters
 XXXXFT = Feet

Blank = No Pulling Eye
 PE = Pulling Eye (One End Only)

MF = Method F
 MA = Method A

HM = Hook & Loop OBC, Mixed
 HS = Hook & Loop OBC, Small
 HL = Hook & Loop OBC, Large
 RS = Rock & Lock*, Small
 NC = Spool Only
 Blank = Standard OBC

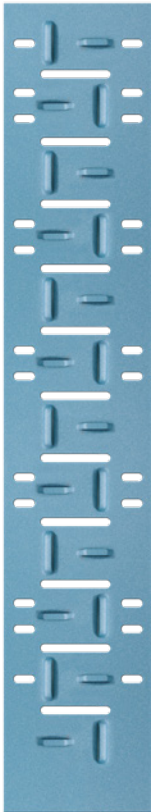
08 = BASE-8
 12 = BASE-12

ASCEND

* NOTE – The "Rock and Lock" mounting clip is only available for trunk cable diameters up to 13 mm and will come standard on trunk cables with fiber counts up to 288. The "Hook and Loop" mounting clip is available by request only.

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|----------------|--------------------------------|
| ITU | G.657.A1 | Single-mode optical fiber only |
| Telcordia | GR-326/GR-1435 | Connectors |
| | GR-409-CORE | Cable |
| EIA/TIA | 568-A | Cable |
| RoHS | Compliant | Cable |



ASCEND® Outback Clip Management (OCM) Bracket

ASCEND trunk cable assemblies provide a high performance plug-and-play solution and come equipped with an integrated mounting clip or "Outback Clip." There are two Outback Clip options: the "Rock and Lock" which mates to the housing using a lever, and the "Hook and Loop" which mates to the housing using velcro. These clips eliminate the need for additional cable clamps and securely position the incoming cable while eliminating unwanted stress during installation.

Trunk cables with Outback Clips are typically mounted directly in the rear of ASCEND Housings; however for applications that require cable mounting on the rack itself, the ASCEND OCM Bracket is designed to efficiently accommodate up to 12 ASCEND trunk cable assemblies.

Features

- Accommodates up to 12 Outback Clips/ Trunk Cables
- Rugged steel construction
- Includes rack tap screws

Applications

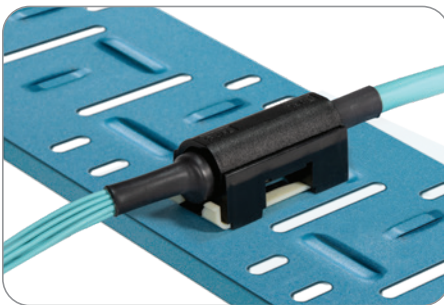
- Data Centers
- Central Offices
- Headends
- Structured Cabling Networks

Ordering Information

| CATEGORY | DESCRIPTION | AFL NO. |
|--------------------|---|---------|
| ASCEND Accessories | ASCEND, Outback Mounting Clip Bracket, 12 Positions | OCM-12 |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| RoHS | Compliant |



Integrated Mounting of "Outback Clip" on ASCEND trunk cable assemblies provide simple snap and push release tabs



MTP® PRO Field Tool for Polarity/Pin Change

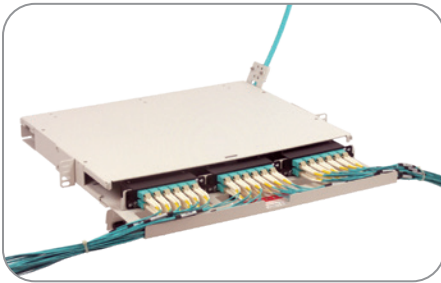
The unique MTP® PRO* design is focused on simplicity and reliability to ensure a quick and effective method for pin configuration without the need to remove the housing or handle loose pins.

Features

- Robust tool for easy pin change process
- Factory color designated pin clamp for easy identification
- Reusable color designated pin exchanger for safe handling of pins
- Field friendly configuration with no risk for damage
- Reliable pin retention force exceeding IEC requirement of 19.6N
- No handling of loose pins
- No housing removal necessary
- Compatible and recommended for use with ASCEND® Trunk Cable Jumper and Pigtail Assemblies whenever gender/ polarity changes are required in the field

Ordering Information

| DESCRIPTION | AFL NO. |
|--|----------|
| Field Tool, Polarity/Pin, MTP PRO (18814) | CS014748 |
| Pin Exchanger, MTP Pro, Multimode, Female, Aqua, 10 pack (18256) | CS016089 |
| Pin Exchanger, MTP Pro, Single-mode, Female, Yellow, 10 pack (18841) | CS016090 |
| Pin Exchanger, MTP Pro, Multimode, Male, Aqua, 10 pack (18842) | CS016091 |
| Pin Exchanger, MTP Pro, Single-mode, Male, Yellow, 10 pack (18843) | CS016092 |



LightLink LANSystem 1RU Fiber Termination Patch/Splice Panel

The AFL 1RU Fiber Termination Patch/Splice Panel is designed for use as a rack mount interconnect point where termination and connectivity of up to 36 fibers is desired. The panel design is based on a 1 rack unit height and is provisioned with three LGX® 118 compatible mounting positions that can accommodate adapter plates, XFM® optical cassettes, passive optical modules or any combination therein.

Standard 1RU Fiber Termination Patch Panels are available empty for complete field configuration, half loaded with adapter plates, or stubbed with a factory installed circular premise cable (CPC) or loose tube cable assembly.

Standard 1RU Fiber Patch and Splice Panels are available empty for complete field configuration, half loaded with adapter plates and splice trays, or loaded with pigtails, adapter plates and splice trays.

Features

- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- Modular design
- Slide-out tray with relief cut-outs for simplified connector access
- Optional splice tray kit for on site conversion to patch and splice panel
- Optional front door key lock for heightened protection of internal components

Applications

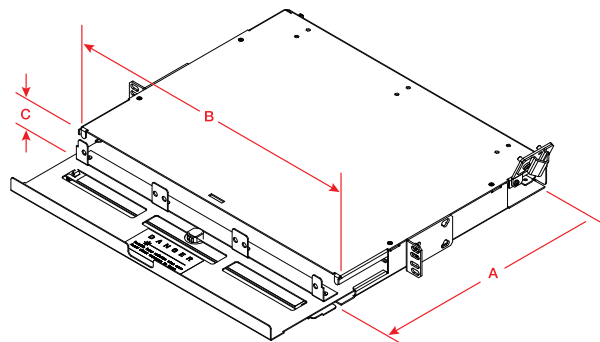
- Telecommunications closets
- Data Centers
- Customer Premise
- LAN / WAN Networks
- Central Offices / Headends
- Hubs / Cabinets / Remote Terminals
- FTTH / FTTB Networks

Specifications

- Designed around Telcordia® GR-63NEBS
- Aluminum construction per ASTM B209
- Durable textured powder coat finish available in black or white
- Universal 19/23" EIA/TIA rack compatibility
- Standard density: up to 18-fiber
- High density: up to 36-fiber
- LGX 118 compatible
- Standard cable stub location is right rear exiting upward
- 1RU Patch and Splice Panel holds up to three splice tray kits

Dimensions

| DEPTH (A) IN INCHES | WIDTH (B) IN INCHES | HEIGHT (C) IN INCHES | RACK UNITS | CAPACITY | UNLOADED WEIGHT |
|------------------------|------------------------|-------------------------|---------------|----------|--------------------|
| 13.51 | 17.00 | 1.75 | 1 | 18 / 36 | 4 lbs. |



LGX is a registered trademark of Furukawa Electric North America, Inc.
Telcordia is a registered trademark of Telcordia Technologies, Inc.

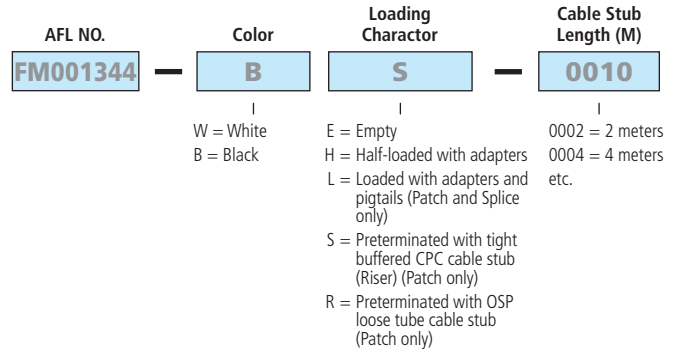
LightLink LANSystem 1RU Fiber Termination Patch/Splice Panel

Ordering Information

Select the seven digit AFL panel part number, specify the color, and choose the loading character desired.

When ordering stubbed (S), enter the cable stub length required in meters.

Note: Standard stub is Circular Premise Cable (CPC).



Example: Order number for a panel Black in color, loaded with 12 PSC adapters (2 six packs), connectors and a cable stub 10 meters in length.

Ordering Information

| CONFIGURATION | AFL NO. |
|---|----------|
| CON012P—1 RU PATCH PANELS—12 FIBERS—LGX118 | |
| EMPTY | FM001038 |
| 12 PSC adapters (2 Six Packs) | FM001344 |
| 12 UST adapters (2 Six Packs) | FM001346 |
| 12 PST adapters (2 Six Packs) | FM001347 |
| 6 UDL (dup) adapters (2 Three Packs) | FM001353 |
| 6 PDL (dup) adapters (2 Three Packs) | FM001354 |
| 12 ASC adapters (2 Six Packs) | FM001352 |
| 12 UFC adapters (2 Six Packs) | FM001349 |
| 12 USC adapters (2 Six Packs) | FM001351 |
| 12 AFC adapters (2 Six Packs) | FM001350 |
| CON024HD—1 RU HIGH DENSITY PATCH PANELS—24 FIBERS—LGX118 | |
| 24 UST adapters (2 Twelve Packs) | FM001355 |
| 24 PST adapters (2 Twelve Packs) | FM001356 |
| 12 PDL (dup) adapters (2 Six Packs) | FM001348 |
| 12 USF (dup) adapters (2 Six Packs) | FM001357 |
| 12 ASF (dup) adapters (2 Six Packs) | FM001358 |

| CONFIGURATION | AFL NO. |
|--|----------|
| CNS012P—1RU PATCH AND SPLICE PANELS—12 FIBERS—LGX118 | |
| EMPTY | FM001328 |
| 12 PSC adapters (2 Six Packs), Splice Tray | FM001323 |
| 12 UST adapters (2 Six Packs), Splice Tray | FM001329 |
| 12 PST adapters (2 Six Packs), Splice Tray | FM001325 |
| 6 UDL (dup) adapters (2 Three Packs), Splice Tray | FM001334 |
| 6 PDL (dup) adapters (2 Three Packs), Splice Tray | FM001335 |
| 12 ASC adapters (2 Six Packs), Splice Tray | FM001333 |
| 12 UFC adapters (2 Six Packs), Splice Tray | FM001330 |
| 12 USC adapters (2 Six Packs), Splice Tray | FM001332 |
| 12 AFC adapters (2 Six Packs), Splice Tray | FM001331 |
| CNS024HD—1 RU HIGH-DENSITY PATCH & SPLICE PANELS—24 FIBERS—LGX118 | |
| 24 UST adapters (2 Twelve Packs), Splice Tray | FM001336 |
| 24 PST adapters (2 Twelve Packs), Splice Tray | FM001337 |
| 12 USF (dup) adapters (2 Six Packs), Splice Tray | FM001338 |
| 12 ASF (dup) adapters (2 Six Packs), Splice Tray | FM001339 |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| ASTM | ASTMB209 |
| Telcordia | GR-63NEBS |

Accessories

| DESCRIPTION | AFL NO. |
|---|-------------|
| Splice Tray Kit: Single Fusion, 12 fiber, 1RU Patch Panel Standard Density (1 splice tray) | FM002826-1 |
| Splice Tray Kit: Single Fusion, 12 fiber, 1RU Patch Panel High Density (2 splice trays) | FM002826-2 |
| Ribbon Splice Tray Kit: Mass Fusion, 12 fiber, 1RU Patch Panel Standard Density (1 splice tray) | FM002826-1R |
| Ribbon Splice Tray Kit: Mass Fusion, 12 fiber, 1RU Patch Panel High Density (2 splice trays) | FM002826-2R |
| Kit, Lock, for CON/CNS Panels | FM001318 |

Connector/Adapter Key

| TYPE | DESCRIPTION |
|------|---------------------------------|
| ASC | SC—Angle Polish, Simplex, SM |
| ASF | SC—Angle Polish, Duplex, SM |
| PSC | SC—Physical Polish, Simplex, MM |
| PSF | SC—Physical Polish, Duplex, MM |
| USC | SC—Ultra Polish, Simplex, SM |
| USF | SC—Ultra Polish, Duplex, SM |
| PST | ST—Physical Polish, Simplex, MM |
| UST | ST—Ultra Polish, Simplex, SM |
| AFC | FC—Angle Polish, Simplex, SM |
| PFC | FC—Physical Polish, Simplex, MM |
| UFC | FC—Ultra Polish, Simplex, SM |
| ADL | LC—Angle Polish, Duplex, SM |
| PLC | LC—Physical Polish, Simplex, MM |
| PDL | LC—Physical Polish, Duplex, MM |
| ULC | LC—Ultra Polish, Simplex, SM |
| UDL | LC—Ultra Polish, Duplex, SM |

Notes:

- 1) All MM cable is 62.5 μm unless otherwise specified.
- 2) When ordering Empty Termination Patch/Splice Panel, accessories are available for field configuration.



LightLink LANSystem 2RU Fiber Termination Patch/Splice Panel

The AFL 2RU Fiber Termination Patch/Splice Panel is designed for use as a rack mount interconnect point where termination and connectivity of up to 72 fibers is desired. The panel design is based on a 2 rack unit height and is provisioned with three LGX® 118 compatible mounting positions that can accommodate adapter plates, XFM optical cassettes, passive optical modules or any combination therein.

Standard 2RU Fiber Termination Patch Panels are available empty for complete field configuration, half loaded with adapter plates, or stubbed with a factory installed circular premise cable (CPC) or loose tube cable assembly.

Standard 2RU Fiber Patch and Splice Panels are available empty for complete field configuration, half loaded with adapter plates and splice trays, or loaded with pigtails, adapter plates and splice trays.

Specifications

- Designed around Telcordia® GR-63NEBS
- Aluminum construction per ASTM B209
- Durable textured powder coat finish available in black or white
- Universal 19/23" EIA/TIA rack compatibility
- Standard density: up to 36 fiber
- High density: up to 72 fiber
- LGX 118 compatible
- Standard cable stub location is right rear exiting upward
- 2RU Patch and Splice Panel holds up to four splice tray kits

Features

- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- Modular design
- Slide-out tray with relief cut-outs for simplified connector access
- Optional splice tray kit for on site conversion to patch and splice panel
- Optional front door key lock for height-ened protection of internal components

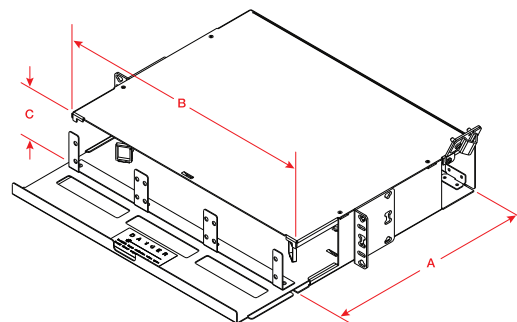
Applications

- Telecommunications closets
- Data Centers
- Customer Premise
- LAN / WAN Networks
- Central Offices / Headends
- Hubs / Cabinets / Remote Terminals
- FTTH / FTTB Networks

Dimensions

| DEPTH (A) IN INCHES | WIDTH (B) IN INCHES | HEIGHT (C) IN INCHES | RACK UNITS | CAPACITY | UNLOADED WEIGHT |
|------------------------|------------------------|-------------------------|---------------|----------|--------------------|
| 13.51 | 17.00 | 3.50 | 2 | 36 / 72* | 5 lbs. |

* 72 fiber capacity not available in Patch and Splice configuration.



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Telcordia is a registered trademark of Telcordia Technologies, Inc.

LightLink LANSystem 2RU Fiber Termination Patch/Splice Panel

Ordering Information

Select the seven digit AFL panel part number, specify the color, and choose the loading character desired.

When ordering stubbed (S), enter the cable stub length required in meters.

Note: Standard stub is Circular Premise Cable (CPC).

| AFL NO. | Color | Loading Character | Cable Stub Length (M) |
|----------|------------------------|---|--|
| FM001433 | B | S | 0010 |
| | W = White B = Black | E = Empty H = Half-loaded with adapters L = Loaded with adapters and pigtails (Patch and Splice only) S = Preterminated with tight buffered CPC cable stub (Riser) (Patch only) R = Preterminated with OSP loose tube cable stub (Patch only) | 0002 = 2 meters 0004 = 4 meters etc. |

Example: Order number for a panel Black in color, loaded with 24 PSC adapters (4 six packs), connectors and a cable stub 10 meters in length.

Ordering Information

| CONFIGURATION | AFL NO. |
|---|----------|
| CON024P—2 RU PATCH PANELS—24 FIBERS—LGX118 | |
| EMPTY | FM001029 |
| 24 PSC adapters (4 Six Packs) 118 LGX (Beige) | FM001433 |
| 24 UST adapters (4 Six Packs) 118 LGX | FM001434 |
| 24 PST adapters (4 Six Packs) 118 LGX | FM001435 |
| 12 UDL (dup) adapters (4 Three Packs) 118 LGX (Blue) | FM001441 |
| 12 PDL (dup) adapters (4 Three Packs) 118 LGX (Beige) | FM001442 |
| 24 ASC adapters (4 Six Packs) 118 LGX (Green) | FM001439 |
| 24 UFC adapters (4 Six Packs) 118 LGX | FM001436 |
| 24 USC adapters (4 Six Packs) 118 LGX (Blue) | FM001438 |
| 24 AFC adapters (4 Six Packs) 118 LGX | FM001437 |

| CONFIGURATION | AFL NO. |
|---|----------|
| CNS024P—2U PATCH AND SPLICE PANELS—24 FIBERS—LGX118 | |
| EMPTY | FM001414 |
| 24 PSC adapters (4 Six Packs) 118 LGX, Splice tray | FM001411 |
| 24 UST adapters (4 Six Packs) 118 LGX, Splice tray | FM001412 |
| 24 PST adapters (4 Six Packs) 118 LGX, Splice tray | FM001413 |
| 12 UDL (dup) adapters (4 three Packs) 118 LGX , Splice tray | FM001419 |
| 12 PDL (dup) adapters (4 three Packs) 118 LGX , Splice tray | FM001420 |
| 24 ASC adapters (4 Six Packs) 118 LGX, Splice tray | FM001418 |
| 24 UFC adapters (4 Six Packs) 118 LGX, Splice tray | FM001415 |
| 24 USC adapters (4 Six Packs) 118 LGX, Splice tray | FM001417 |
| 24 AFC adapters (4 Six Packs) 118 LGX, Splice tray | FM001416 |

Notes:
 1) All MM cable is 62.5 μm unless otherwise specified.
 2) When ordering Empty Termination Patch/Splice Panel, accessories are available for field configuration.

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| ASTM | ASTMB209 |
| Telcordia | GR-63NEBS |

Accessories

| DESCRIPTION | AFL NO. |
|--|-------------|
| Splice Tray Kit: Single Fusion, 12 fiber, 2RU, WME02, WME04 (1 splice tray) | FM002827-1 |
| Splice Tray Kit: Single Fusion, 12 fiber, 2RU, WME02, WME04 (2 splice trays) | FM002827-2 |
| Splice Tray Kit: Single Fusion, 12 fiber, 2RU, WME02, WME04 (3 splice trays) | FM002827-3 |
| Splice Tray Kit: Single Fusion, 12 fiber, 2RU, WME02, WME04 (4 splice trays) | FM002827-4 |
| Splice Tray Kit: Single Fusion, 12 fiber, 2RU, WME02, WME04, Ribbon (1 splice tray) | FM002827-1R |
| Splice Tray Kit: Single Fusion, 12 fiber, 2RU, WME02, WME04, Ribbon (2 splice trays) | FM002827-2R |
| Splice Tray Kit: Single Fusion, 12 fiber, 2RU, WME02, WME04, Ribbon (3 splice trays) | FM002827-3R |
| Splice Tray Kit: Single Fusion, 12 fiber, 2RU, WME02, WME04, Ribbon (4 splice trays) | FM002827-4R |
| Kit, Lock, for CON / CNS Panels | FM001318 |

Connector/Adapter Key

| TYPE | DESCRIPTION |
|------|---------------------------------|
| ASC | SC—Angle Polish, Simplex, SM |
| ASF | SC—Angle Polish, Duplex, SM |
| PSC | SC—Physical Polish, Simplex, MM |
| PSF | SC—Physical Polish, Duplex, MM |
| USC | SC—Ultra Polish, Simplex, SM |
| USF | SC—Ultra Polish, Duplex, SM |
| PST | ST—Physical Polish, Simplex, MM |
| UST | ST—Ultra Polish, Simplex, SM |
| AFC | FC—Angle Polish, Simplex, SM |
| PFC | FC—Physical Polish, Simplex, MM |
| UFC | FC—Ultra Polish, Simplex, SM |
| ADL | LC—Angle Polish, Duplex, SM |
| PLC | LC—Physical Polish, Simplex, MM |
| PDL | LC—Physical Polish, Duplex, MM |
| ULC | LC—Ultra Polish, Simplex, SM |
| UDL | LC—Ultra Polish, Duplex, SM |



LightLink LANSystem 3RU Fiber Termination Patch Panel

The AFL 3RU Fiber Termination Patch Panel is designed for use as a rack mount interconnect point where termination and connectivity of up to 96 fibers is desired. The panel design is based on a 3 rack unit height with a master plate that is provisioned with nine LGX® 118 compatible mounting positions that can accommodate adapter plates, XFM® optical cassettes, passive optical modules or any combination therein.

Standard 3RU Fiber Termination Patch Panels are available empty for complete field configuration, half loaded with adapter plates, or stubbed with a factory installed circular premise cable (CPC) or loose tube cable assembly.

Specifications

- Telcordia® GR-63 NEBS Tested
- Aluminum construction per ASTM B209
- Durable textured powder coat finish available in black or white
- Universal 19/23" EIA/TIA rack compatibility
- Standard density: up to 48-fiber
- High density: up to 96-fiber
- LGX 118 compatible
- Standard cable stub location is right rear exiting upward

Features

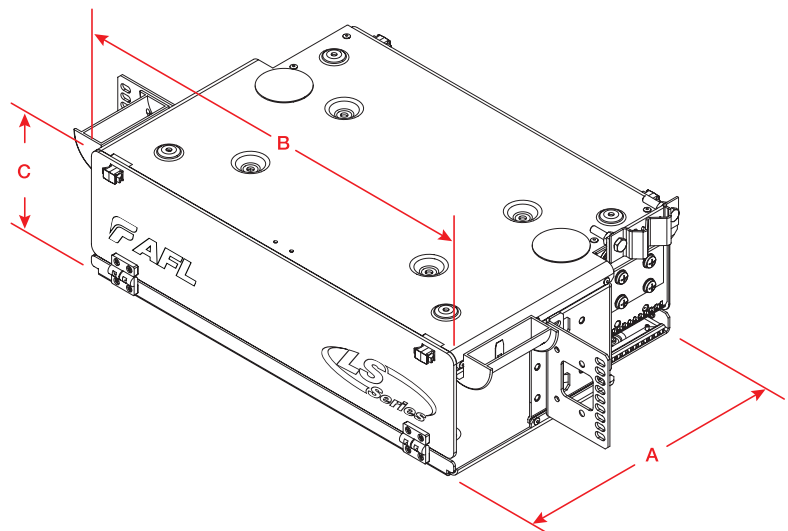
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX compatible master plate (118 mm)
- Modular design
- Provides maximum protection of optical components

Applications

- Telecommunications closets
- Data Centers
- Customer Premise
- LAN / WAN Networks
- Central Offices / Headends
- Hubs / Cabinets / Remote Terminals
- FTTH / FTTB Networks

Dimensions

| DEPTH (A) IN INCHES | WIDTH (B) IN INCHES | HEIGHT (C) IN INCHES | RACK UNITS | FIBER CAPACITY | UNLOADED WEIGHT | MATERIAL GAUGE |
|------------------------|------------------------|-------------------------|---------------|-------------------|--------------------|-------------------|
| 11.00 | 17.00 | 5.25 | 3 | 48/96 | 8.4 lbs. | 2.03 mm |



LGX is a registered trademark of Furukawa Electric North America, Inc.
Telcordia is a registered trademark of Telcordia Technologies, Inc.

LightLink LANSystem 3RU Fiber Termination Patch Panel

Ordering Information

Select the seven digit AFL part number you need, specify black or white, and choose the loading character desired.

When ordering stubbed (S), enter the cable stub length required in meters.

Note: Standard stub is Circular Premise Cable (CPC).

| AFL NO. | Color | Loading Character | Cable Stub Length (M) |
|----------------|------------------------|--|--|
| C211309 | B | S | 0010 |
| | W = White B = Black | E = Empty H = Half-loaded with adapters S = Preterminated with tight buffered CPC cable stub (Riser) (Patch only) R = Preterminated with OSP loose tube cable stub (Patch only) | 0002 = 2 meters 0004 = 4 meters etc. |

Example: Order number for a panel Black in color, loaded with 48 PSC adapters (8 six packs), connectors and a cable stub 10 meters in length.

Configuration Part Numbers

All cable clamps offered separately so that customers may choose the correct clamp for their application.

| CONFIGURATION | AFL NO. |
|---|----------|
| CON048P—3 RU PATCH PANELS—48 FIBERS—LGX118 | |
| EMPTY | C211291 |
| 48 PSC adapters (8 Six Packs) | C211309 |
| 48 UST adapters (8 Six Packs) | C211336 |
| 48 PST adapters (8 Six Packs) | C211345 |
| 24 UDL (dup) adapters (8 Three Packs) | FM000181 |
| 24 PDL (dup) adapters (8 Three Packs) | FM000182 |
| 48 ASC adapters (8 Six Packs) | C213928 |
| 48 UFC adapters (8 Six Packs) | C213916 |
| 48 USC adapters (8 Six Packs) | C213923 |
| 48 AFC adapters (8 Six Packs) | C213919 |
| 24 PSF (dup) adapters (8 Three Packs) | FM000183 |
| 24 USF (dup) adapters (8 Three Packs) | FM000184 |
| 24 ASF (dup) adapters (8 Three Packs) | FM000185 |
| CON096HD—3 RU HIGH DENSITY PATCH PANELS—96 FIBERS—LGX118 | |
| 96 UST adapters (8 Twelve Packs) | FM000187 |
| 96 PST adapters (8 Twelve Packs) | FM000188 |
| 48 UDL (dup) adapters (8 Six Packs) | C211349 |
| 48 PSF (dup) adapters (8 Six Packs) | C211313 |
| 48 PDL (dup) adapters (8 Six Packs) | C211360 |
| 48 USF (dup) adapters (8 Six Packs) | FM000189 |
| 48 ASF (dup) adapters (8 Six Packs) | FM000190 |

Notes:

- 1) All MM cable is 62.5 µm unless otherwise specified.
- 2) When ordering Empty Termination Patch/Splice Panel, accessories are available for field configuration.

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| ASTM | ASTMB209 |
| Telcordia | GR-63NEBS |

Connector/Adapter Key

| TYPE | DESCRIPTION |
|------|---------------------------------|
| ASC | SC—Angle Polish, Simplex, SM |
| ASF | SC—Angle Polish, Duplex, SM |
| PSC | SC—Physical Polish, Simplex, MM |
| PSF | SC—Physical Polish, Duplex, MM |
| USC | SC—Ultra Polish, Simplex, SM |
| USF | SC—Ultra Polish, Duplex, SM |
| PST | ST—Physical Polish, Simplex, MM |
| UST | ST—Ultra Polish, Simplex, SM |
| AFC | FC—Angle Polish, Simplex, SM |
| PFC | FC—Physical Polish, Simplex, MM |
| UFC | FC—Ultra Polish, Simplex, SM |
| ADL | LC—Angle Polish, Duplex, SM |
| PLC | LC—Physical Polish, Simplex, MM |
| PDL | LC—Physical Polish, Duplex, MM |
| ULC | LC—Ultra Polish, Simplex, SM |
| UDL | LC—Ultra Polish, Duplex, SM |



LightLink LANSystem 4RU Fiber Termination Patch Panel

The AFL 4RU Fiber Termination Patch Panel is designed for use as a rack mount interconnect point where termination and connectivity of up to 144 fibers is desired. The panel design is based on a 4 rack unit height with a master plate that is provisioned with 12 LGX® 118 compatible mounting positions that can accommodate adapter plates, XFM® optical cassettes, passive optical modules or any combination therein.

Standard 4RU Fiber Termination Patch Panels are available empty for complete field configuration, half loaded with adapter plates, or stubbed with a factory installed circular premise cable (CPC) or loose tube cable assembly.

Specifications

- Telcordia® GR-63 NEBS Tested
- Aluminum construction per ASTM B209
- Durable textured powder coat finish available in black or white
- Universal 19/23" EIA/TIA rack compatibility
- Standard density: up to 72-fiber
- High density: up to 144-fiber
- LGX 118 compatible
- Standard cable stub location is right rear exiting upward

Features

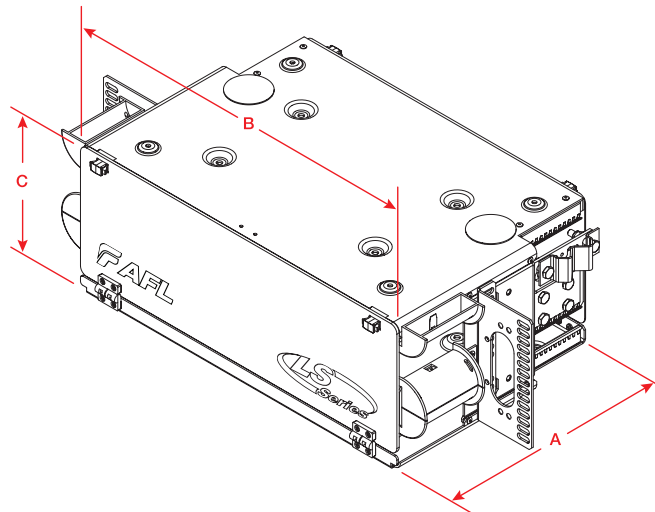
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX compatible master plate and footprint (118 mm)
- Modular design
- Provides maximum protection of optical components

Applications

- Telecommunications closets
- Data Centers
- Customer Premise
- LAN / WAN Networks
- Central Offices / Headends
- Hubs / Cabinets / Remote Terminals
- FTTH / FTTB Networks

Dimensions

| DEPTH (A) IN INCHES | WIDTH (B) IN INCHES | HEIGHT (C) IN INCHES | RACK UNITS | FIBER CAPACITY | UNLOADED WEIGHT | MATERIAL GAUGE |
|------------------------|------------------------|-------------------------|---------------|-------------------|--------------------|-------------------|
| 11.00 | 17.00 | 7.00 | 4 | 72/96/144 | 9 lbs. | 2.03 mm |



LGX is a registered trademark of Furukawa Electric North America, Inc.
Telcordia is a registered trademark of Telcordia Technologies, Inc.

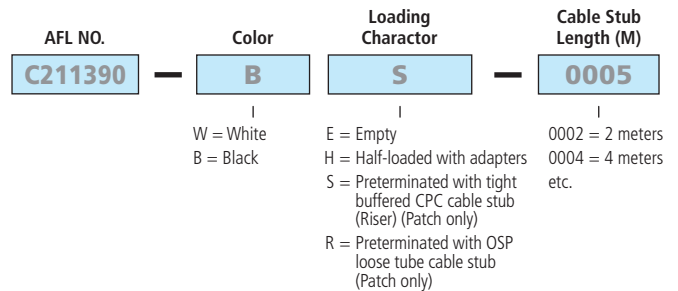
LightLink LANSystem 4RU Fiber Termination Patch Panel

Ordering Information

Select the seven digit AFL panel part number, specify the color, and choose the loading character desired.

When ordering stubbed (S), enter the cable stub length required in meters.

Note: Standard stub is Circular Premise Cable (CPC).



Example: Order number for a panel Black in color, loaded with 72 PSC adapters (12 six packs), connectors and a cable stub 5 meters in length.

Ordering Information

| CONFIGURATION | AFL NO. |
|---|----------|
| CON072P—4 RU PATCH PANELS—72 FIBERS—LGX118 | |
| EMPTY | C211372 |
| 72 PSC adapters (12 Six Packs) | C211390 |
| 72 UST adapters (12 Six Packs) | C211417 |
| 72 PST adapters (12 Six Packs) | C211426 |
| 36 UDL (dup) adapters (12 Three Packs) | FM000191 |
| 36 PDL (dup) adapters (12 Three Packs) | FM000192 |
| 72 ASC adapters (12 Six Packs) | C213955 |
| 72 UFC adapters (12 Six Packs) | C213941 |
| 72 USC adapters (12 Six Packs) | C213952 |
| 72 AFC adapters (12 Six Packs) | C213946 |
| 36 PSF (dup) adapters (12 Three Packs) | FM000193 |
| 36 USF (dup) adapters (12 Three Packs) | FM000136 |
| 36 ASF (dup) adapters (12 Three Packs) | FM000194 |

| CONFIGURATION | AFL NO. |
|---|----------|
| CON096P—4 RU PATCH PANELS—96 FIBERS—LGX118 | |
| EMPTY | FM000344 |
| 96 PSC adapters (12 Eight Packs) | FM000203 |
| 96 UST adapters (12 Eight Packs) | C213964 |
| 96 PST adapters (12 Eight Packs) | FM000204 |
| 96 ASC adapters (12 Eight Packs) | C213982 |
| 96 UFC adapters (12 Eight Packs) | C213970 |
| 96 USC adapters (12 Eight Packs) | C213977 |
| 96 AFC adapters (12 Eight Packs) | C213973 |

Notes:
 1) All MM cable is 62.5 μm unless otherwise specified.
 2) When ordering Empty Termination Patch/Splice Panel, accessories are available for field configuration.

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| ASTM | ASTMB209 |
| Telcordia | GR-63NEBS |

| CONFIGURATION | AFL NO. |
|--|----------|
| CON144HD—4 RU HIGH DENSITY PATCH PANELS—144 FIBERS—LGX118 | |
| EMPTY | FM000344 |
| 72 UDL (dup) adapters (12 Six Packs) | C211432 |
| 72 ADL (dup) adapters (12 Six Packs) | FM000345 |
| 72 PSF (dup) adapters (12 Six Packs) | C211396 |
| 72 PDL (dup) adapters (12 Six Packs) | C211439 |
| 72 USF (dup) adapters (12 Six Packs) | FM000196 |
| 72 ASF (dup) adapters (12 Six Packs) | FM000197 |
| 144 UST adapters (12 Twelve Packs) | FM000198 |
| 144 PST adapters (12 Twelve Packs) | FM000199 |
| 144 UFC adapters (12 Twelve Packs) | FM000200 |
| 144 USC adapters (12 Twelve Packs) | FM000133 |
| 144 ASC adapters (12 Twelve Packs) | FM000201 |

Connector/Adapter Key

| TYPE | DESCRIPTION |
|------|---------------------------------|
| ASC | SC—Angle Polish, Simplex, SM |
| ASF | SC—Angle Polish, Duplex, SM |
| PSC | SC—Physical Polish, Simplex, MM |
| PSF | SC—Physical Polish, Duplex, MM |
| USC | SC—Ultra Polish, Simplex, SM |
| USF | SC—Ultra Polish, Duplex, SM |
| PST | ST—Physical Polish, Simplex, MM |
| UST | ST—Ultra Polish, Simplex, SM |
| AFC | FC—Angle Polish, Simplex, SM |
| PFC | FC—Physical Polish, Simplex, MM |
| UFC | FC—Ultra Polish, Simplex, SM |
| ADL | LC—Angle Polish, Duplex, SM |
| PLC | LC—Physical Polish, Simplex, MM |
| PDL | LC—Physical Polish, Duplex, MM |
| ULC | LC—Ultra Polish, Simplex, SM |
| UDL | LC—Ultra Polish, Duplex, SM |



LightLink LANSystem 5RU Fiber Termination Patch Panel

The AFL 5RU Fiber Termination Patch Panel is designed for use as a rack mount interconnect point where termination and connectivity of up to 288 fibers is desired. The panel design is based on a 5 rack unit height with a master plate that is provisioned with twelve LGX® 170 compatible mounting positions that can accommodate adapter plates, XFM® optical cassettes, passive optical modules or any combination therein.

Standard 5RU Fiber Termination Patch Panels are available empty for complete field configuration, half loaded with adapter plates, or stubbed with a factory installed circular premise cable (CPC) or loose tube cable assembly. High density panels utilize two 144 fiber stubs for 288 terminations.

Specifications

- Telcordia® GR-63 NEBS Tested
- Aluminum construction per ASTM B209
- Durable textured powder coat finish available in black or white
- Universal 19/23" EIA/TIA rack compatibility
- Standard density: up to 144-fiber
- High density: up to 288-fiber
- LGX 170 compatible
- Standard cable stub location is right rear exiting upward

Features

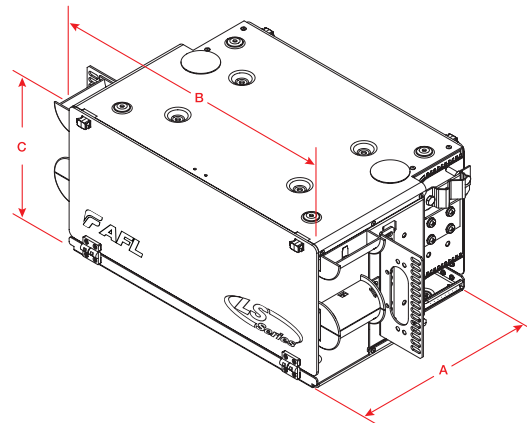
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX compatible master plate (170 mm)
- Modular design
- Provides maximum protection of optical components

Applications

- Telecommunications closets
- Data Centers
- Customer Premise
- LAN / WAN Networks
- Central Offices / Headends
- Hubs / Cabinets / Remote Terminals
- FTTH / FTTB Networks

Dimensions

| DEPTH (A) IN INCHES | WIDTH (B) IN INCHES | HEIGHT (C) IN INCHES | RACK UNITS | FIBER CAPACITY | UNLOADED WEIGHT | MATERIAL GAUGE |
|------------------------|------------------------|-------------------------|---------------|-------------------|--------------------|-------------------|
| 11.00 | 17.00 | 8.75 | 5 | 144/288 | 9 lbs. | 2.03 mm |



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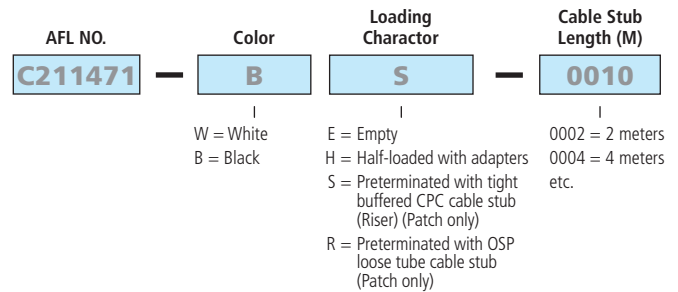
LightLink LANSystem 5RU Fiber Termination Patch Panel

Ordering Information

Select the seven digit AFL panel part number, specify the color, and choose the loading character desired.

When ordering stubbed (S), enter the cable stub length required in meters.

Note: Standard stub is Circular Premise Cable (CPC).



Example: Order number for a panel Black in color, loaded with 144 PSC adapters (12 twelve packs), connectors and a cable stub 10 meters in length.

Ordering Information

| CONFIGURATION | AFL NO. |
|--|----------|
| CON144P—5 RU PATCH PANELS—144 FIBERS—LGX170 | |
| EMPTY | C211453 |
| 144 PSC adapters (12 Twelve Packs) | C211471 |
| 144 UST adapters (12 Twelve Packs) | C211498 |
| 144 PST adapters (12 Twelve Packs) | C211507 |
| 72 UDL (dup) adapters (12 Six Packs) | FM000206 |
| 72 PDL (dup) adapters (12 Six Packs) | FM000207 |
| 144 ASC adapters (12 Twelve Packs) | C214009 |
| 144 UFC adapters (12 Twelve Packs) | C213995 |
| 144 USC adapters (12 Twelve Packs) | C214006 |
| 72 PSF (dup) adapters (12 Six Packs) | FM000208 |
| 72 USF (dup) adapters (12 Six Packs) | FM000209 |
| 72 ASF (dup) adapters (12 Six Packs) | FM000210 |
| CON288HD—5 RU HIGH DENSITY PATCH PANELS (USES TWO 144 STUBS)—LGX170 | |
| 144 UDL (dup) adapters (12 Twelve Packs) | C211511 |
| 144 ADL (dup) adapters (12 Twelve Packs) | FM000346 |
| 144 PSF (dup) adapters (12 Twelve Packs) | C211475 |
| 144 USF (dup) adapters (12 Twelve Packs) | FM000212 |
| 144 ASF (dup) adapters (12 Twelve Packs) | FM000213 |

Notes:

- 1) All MM cable is 62.5 μm unless otherwise specified.
- 2) When ordering Empty Termination Patch/Splice Panel, accessories are available for field configuration.

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| ASTM | ASTMB209 |
| Telcordia | GR-63NEBS |

Connector/Adapter Key

| TYPE | DESCRIPTION |
|------|---------------------------------|
| ASC | SC—Angle Polish, Simplex, SM |
| ASF | SC—Angle Polish, Duplex, SM |
| PSC | SC—Physical Polish, Simplex, MM |
| PSF | SC—Physical Polish, Duplex, MM |
| USC | SC—Ultra Polish, Simplex, SM |
| USF | SC—Ultra Polish, Duplex, SM |
| PST | ST—Physical Polish, Simplex, MM |
| UST | ST—Ultra Polish, Simplex, SM |
| AFC | FC—Angle Polish, Simplex, SM |
| PFC | FC—Physical Polish, Simplex, MM |
| UFC | FC—Ultra Polish, Simplex, SM |
| ADL | LC—Angle Polish, Duplex, SM |
| PLC | LC—Physical Polish, Simplex, MM |
| PDL | LC—Physical Polish, Duplex, MM |
| ULC | LC—Ultra Polish, Simplex, SM |
| UDL | LC—Ultra Polish, Duplex, SM |



LightLink LANSys™ 6RU Fiber Patch and Splice Panel

The AFL 6RU Fiber Patch and Splice Panel is designed for use as a rack mount interconnect point where termination and connectivity of up to 96 fibers is desired. The two panel design is based on a 6-rack unit height comprised of a 3RU Termination Patch Panel and a 3RU Optical Splice Shelf. The 3RU Termination Patch Panel is provisioned with nine LGX® 118 compatible mounting positions. The 3RU Optical Splice Shelf utilizes two STF-48 telescoping splice drawers.

Standard 6RU Fiber Patch and Splice Panels are available empty for complete field configuration, half loaded with adapter plates and STF-48 telescoping splice trays, or loaded with pigtails, adapter plates and STF-48 telescoping splice trays.

Specifications

- Designed around Telcordia® GR-63NEBS
- Aluminum construction per ASTM B209
- Durable textured powder coat finish available in black or white
- Universal 19/23" EIA/TIA rack compatibility
- Standard density: up to 48-fiber
- High density: up to 96-fiber
- Fiber storage capacity—one meter per spliced fiber (3 mm jacket)
- Uses two STF-48 telescoping splice drawers
- Two panel package—3U patch, 3U splice
- Nine LGX 118 mm positions

Features

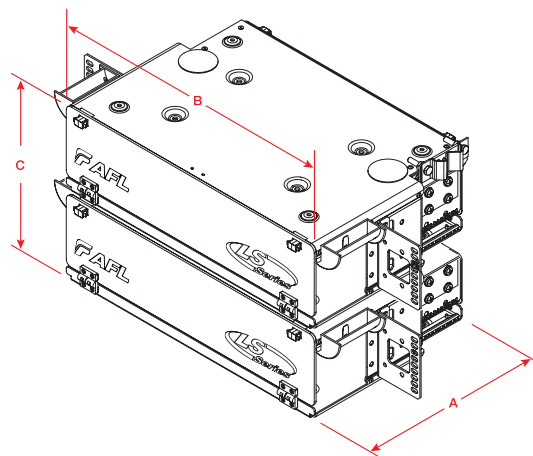
- Fits comfortably into new and existing interconnect, cross-connect, customer premise and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX-compatible master plate (118 mm)
- Modular design
- Compact and versatile method of organizing splicing and connectivity
- Provides maximum protection of optical components

Applications

- Telecommunications closets
- Data Centers
- Customer Premise
- LAN / WAN Networks
- Central Offices / Headends
- Hubs / Cabinets / Remote Terminals
- FTTH / FTTB Networks

Dimensions

| DEPTH (A) IN INCHES | WIDTH (B) IN INCHES | HEIGHT (C) IN INCHES | RACK UNITS | FIBER CAPACITY |
|------------------------|------------------------|-------------------------|---------------|-------------------|
| 11.00 | 17.00 | 10.5 | 6 | 48/96 |

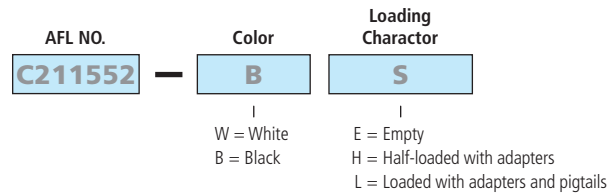


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LightLink LANSystem 6RU Fiber Patch and Splice Panel

Ordering Information

Select the seven-digit AFL panel part number, specify the color and choose the loading character desired.



Example: Order number for a panel Black in color, loaded with, master plate, adapter plates, 48 PSC adapters (8 Six packs), splice drawer (2-48 position), pigtails with connectors, hardware, cable clamp.

Empty - Includes master plate, mounting hardware, cable clamp.

Unloaded - Includes master plate, adapter plates, adapters, splice drawer (48 & up), hardware, cable clamp.

Loaded - Includes master plate, adapter plates, adapters, splice drawer (48 & up), pigtails with connectors, hardware, cable clamp.

Configuration Part Numbers

| CONFIGURATION | AFL NO. |
|--|----------|
| CNS048P—6U PATCH & SPLICE PANELS (1 EA. 3U PATCH, 3U SPLICE)—LGX118 | |
| EMPTY | C211534 |
| 48 PSC adapters (8 Six Packs) Splice Drawer (2-48 position) | C211552 |
| 48 UST adapters (8 Six Packs) Splice Drawer (2-48 position) | C211579 |
| 48 PST adapters (8 Six Packs) Splice Drawer (2-48 position) | C211588 |
| 24 UDL (dup) adapters (8 Three Packs) Splice Drawer (2-48 position) | FM000234 |
| 24 PDL (dup) adapters (8 Three Packs) Splice Drawer (2-48 position) | FM000235 |
| 48 ASC adapters (8 Six Packs) Splice Drawer (2-48 position) | C210928 |
| 48 UFC adapters (8 Six Packs) Splice Drawer (2-48 position) | C210913 |
| 48 USC adapters (8 Six Packs) Splice Drawer (2-48 position) | C210922 |
| 48 AFC adapters (8 Six Packs) Splice Drawer (2-48 position) | C210917 |
| 24 PSF (dup) adapters (8 Three Packs) Splice Drawer (2-48 position) | FM000236 |
| 24 USF (dup) adapters (8 Three Packs) Splice Drawer (2-48 position) | FM000237 |
| 24 ASF (dup) adapters (8 Three Packs) Splice Drawer (2-48 position) | FM000238 |
| CNS096HD—6U HIGH DENSITY PATCH & SPLICE PANELS—LGX118 | |
| 96 UST adapters (8 Twelve Packs) Splice Drawer 2-48 position) | FM000240 |
| 96 PST adapters (8 Twelve Packs) Splice Drawer (2-48 position) | FM000241 |
| 48 UDL (dup) adapters (8 Six Packs) Splice Drawer (2-48 position) | C211594 |
| 48 PSF (dup) adapters (8 Six Packs) Splice Drawer (2-48 position) | C211558 |
| 48 PDL (dup) adapters (8 Six Packs) Splice Drawer (2-48 position) | C211601 |
| 48 USF (dup) adapters (8 Six Packs) Splice Drawer (2-48 position) | FM000242 |
| 48 ASF (dup) adapters (8 Six Packs) Splice Drawer (2-48 position) | FM000243 |

Notes:

- 1) All MM cable is 62.5 µm unless otherwise specified.
- 2) When ordering Empty Termination Patch/Splice Panel, accessories are available for field configuration.

Qualifications

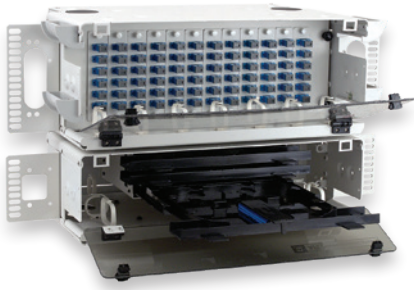
| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| ASTM | ASTMB209 |
| Telcordia | GR-63NEBS |

Accessories

| DESCRIPTION | AFL NO. |
|----------------------------------|--------------|
| STF-48 Telescoping Splice Drawer | 911442-00-00 |

Connector/Adapter Key

| TYPE | DESCRIPTION |
|------|---------------------------------|
| ASC | SC—Angle Polish, Simplex, SM |
| ASF | SC—Angle Polish, Duplex, SM |
| PSC | SC—Physical Polish, Simplex, MM |
| PSF | SC—Physical Polish, Duplex, MM |
| USC | SC—Ultra Polish, Simplex, SM |
| USF | SC—Ultra Polish, Duplex, SM |
| PST | ST—Physical Polish, Simplex, MM |
| UST | ST—Ultra Polish, Simplex, SM |
| AFC | FC—Angle Polish, Simplex, SM |
| PFC | FC—Physical Polish, Simplex, MM |
| UFC | FC—Ultra Polish, Simplex, SM |
| ADL | LC—Angle Polish, Duplex, SM |
| PLC | LC—Physical Polish, Simplex, MM |
| PDL | LC—Physical Polish, Duplex, MM |
| ULC | LC—Ultra Polish, Simplex, SM |
| UDL | LC—Ultra Polish, Duplex, SM |



LightLink LANSystem 7RU Fiber Patch and Splice Panel

The AFL 7RU Fiber Patch and Splice Panel is designed for use as a rack mount interconnect point where termination and connectivity of up to 144 fibers is desired. The two panel design is based on a 7 rack unit height comprised of a 4RU Termination Patch Panel and a 3RU Optical Splice Shelf. The 4RU Termination Patch Panel includes a master plate that is provisioned with 12 LGX® 118 compatible mounting positions. The 3RU Optical Splice Shelf utilizes three STF-48 telescoping splice drawers.

Standard 7RU Fiber Patch and Splice Panels are available empty for complete field configuration, half loaded with adapter plates and STF-48 telescoping splice trays, or loaded with pigtails, adapter plates and STF-48 telescoping splice trays.

Specifications

- Designed around Telcordia® GR-63NEBS
- Aluminum construction per ASTM B209
- Durable textured powder coat finish available in black or white
- Universal 19/23" EIA/TIA rack compatibility
- Standard density: up to 72-fiber
- High density: up to 144-fiber
- Fiber storage capacity—one meter per spliced fiber (3 mm jacket)
- Uses three STF-48 telescoping splice drawers
- Two panel package—4U patch and 3U splice
- 12 LGX 118 mm positions

Features

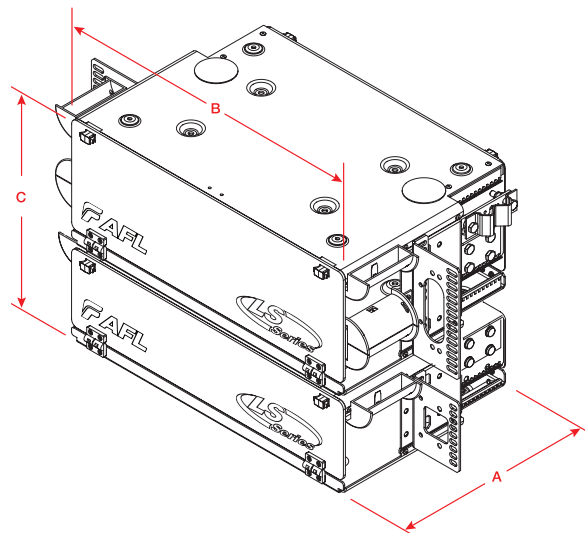
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX-compatible master plate (118 mm)
- Modular design
- Compact and versatile method of organizing splicing and connectivity
- Provides maximum protection of optical components

Applications

- Telecommunications closets
- Data Centers
- Customer Premise
- LAN / WAN Networks
- Central Offices / Headends
- Hubs / Cabinets / Remote Terminals
- FTTH / FTTB Networks

Dimensions

| DEPTH (A) IN INCHES | WIDTH (B) IN INCHES | HEIGHT (C) IN INCHES | RACK UNITS | FIBER CAPACITY |
|------------------------|------------------------|-------------------------|------------|----------------|
| 11.00 | 17.00 | 12.25 | 7 | 72/144 |



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Telcordia is a registered trademark of Telcordia Technologies, Inc.

LightLink LANsystem 7RU Fiber Patch and Splice Panel

Ordering Information

Select the seven-digit AFL number, specify the color and choose the loading character desired.

Example: Order number for a panel Black in color, loaded with master plate, adapter plates, 72 PSC adapters (12 Six packs), splice drawer (3-48 position), pigtails with connectors, hardware, cable clamp.

Ordering Information

| CONFIGURATION | AFL NO. |
|--|----------|
| CNS072P—7U PATCH & SPLICE PANELS (1 EA. 4U PATCH, 3U SPLICE)—LGX118 | |
| EMPTY | C211615 |
| 72 PSC adapters (12 Six Packs)Splice Drawers (3-48 position) | C211633 |
| 72 UST adapters (12 Six Packs) Splice Drawers (3-48 position) | C211660 |
| 72 PST adapters (12 Six Packs)Splice Drawers (3-48 position) | C211669 |
| 36 UDL (dup) adapters (12 Three Packs)Splice Drawers (3-48 position) | FM000244 |
| 36 PDL (dup) adapters (12 Three Packs)Splice Drawers (3-48 position) | FM000245 |
| 72 ASC adapters (12 Six Packs)Splice Drawers (3-48 position) | C210958 |
| 72 UFC adapters (12 Six Packs)Splice Drawers (3-48 position) | C210946 |
| 72 USC adapters (12 Six Packs)Splice Drawers (3-48 position) | C210953 |
| 72 AFC adapters (12 Six Packs) Splice Drawers (3-48 position) | C210949 |
| 36 PSF (dup) adapters (12 Three Packs)Splice Drawers (3-48 position) | FM000246 |
| 36 USF (dup) adapters (12 Three Packs)Splice Drawers (3-48 position) | FM000247 |
| 36 ASF (dup) adapters (12 Three Packs)Splice Drawers (3-48 position) | FM000248 |
| CNS096P—7U PATCH & SPLICE PANELS (1 EA. 4U PATCH, 3U SPLICE)—LGX118 | |
| EMPTY | C210967 |
| 96 UST adapters (12 Eight Packs) Splice Drawers (2-48 position) | C210971 |
| 96 UFC adapters (12 Eight Packs) Splice Drawers (2-48 position) | C210976 |
| 96 AFC adapters (12 Eight Packs) Splice Drawers (2-48 position) | C210982 |
| 96 USC adapters (12 Eight Packs) Splice Drawers (2-48 position) | C210985 |
| 96 ASC adapters (12 Eight Packs) Splice Drawers (2-48 position) | C210989 |

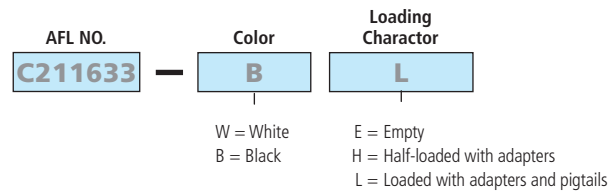
Notes:

1) All MM cable is 62.5 µm unless otherwise specified.

2) When ordering Empty Termination Patch/Splice Panel, accessories are available for field configuration.

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| ASTM | ASTMB209 |
| Telcordia | GR-63NEBS |



Empty - Includes master plate, mounting hardware, cable clamp.

Unloaded - Includes master plate, adapter plates, adapters, splice drawer (48 & up), hardware, cable clamp.

Loaded - Includes master plate, adapter plates, adapters, splice drawer (48 & up), pigtails with connectors, hardware, cable clamp.

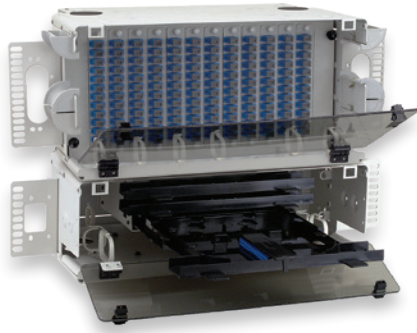
| CONFIGURATION | AFL NO. |
|--|----------|
| CNS144HD—7RU HIGH DENSITY PATCH PANELS (1 EA. 4U PATCH, 3U SPLICE)—LGX118 | |
| 72 UDL (dup) adapters (12 Six Packs)Splice Drawers (3-48 position) | C211673 |
| 72 PSF (dup) adapters (12 Six Packs)Splice Drawers (3-48 position) | C211637 |
| 72 PDL (dup) adapters (12 Six Packs)Splice Drawers (3-48 position) | C211684 |
| 72 USF (dup) adapters (12 Six Packs)Splice Drawers (3-48 position) | FM000250 |
| 72 ASF (dup) adapters (12 Six Packs)Splice Drawers (3-48 position) | FM000251 |
| 144 UST adapters (12 Twelve Packs)Splice Drawers (3-48 position) | FM000252 |
| 144 PST adapters (12 Twelve Packs)Splice Drawers (3-48 position) | FM000253 |
| 144 UFC adapters (12 Twelve Packs)Splice Drawers (3-48 position) | FM000254 |
| 144 USC adapters (12 Twelve Packs)Splice Drawers (3-48 position) | FM000255 |
| 144 ASC adapters (12 Twelve Packs)Splice Drawers (3-48 position) | FM000256 |

Accessories

| DESCRIPTION | AFL NO. |
|----------------------------------|--------------|
| STF-48 Telescoping Splice Drawer | 911442-00-00 |

Connector/Adapter Key

| TYPE | DESCRIPTION |
|------|---------------------------------|
| ASC | SC—Angle Polish, Simplex, SM |
| ASF | SC—Angle Polish, Duplex, SM |
| PSC | SC—Physical Polish, Simplex, MM |
| PSF | SC—Physical Polish, Duplex, MM |
| USC | SC—Ultra Polish, Simplex, SM |
| USF | SC—Ultra Polish, Duplex, SM |
| PST | ST—Physical Polish, Simplex, MM |
| UST | ST—Ultra Polish, Simplex, SM |
| AFC | FC—Angle Polish, Simplex, SM |
| PFC | FC—Physical Polish, Simplex, MM |
| UFC | FC—Ultra Polish, Simplex, SM |
| ADL | LC—Angle Polish, Duplex, SM |
| PLC | LC—Physical Polish, Simplex, MM |
| PDL | LC—Physical Polish, Duplex, MM |
| ULC | LC—Ultra Polish, Simplex, SM |
| UDL | LC—Ultra Polish, Duplex, SM |



LightLink LANSystem 8RU Fiber Patch and Splice Panel

The AFL 8RU Fiber Patch and Splice Panel is designed for use as a rack mount interconnect point where termination and connectivity of up to 144 fibers is desired. The standard density, two panel design is based on an 8 rack unit height comprised of a 5RU Termination Patch Panel and a 3RU Optical Splice Shelf. The 5RU Termination Patch Panel includes a master plate that is provisioned with twelve LGX® 170 compatible mounting positions. The 3RU Optical Splice Shelf utilizes three STF-48 telescoping splice drawers.

Standard 8RU Fiber Patch and Splice Panels are available empty for complete field configuration, half loaded with adapter plates and STF-48 telescoping splice trays, or loaded with pigtails, adapter plates and STF-48 telescoping splice trays.

Specifications

- Designed around Telcordia® GR-63NEBS
- Aluminum construction per ASTM B209
- Durable textured powder coat finish available in black or white
- Universal 19/23" EIA/TIA rack compatibility
- Standard density: up to 144-fiber
- Fiber storage capacity—one meter per spliced fiber (3 mm jacket)
- Uses three STF-48 telescoping splice drawers
- Two panel package Standard Density: 5U patch and 3U splice
- 12 LGX 170 mm positions

Features

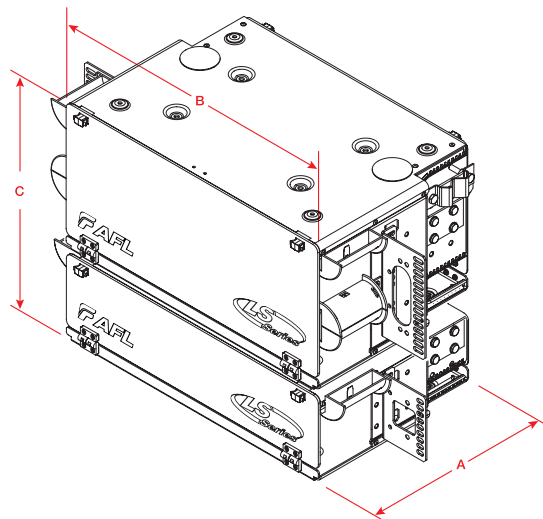
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX compatible master plate (170 mm)
- Modular design
- Compact and versatile method of organizing splicing and connectivity
- Provides maximum protection of optical components

Applications

- Telecommunications closets
- Data Centers
- Customer Premise
- LAN / WAN Networks
- Central Offices / Headends
- Hubs / Cabinets / Remote Terminals
- FTTH / FTTB Networks

Dimensions

| PANEL VERSION | DEPTH (A) IN INCHES | WIDTH (B) IN INCHES | HEIGHT (C) IN INCHES | RACK UNITS | FIBER CAPACITY |
|---------------|------------------------|------------------------|-------------------------|------------|----------------|
| Standard | 11.00 | 17.00 | 14.00 | 8 | 144 |



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Telcordia is a registered trademark of Telcordia Technologies, Inc.

LightLink LANSystem 8RU Fiber Patch and Splice Panel

Ordering Information

Select the seven-digit AFL number, specify the color and choose the loading character desired.

| AFL NO. | Color | Loading Character |
|----------------|------------------------|---|
| C211714 | B | L |
| | W = White B = Black | E=Empty H = Half-loaded with adapters L=Loaded with adapters and pigtails |

Example: Order number for a panel Black in color, loaded with, master plate, adapter plates, 144 PSC adapters (12 Twelve packs), splice drawer (3-48 position), pigtails with connectors, hardware, cable clamp.

Empty - Includes master plate, mounting hardware, cable clamp.

Unloaded - Includes master plate, adapter plates, adapters, splice drawer (48 & up), hardware, cable clamp.

Loaded - Includes master plate, adapter plates, adapters, splice drawer (48 & up), pigtails with connectors, hardware, cable clamp.

Configuration Part Numbers

| CONFIGURATION | AFL NO. |
|--|----------|
| CNS144P—8U PATCH & SPLICE PANELS (1 EA. 4U PATCH, 3U SPLICE)—LGX170 | |
| EMPTY | C211696 |
| 144 PSC adapters (12 Twelve Packs) Splice Drawers (3-48 position) | C211714 |
| 144 UST adapters (12 Twelve Packs) Splice Drawers (3-48 position) | C211741 |
| 144 PST adapters (12 Twelve Packs) Splice Drawers (3-48 position) | C211750 |
| 72 UDL (dup) adapters (12 Six Packs) Splice Drawers (3-48 position) | FM000258 |
| 72 PDL (dup) adapters (12 Six Packs) Splice Drawers (3-48 position) | FM000259 |
| 144 ASC adapters (12 Twelve Packs) Splice Drawers (3-48 position) | C211021 |
| 144 UFC adapters (12 Twelve Packs) Splice Drawers (3-48 position) | C211007 |
| 144 USC adapters (12 Twelve Packs) Splice Drawers (3-48 position) | FM000260 |
| 72 PSF (dup) adapters (12 Six Packs) Splice Drawers (3-48 position) | FM000261 |
| 72 USF (dup) adapters (12 Six Packs) Splice Drawers (3-48 position) | FM000262 |
| 72 ASF (dup) adapters (12 Six Packs) Splice Drawers (3-48 position) | FM000263 |

Notes:

- 1) All MM cable is 62.5 µm unless otherwise specified.
- 2) When ordering Empty Termination Patch/Splice Panel, accessories are available for field configuration.

Qualifications

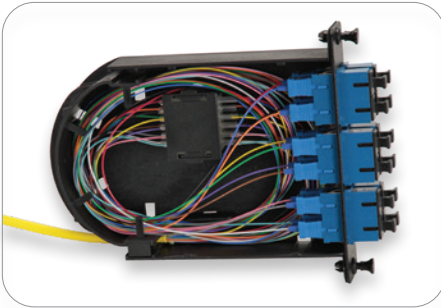
| GOVERNING BODY | STANDARD CODE |
|----------------|---------------|
| ASTM | ASTMB209 |
| Telcordia | GR-63NEBS |

Accessories

| DESCRIPTION | AFL NO. |
|----------------------------------|--------------|
| STF-48 Telescoping Splice Drawer | 911442-00-00 |

Connector/Adapter Key

| TYPE | DESCRIPTION |
|------|---------------------------------|
| ASC | SC—Angle Polish, Simplex, SM |
| ASF | SC—Angle Polish, Duplex, SM |
| PSC | SC—Physical Polish, Simplex, MM |
| PSF | SC—Physical Polish, Duplex, MM |
| USC | SC—Ultra Polish, Simplex, SM |
| USF | SC—Ultra Polish, Duplex, SM |
| PST | ST—Physical Polish, Simplex, MM |
| UST | ST—Ultra Polish, Simplex, SM |
| AFC | FC—Angle Polish, Simplex, SM |
| PFC | FC—Physical Polish, Simplex, MM |
| UFC | FC—Ultra Polish, Simplex, SM |
| ADL | LC—Angle Polish, Duplex, SM |
| PLC | LC—Physical Polish, Simplex, MM |
| PDL | LC—Physical Polish, Duplex, MM |
| ULC | LC—Ultra Polish, Simplex, SM |
| UDL | LC—Ultra Polish, Duplex, SM |



12-Fiber SC/UPC Configuration



24-Fiber LC/UPC Configuration



DAS Poli-MOD



Poli-MOD® Patch and Splice Module

AFL's new Poli-MOD is an innovative patch and splice module, which offers an inventive and effective means to accommodate up to 24 fiber interconnections in an industry-standard, single-slot LGX® 118 footprint. The Poli-MOD offers a unique and robust way to secure cable without the need for time-wasting, tie-wrap alternatives. Additionally, the module leverages a creative snap-in splice sleeve cradle to securely manage both single and ribbon fiber arrangements. These features provide the capacity to outfit a standard 4RU rack-mount panel with up to 288-fiber interconnections.

The Poli-MOD is also offered in an arrangement that supports the low loss budget requirements of Distributed Antenna System (DAS) networks. This is accomplished through the elimination of an interconnection point while providing a robust splicing environment for rack and wall-mount panel applications.

Features

- 24-fiber interconnection capacity
- LGX 118 compatibility (single-slot module)
- Effective and time-saving cable mounting mechanism (no tie-wraps necessary)
- Inventive splice sleeve cradle
- Available in SC, LC, ST and FC connector arrangements
- Shuttered LC connectors for increased dust protection
- Organized fiber routing
- Fixed solution, no moving parts
- Multi-directional cable entry access
- DIN rail mountable (with DIN Mount Kit)

Applications

- Telecommunications Closets
- Data Centers
- Customer Premise
- Local Area Networks
- Wide Area Networks
- Central Offices
- Hub Sites
- Cabinets
- Remote Terminals
- Distributed Antenna Systems (DAS)

LGX is a registered trademark of Furukawa Electric North America, Inc.

Poli-MOD® Patch and Splice Module

Ordering Information

Example: PM-L-12-ASC-0-S-01

| PM | L | 12 | ASC | 0 | S | 01 |
|----|---|---|--|--|---|---|
| | Configuration | Fiber/Connector Count | Connector Type ³ | Fiber Type | Fiber Arrangement | Packaging |
| | E = Empty (Splicing Only) H = Half Loaded (Adapter Plate only) L = Loaded (Adapter Plate & Pigtails) D = DAS Poli-MOD ¹ | 06 = 6 Fibers/Connectors 12 = 12 Fibers/Connectors 24 = 24 Fibers/Connectors ² XX = Empty | ASC = Angle-Polished SC USC = Ultra-Polished SC PSC = Multimode SC ALC = Angle-Polished LC ULC = Ultra-Polished LC PLC = Multimode LC UST = Ultra-Polished ST PST = Multimode ST AFC = Angle-Polished FC UFC = Ultra-Polished FC PFC = Multimode FC XXX = Empty | 0 = Single-mode (G.657.A1 BIF) 1 = 62.5 μm (OM1) 2 = 50 μm (OM2) 3 = 50 μm (OM3) 4 = 50 μm (OM4) X = Empty | S = Single/Standard R = Ribbon 3 = 3 mm, 3 meter DAS W = SpiderWeb Ribbon® (SWR®) X = No Fiber (Half Loaded or Empty) | 01 = 1 Poli-MOD per box* 06 = 6 Poli-MODs per box 12 = 12 Poli-MODs per box |

1. DAS Poli-MOD, with a maximum of 12 fibers each, requires specialty packaging and is packaged as "1 Poli-MOD per box" ONLY.
2. 24 Fibers/Connectors are only available in a LC Duplex configuration.
3. Angle and Ultra-Polished connector types are only available with single-mode fiber configurations.

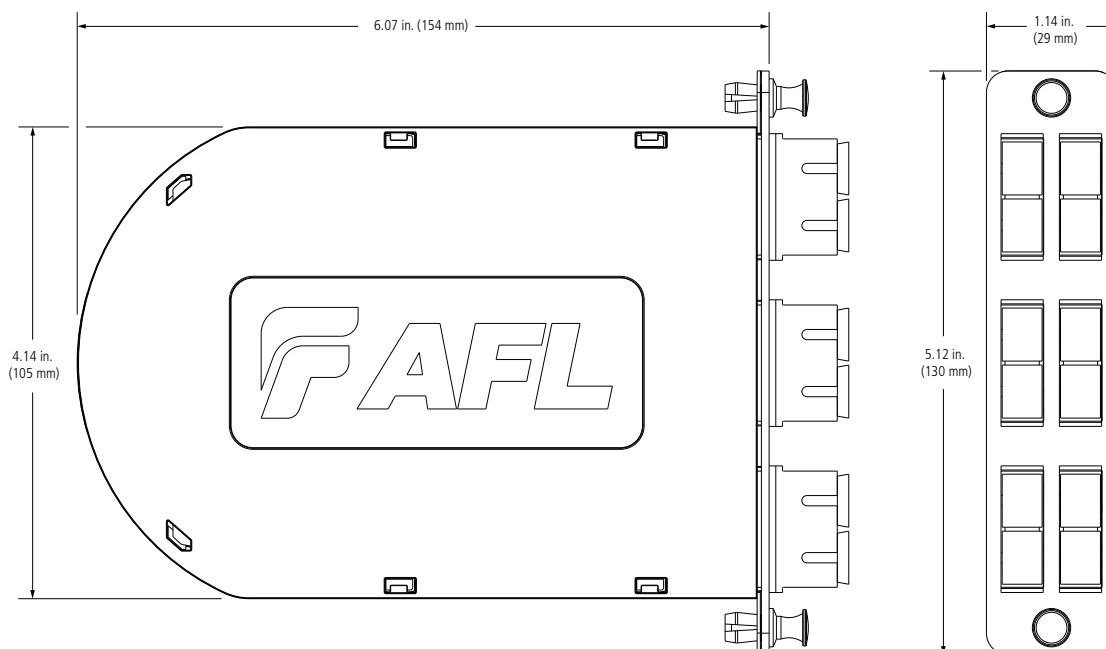
Adapter Color Codes

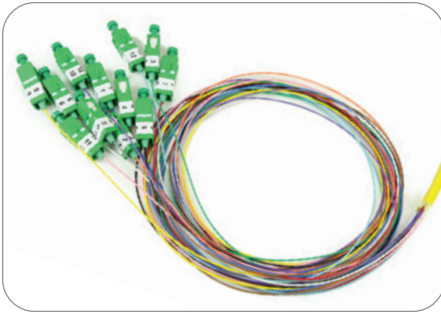
| FIBER AND POLISH TYPE | ADAPTER COLOR |
|--|---------------|
| Single-mode, APC (Angled Physical Contact) | Green |
| Single-mode, UPC (Ultra Physical Contact) | Blue |
| Multimode OM1, PC (Physical Contact) | Beige |
| Multimode OM2, PC (Physical Contact) | Black |
| Multimode OM4, PC (Physical Contact) | Aqua |

Poli-MOD Kits/Accessories

| DESCRIPTION | AFL NO. |
|--|------------|
| Poli-MOD Cable Mounting Clip Kit | FM003053 |
| Poli-MOD Spiral Wrap Kit | FM003280 |
| Poli-MOD Splice Chip Kit with 24 Splice Sleeves | FM003711 |
| Fusion Splice Sleeve, FP-03, 40 mm | S000206 |
| Adapter Bracket for Mounting Single Poli-MOD, angled | FM000948-B |
| Adapter Bracket for Mounting Single Poli-MOD, flat | FM003589-B |
| Corning CCH and PCH 145 mm Adapter Bracket | FM001636 |
| DIN Mount Kit, LGX® 118 | FM003394 |

Dimensions





Pigtail Assemblies for Patch and Splice Panels

AFL's pigtail assemblies help eliminate labor-intensive field termination, yet guarantee reliable performance. Featuring a unified construction allowing for easy fiber identification and rapid installation, these assemblies are built to exceed all TIA and Telcordia® requirements.

Ordering Information

| POLISH | FIBER TYPE | CONNECTOR INTERFACE AFL NO. | | |
|--|------------|-----------------------------|---------------|---------------|
| | | SC | ST | LC |
| CPC PIGTAIL KITS, 3 METER, 12-FIBER | | | | |
| APC | SMF | C152906-0003 | — | CS007719-0003 |
| UPC | SMF | C165943-0003 | C152671-0003 | C223369-0003 |
| PC | 62.5 μm | C165463-0003 | C223366-0003 | C223373-0003 |
| PC | 50 μm LO | CS007673-0003 | CS007675-0003 | CS007677-0003 |

| 900 μm TIGHT-BUFFERED PIGTAIL KITS, 3 METER, 12-FIBER | | | | |
|--|----------|---------------|---------------|---------------|
| APC | SMF | C223312-0003 | — | CS002951-0003 |
| UPC | SMF | C223492-0003 | CS003979-0003 | CS001037-0003 |
| PC | 62.5 μm | CS000386-0003 | CS002150-0003 | CS002067-0003 |
| PC | 50 μm LO | CS003056-0003 | CS003980-0003 | CS003058-0003 |

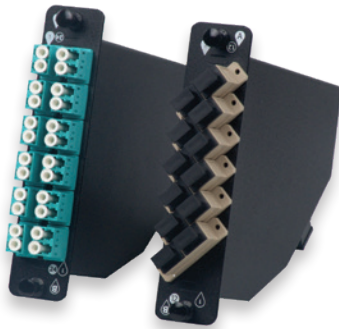
Specifications

| PARAMETER | | VALUE | | | | | |
|--------------------------|-----|--------------|----------|----------|----------|----------|----------|
| | | LC | SC | ST | FC | LC-APC | SC-APC |
| Insertion Loss | | | | | | | |
| SM | MAX | 0.3 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 |
| MM | MAX | 0.5 | 0.5 | 0.5 | 0.5 | | |
| Return Loss | | | | | | | |
| SM | MIN | -55.0 dB | -55.0 dB | -55.0 dB | -55.0 dB | -65.0 dB | -65.0 dB |
| MM | MIN | -20.0 dB | | | | | |
| Cable Bend Radius | | | | | | | |
| Bend Insensitive | MIN | <15 mm | | | | | |
| Operating Temperature | | 0°C to +70°C | | | | | |

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|-------------------|--------------------------------|
| Telcordia | GR-409 | Cable |
| TIA | GR-326 | Connector |
| ITU | G.652-D, G.657-A1 | Single-mode Optical Fiber Only |

Telcordia is a registered trademark of Telcordia Technologies, Inc.



Xpress Fiber Management® (XFM) MPO Optical Cassettes

AFL's Xpress Fiber Management Optical Cassette product line is a family of preterminated fanout modules that streamline the deployment of optical network infrastructure. The primary function of these products is to break out multi-fiber ribbon connectors to simplex or duplex style connectors for connection to adjacent network elements.

The Xpress Fiber Management Optical Cassette solution features low-loss MPO style trunk cable assemblies. These cassettes are available in the industry standard LGX® footprint as well as a selection of Corning Cable Systems™ footprints to support embedded base installations. All modules feature a durable powder coat finish, and are compatible with all 1U-4U LANSysSystem platforms. All modules are clearly labeled with a silk-screened "A" and "B" positioning reference to ensure proper polarity is maintained in the network, referenced to the polarity convention being deployed. Method "F" is also available.

Applications

- Data centers
- LAN, WAN and SAN
- Interoffice cross-connects
- Campus environments

Features

- 12- and 24- port configurations
- Single-slot LGX packages
- Compatible with LANSysSystem and WME hardware
- Available in black with rear MPO connection(s)
- SMF, 62.5 μm MMF and 50 μm MMF supported
- SC- and LC-MPO standard configurations
- ST- and FC-MPO configurations available on special order

Optical Performance Data

| PARAMETER | Single-mode Fiber (OS1) | | | | | Multimode Fiber (OM1, OM2 and 50 μm Laser Optimized) | | |
|------------------|-------------------------|-------------|----------|-------------|----------|--|----------|----------|
| | LC - MPO | LCAPC - MPO | SC - MPO | SCAPC - MPO | ST - MPO | LC - MPO | SC - MPO | ST - MPO |
| Max IL (dB) | 1.15 | 1.15 | 1.3 | 1.3 | 1.3 | 1.15 | 1.3 | 1.3 |
| Typical IL (dB) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Reflectance (dB) | -55 | -65 | -55 | -65 | -55 | -30 | -30 | -30 |

Notes:

1. Single-mode IL test wavelengths 1310 nm and 1550 nm
2. Multimode IL test wavelengths 850 nm and 1300 nm
3. Single-mode RL test wavelengths 1310 nm and 1550 nm
4. Multimode RL test wavelengths 850 nm and 1300 nm

Ordering Information (Method A/B)

| FIBER COUNT, CONNECTOR OPTION | SINGLE-MODE | | MULTIMODE | |
|-------------------------------|-----------------------|-----------------------|---------------------------------|-------------------------------------|
| | UPC - MPO (MALE, APC) | APC - MPO (Male, APC) | 62.5 μm OM1 PC - MPO (Male, PC) | 50 μm LOMMF OM4 PC - MPO (Male, PC) |
| 12F, LC | FM000090-B | FM001477-B | FM000092-B | FM000273-B |
| 24F, LC | FM000691-B | FM001653-B | FM000663-B | FM000692-B |
| 12F, SC | FM000087-B | FM001465-B | FM000089-B | FM000272-B |
| 12F, ST | FM000093-B | N/A | FM000095-B | FM000274-B |

Ordering Information (Method F)

| FIBER COUNT, CONNECTOR OPTION | SINGLE-MODE | | MULTIMODE |
|-------------------------------|-----------------------|-----------------------|-------------------------------------|
| | UPC - MPO (MALE, APC) | APC - MPO (Male, APC) | 50 μm LOMMF OM4 PC - MPO (Male, PC) |
| 12F, LC | FM004756-B | FM004757-B | FM004832-B |
| 24F, LC | FM004653-B | FM004831-B | FM004613-B |

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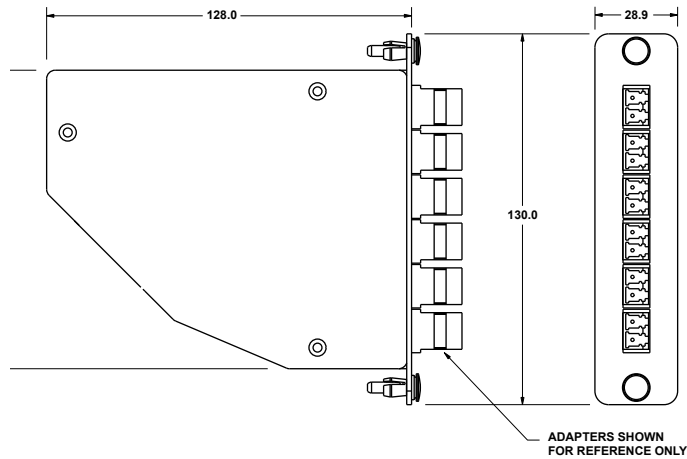
Xpress Fiber Management® (XFM) MPO Optical Cassettes

Ordering Information – Accessories

| DESCRIPTION | AFL NO. |
|------------------------|----------|
| 145 mm Adapter Bracket | FM001636 |

NOTE: Allows standard LGX modules, such as AFL's Poli-Mod Interconnect Module and the XFM Optical Cassette, to be mounted into existing Corning Cable Systems™ CCH series and PCH series racks and wall mount products.

Dimensions



Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|----------------------|
| ANSI/TIA/EIA | ANSI/TIA/EIA-568-B.3 |
| Telcordia | GR-326 |
| Telcordia | GR-1435 |



24 Port ST Loaded Mini DIN Enclosure



12 Port SC Loaded Mini DIN Enclosure



FDE-24LC1-P
24F LC Mini DIN enclosure for patching

Mini DIN Rail Mounted Enclosure

The Mini DIN Rail Mounted Enclosure's compact design gives it the ideal form factor for installation into densely populated industrial cabinets.

Features and Benefits

- Small size making it very versatile
- Accommodates up to 12 or 24 x SC, ST or LC duplex adapters
- Ideal for housing pre-terminated loose tube and tight buffered cables
- Top and bottom cable entry to suit installation environment

Applications

- Process automation and control
- Intelligent transport system
- Rail signalling and control networks
- Power systems and control
- MTP pre-terminated cabling solutions

Technical Specifications

| DESCRIPTION | 12 PORT MINI DIN RAIL ENCLOSURE | 24 PORT (PATCH ONLY) MINI DIN RAIL ENCLOSURE |
|-----------------------------------|--|--|
| Dimensions W x H x D (mm) | 54.5 x 155 x 113 | 109 x 155 x 113 |
| Weight (lbs) | 1.5 | 3.0 |
| Maximum Number of Splices | 12 | N/A |
| Maximum Fiber Count (Front Panel) | 12 SC, ST and LC 24 | SC, ST |
| Incoming Cable Ports | 1 top and bottom | 2 top and bottom (includes internal routing hole for single cable 24 fiber installation) |
| Material and Color | Powder coated Mercury Grey | |
| Standard Accessories | Cable gland, central strain relief post, DIN rail mounting clip, laser badge, fiber clips and through adapters | |

Ordering Information

| | | | | | | |
|----------------------------|---|--------------------|----------------------------|-------------------|---|--|
| FDE | — | 12 | SC | 1 | — | S |
| Fiber DIN Enclosure | | Fiber Count | Adapter Type | Fiber Type | | Enclosure Function |
| | | 06 ¹ | SC | 1 – 9/125 μm | | S ³ – Splicing |
| | | 12 | SCA ⁵ (SM only) | SM OS1 | | M ^{2,4} – MTP pre-terminated enclosure |
| | | 24 ² | LC | 3 – 50/125 μm | | P – Patching pre-terminated or direct terminated cables only |
| | | | LCA ⁵ (SM only) | MM OM3 | | |
| | | | ST | 4 – 50/125 μm | | |
| | | | | MM OM4 | | |
| | | | | 6 – 62.5/125 μm | | |
| | | | | MM OM1 | | |

Notes

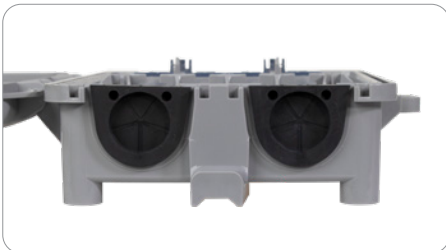
1. Uses 12 port plates, empty ports are filled with blanking plugs
2. 24 fiber option for patch (P) and MTP pre-terminated (M) enclosures only
3. Splicing enclosures include splice tray, protectors and pigtailed for 06 and 12 fiber configurations
4. LC OM3, OM4 and OS1/2 only
5. SCA and LCA options stand for APC adapter types.

Accessories

Contact AFL for ordering information on additional accessories to be used with the FDE product line such as pigtailed, splicing consumables, termination consumables, and pre-tailed fiber optic cable assemblies.



Shown with four SC/APC adapters, security cover and grounding



"U-Grommet" Entry Option



1/2" Hole Entry Option

OptiNID® Duo Optical Demarcation Enclosure

AFL's OptiNID (OPN) Duo Optical Demarcation Enclosure is the latest entry in the OptiNID fiber optic demarcation family of products. The ultra-compact OPN Duo is designed with flexibility in mind with the capability to house up to 4 SC simplex or LC duplex adapters, along with the ability to house up to 18 single fiber or 6 mass fusion splices. The OPN Duo is also optimized for the use of AFL's FASTConnect® or FUSEConnect® field-installable connectors. The base of the enclosure houses an insert which incorporates fiber routing, splice tray, adapter plate, and cable retention features. The OPN Duo also has several optional features such as a clear splice/security cover for protecting provider-side connectors or a grounding plate for grounding armored or toneable drop cables. The OPN Duo is available with two different base cable entry options, either a pair of U-shaped "drop-in" style grommets, or two half-inch ports allowing for a variety of different entry accessories.

Features

- Integrated splice tray for up to 18 single fusion splices or 6 mass fusion
- Optional clear splice/security cover covers splices, pigtails and provider-side connectors
- Snap lock cover with optional 3/8" screw for added security
- "U-Grommets" provide easy drop-in cable entry or two half-inch ports for a variety of cable entry options
- Integrated mounting points external to the enclosure allow mounting to walls or poles without drilling holes through the box, creating leak paths

Applications

- FTTx – Fiber-to-the-Home (single family, multi-dwelling), Fiber-to-the-Business (multi-tenant)
- Wireless – Macro and small cell

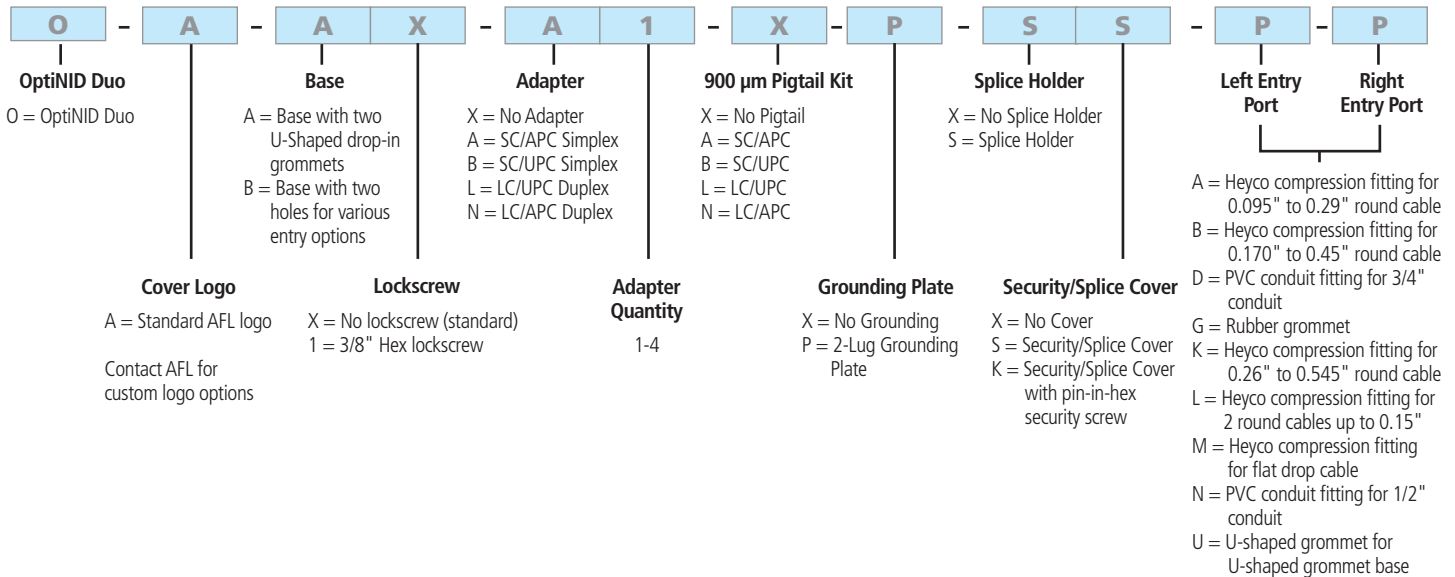
Specifications

| PARAMETER | VALUES |
|--|--|
| Dimensions – H x W x D | 9.6 x 7.0 x 2.7 inches (24.4 x 17.7 x 6.8 cm) |
| Material | UL® listed flame retardant thermoplastic alloy |
| UV Resistance (Days Exposed) | 60 per ASTM-G26-84 |
| Flammability | UL94-5VA |
| Impact Test | -40°F (-40°C), 10 ft.-lbs. on all external surfaces |
| Chemical Resistance 30 Days at 100°F and 95% RH | Resists chipping and/or cracking when subject to house paint, wasp spray, sulfuric acid, kerosene and sodium hydroxide |
| Drop Test | -40°F (-40°C), 3 ft. onto concrete surface 4 times |
| Rain | 24 hours at 10 psi |
| Temperature Cycling with Humidity | 30 day cycling from -40°F to 149°F (-40°C to 65°C) with 95% RH |

continued
→

OptiNID® Duo Optical Demarcation Enclosure

Ordering Information

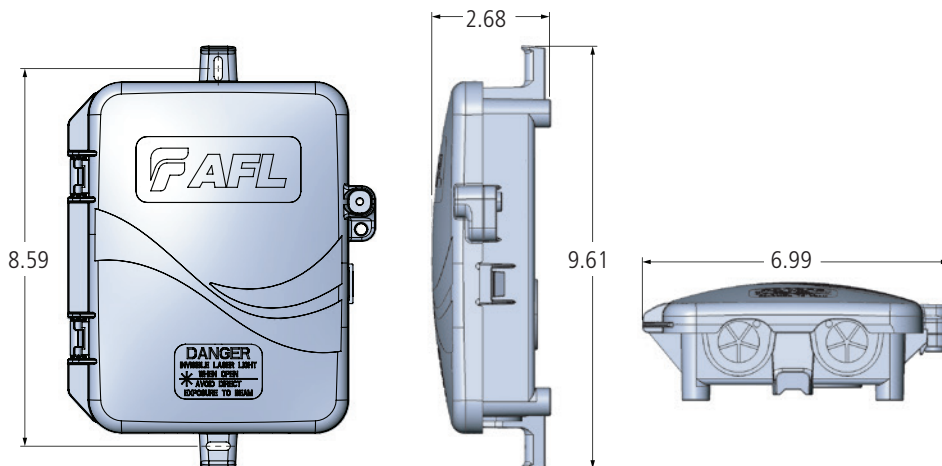


Ordering Information – Accessories

| DESCRIPTION | AFL NO. |
|---------------------------------------|----------------|
| OptiNID Duo Splice Module, Pack of 20 | AX-TRAY-MOD-20 |

NOTE: Options A-N available with the two-hole entry option only

Dimensions (in inches)



Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|----------------|
| Telcordia | GR-49, GR-2898 |

Contact AFL for further details.



OptiNID® 500 Optical Demarcation Closure

The OptiNID (OPN) 500 is an optical demarcation closure designed for use in either indoor or outdoor environments. Small form factor for FTTH demarcation applications, the closure is capable of housing up to six bulkhead adapters in one 118 LGX® compatible adapter plate, and is equipped with an integrated splice tray, which holds up to six single fusion splices. The OPN-500 can be either wall or pole-mounted.

Features

- Weather-resistant thermoplastic alloy
- Self-latching, hinged cover design allows easy access without loose parts
- Capacity for one 118 LGX compatible adapter plate
- Provider override for customer lock
- 3/4" NPT conduit fitting, compression cable fittings or grommets entry ports

Specifications

| PARAMETER | VALUES |
|--|--|
| Dielectric Strength | Minimum 2500 Vrms for 1 minute |
| Impact Test | -40°F (-40°C), 5 ft.-lbs on all external surfaces |
| Drop Test | -40°F (-40°C), 5 ft onto concrete surface four times |
| Rain | 24 hours at 10 psi |
| UV Resistance (Days Exposed) | 60 per ASTM-G26-84 |
| Salt Fog (Days Exposed) | 60 per ASTM-BLL7-90 |
| Flammability | UL94-5V |
| Chemical Resistance 30 Days at 100°F and 95% RH | Resists chipping and/or cracking when subject to house paint, wasp spray, sulfuric acid, kerosene and sodium hydroxide |
| Material | UL® listed flame retardant thermoplastic alloy |
| Dimensions (H x W x D) in. (cm) | 6.3 x 7.8 x 2.0 (15.7 x 19.7 x 5.0) |
| Cable Entrance in. (cm) diameter - Input | 1 x 3/4" NPT (1.130"), 2 x 1/2" NPT (0.875") |
| Covers | Standard, molded-in snap finger and "F" termination |
| Operating Temperature Range – °F (°C) | -40 to 140 (-40 to 60) |

Ordering Information

| DESCRIPTION | AFL NO. |
|--|----------|
| BASE PRODUCT ^{1,2} | |
| OptiNID OPN-500, No Adapters | DM001021 |
| OptiNID OPN-500, 1 x SC/UPC Adapter | DM000550 |
| OptiNID OPN-500, 1 x SC/APC Adapter | DM000766 |
| OptiNID OPN-500, 6 x SC/UPC Adapters | DM000871 |
| OptiNID OPN-500, 6 x SC/UPC Adapters, 6 x 1 m 900 µm Pigtailed | DM001109 |
| ACCESSORIES ³ | |
| Heyco M3234 Compression Fitting, 18 mm to 11 mm Grip (includes 4) – Left Port Only | DM001171 |
| Kit, Six-Position Splice Chip, (includes 10) | DM000870 |

Notes:

1. All standard OPN-500 configurations come equipped with a 3/4" NPT fitting, rubber grommet and Heyco 3231 compression fitting, along with a splice chip for six single fusion splices.
2. Contact AFL customer service for additional configurations.
3. See OptiNID Accessory Page for additional kits.

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OptiNID® 760XL Optical Demarcation Closure

The OptiNID (OPN) 760XL is an optical demarcation closure designed for use in either indoor or outdoor environments. It is capable of housing up to 24 bulkhead adapters in two 118 LGX® compatible adapter plates and is equipped with a splice tray (LL-2425), which holds up to 32 single fusion splices. The OPN-760XL can be either wall or pole-mounted.

Features

- Capacity for up to two 118 LGX compatible adapter plates
- Rugged weather-resistant thermoplastic alloy
- Self-latching, hinged cover design allows easy access without loose parts
- Slip-in grommets allow pre-connectorized cable deployment
- Provider override is provided so that technician can override customer lock
- Security cover option available

Specifications

| PARAMETER | VALUES |
|---|---|
| Dielectric Strength | Minimum 2500 Vrms for 1 minute |
| High Temperature Storage/Mold Stress | 14 days at 159°F (70.55 °C) |
| Temperature Cycling with Humidity | 150 day cycling from 40-140°F (4.44-60°C) with 95% RH |
| Impact Test | -40°F (-40°C), 5*/lbs on all external surfaces |
| Drop Test | -40°F (-40°C), 5* (12.7 cm) onto concrete surface 4 times |
| Rain | 24 hours at 10 psi |
| UV Resistance (Days Exposed) | 60 per ASTM-G26-84 |
| Salt Fog (Days Exposed) | 60 per ASTM-BLL7-90 |
| Flammability | UL94-5V |
| Chemical Resistance 30 Days at 100 °F and 95% RH Subject to: | Resists chipping and/or cracking when subject to: house paint, wasp spray, sulfuric acid, kerosene and sodium hydroxide |
| Material | UL® listed flame retardant thermoplastic alloy |
| Dimensions (H x W x D) in. (cm) | 13 x 13 x 3.75 (32.5 x 32.5 x 9.5) |
| Cable Entrances in. (cm) diameter—Input | 4 x 0.875 (2.2)—3/4" conduit |
| Covers | Standard – molded-in snap finger and 3/8" hex head fastener |



OPN-760XL with optional security cover kit



OPN-760XL with 3/4" Pipe Fitting Transition Kit



3/4" Pipe Fitting Transition Kit

Ordering Information

| DESCRIPTION | AFL NO. |
|---|----------|
| BASE PRODUCT ^{1,2} | |
| OptiNID OPN-760XL, No Adapters, No Security Cover | DM001000 |
| OptiNID OPN-760XL, No Adapters, Security Cover | DM001022 |
| ACCESSORIES ³ | |
| 3/4" Pipe Fitting Transition Kit (includes 2) | DM001174 |
| OPN-760XL Security Cover Kit | DM000923 |
| OPN-760XL Pole Mounting Kit | DM000927 |

Notes:

1. All standard OPN-760XL configurations come equipped with four slip-in rubber grommets and a splice tray equipped for 32 single fusion splices.
2. Contact AFL customer service for additional configurations.
3. See OptiNID Accessory Page for additional kits.



Stainless Steel Fiber Optic Tubes

As the inventor and owner of the technology for placing optical fibers into stainless steel tubes, AFL offers a range of tube sizes and fiber counts for a variety of applications. Each tube is flooded with a thixotropic filling compound and hermetically sealed to protect the enclosed fibers from environmental degradation. This product is sometimes referred to as FIST (Fiber in Steel Tube) or FIMT (Fiber in Metal Tube).

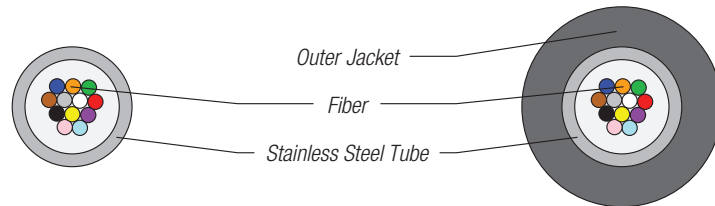
Jacket Options

AFL can encapsulate any of our stainless steel tubes with any of the following polymers:

- Hytrel™
- Santoprene™
- Polyethylene
- Polypropylene
- Nylon
- PVDF



Cable Components



Applications

- Umbilical Cables
- Downhole Cables for Oil & Gas
- Towed Arrays
- High Temperature Cables
- Hybrid Cables
- Sensor Cable
- OPGW

Specifications (without jacketing)

| OPTION NUMBER | MAXIMUM FIBER COUNT | OUTSIDE DIAMETER inches (mm) | INSIDE DIAMETER inches (mm) | WALL THICKNESS inches (mm) |
|---------------|---------------------|------------------------------|-----------------------------|----------------------------|
| 1 | 3 | 0.046 (1.17) | 0.036 (0.91) | 0.005 (0.127) |
| 2 | 4 | 0.052 (1.32) | 0.042 (1.07) | 0.005 (0.127) |
| 3 | 4 | 0.055 (1.40) | 0.039 (1.00) | 0.008 (0.200) |
| 4 | 6 | 0.065 (1.65) | 0.049 (1.25) | 0.008 (0.200) |
| 5 | 6 | 0.071 (1.80) | 0.055 (1.40) | 0.008 (0.200) |
| 6 | 8 | 0.074 (1.88) | 0.058 (1.47) | 0.008 (0.200) |
| 7 | 8 | 0.078 (1.98) | 0.062 (1.57) | 0.008 (0.200) |
| 8 | 8 | 0.079 (2.00) | 0.063 (1.60) | 0.008 (0.200) |
| 9 | 12 | 0.092 (2.33) | 0.076 (1.93) | 0.008 (0.200) |
| 10 | 16 | 0.094 (2.38) | 0.078 (1.98) | 0.008 (0.200) |
| 11 | 16 | 0.095 (2.40) | 0.079 (2.00) | 0.008 (0.200) |
| 12 | 16 | 0.098 (2.49) | 0.082 (2.08) | 0.008 (0.200) |
| 13 | 16 | 0.106 (2.69) | 0.090 (2.29) | 0.008 (0.200) |
| 14 | 24 | 0.118 (3.00) | 0.102 (2.60) | 0.008 (0.200) |
| 15 | 36 | 0.125 (3.20) | 0.109 (2.80) | 0.008 (0.200) |
| 16 | 48 | 0.134 (3.40) | 0.119 (3.00) | 0.008 (0.200) |
| 17 | 60 | 0.142 (3.60) | 0.126 (3.20) | 0.008 (0.200) |
| 18 | 72 | 0.150 (3.80) | 0.134 (3.40) | 0.008 (0.200) |
| 19 | 72 | 0.156 (3.96) | 0.140 (3.56) | 0.008 (0.200) |
| 20 | 72 | 0.158 (4.00) | 0.142 (3.60) | 0.008 (0.200) |
| 21 | 72 | 0.165 (4.20) | 0.150 (3.80) | 0.008 (0.200) |
| 22 | 96 | 0.189 (4.80) | 0.165 (4.20) | 0.012 (0.300) |

Available in Stainless Steel 304, 316 and Incoloy 825. Others sizes and materials available on request.



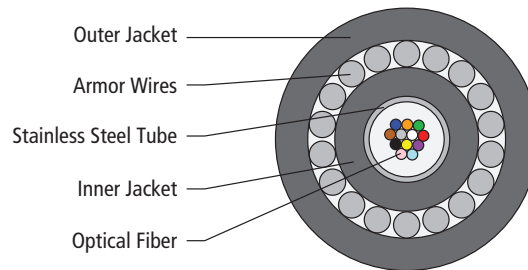
Fiber Optic Component for Umbilical Cable

AFL's Fiber Optic Component for Umbilical Cable is designed for subsea umbilical applications. AFL is the technology owner for hermetic stainless steel tubes which are the key building block for subsea cables. AFL provides customized designs to meet the most stringent requirements. AFL's Fiber Optic Component is suitable for depths of 10,000 feet and beyond.

Features

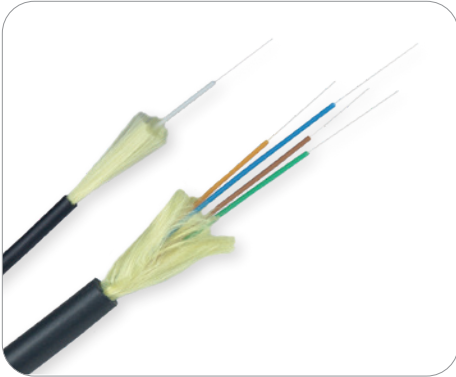
- Hermetic Stainless Steel Tube
- High Strength Wire
- Polyethylene Jacketed
- Hydrogen scavenging gel
- Long lengths
- In-line splice technology
- Proven technology
- Long life expectancy
- Custom Jacket Colors

Cable Components



Options and Specifications

| PARAMETER | VALUE |
|--------------------------------|---|
| Number of Fibers | Up to 96 |
| Fiber | Single-mode, Multimode, 100 or 200 kpsi proof test |
| Stainless Steel Tube Sizes | 2.4 mm to 4.8 mm |
| Stainless Steel Tube Types | 304 or 316L Stainless Steel |
| Armor | Stranded wires, a range of tensile specifications are available |
| Fiber Colors | TIA/EIA 598 or customer specification |
| Unit Weight | 150 to 300 kg/km |
| Overall Diameter | 7 mm to 16 mm |
| Storage Temperature Range | -40 to +85°C |
| Operating Temperature Range | -40 to +85°C |
| Breaking Load | Up to 25 kN (dependant on armor selection) |
| Bend Radius (design dependent) | 120 mm to 320 mm |
| Cable Marking | To customer specification |



Tactical Tight Buffered Cable

AFL Tactical Tight Buffered Cables are ideal for use in installations where extreme environmental conditions are present. Designed to be deployed and retrieved in the field, AFL's Tactical Tight Buffered Cables are highly resistant to damage caused by repeated impacts crushing forces, abrasion and extreme temperatures.

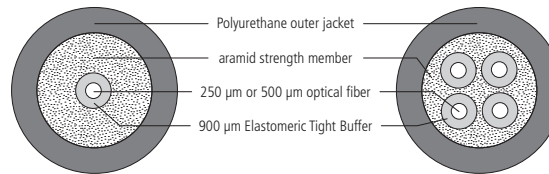
Features

- Cut resistant, fire retardant, LSZH polyurethane jacket
- Highly flexible construction allows for multiple deployments
- All aramid strength members
- Performance in wide temperature range
- UV, Fungus and water resistant
- High impact and crush resistance
- Durable in high traffic areas
- MIL-PRF-49291 qualified fiber available (-RH designation)

Applications

- Field deployment in abusive environments
- Temporary installation of critical communications lines where quick retrieval and re-use is necessary
- High Traffic areas
- Security and Sensing applications
- Broadcast deployments
- Installations in harsh environments

Cable Components



Specifications

| CHARACTERISTIC | TEST PROCEDURE | PERFORMANCE |
|------------------------------|------------------------|----------------------|
| Tensile and elongation | EIA/TIA-455-33 | |
| Operating tensile strength | EIA/TIA-455-33 | |
| Low-temp flexibility | EIA/TIA-455-37 | |
| Cyclic flexing | EIA/TIA-455-104 | 2000 |
| Crush resistance | EIA/TIA-455-41 | 1800 N/cm or greater |
| Impact | EIA/TIA-455-25 | 200 |
| Temperature cycling | EIA/TIA-455-3 | -46°C to 85°C |
| Temperature/humidity cycling | EIA/TIA-455-5 Method B | |
| Life aging | EIA/TIA-455-4 | |
| Freezing water immersion | EIA/TIA-455-98 | |

Tactical Tight Buffered Cable

Mechanical Data

| AFL NO. | FIBER COUNT | NOMINAL DIAMETER | | NOMINAL WEIGHT | | MAXIMUM TENSILE LOAD | | MINIMUM BEND RADIUS | |
|--------------|-------------|------------------|-------|----------------|---------|----------------------|-----------|---------------------|-----------|
| | | INCHES | (MM) | LBS/1000FT | (KG/KM) | LBS (N) | | INCHES (CM) | |
| | | | | | | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| X5002*551#0H | 2 | 0.22 | (5.5) | 16.2 | (25) | 400 (1780) | 130 (578) | 2.2 (5.5) | 1.1 (2.8) |
| X5004*551#0H | 4 | 0.22 | (5.5) | 16.2 | (25) | 400 (1780) | 130 (578) | 2.2 (5.5) | 1.1 (2.8) |
| X5002*581#0H | 2 | 0.23 | (5.8) | 21.5 | (32) | 400 (1780) | 130 (578) | 3.4 (8.7) | 2.3 (5.8) |
| X5004*581#0H | 4 | 0.23 | (5.8) | 21.5 | (32) | 400 (1780) | 130 (578) | 3.4 (8.7) | 2.3 (5.8) |
| X5006*611#0H | 6 | 0.24 | (6.1) | 22.2 | (33) | 400 (1780) | 130 (578) | 3.6 (9.2) | 2.4 (6.1) |
| X5008*641#0H | 8 | 0.25 | (6.4) | 28.8 | (44) | 470 (2090) | 160 (712) | 2.5 (6.4) | 1.3 (3.2) |
| X5012*641#0H | 12 | 0.25 | (6.4) | 30.8 | (47) | 470 (2090) | 160 (712) | 2.5 (6.4) | 1.3 (3.2) |

Note: Diameter and weight subject to change without notice

500 µm primary coated fiber available, replace H in AFL number with number corresponding below.

G = 500 µm Coated Optical Fiber

H = 250 µm Coated Optical Fiber

Replace asterisk (*) in AFL No. with corresponding fiber type below.

5 = 50/125 µm multimode GIGA-Link™ 600

6 = 62.5/125 µm multimode GIGA-Link™ 300

9 = Bend Insensitive G.657A1 single-mode

L = 50/125 µm OM3

C = 50/125 µm OM4

Replace hashtag (#) in AFL No. with jacket color. See Tactical Cable Ordering Guide.

Customer specified print available.

See Tactical Cable Ordering Guide AFL No. designations.

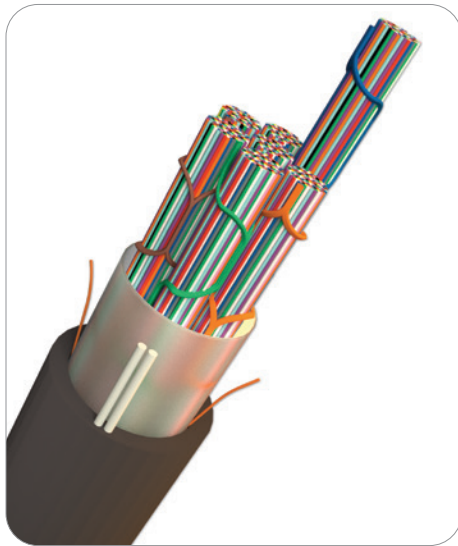
Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------------------|---|------------------------------------|
| EIA/TIA | EIA/TIA-455-33, EIA/TIA-455-37, EIA/TIA-455-104, EIA/TIA-455-41, EIA/TIA-455-25, EIA/TIA-455-3, EIA/TIA-455-5 Method B, EIA/TIA-455-4, EIA/TIA-455-98 | Fiber Optic Cable |
| U.S. Department of Defense | MIL-PRF-49291 MIL-PRF-85045 | Optical Fiber Fiber Optic Cable |

Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|----------------|
| INSTALLATION | -46°C to +85°C |
| OPERATION | -46°C to +85°C |
| STORAGE | -55°C to +85°C |

Contact AFL for further details.



Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®) – 250 μm Fiber/250 μm Pitch

The 250 μm Fiber/250 μm Pitch Wrapping Tube Cable (WTC), with SpiderWeb Ribbon® (SWR®), is an ultra-high density outside plant cable designed specifically for fiber-to-the-home (FTTH) or access markets. It is compliant with the latest issue of the outside plant cable standard, Telcordia GR-20. With an ultra-high density and a new ribbon technology called SpiderWeb Ribbon®, WTC provides the smallest cable diameter and lowest weight, high-fiber count ribbon cable in the industry. WTC with SWR® cables are available in fiber counts from 144 to 1,728.

SWR® is a bonded fiber ribbon design allowing for either a highly efficient ribbon splicing or an individual fiber breakout splicing process. This flexibility allows for a single cable design to cover a diverse set of applications from access networks to high-fiber count mass fusion splicing. With the ability to roll and conform, the SWR® provides for ultra-high density packaging in the WTC.

Features

- Collapsible ribbon reduces size of cable compared to other encapsulated or pliable ribbon technologies
- Design optimizes the fiber packing density making WTC-SWR cables the smallest ribbon cables without compromising robustness of the cable
- Small-diameter cable allows more optical fibers to be placed into crowded or limited-space pathways
- Water-blocked core
- Light weight for easy handling in the field compared to traditional cables
- Completely Gel-free for reduced time to access fiber and prep for splicing

Applications

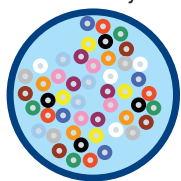
- Data Center Inter-building Connections
- Access Provider Metro Rings
- Service Provider FTTx
- Cable TV Subscriber Networks
- Metro Rail Track-side Network Links
- Suitable for Aerial Lashing, Pulled-in-duct, Air-Jetted-in-Duct
- Campus LAN

SWR Technology

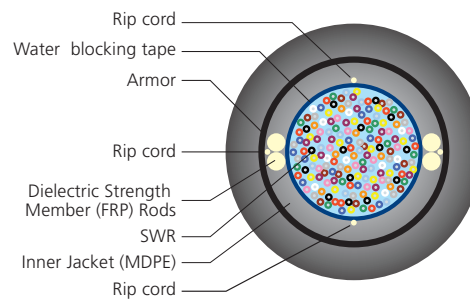


12F SWR®

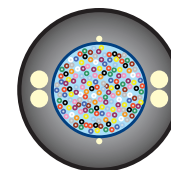
Contra-helical dual binder system



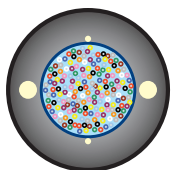
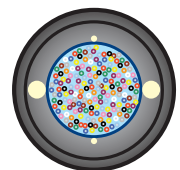
Multiple 12F SWR® Bundle



Armored 4-rod FRP (288F - 1,728F)



Non-armored 4-rod FRP (288F - 1,728F)



Non-armored & Armored 2-rod FRP (144F)

continued
→

Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®) – 250 µm Fiber/ 250 µm Pitch

Mechanical Data—Non-Armored

| DESCRIPTION | FIBER COUNT | BINDER UNIT | NOMINAL DIAMETER | WEIGHT | SHORT TERM / INSTALLATION | | LONG TERM / STORAGE / STATIC | |
|------------------------------|-------------|-------------|------------------|------------------------|---------------------------|-----------------------------|------------------------------|-----------------------------|
| | | | inches (mm) | lbs / 1,000 ft (kg/km) | MAX TENSILE LOAD lbs (N) | MIN BEND RADIUS inches (mm) | MAX TENSILE LOAD lbs (N) | MIN BEND RADIUS inches (mm) |
| ACE FIBER | | | | | | | | |
| LWSE-144-9-C-144-1-00N1D-* | 144 | 1 X 144F | 0.43 (11.0) | 61 (90) | 607 (2700) | 8.7 (221) | 182 (810) | 6.5 (165) |
| LWSE-288-9-C-288-1-00N1D-* | 288 | 1 X 288F | 0.47 (12.0) | 71 (105) | 607 (2700) | 9.5 (242) | 182 (810) | 7.1 (181) |
| LWSE-432-9-C-72-6-00N1D-* | 432 | 6 X 72F | 0.53 (13.5) | 91 (135) | 607 (2700) | 10.6 (270) | 182 (810) | 8.0 (203) |
| LWSE-576-9-C-72-8-00N1D-* | 576 | 8 X 72F | 0.59 (15.0) | 111 (165) | 607 (2700) | 11.8 (300) | 182 (810) | 8.9 (226) |
| LWSE-864-9-C-72-12-00N1D-* | 864 | 12 X 72F | 0.69 (17.5) | 145 (215) | 607 (2700) | 13.8 (351) | 182 (810) | 10.3 (262) |
| SR15E FIBER | | | | | | | | |
| LWSE-144-K-C-144-1-00N1D-* | 144 | 1 X 144F | 0.43 (11.0) | 61 (90) | 607 (2700) | 8.7 (221) | 182 (810) | 6.5 (165) |
| LWSE-288-K-C-288-1-00N1D-* | 288 | 1 X 288F | 0.47 (12.0) | 71 (105) | 607 (2700) | 9.5 (242) | 182 (810) | 7.1 (181) |
| LWSE-432-K-C-72-6-00N1D-* | 432 | 6 X 72F | 0.53 (13.5) | 91 (135) | 607 (2700) | 10.6 (270) | 182 (810) | 8.0 (203) |
| LWSE-576-K-C-72-8-00N1D-* | 576 | 8 X 72F | 0.59 (15.0) | 111 (165) | 607 (2700) | 11.8 (300) | 182 (810) | 8.9 (226) |
| LWSE-864-K-C-72-12-00N1D-* | 864 | 12 X 72F | 0.69 (17.5) | 145 (215) | 607 (2700) | 13.8 (351) | 182 (810) | 10.3 (262) |
| LWSE-1152-K-C-144-8-00N1D-* | 1152 | 8 X 144F | 0.73 (18.5) | 161 (240) | 607 (2700) | 14.6 (371) | 182 (810) | 10.9 (277) |
| LWSE-1728-K-C-144-12-00N1D-* | 1728 | 12 X 144F | 0.91 (23.0) | 242 (360) | 607 (2700) | 18.1 (460) | 182 (810) | 13.6 (346) |

* NOTE: To designate length markings in AFL No., replace asterisk * with (FT) for Feet or (M) for Meters.

Mechanical Data—Armored

| DESCRIPTION | FIBER COUNT | BINDER UNIT | NOMINAL DIAMETER | WEIGHT | SHORT TERM / INSTALLATION | | LONG TERM / STORAGE / STATIC | |
|------------------------------|-------------|-------------|------------------|------------------------|---------------------------|-----------------------------|------------------------------|-----------------------------|
| | | | inches (mm) | lbs / 1,000 ft (kg/km) | MAX TENSILE LOAD lbs (N) | MIN BEND RADIUS inches (mm) | MAX TENSILE LOAD lbs (N) | MIN BEND RADIUS inches (mm) |
| LWSE-144-9-C-144-1-10S1D-* | 144 | 1 X 144F | 0.63 (16.0) | 148 (220) | 607 (2700) | 12.6 (320) | 182 (810) | 9.5 (242) |
| LWSE-288-9-C-288-1-10S1D-* | 288 | 1 X 288F | 0.69 (17.5) | 172 (255) | 607 (2700) | 13.8 (351) | 182 (810) | 10.3 (262) |
| LWSE-432-9-C-72-6-10S1D-* | 432 | 6 X 72F | 0.75 (19.0) | 202 (300) | 607 (2700) | 15.0 (381) | 182 (810) | 11.2 (285) |
| LWSE-576-9-C-72-8-10S1D-* | 576 | 8 X 72F | 0.81 (20.5) | 235 (350) | 607 (2700) | 16.1 (409) | 182 (810) | 12.1 (307) |
| LWSE-864-9-C-72-12-10S1D-* | 864 | 12 X 72F | 0.91 (23.0) | 286 (425) | 607 (2700) | 18.1 (460) | 182 (810) | 13.6 (346) |
| LWSE-1728-K-C-144-12-10S1D-* | 1728** | 12 X 144F | 1.14 (29.0) | 410 (610) | 607 (2700) | 22.8 (579) | 182 (810) | 17.1 (435) |

NOTES:

* To designate length markings in AFL No., replace asterisk * with (FT) for Feet or (M) for Meters.

** Modified temperature performance

Optical Fiber

| FIBER COUNT | FIBER DIAMETER | FIBER PITCH | FIBER DESIGNATOR | MFD | MAXIMUM ATTENUATION (CABLED) dB/km | | |
|--------------------------------|----------------|-------------|--------------------------------|--------------|------------------------------------|---------|---------|
| | | | | | 1310 nm | 1383 nm | 1550 nm |
| Fujikura ACE (144F to 864F) | 250 µm | 250 µm | 9 (ITU-T G.652.D and G.657.A1) | 9.2 ± 0.4 µm | ≤ 0.40 | ≤ 0.40 | ≤ 0.30 |
| Fujikura SR15E (144F to 1728F) | 250 µm | 250 µm | K (ITU-T G.652.D and G.657.A1) | 8.6 ± 0.4 µm | ≤ 0.40 | ≤ 0.40 | ≤ 0.30 |

continued 

Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®) – 250 μm Fiber/ 250 μm Pitch

Stripe Ring Fiber Identification

| R NO. | STRIPE RING MARKING | R NO. | STRIPE RING MARKING | R NO. | STRIPE RING MARKING | R NO. | STRIPE RING MARKING |
|-------|---------------------|-------|---------------------|-------|---------------------|-------|---------------------|
| 1 | █ | 7 | ███ | 13 | ██████ | 19 | ██████████ |
| 2 | ██ | 8 | ████ | 14 | ███████ | 20 | ████████ |
| 3 | ███ | 9 | █████ | 15 | ██████ | 21 | █████████ |
| 4 | ████ | 10 | █████ | 16 | ██████ | 22 | █████████ |
| 5 | █████ | 11 | ██████ | 17 | ███████ | 23 | ██████████ |
| 6 | ██████ | 12 | ███████ | 18 | ████████ | 24 | ██████████ |

| FIBER COUNT | BINDER UNIT (BU) | | | | | | | | | | | | RING MARKINGS | |
|-------------|------------------|---|---|---|---|---|---|---|---|---|----|----|-------------------|-------------------|
| 144F | No Binder Unit | | | | | | | | | | | | 1-12 Ring Marking | |
| 288F | No Binder Unit | | | | | | | | | | | | 1-24 Ring Marking | |
| 432F | 6 Binder Units | 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | 1-6 Ring Marking |
| 576F | 8 Binder Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | |
| 864F | 12 Binder Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1-12 Ring Marking |
| 1152F | 8 Binder Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | |
| 1728F | 12 Binder Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1-12 Ring Marking |

Temperature Specifications

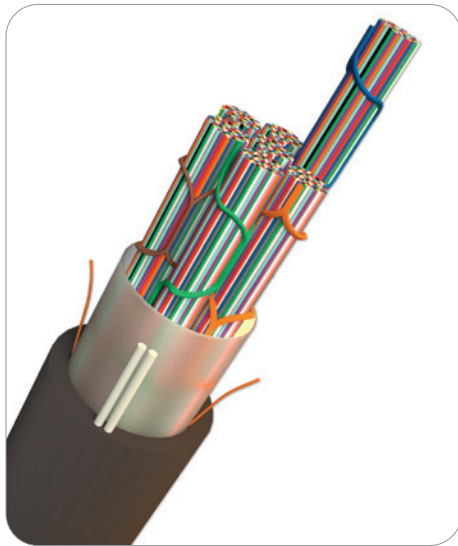
| TEMPERATURE RANGE | |
|-------------------|-------------------------------------|
| OPERATION | -40°F to +158°F (-40°C to +70°C) |
| STORAGE | -40°F to +158°F (-40°C to +70°C) |
| INSTALLATION | -22°F to +140°F (-30°C to +60°C) |

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------|-------------------|
| Telcordia | GR-20 | Fiber Optic Cable |

Contact AFL for further details.

Fiber Optic Cable



Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®) – 200 μm Fiber/250 μm Pitch

The 200 μm fiber/250 μm pitch Wrapping Tube Cable (WTC), with SpiderWeb Ribbon® (SWR®), is an ultra-high density outside plant cable designed specifically for fiber-to-the-home (FTTH) or access markets. It is compliant with the latest issue of the outside plant cable standard, Telcordia GR-20. With an ultra-high density and a new ribbon technology called SpiderWeb Ribbon®, WTC provides the smallest cable diameter and lowest weight, high-fiber count ribbon cable in the industry. WTC with SWR® cables are available in fiber counts of 864, 1,728, 3,456 and 6,912.

SWR® is a bonded fiber ribbon design allowing for either a highly efficient ribbon splicing or an individual fiber breakout splicing process. This flexibility allows for a single cable design to cover a diverse set of applications from access networks to high-fiber count mass fusion splicing. With the ability to roll and conform, the SWR® provides for ultra-high density packaging in the WTC.

Features

- Collapsible ribbon reduces size of cable compared to other encapsulated or pliable ribbon technologies
- Design optimizes the fiber packing density making WTC-SWR cables the smallest ribbon cables without compromising robustness of the cable
- Small-diameter cable allows more optical fibers to be placed into crowded or limited-space pathways
- Water-blocked core
- Light weight for easy handling in the field compared to traditional cables
- Completely Gel-free for reduced time to access fiber and prep for splicing

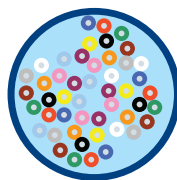
Applications

- Data Center Inter-building Connections
- Access Provider Metro Rings
- Service Provider FTTx
- Cable TV Subscriber Networks
- Metro Rail Track-side Network Links
- Suitable for Aerial Lashing, Pulled-in-duct, Air-Jetted-in-Duct
- Campus LAN

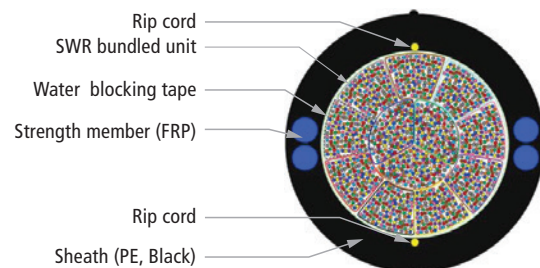
SWR Technology



12F SWR



Multiple 12F SWR Bundle



Non-armored
(864F, 1728F, 3456F
and 6912F)

continued
→

Wrapping Tube Cable (WTC) with SWR® – 200 µm Fiber/250 µm Pitch

Mechanical Data—Non-Armored

| DESCRIPTION | FIBER COUNT | BINDER UNIT | NOMINAL DIAMETER | WEIGHT lbs/1,000 ft (kg/km) | SHORT TERM/INSTALLATION | | LONG TERM/STORAGE/STATIC | |
|-------------------------------|-------------|-------------|------------------|-----------------------------------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|
| | | | inches (mm) | | MAX TENSILE LOAD lbs (N) | MIN BEND RADIUS inches (mm) | MAX TENSILE LOAD lbs (N) | MIN BEND RADIUS inches (mm) |
| LWSE-864-BE-C-72-12-00N1D-* | 864 | 12 X 72F | 0.63 (16.0) | 124 (185) | 607 (2700) | 12.6 (320) | 182 (810) | 9.5 (241) |
| LWSE-1728-BE-C-144-12-00N1D-* | 1728 | 12 X 144F | 0.85 (21.5) | 202 (300) | 607 (2700) | 16.9 (430) | 182 (810) | 12.7 (323) |
| LWSE-3456-BE-C-144-24-00N1D-* | 3456 | 24 X 144F | 1.04 (26.5) | 292 (435) | 607 (2700) | 20.9 (530) | 182 (810) | 15.7 (399) |
| LWSE-6912-BE-C-288-24-00N1D-* | 6912 | 24 X 288F | 1.38 (35.0) | 514 (765) | 607 (2700) | 27.6 (700) | 182 (810) | 20.7 (525) |

* NOTE: To designate length markings in AFL No., replace asterisk * with (FT) for Feet or (M) for Meters.

Optical Fiber

| FIBER COUNT | FIBER DIA. | FIBER PITCH | FIBER DESIGNATOR | MFD | MAXIMUM ATTENUATION (CABLED) dB/km | | |
|--|------------|-------------|---------------------------------|--------------|---------------------------------------|--------------|--------------|
| | | | | | 1310 nm | 1383 nm | 1550 nm |
| Fujikura SR15E-200 (864, 1728, 3456, 6912) | 200 µm | 250 µm | BE (ITU-T G.652.D and G.657.A1) | 8.6 ± 0.4 µm | ≤ 0.35 dB/km | ≤ 0.35 dB/km | ≤ 0.25 dB/km |

Stripe Ring Fiber Identification — 864, 1728, 3456

| R NO. | STRIPE RING MARKING | R NO. | STRIPE RING MARKING | R NO. | STRIPE RING MARKING |
|-------|---------------------|-------|---------------------|-------|---------------------|
| 1 | █ | 5 | ██ | 9 | ████ |
| 2 | ██ | 6 | ███ | 10 | █████ |
| 3 | ███ | 7 | ████ | 11 | █████ |
| 4 | ████ | 8 | █████ | 12 | █████ |

Stripe Ring Fiber Identification — 6,912

| R NO. | STRIPE RING MARKING | R NO. | STRIPE RING MARKING | R NO. | STRIPE RING MARKING | R NO. | STRIPE RING MARKING |
|-------|---------------------|-------|---------------------|-------|---------------------|-------|---------------------|
| 1 | █ | 7 | ███ | 13 | ██████ | 19 | ██████████ |
| 2 | ██ | 8 | ████ | 14 | ███████ | 20 | ██████████ |
| 3 | ███ | 9 | █████ | 15 | ███████ | 21 | ██████████ |
| 4 | ████ | 10 | █████ | 16 | ███████ | 22 | ██████████ |
| 5 | █████ | 11 | █████ | 17 | ███████ | 23 | ██████████ |
| 6 | █████ | 12 | █████ | 18 | ███████ | 24 | ██████████ |

| FIBER COUNT | BINDER UNIT (BU) | RING MARKINGS |
|-------------|------------------|-------------------|
| 864F | 12 Binder Units | 1-6 Ring Marking |
| 1728F | 12 Binder Units | 1-12 Ring Marking |
| 3456F | 24 Binder Units* | 1-12 Ring Marking |
| 6912F | 24 Binder Units* | 1-24 Ring Marking |

*For binder units 13-24, the second binder unit is clear

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------|-------------------|
| Telcordia | GR-20 | Fiber Optic Cable |

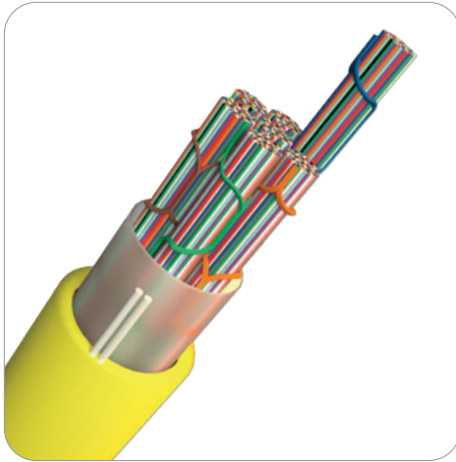
Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|----------------------------------|
| OPERATION | -40°F to +158°F (-40°C to +70°C) |
| STORAGE | -40°F to +158°F (-40°C to +70°C) |
| INSTALLATION | -22°F to +140°F (-30°C to +60°C) |

Contact AFL for further details.

AFLglobal.com | 800.235.3423

Fiber Optic Cable



Flame-Retardant Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®)

Flame-retardant (FR) Wrapping Tube Cable (WTC) with SpiderWeb Ribbon (SWR) is a high-density fiber optic ribbon cable intended for inside plant and indoor/outdoor network applications where riser-rated products are required. The FR-WTC-SWR incorporates the leading-edge SpiderWeb Ribbon technology in a robust, flame-retardant cable package that can be used within buildings and, because of the core water-blocking feature, can also be routed outside provided the cable is housed within covered pathway spaces including duct-banks and cable trays.

The FR-WTC-SWR product set is available in LSZH, UL 1666 Riser Rated, CPR Classification, non-armored 250 μm SR15E fiber (288F) and 200 μm SR15E-200 fiber (864F and 1728F) constructions.

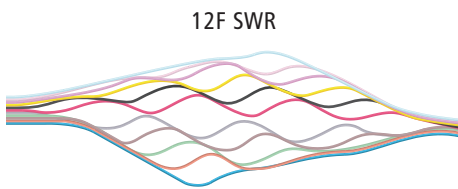
Features

- Collapsible ribbon reduces size of cable compared to other encapsulated or pliable ribbon technologies
- Design optimizes the fiber packing density making WTC-SWR cables the smallest ribbon cables without compromising robustness of the cable
- Small-diameter cable allows more optical fibers to be placed into crowded or limited-space pathways
- Water-blocked core
- Light weight for easy handling in the field compared to traditional cables
- Completely Gel-free for reduced time to access fiber and prep for splicing

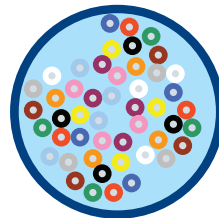
Applications

- Riser spaces within build structures
- Data Center Inter-building Connections

SWR Technology

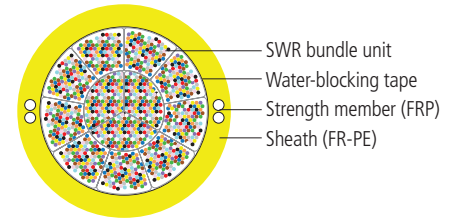


12F SWR
Contra-helical dual binder system



Multiple 12F SWR bundle
72F OR 144F bundles
depending on cable fiber count

Cable Components



OFNR-LS
Non-armored
(288F, 864F, 1728F)

continued
→

Flame-Retardant Wrapping Tube Cable (WTC) with SpiderWeb Ribbon® (SWR®)

Mechanical Data—Non-Armored

| DESCRIPTION | EN 13501-6 CLASSIFICATION | FIBER COUNT | BINDER UNIT | NOMINAL DIAMETER | WEIGHT | SHORT TERM / INSTALLATION | | LONG TERM / STORAGE /STATIC | |
|----------------------------------|---------------------------|-------------|-------------|------------------|-----------|---------------------------|--------------------------|-----------------------------|--------------------------|
| | | | | inches (mm) | | lbs/1,000 ft (kg/km) | MAX TENSILE LOAD lbs (N) | MIN BEND RADIUS inches (mm) | MAX TENSILE LOAD lbs (N) |
| 250 µm SR15E FIBER | | | | | | | | | |
| FR-OGNM12WTZTWBE SR15Ex288C | Cca-s1a,d0,a1 | 288 | 4 X 72F | 0.49 (12.5) | 108 (160) | 297 (1320) | 7.4 (188) | 89 (396) | 4.9 (125) |
| 200 µm SR15E FIBER | | | | | | | | | |
| FR-OGNM12WTZTWBE SR15E-200x864C | Cca-s2,d2,a1 | 864 | 12 X 72F | 0.65 (16.5) | 181 (270) | 297 (1320) | 9.7 (248) | 89 (396) | 6.5 (165) |
| FR-OGNM12WTZTWBE SR15E-200x1728C | Cca-s1,d0,a1 | 1728 | 12 X 144F | 0.85 (21.5) | 276 (410) | 297 (1320) | 12.7 (323) | 89 (396) | 8.5 (215) |

Optical Fiber

| OPTICAL FIBER (FIBER COUNT) | FIBER DIA. | FIBER PITCH | OPTICAL FIBER STANDARD | MFD | MAXIMUM ATTENUATION (CABLED) dB/km | | |
|----------------------------------|------------|-------------|---------------------------------|--------------|------------------------------------|--------------|--------------|
| | | | | | 1310 nm | 1383 nm | 1550 nm |
| Fujikura SR15E (288F) | 250 µm | 250 µm | K (ITU-T G.652D/G.657.A1) | 8.6 ± 0.4 µm | ≤ 0.35 dB/km | ≤ 0.35 dB/km | ≤ 0.25 dB/km |
| Fujikura SR15E-200 (864F, 1728F) | 200 µm | 250 µm | BE (ITU-T G.652.D AND G.657.A1) | 8.6 ± 0.4 µm | ≤ 0.35 dB/km | ≤ 0.35 dB/km | ≤ 0.25 dB/km |

Stripe Ring Fiber Identification

| R NO. | STRIPE RING MARKING | R NO. | STRIPE RING MARKING |
|-------|---------------------|-------|---------------------|
| 1 | █ | 7 | ███ █ |
| 2 | ██ | 8 | ████ █ |
| 3 | ███ | 9 | █████ █ |
| 4 | ████ | 10 | ██████ █ |
| 5 | █████ | 11 | ███████ █ |
| 6 | ██████ | 12 | ████████ █ |

| FIBER COUNT | BINDER UNIT (BU) | RING MARKINGS | | | | | | | | | | | |
|-------------|------------------|---------------|---|---|---|---|---|---|---|---|----|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 288F | 4 Binder Units | 1 | 2 | 3 | 4 | | | | | | | | |
| 864F | 12 Binder Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1728F | 12 Binder Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |

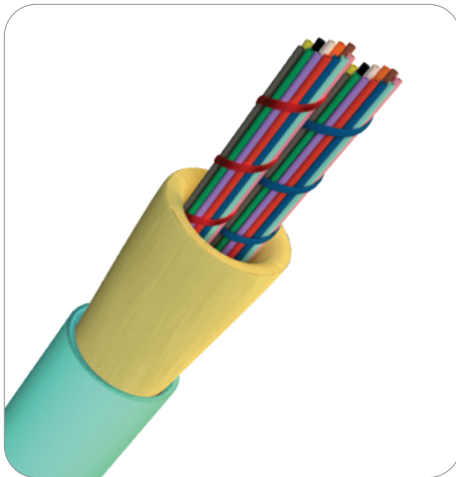
Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|--|
| UL | 1666, Listed Riser 1685, Fire Propagation and Low Smoke |
| ANSI/ICEA | S-83-596 |
| EU | EN 13501-6 (CPR) |

Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|----------------------------------|
| INSTALLATION | +14°F to +140°F (-10°C to +60°C) |
| OPERATING | -4°F to +158°F (-20°C to +70°C) |
| STORAGE | -40°F to +158°F (-40°C to +70°C) |

Contact AFL for further details.



Interconnect Premise MicroCore® Cable

Interconnect Premise MicroCore cables are designed for MTP terminations and meet the interconnect standards of Telcordia® GR-409. To minimize the cable's diameter, multiple colored 250 μm fibers and aramid strands are packaged in a PVC or LSZH jacket. Simplex and Zipcord designs are available in a variety of fiber counts.

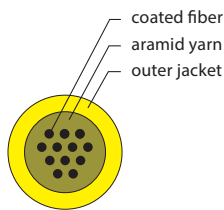
Features

- 8 to 72 fibers
- 2.0 mm or 3.0 mm Outer Diameter for Round Boot 12-fiber MTP Cables
- 3.0 mm or 3.8 mm Outer Diameter for Round Boot 24-fiber MTP Cables
- 4.0 mm Outer Diameter for Round Boot 48-count MTP Cables

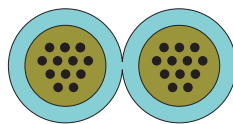
Applications

- Building Interconnections
- Data Centers and Central Offices
- Anywhere MTP connections can be used
- High-density Interconnects
- 40 Gbit and 100 Gbit Ethernet Architecture

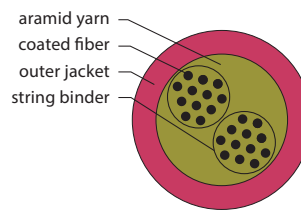
Cable Components



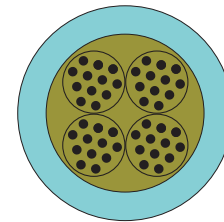
12 Fiber Simplex



24 Fiber Zipcord
(3.0 mm only)



24 Fiber Simplex



48 Fiber Simplex

Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO/IEC | MAXIMUM ATTENUATION (dB/km) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMB _c (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|--|---------|-----------------------------|---------|---------|---|---------|---------------------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| (6) 62.5 Giga-Link™ 300 | OM1 | 3.5 | 1.2 | N/A | 200 | 600 | N/A | 300 | 550 | 32 | — |
| (5) 50 Giga-Link™ 600 | OM2 | 3.5 | 1.5 | N/A | 500 | 500 | N/A | 600 | 600 | 82 | — |
| (L) 50 Laser-Link 300 | OM3 | 3.0 | 1.2 | N/A | 1,500 | 500 | 2,000 | 1,000 | 550 | 300 | — |
| (C) 50 Laser-Link 550 | OM4 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (W) AFL Wideband Multimode | OM5 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (9) Single-mode (ITU G.652.D/G.657.A1) | OS2 | N/A | 0.5 | 0.5 | N/A | N/A | N/A | N/A | 5,000 | N/A | 10,000 |

*Other fiber types available (All ITU G.657 grade SMF available)

continued
→

Interconnect Premise MicroCore® Cable

Mechanical Data

| CABLE TYPE | PLENUM | LSZH | FIBER COUNT | NOMINAL DIAMETER | WEIGHT | TENSION lbs (N) | | BENDING RADIUS inches (cm) | |
|-------------------|--------------|--------------|-------------|------------------|---------------------|-----------------|-----------|----------------------------|-----------|
| | AFL NO. | | | inches (mm) | lbs/1000 ft (kg/km) | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| | SP/ZP | SE/ZE | | | | | | | |
| SINGLE SMALL FORM | SP008◆201#0B | SE008◆201#0B | 8 | 0.08 (2.0) | 2.6 (4.0) | 22 (98) | 7 (30) | 1.2 (3.0) | 0.8 (2.0) |
| | SP012◆201#0B | SE012◆201#0B | 12 | 0.08 (2.0) | 2.6 (4.0) | 22 (98) | 7 (30) | 1.2 (3.0) | 0.8 (2.0) |
| | SP016◆301#0B | SE016◆301#0B | 16 | 0.12 (3.0) | 5.3 (7.9) | 22 (98) | 7 (30) | 1.8 (4.5) | 1.2 (3.0) |
| | SP024◆301#0B | SE024◆301#0B | 24 | 0.12 (3.0) | 5.3 (7.9) | 22 (98) | 7 (30) | 1.8 (4.5) | 1.2 (3.0) |
| | SP032◆381#0B | SE032◆381#0B | 32 | 0.15 (3.8) | 9.4 (14.0) | 22 (98) | 7 (30) | 2.2 (5.7) | 1.5 (3.8) |
| | SP048◆381#0B | SE048◆381#0B | 48 | 0.15 (3.8) | 9.4 (14.0) | 22 (98) | 7 (30) | 2.2 (5.7) | 1.5 (3.8) |
| SIMPLEX | SP008◆301#0B | SE008◆301#0B | 8 | 0.12 (3.0) | 5.3 (7.9) | 50 (220) | 17 (75) | 1.8 (4.5) | 1.2 (3.0) |
| | SP012◆301#0B | SE012◆301#0B | 12 | 0.12 (3.0) | 5.3 (7.9) | 50 (220) | 17 (75) | 1.8 (4.5) | 1.2 (3.0) |
| | SP024◆381#0B | SE024◆381#0B | 24 | 0.15 (3.8) | 10.1 (15.0) | 75 (330) | 25 (110) | 2.2 (5.7) | 1.5 (3.8) |
| | SP048◆401#0B | SE048◆401#0B | 48 | 0.16 (4.0) | 9.4 (14.0) | 50 (220) | 17 (75) | 2.4 (6.0) | 1.6 (4.0) |
| | SP048◆481#0B | SE048◆481#0B | 48 | 0.19 (4.8) | 14.1 (21.0) | 75 (330) | 25 (110) | 2.8 (7.2) | 1.9 (4.8) |
| | SP064◆451#0B | SE064◆451#0B | 64 | 0.18 (4.5) | 13.4 (20.0) | 50 (220) | 17 (75) | 2.7 (6.8) | 1.8 (4.5) |
| | SP072◆481#0B | SE072◆481#0B | 72 | 0.19 (4.8) | 16.1 (24.0) | 50 (220) | 17 (75) | 2.8 (7.2) | 1.9 (4.8) |
| ZIPCORD | ZP024◆301#0B | ZE024◆301#0B | 24 | 0.12 (3.0) | 12.4 (18.4) | 100 (445) | 33 (147) | 1.8 (4.5) | 1.2 (3.0) |

◆ Fiber Types – Replace diamond (◆) in AFL No. with number in the Fiber Specifications table on previous page.

Outer Jacket Color – Replace hashtag (#) in AFL No. with number in the Cable Jacket Color table below.

16 unique colors available for fibers in 16 fiber subunit: Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua, Olive, Magenta, Tan, Lime.

Cable Jacket Color Options

| | |
|--------------------------|----------------------------|
| 1 - Blue | 8 - Black |
| 2 - Orange (OM1 and OM2) | 9 - Yellow (SM) |
| 3 - Green | A - Violet |
| 4 - Brown | B - Rose |
| 5 - Slate | C - Aqua (OM3 and OM4) |
| 6 - White | K - Erika Violet (OM4) |
| 7 - Red | L - Lime (Pending for OM5) |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|-------------------------|
| NFPA | 262 |
| IEC | 60332 |
| IEC | 60754 |
| IEC | 61034 |
| Telcordia | GR-409-CORE |
| RoHS | Compliant to 2002/95/EC |

Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|----------------|
| OPERATION | 0°C to +70°C |
| STORAGE | -40°C to +75°C |
| INSTALLATION | 0°C to +70°C |

Contact AFL for cable designs.



Interconnect Premise MicroCore® Cable with SpiderWeb Ribbon® (SWR®) Technology

Interconnect Premise MicroCore cables with SWR are designed for MTP terminations and meet the interconnect standards of Telcordia® GR-409. To minimize the cable's diameter, SWR and aramid strands are packaged in a high performance PVC or LSZH jacket. Fiber counts of 12 and 24 are available. Both Simplex and Zipcord designs are available.

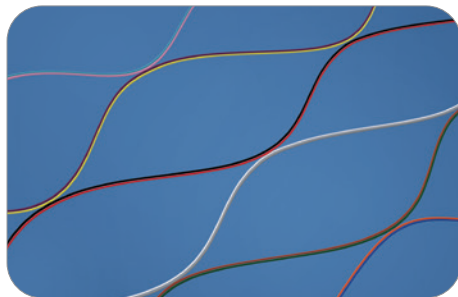
SWR is a bonded fiber design allowing for either a highly efficient ribbonizing application or for individual fiber breakouts. This flexibility allows for the application of a single cable design to cover a diverse set of applications. High-density round designs allow for the most efficient use of space and materials, resulting in a cost-effective solution.

Features

- 3.0 mm Outer Diameter for Round Boot 12-fiber MTP Cables
- 3.0 mm or 3.8 mm Outer Diameter for Round Boot 24-fiber MTP Cables
- Exceptional skew performance

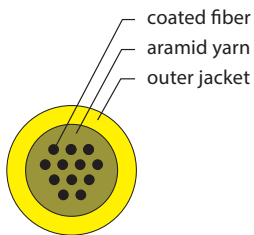
Applications

- Building Interconnections
- Data Centers and Central Offices
- Anywhere MTP connections can be used
- High-density Interconnects
- 40 Gbit and 100 Gbit Ethernet Architecture

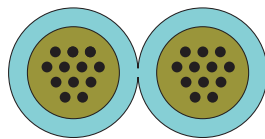


SpiderWeb Ribbon Technology

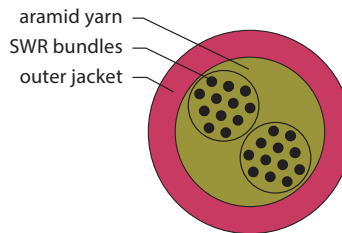
Cable Components



12 Fiber Simplex



24 Fiber Zipcord
(3.0 mm only)



24 Fiber Simplex

SWR Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO | MAX. ATTENUATION (dB/km) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMBC (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|----------------------|-----|---|---------|---------|---|---------|---------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| | | (P) AFL Bend-Insensitive Single-mode (ITU G.652.D/G.657.A1) | OS2 | N/A | 0.5 | 0.5 | | N/A | N/A | N/A | 5,000 |

continued
→

Interconnect Premise MicroCore® Cable with SpiderWeb Ribbon® (SWR®) Technology

Mechanical Data

| CABLE TYPE | FIBER COUNT | NOMINAL DIAMETER | WEIGHT | TENSION lbs (N) | | BENDING RADIUS inches (cm) | |
|-------------------|-------------|------------------|---------------------|-----------------|-----------|----------------------------|-----------|
| | | inches (mm) | lbs/1000 ft (kg/km) | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| SINGLE SMALL FORM | 24 | 0.12 (3.0) | 5.3 (7.9) | 22 (98) | 7 (30) | 1.8 (4.5) | 1.2 (3.0) |
| SIMPLEX | 12 | 0.12 (3.0) | 5.3 (7.9) | 50 (220) | 17 (75) | 1.8 (4.5) | 1.2 (3.0) |
| | 24 | 0.15 (3.8) | 10.1 (15.0) | 75 (330) | 25 (110) | 2.2 (5.7) | 1.5 (3.8) |
| ZIPCORD | 24 | 0.12 (3.0) | 12.4 (18.4) | 100 (445) | 33 (147) | 1.8 (4.5) | 1.2 (3.0) |

Ordering Information

| CABLE TYPE | FIBER COUNT | AFL NO. | |
|-------------------|-------------|--------------|--------------|
| | | SINGLE-MODE | |
| | | PLENUM | LSZH |
| SINGLE SMALL FORM | 24 | SP024P301#0R | SE024P301#0R |
| SIMPLEX | 12 | SP012P301#0R | SE012P301#0R |
| | 24 | SP024P381#0R | SE024P381#0R |
| ZIPCORD | 24 | ZP024P301#0R | ZE024P301#0R |

Replace # with number corresponding to desired jacket color from Cable Jacket Color Options table below.

Cable Jacket Color Options

| | | |
|------------|-----------------|------------------------|
| 1 - Blue | 6 - White | B - Rose |
| 2 - Orange | 7 - Red | C - Aqua (OM3 and OM4) |
| 3 - Green | 8 - Black | K - Erika Violet (OM4) |
| 4 - Brown | 9 - Yellow (SM) | L - Lime |
| 5 - Slate | A - Violet | |

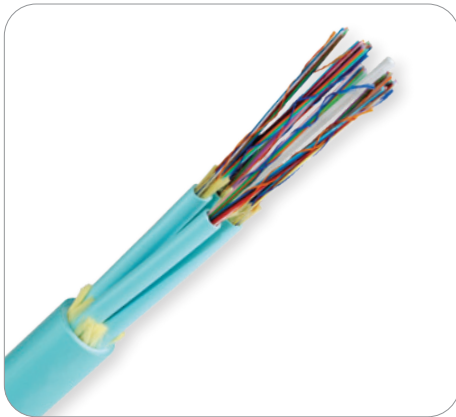
Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------------|---------------------|
| NFPA | 262 (ONFP) | Jacket |
| IEC | 60332, 60754, 61034 | LSZH/ONFR-LS Jacket |
| Telcordia | GR-409-CORE | Jacket |
| RoHS | 2002/95/EC | Jacket |

Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|----------------|
| INSTALLATION | 0°C to +70°C |
| OPERATING | 0°C to +70°C |
| STORAGE | -40°C to +75°C |

Contact AFL for further details.



Sub-unitized Premise MicroCore® 3.0 Base-16 and Base-24

The third generation of AFL's Sub-Unitized Premise MicroCore Cable is another astounding evolution of high performance premise cabling. Enabling even greater pathway density than our 2.0 version, the 3.0 revolutionizes cable deployment and allows the end user to realize savings in space, routing infrastructures and fiber management. Combining the highest quality materials with rigorous testing to industry standards, this generation builds on the same quality of construction as the previous versions of our Sub-Unitized Premise MicroCore cables. Also similar to the previous version is the employment of stand-alone sub cables. Each sub-cable is independently qualified and is suitable for individual routing paths within the rack/panel architecture. This flexibility of design and deployment is not available in comparable high density designs. Designed for direct termination, and supportive of both single-fiber and multi-fiber architectures, this cable family is capable of serving as the backbone in any deployed system.

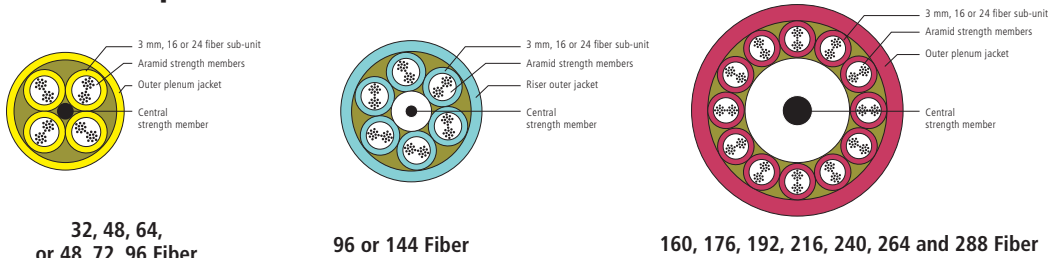
Applications

- In-building cable runs where space is a premium
- Trunk applications where flexibility and small bend radii are required to route cable
- High-density cable areas like data centers and central offices
- Lower cost cable runs where easy handling of tight buffered fibers not needed because cable will be spliced to factory terminated pigtails

Features

- Each sub-unit can stand alone as a rated cable
- 16-fiber sub-units with 32-144 fiber counts
- 24-fiber sub-units with 48-288 fiber counts
- High fiber density—more channels in less space
- No preferential bend direction typically found in stacked ribbon designs
- Small diameter/superior bend performance
- LSZH or Plenum flame-rated jacket
- All aramid tensile strength members around core cable for ease of attaching pulling-eye; aramid within core for use with MT termination

Cable Components



Loose Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO/IEC | MAXIMUM ATTENUATION (dB/km) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMB _c (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|---------------------------------------|---------|-----------------------------|---------|---------|---|---------|---------------------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| (6) 62.5 Giga-Link™ 300 | OM1 | 3.5 | 1.2 | N/A | 200 | 600 | N/A | 300 | 550 | 32 | — |
| (5) 50 Giga-Link™ 600 | OM2 | 3.5 | 1.5 | N/A | 500 | 500 | N/A | 600 | 600 | 82 | — |
| (L) 50 Laser-Link 300 | OM3 | 3.0 | 1.2 | N/A | 1,500 | 500 | 2,000 | 1,000 | 550 | 300 | — |
| (C) 50 Laser-Link 550 | OM4 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (W) AFL Wideband Multimode | OM5 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (9) Single-mode (ITU G.652.D/G657.A1) | OS2 | N/A | 0.5 | 0.5 | N/A | N/A | N/A | N/A | 5,000 | N/A | 10,000 |

*Other grades of single-mode fiber available.



continued
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Sub-unitized Premise MicroCore® 3.0 Base-16 and Base-24

Mechanical Data

| TYPE | AFL NO. WITH STANDARD LOOSE FIBER | | FIBER COUNT | NO. OF SUBS | NO. OF FILLERS | NOMINAL DIAMETER inches (mm) | WEIGHT lbs/1000 ft (kg/km) | TENSION lbs (N) | | BENDING RADIUS inches (cm) | |
|---|--------------------------------------|------------------|----------------|-------------------|-------------------|------------------------------------|----------------------------------|-----------------|--------------|-------------------------------|--------------|
| | PLENUM | LSZH | | | | | | INSTALL | LONG TERM | INSTALL | LONG TERM |
| | | | | | | | | | | | |
| 16F SUB-UNITS (2X 8F BUNDLES) | GQ032*301##B:G48 | GE032*301##B:G48 | 32 | 2 | 2 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| | GQ048*301##B:G48 | GE048*301##B:G48 | 48 | 3 | 1 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| | GQ064*301##B:G48 | GE064*301##B:G48 | 64 | 4 | 0 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| | GQ080*301##B:G68 | GE080*301##B:G68 | 80 | 5 | 1 | 0.50 (12.7) | 107 (160) | 150 (670) | 45 (200) | 7.5 (19.1) | 5.0 (12.7) |
| | GQ096*301##B:G68 | GE096*301##B:G68 | 96 | 6 | 0 | 0.50 (12.7) | 107 (160) | 150 (670) | 45 (200) | 7.5 (19.1) | 5.0 (12.7) |
| | GQ112*301##B:G98 | GE112*301##B:G98 | 112 | 7 | 2 | 0.61 (15.5) | 171 (255) | 150 (670) | 45 (200) | 9.2 (23.5) | 6.1 (15.5) |
| | GQ128*301##B:G98 | GE128*301##B:G98 | 128 | 8 | 1 | 0.61 (15.5) | 171 (255) | 150 (670) | 45 (200) | 9.2 (23.5) | 6.1 (15.5) |
| | GQ144*301##B:G98 | GE144*301##B:G98 | 144 | 9 | 0 | 0.61 (15.5) | 171 (255) | 150 (670) | 45 (200) | 9.2 (23.5) | 6.1 (15.5) |
| | GQ160*301##B:GC8 | GE160*301##B:GC8 | 160 | 10 | 2 | 0.72 (18.4) | 218 (325) | 150 (670) | 45 (200) | 11.0 (27.6) | 7.2 (18.4) |
| | GQ176*301##B:GC8 | GE176*301##B:GC8 | 176 | 11 | 1 | 0.72 (18.4) | 218 (325) | 150 (670) | 45 (200) | 11.0 (27.6) | 7.2 (18.4) |
| 24F SUB-UNITS (2X 12F BUNDLES) | GQ192*301##B:GC8 | GE192*301##B:GC8 | 192 | 12 | 0 | 0.72 (18.4) | 218 (325) | 150 (670) | 45 (200) | 11.0 (27.6) | 7.2 (18.4) |
| | GQ048*301##B:O4C | GE048*301##B:O4C | 48 | 2 | 2 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| | GQ072*301##B:O4C | GE072*301##B:O4C | 72 | 3 | 1 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| | GQ096*301##B:O4C | GE096*301##B:O4C | 96 | 4 | 0 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| | GQ120*301##B:O6C | GE120*301##B:O6C | 120 | 5 | 1 | 0.50 (12.7) | 107 (160) | 150 (670) | 45 (200) | 7.5 (19.1) | 5.0 (12.7) |
| | GQ144*301##B:O6C | GE144*301##B:O6C | 144 | 6 | 0 | 0.50 (12.7) | 107 (160) | 150 (670) | 45 (200) | 7.5 (19.1) | 5.0 (12.7) |
| | GQ168*301##B:O9C | GE168*301##B:O9C | 168 | 7 | 2 | 0.61 (15.5) | 171 (255) | 150 (670) | 45 (200) | 9.2 (23.5) | 6.1 (15.5) |
| | GQ192*301##B:O9C | GE192*301##B:O9C | 192 | 8 | 1 | 0.61 (15.5) | 171 (255) | 150 (670) | 45 (200) | 9.2 (23.5) | 6.1 (15.5) |
| | GQ216*301##B:O9C | GE216*301##B:O9C | 216 | 9 | 0 | 0.61 (15.5) | 171 (255) | 150 (670) | 45 (200) | 9.2 (23.5) | 6.1 (15.5) |
| | GQ240*301##B:OCC | GE240*301##B:OCC | 240 | 10 | 2 | 0.72 (18.4) | 218 (325) | 150 (670) | 45 (200) | 11.0 (27.6) | 7.2 (18.4) |
| GQ264*301##B:OCC | GE264*301##B:OCC | 264 | 11 | 1 | 0.72 (18.4) | 218 (325) | 150 (670) | 45 (200) | 11.0 (27.6) | 7.2 (18.4) | |
| GQ288*301##B:OCC | GE288*301##B:OCC | 288 | 12 | 0 | 0.72 (18.4) | 218 (325) | 150 (670) | 45 (200) | 11.0 (27.6) | 7.2 (18.4) | |

* Fiber Types—Replace asterisk (*) in AFL No. with number in the Fiber Specifications table on previous page.

Outer Jacket Color – Replace hashtag (#) in AFL No. with number in the Cable Jacket Color table below.

16 unique colors available for fibers in 16 fiber sub-unit: Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua, Olive, Tan, Lime, Magenta

Cable Jacket Color Options

| | |
|--------------------------|----------------------------|
| 1 - Blue | 8 - Black |
| 2 - Orange (OM1 and OM2) | 9 - Yellow (SM) |
| 3 - Green | A- Violet |
| 4 - Brown | B - Rose |
| 5 - Slate | C - Aqua (OM3 and OM4) |
| 6 - White | K - Erika Violet (OM4) |
| 7 - Red | L - Lime (Pending for OM5) |

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------------|---------------------|
| NFPA | 262 (ONFP) / FT6 | Plenum Jacket |
| IEC | 60332, 60754, 61034 | LSZH/ONFR-LS Jacket |
| Telcordia | GR-409-CORE | Jacket |
| EIA/TIA | 568 | Jacket |
| ICEA | | Jacket |
| RoHS | REACH | Jacket |

Temperature Specifications

| TEMPERATURE RANGE | |
|---------------------|----------------------------------|
| LSZH/PLENUM | |
| INSTALLATION | 0°C to +60°C (32°F to +140°F) |
| OPERATION | 0°C to +70°C (32°F to +158°F) |
| STORAGE | -40°C to +70°C (-40°F to +158°F) |

Contact AFL for further details.

Fiber Optic Cable



Sub-unitized Premise MicroCore[®] 3.0 with SpiderWeb Ribbon[®] (SWR[®]) Technology

The third generation of AFL's Sub-Unitized Premise MicroCore Cable with SWR Technology is another astounding evolution of high performance premise cabling. Enabling even greater pathway density than our 2.0 version, the 3.0 revolutionizes cable deployment and allows the end user to realize savings in space, routing infrastructures and fiber management. Combining the highest quality materials with rigorous testing to industry standards, this generation builds on the same quality of construction as the previous versions of our Sub-Unitized Premise MicroCore cables.



SpiderWeb Ribbon Technology

Additionally, this version features stand-alone sub cables. Each sub cable is independently qualified and is suitable for individual routing paths within the rack/panel architecture. This flexibility of design and deployment is not available in comparable high-density designs. Designed for direct termination and supportive of both single-fiber and multi-fiber architectures, this cable family is capable of serving as the backbone in any deployed system.

SpiderWeb Ribbon is a bonded fiber design allowing for either a highly efficient ribbonizing application or for individual fiber break-outs. This flexibility allows for the application of a single cable design to cover a diverse set of applications. High density round designs allow for the most efficient use of space and materials, resulting in a cost-effective solution.

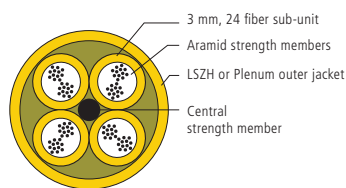
Applications

- In-building cable runs where space is a premium
- Trunk applications where flexibility and small bend radii are required to route cable
- High-density cable areas like data centers and central offices
- Lower cost cable runs where easy handling of tight buffered fibers not needed because cable will be spliced to factory terminated pigtailed

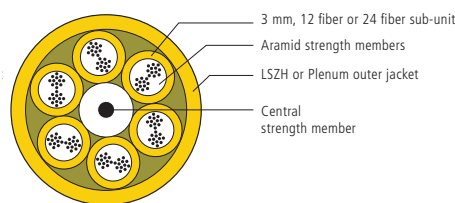
Features

- SpiderWeb Ribbon technology allows for a highly efficient ribbonizing application or for individual fiber break-outs
- Each sub-unit can stand alone as a rated cable
- 12-fiber sub-units with 12-144 fiber counts
- 24-fiber sub-units with 24-288 fiber counts
- High fiber density—more channels in less space
- No preferential bend direction typically found in stacked ribbon design
- Small diameter/superior bend performance
- LSZH or Plenum flame-rated jacket
- All aramid tensile strength members around core cable for ease of attaching pulling-eye; aramid within core for use with MT termination

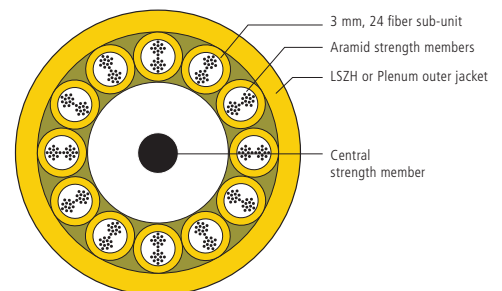
Cable Components



24, 48, 72 and 96 Fiber



72 and 144 Fiber



144 and 288 Fiber



Sub-unitized Premise MicroCore® 3.0 with SpiderWeb Ribbon® Technology
Mechanical Data

| NO. OF SUBS | NO. OF FILLERS | NOMINAL DIAMETER inches (mm) | WEIGHT lbs/1000 ft (kg/km) | TENSION lbs (N) | | BENDING RADIUS inches (cm) | |
|-------------|----------------|------------------------------|----------------------------|-----------------|-----------|----------------------------|------------|
| | | | | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| 1 | 3 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| 2 | 2 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| 3 | 1 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| 4 | 0 | 0.40 (10.2) | 60 (90) | 150 (670) | 45 (200) | 6.0 (15.3) | 4.0 (10.2) |
| 5 | 1 | 0.47 (11.9) | 107 (160) | 150 (670) | 45 (200) | 7.1 (17.9) | 4.7 (11.9) |
| 6 | 0 | 0.47 (11.9) | 107 (160) | 150 (670) | 45 (200) | 7.1 (17.9) | 4.7 (11.9) |
| 7 | 2 | 0.56 (14.3) | 171 (255) | 150 (670) | 45 (200) | 8.4 (21.5) | 5.6 (14.3) |
| 8 | 1 | 0.56 (14.3) | 171 (255) | 150 (670) | 45 (200) | 8.4 (21.5) | 5.6 (14.3) |
| 9 | 0 | 0.56 (14.3) | 171 (255) | 150 (670) | 45 (200) | 8.4 (21.5) | 5.6 (14.3) |
| 10 | 2 | 0.62 (15.7) | 218 (325) | 150 (670) | 45 (200) | 9.3 (23.6) | 6.2 (15.7) |
| 11 | 1 | 0.62 (15.7) | 218 (325) | 150 (670) | 45 (200) | 9.3 (23.6) | 6.2 (15.7) |
| 12 | 0 | 0.62 (15.7) | 218 (325) | 150 (670) | 45 (200) | 9.3 (23.6) | 6.2 (15.7) |

SWR Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO/IEC | MAXIMUM ATTENUATION (dB/km) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMB _c (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|---|---------|-----------------------------|---------|---------|---|---------|---------------------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| (P) AFL Bend-Insensitive Single-mode (ITU G.652.D/G.657.A1) | OS2 | N/A | 0.5 | 0.5 | N/A | N/A | N/A | N/A | 5,000 | N/A | 10,000 |

Cable Jacket Color Options

| | |
|------------|------------------------|
| 1 - Blue | 8 - Black |
| 2 - Orange | 9 - Yellow (SM) |
| 3 - Green | A - Violet |
| 4 - Brown | B - Rose |
| 5 - Slate | C - Aqua (OM3 and OM4) |
| 6 - White | K - Erika Violet (OM4) |
| 7 - Red | L - Lime |

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------------|---------------------|
| NFPA | 262 (ONFP) / FT6 | Plenum Jacket |
| IEC | 60332, 60754, 61034 | LSZH/OFNR-LS Jacket |
| Telcordia | GR-409-CORE | Jacket |
| EIA/TIA | 568 | Jacket |
| ICEA | | Jacket |
| RoHS | REACH | Jacket |

Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|----------------|
| | LSZH/PLENUM |
| INSTALLATION | 0°C to +60°C |
| OPERATION | 0°C to +70°C |
| STORAGE | -40°C to +70°C |

Contact AFL for further details.

continued
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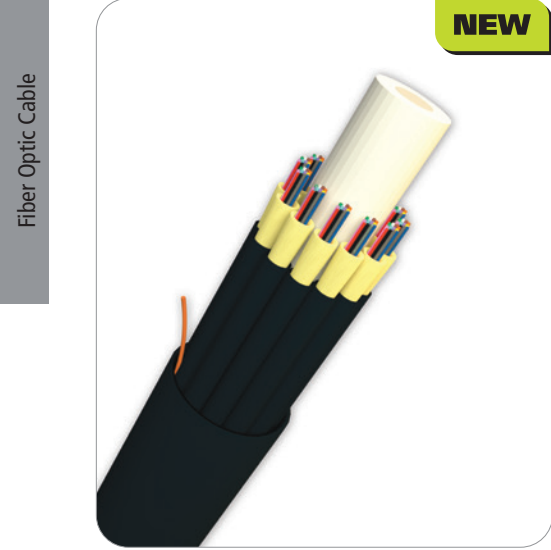
Sub-unitized Premise MicroCore® 3.0 with SpiderWeb Ribbon® Technology

Ordering Information

| CABLE TYPE | FIBER COUNT | NO. OF SUBS | NO. OF FILLERS | AFL NO. | |
|------------------|-------------|-------------|------------------|------------------|------------------|
| | | | | SINGLE-MODE | |
| | | | | PLENUM | LSZH |
| 12 Fiber Subunit | 12 | 1 | 3 | GQ012P301##R:C4C | GE012P301##R:C4C |
| | 24 | 2 | 2 | GQ024P301##R:C4C | GE024P301##R:C4C |
| | 36 | 3 | 1 | GQ036P301##R:C4C | GE036P301##R:C4C |
| | 48 | 4 | 0 | GQ048P301##R:C4C | GE048P301##R:C4C |
| | 60 | 5 | 1 | GQ060P301##R:C6C | GE060P301##R:C6C |
| | 72 | 6 | 0 | GQ072P301##R:C6C | GE072P301##R:C6C |
| | 84 | 7 | 1 | GQ084P301##R:C8C | GE084P301##R:C8C |
| | 96 | 8 | 0 | GQ096P301##R:C8C | GE096P301##R:C8C |
| | 120 | 10 | 2 | GQ120P301##R:CCC | GE120P301##R:CCC |
| | 132 | 11 | 1 | GQ132P301##R:CCC | GE132P301##R:CCC |
| 24 Fiber Subunit | 144 | 12 | 0 | GQ144P301##R:CCC | GE144P301##R:CCC |
| | 24 | 1 | 3 | GQ024P301##R:O4C | GE024P301##R:O4C |
| | 48 | 2 | 2 | GQ048P301##R:O4C | GE048P301##R:O4C |
| | 72 | 3 | 1 | GQ072P301##R:O4C | GE072P301##R:O4C |
| | 96 | 4 | 0 | GQ096P301##R:O4C | GE096P301##R:O4C |
| | 120 | 5 | 1 | GQ120P301##R:O6C | GE120P301##R:O6C |
| | 144 | 6 | 0 | GQ144P301##R:O6C | GE144P301##R:O6C |
| | 168 | 7 | 2 | GQ168P301##R:O9C | GE168P301##R:O9C |
| | 192 | 8 | 1 | GQ192P301##R:O9C | GE192P301##R:O9C |
| | 216 | 9 | 0 | GQ216P301##R:O9C | GE216P301##R:O9C |
| 240 | 10 | 2 | GQ240P301##R:OCC | GE240P301##R:OCC | |
| 264 | 11 | 1 | GQ264P301##R:OCC | GE264P301##R:OCC | |
| 288 | 12 | 0 | GQ288P301##R:OCC | GE288P301##R:OCC | |

Notes:

- Replace first # with number corresponding to desired jacket color from Cable Jacket Color Options table on previous page.
- Replace second # with number corresponding to desired subunit color from Cable Jacket Color Options table on previous page.



Indoor/Outdoor Riser Sub-unitized MicroCore® Cable

AFL now offers high fiber count Indoor/Outdoor MicroCore Cables. Waterblocked sub-units are helically stranded to provide sub-unitized cables ranging from 24 to 288 fiber counts. These cables are OFNR listed for use in indoor and indoor/outdoor applications. Both the sub-unit jackets and outer sheath contain a UV stabilizer and anti-fungus protection for use in outdoor applications.

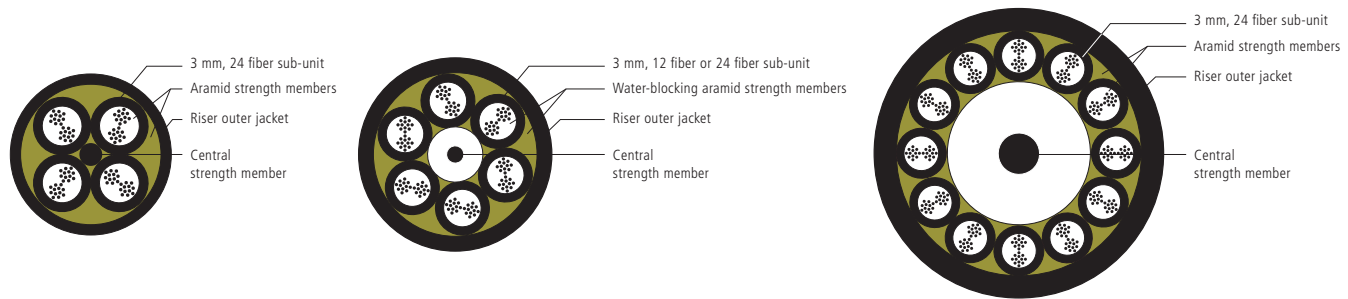
Features

- Available with 24 to 288 fibers
- Water-blocked sub-units
- Moisture-resistant, fungus-resistant and UV-resistant sub-unit jackets and outer sheath

Applications

- ONFR inside plant and outside plant environments

Cable Components



Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO/IEC | MAXIMUM ATTENUATION (dB/km) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMB _c (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|--|---------|-----------------------------|---------|---------|---|---------|---------------------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| | | (6) 62.5 Giga-Link™ 300 | OM1 | 3.5 | 1.2 | N/A | | 200 | 600 | N/A | 300 |
| (5) 50 Giga-Link™ 600 | OM2 | 3.5 | 1.5 | N/A | 500 | 500 | N/A | 600 | 600 | 82 | — |
| (L) 50 Laser-Link 300 | OM3 | 3.0 | 1.2 | N/A | 1,500 | 500 | 2,000 | 1,000 | 550 | 300 | — |
| (C) 50 Laser-Link 550 | OM4 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (W) AFL Wideband Multimode | OM5 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (9) Single-mode (ITU G.652.D/G.657.A1) | OS2 | N/A | 0.5 | 0.5 | N/A | N/A | N/A | N/A | 5,000 | N/A | 10,000 |



Indoor/Outdoor Riser Sub-unitized MicroCore® Cable

Mechanical Data—Non-Armored

| CABLE TYPE | NO. OF SUBS | NO. OF FILLERS | NOMINAL DIAMETER inches (mm) | WEIGHT lbs/1000 ft (kg/km) | TENSION lbs (N) | | BENDING RADIUS inches (cm) | |
|------------------|-------------|----------------|------------------------------|----------------------------|-----------------|-----------|----------------------------|------------|
| | | | | | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| 12 Fiber Subunit | 2 | 2 | 0.38 (9.7) | 52 (78) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 4 | 0 | 0.38 (9.7) | 54 (80) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 6 | 0 | 0.46 (11.6) | 77 (115) | 300 (1320) | 90 (400) | 6.9 (17.4) | 4.6 (11.6) |
| | 8 | 0 | 0.54 (13.7) | 105 (155) | 300 (1320) | 90 (400) | 8.1 (20.6) | 5.4 (13.7) |
| | 12 | 0 | 0.68 (17.3) | 250 (370) | 300 (1320) | 90 (400) | 10.2 (26.0) | 6.8 (17.3) |
| 24 Fiber Subunit | 1 | 3 | 0.38 (9.7) | 53 (79) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 2 | 2 | 0.38 (9.7) | 54 (80) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 3 | 1 | 0.38 (9.7) | 55 (82) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 4 | 0 | 0.38 (9.7) | 56 (83) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 6 | 0 | 0.46 (11.6) | 81 (120) | 300 (1320) | 90 (400) | 6.9 (17.4) | 4.6 (11.6) |
| | 12 | 0 | 0.68 (17.3) | 257 (380) | 300 (1320) | 90 (400) | 10.2 (26.0) | 6.8 (17.3) |

Ordering Information—Non-Armored

| CABLE TYPE | NO. OF FIBERS | NO. OF SUBS | NO. OF FILLERS | AFL NO. |
|------------------|---------------|-------------|----------------|------------------|
| | | | | BARE FIBER |
| 12 Fiber Subunit | 24 | 2 | 2 | QR024*3018#B:C4C |
| | 48 | 4 | 0 | QR048*3018#B:C4C |
| | 72 | 6 | 0 | QR072*3018#B:C6C |
| | 96 | 8 | 0 | QR096*3018#B:C8C |
| | 144 | 12 | 0 | QR144*3018#B:CCC |
| 24 Fiber Subunit | 24 | 1 | 3 | QR024*3018#B:O4C |
| | 48 | 2 | 2 | QR048*3018#B:O4C |
| | 72 | 3 | 1 | QR072*3018#B:O4C |
| | 96 | 4 | 0 | QR096*3018#B:O4C |
| | 144 | 6 | 0 | QR144*3018#B:O6C |
| | 288 | 12 | 0 | QR288*3018#B:OCC |

Cable Jacket Color Options

| | |
|------------|------------------------|
| 1 - Blue | 8 - Black |
| 2 - Orange | 9 - Yellow (SM) |
| 3 - Green | A - Violet |
| 4 - Brown | B - Rose |
| 5 - Slate | C - Aqua (OM3 and OM4) |
| 6 - White | K - Erika Violet (OM4) |
| 7 - Red | L - Lime |

- * Fiber Types – Replace asterisk (*) in AFL number above with number in the Fiber Specifications table on previous page.
- # Subunit Jacket Color – Replace hashtag (#) in AFL number with number in the Cable Jacket Color table at right.
- ** Item numbers represent AFL standard print and Black outer jacket. All jacket colors are UV stable and contain anti-fungal additive. For best performance, AFL recommends Black Outer Jacket.

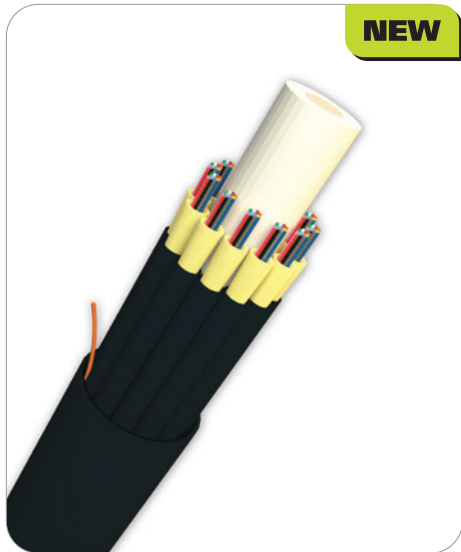
Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------------------|--|
| Telcordia | GR-20-CORE GR-409-CORE | Water-Blocked Cabled Buffer Tube Core Sub-units |
| EIA/TIA | 598-A | Sub-units |
| ICEA | S-104-696 | Sub-units |
| RoHS | 2002/95/EC | Cable |

Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|----------------|
| INSTALLATION | -10°C to +70°C |
| OPERATION | -40°C to +70°C |
| STORAGE | -40°C to +70°C |

Contact AFL for further details.



Indoor/Outdoor Riser Sub-unitized MicroCore® Cable with SpiderWeb Ribbon® Technology

AFL now offers high fiber count Indoor/Outdoor MicroCore Cables with SpiderWeb Ribbon (SWR®) technology. Waterblocked sub-units are helically stranded to provide sub-unitized cables ranging from 24 to 288 fiber counts. These cables are OFNR listed for use in indoor and indoor/outdoor applications. Both the sub-unit jackets and outer sheath contain a UV stabilizer and anti-fungus protection for use in outdoor applications.

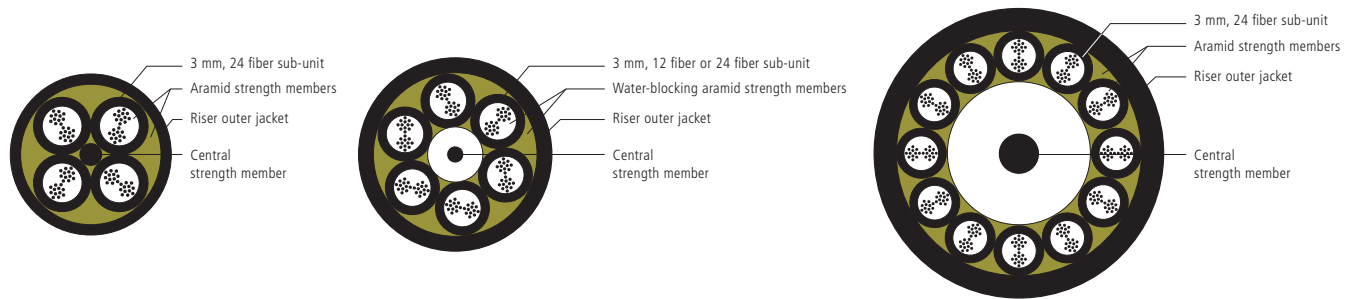
Features

- Available with 24 to 288 fibers
- Water-blocked sub-units
- Moisture-resistant, fungus-resistant and UV-resistant sub-unit jackets and outer sheath

Applications

- ONFR inside plant and outside plant environments

Cable Components



SWR Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO/IEC | MAXIMUM ATTENUATION (dB/km) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMB _c (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|---|---------|-----------------------------|---------|---------|---|---------|---------------------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| (P) AFL Bend-Insensitive Single-mode (ITU G.652.D/G.657.A1) | OS2 | N/A | 0.5 | 0.5 | N/A | N/A | N/A | N/A | 5,000 | N/A | 10,000 |



Indoor/Outdoor Riser Sub-unitized MicroCore® Cable with SpiderWeb Ribbon® Technology

Mechanical Data—Non-Armored

| CABLE TYPE | NO. OF SUBS | NO. OF FILLERS | NOMINAL DIAMETER inches (mm) | WEIGHT lbs/1000 ft (kg/km) | TENSION lbs (N) | | BENDING RADIUS inches (cm) | |
|------------------|-------------|----------------|------------------------------|----------------------------|-----------------|-----------|----------------------------|------------|
| | | | | | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| 12 Fiber Subunit | 2 | 2 | 0.38 (9.7) | 52 (78) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 4 | 0 | 0.38 (9.7) | 54 (80) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 6 | 0 | 0.46 (11.6) | 77 (115) | 300 (1320) | 90 (400) | 6.9 (17.4) | 4.6 (11.6) |
| | 8 | 0 | 0.54 (13.7) | 105 (155) | 300 (1320) | 90 (400) | 8.1 (20.6) | 5.4 (13.7) |
| | 12 | 0 | 0.68 (17.3) | 250 (370) | 300 (1320) | 90 (400) | 10.2 (26.0) | 6.8 (17.3) |
| 24 Fiber Subunit | 1 | 3 | 0.38 (9.7) | 53 (79) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 2 | 2 | 0.38 (9.7) | 54 (80) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 3 | 1 | 0.38 (9.7) | 55 (82) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 4 | 0 | 0.38 (9.7) | 56 (83) | 300 (1320) | 90 (400) | 5.7 (14.6) | 3.8 (9.7) |
| | 6 | 0 | 0.46 (11.6) | 81 (120) | 300 (1320) | 90 (400) | 6.9 (17.4) | 4.6 (11.6) |
| | 12 | 0 | 0.68 (17.3) | 257 (380) | 300 (1320) | 90 (400) | 10.2 (26.0) | 6.8 (17.3) |

Ordering Information—Non-Armored

| CABLE TYPE | NO. OF FIBERS | NO. OF SUBS | NO. OF FILLERS | AFL NO. |
|------------------|---------------|-------------|----------------|------------------|
| | | | | SINGLE-MODE SWR* |
| 12 Fiber Subunit | 24 | 2 | 2 | QR024P30189R:C4C |
| | 48 | 4 | 0 | QR048P30189R:C4C |
| | 72 | 6 | 0 | QR072P30189R:C6C |
| | 96 | 8 | 0 | QR096P30189R:C8C |
| | 144 | 12 | 0 | QR144P30189R:CCC |
| 24 Fiber Subunit | 24 | 1 | 3 | QR024P30189R:O4C |
| | 48 | 2 | 2 | QR048P30189R:O4C |
| | 72 | 3 | 1 | QR072P30189R:O4C |
| | 96 | 4 | 0 | QR096P30189R:O4C |
| | 144 | 6 | 0 | QR144P30189R:O6C |
| | 288 | 12 | 0 | QR288P30189R:OCC |

Cable Jacket Color Options

| | |
|------------|------------------------|
| 1 - Blue | 8 - Black |
| 2 - Orange | 9 - Yellow (SM) |
| 3 - Green | A - Violet |
| 4 - Brown | B - Rose |
| 5 - Slate | C - Aqua (OM3 and OM4) |
| 6 - White | K - Erika Violet (OM4) |
| 7 - Red | L - Lime |

* Item numbers represent AFL standard print, Black Outer Jacket and Yellow Subunits. All jacket colors are UV stable and contain anti-fungal additive. For best performance, AFL recommends Black Outer Jacket.

Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------------------|--|
| Telcordia | GR-20-CORE GR-409-CORE | Water-Blocked Cabled Buffer Tube Core Sub-units |
| EIA/TIA | 598-A | Sub-units |
| ICEA | S-104-696 | Sub-units |
| RoHS | 2002/95/EC | Cable |

Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|----------------|
| INSTALLATION | 0°C to +60°C |
| OPERATION | -20°C to +70°C |
| STORAGE | -40°C to +70°C |

Contact AFL for further details.



Simplex Cable

Simplex fiber optic cables provide the strength and flexibility for fiber interconnect applications. AFL offers a broad selection of simplex cordage including Plenum, Riser and LSZH, available in multiple diameters. Our simplex cable is tested to meet Telcordia GR-326 when used in connectorized assemblies. AFL provides customized performance for jacket stiffness and flexibility, diameter, print legend, jacket color and tight buffer strippability. The easy strip option allows removal of up to one meter of 900 µm material without stripping the fiber’s 250 µm coating.

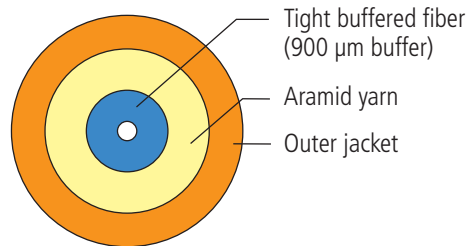
Features

- 1.6 mm to 2.9 mm outside diameter available
- Easy strip option available
- Custom diameters, colors, and print legends

Applications

- Trunking lines direct to telecommunications closet
- Fiber patch panels within communications closets
- Long haul networks
- Links between electronic equipment and fiber patch panels
- Connectorized patch cords for cross connect applications

Cable Components



Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO/IEC | MAXIMUM ATTENUATION (dB/km) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMB _c (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|--|---------|-----------------------------|---------|---------|---|---------|---------------------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| (6) 62.5 Giga-Link™ 300 | OM1 | 3.5 | 1.2 | N/A | 200 | 600 | N/A | 300 | 550 | 32 | — |
| (5) 50 Giga-Link™ 600 | OM2 | 3.5 | 1.5 | N/A | 500 | 500 | N/A | 600 | 600 | 82 | — |
| (L) 50 Laser-Link 300 | OM3 | 3.0 | 1.2 | N/A | 1,500 | 500 | 2,000 | 1,000 | 550 | 300 | — |
| (C) 50 Laser-Link 550 | OM4 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (W) AFL Wideband Multimode | OM5 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (9) Single-mode (ITU G.652.D/G.657.A1) | OS2 | N/A | 0.5 | 0.5 | N/A | N/A | N/A | N/A | 5,000 | N/A | 10,000 |

continued
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Simplex Cable

Mechanical Data

| AFL NO. | FIBER COUNT | NOMINAL DIAMETER inches (mm) | WEIGHT | | TENSION lbs (N) | | BENDING RADIUS inches (cm) | | |
|---------|--------------|---------------------------------|---------------------------------|----------------------------------|--------------------|-----------|-------------------------------|-----------|-----------|
| | | | RISER lbs/1000 ft (kg/km) | PLENUM lbs/1000 ft (kg/km) | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM | |
| | | | | | | | | | |
| PLENUM | SP001★301#01 | 1 | 0.11 (2.9) | — | 6 (9) | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| | SP001★241#01 | 1 | 0.09 (2.4) | — | 5 (7) | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| | SP001★201#01 | 1 | 0.08 (2.0) | — | 3 (5) | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| | SP001★161#01 | 1 | 0.06 (1.6) | — | 2 (3) | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| RISER | SA001★301#01 | 1 | 0.11 (2.9) | 5 (7) | — | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| | SR001★241#01 | 1 | 0.09 (2.4) | 3 (5) | — | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| | SR001★201#01 | 1 | 0.08 (2.0) | 3 (4) | — | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| | SR001★161#01 | 1 | 0.06 (1.6) | 2 (2) | — | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| LSZH | SE001★301#0E | 1 | 0.11 (2.9) | 5 (7) | — | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| | SE001★241#0E | 1 | 0.09 (2.4) | 3 (5) | — | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |
| | SE001★201#0E | 1 | 0.08 (2.0) | 3 (4) | — | 22 (100) | 7 (30) | 2.0 (5.0) | 1.2 (3.0) |

★ Fiber Types – Replace asterisk (★) in AFL number with number in the Fiber Specifications table on previous page.

Outer Jacket Color – Replace hashtag (#) in AFL number with number in the Cable Jacket Color table below.

Cable Jacket Color Options

| | | |
|------------|------------|-----------------------------|
| 1 - Blue | 6 - White | B - Rose |
| 2 - Orange | 7 - Red | C - Aqua |
| 3 - Green | 8 - Black | K - Erika Violet (RAL 4003) |
| 4 - Brown | 9 - Yellow | |
| 5 - Slate | A - Violet | |

Recommended Products

| DESCRIPTION | AFL NO. |
|---|---|
| Xpress Fiber Management® (XFM®) 1RU Patch Panel | Refer to spec sheet for AFL No. |

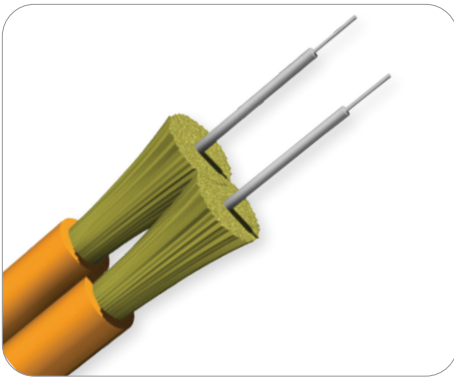
Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|-------------------------|
| IEC | 61034-1 |
| IEC | 61034-2 |
| IEC | 60332-1-1 |
| IEC | 60332-1-2 |
| IEC | 60754-1 |
| IEC | 60754-2 |
| Telcordia | GR-409-CORE |
| RoHS | Compliant to 2002/95/EC |
| EIA/TIA | 568-133 |

Temperature Specifications

| | PLENUM | RISER | LSZH |
|---------------------|----------------|----------------|----------------|
| OPERATION | 0°C to +70°C | -20°C to +70°C | 0°C to +70°C |
| STORAGE | -40°C to +75°C | -40°C to +75°C | -40°C to +75°C |
| INSTALLATION | 0°C to +70°C | -20°C to +70°C | 0°C to +70°C |

Contact AFL for more details.



Zipcord, Dual-link and Micro-Dual Cable

Zipcord, DUAL-link and Micro-Dual cables provide links to the future for such protocols as FDDI, 10 Gigabit Ethernet, ATM, and Fibre Channel. AFL offers a broad selection of duplex cordage including Plenum, Riser and LSZH in multiple diameters. LSZH jacketed cables are OFNR listed. One design for global companies that don't want to maintain multiple cable types for varying global standards.

Features

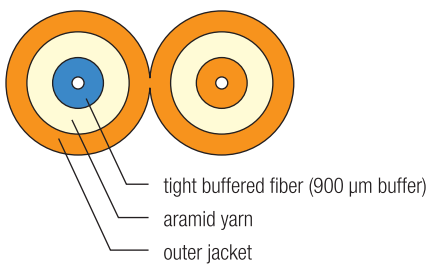
- Flexible, two-fiber design for ease of connections
- Print legend customization
- 12 standard Jacket colors available
- Tight Buffer strippability (easy strip option allows removal of up to 1 meter of 900 μ m material without stripping the fiber's 250 μ m coating)

Applications

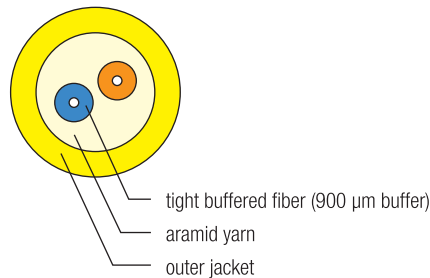
- Communications closet to wall outlet
- Wall outlet to desk
- Connectorized patchcords for interconnect and cross-connect applications
- Easy interface to ESCON[®], FDDI, and various other duplex connectors

Cable Components

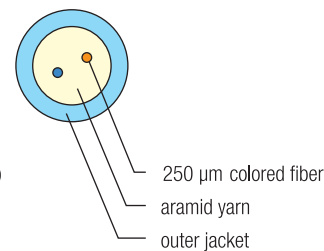
Zipcord



DUAL-Link



Micro-Dual



Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO/IEC | MAXIMUM ATTENUATION (dB/km) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMB _c (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|--|---------|-----------------------------|---------|---------|---|---------|---------------------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| | | (6) 62.5 Giga-Link™ 300 | OM1 | 3.5 | 1.2 | N/A | | 200 | 600 | N/A | 300 |
| (5) 50 Giga-Link™ 600 | OM2 | 3.5 | 1.5 | N/A | 500 | 500 | N/A | 600 | 600 | 82 | — |
| (L) 50 Laser-Link 300 | OM3 | 3.0 | 1.2 | N/A | 1,500 | 500 | 2,000 | 1,000 | 550 | 300 | — |
| (C) 50 Laser-Link 550 | OM4 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (W) AFL Wideband Multimode | OM5 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (9) Single-mode (ITU G.652.D/G.657.A1) | OS2 | N/A | 0.5 | 0.5 | N/A | N/A | N/A | N/A | 5,000 | N/A | 10,000 |

continued
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Zipcord, Dual-link and Micro-Dual Cable

Mechanical Data

| CABLE TYPE | AFL NO. | | | FIBER COUNT | NOMINAL DIAMETER inches (mm) | WEIGHT | | TENSION | | BENDING RADIUS | |
|------------|--------------|--------------|--------------|-------------|---------------------------------|---------------------|---------------------|--------------|-----------|----------------|------------|
| | RISER | PLENUM | LSZH | | | RISER | PLENUM/LSZH | lbs (N) | | inches (cm) | |
| | | | | | | lbs/1000 ft (kg/km) | lbs/1000 ft (kg/km) | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| Zipcord | ZA002★301#01 | ZP002★301#01 | ZE002★301#0E | 2 | 0.11 x 0.22 (2.9 x 6.0) | 10 (15) | 12 (18) | 22 (100) | 9 (40) | 2.0 (5.0) | 1.2 (3.0) |
| | ZR002★241#01 | ZP002★241#01 | ZE002★241#0E | 2 | 0.09 x 0.19 (2.4 x 4.8) | 7 (10) | 9 (14) | 22 (100) | 9 (40) | 2.0 (5.0) | 1.2 (3.0) |
| | ZR002★201#01 | ZP002★201#01 | ZE002★201#0E | 2 | 0.08 x 0.16 (2.0 x 4.0) | 5 (8) | 7 (10) | 22 (100) | 9 (40) | 2.0 (5.0) | 1.2 (3.0) |
| | ZR002★161#01 | ZP002★161#01 | ZE002★161#0E | 2 | 0.06 x 0.12 (1.6 x 3.2) | 4 (6) | 7 (6) | 22 (100) | 9 (40) | 2.0 (5.0) | 1.2 (3.0) |
| Micro-Dual | DR002★201#0B | DP002★201#0B | DE002★201#0B | 2 | 0.08 (2.0) | 3 (5) | 5 (7) | 22 (100) | 9 (40) | 1.2 (3.0) | 0.78 (2.0) |
| | — | DP002★161#0B | DE002★161#0B | 2 | 0.06 (1.6) | — | 2.7 (1.8) | 22 (100) | 9 (40) | 0.9 (2.3) | 0.6 (1.5) |
| DUAL-Link | DA002★481#01 | DP002★481#01 | DE002★481#0E | 2 | 0.19 (4.8) | 13 (20) | 17 (20) | 22 (100) | 9 (40) | 3.1 (7.2) | 2.0 (7.2) |
| | DR002★281#01 | DP002★281#01 | DE002★281#0E | 2 | 0.11 (2.8) | 5 (7) | 6 (9) | 22 (100) | 9 (40) | 2.0 (5.0) | 1.2 (3.0) |
| | DR002★241#01 | DP002★241#01 | DE002★241#0E | 2 | 0.094 (2.4) | 3 (5) | 5 (7) | 22 (100) | 9 (40) | 2.0 (5.0) | 1.2 (3.0) |

★ Fiber Types – Replace asterisk (★) in AFL number with number in the Fiber Specifications table on previous page.

Outer Jacket Color – Replace hashtag (#) in AFL number with number in the Cable Jacket Color table below.

Cable Jacket Color Options

| | |
|------------|-----------------------------|
| 1 - Blue | 8 - Black |
| 2 - Orange | 9 - Yellow |
| 3 - Green | A - Violet |
| 4 - Brown | B - Rose |
| 5 - Slate | C - Aqua |
| 6 - White | K - Erika Violet (RAL 4003) |
| 7 - Red | |

Recommended Products

| DESCRIPTION | AFL NO. |
|------------------------------------|--|
| FASTConnect® Mechanical Connectors | Refer to spec sheet for AFL No. |
| FUSEConnect® Splice-on Connectors | Refer too spec sheet for AFL No. |

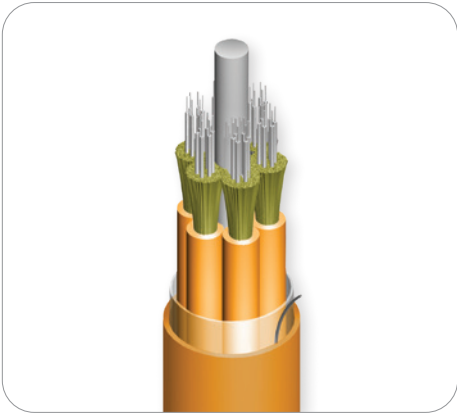
Temperature Specifications

| | PLENUM | RISER/LSZH |
|---------------------|----------------|----------------|
| OPERATION | 0°C to +70°C | -20°C to +70°C |
| STORAGE | -40°C to +75°C | -40°C to +75°C |
| INSTALLATION | 0°C to +70°C | -10°C to +70°C |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|-------------------------|
| IEC | 61034-1 |
| IEC | 61034-2 |
| IEC | 60332-1-1 |
| IEC | 60332-1-2 |
| IEC | 60754-1 |
| IEC | 60754-2 |
| Telcordia | GR-409-CORE |
| RoHS | Compliant to 2002/95/EC |
| EIA/TIA | 568-133 |

Contact AFL for more details.



Multi-Unit Circular Premise Cable

Multi-Unit Circular Premise Cables are for use in applications requiring fiber counts between 24 and 144 fibers. Unitized construction allows for ease of fiber identification and rapid installation.

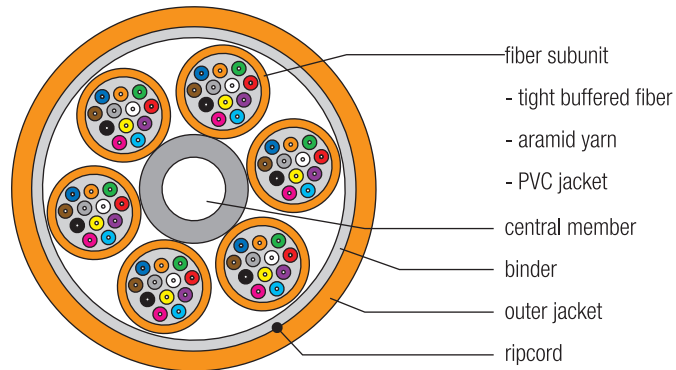
Features

- Available with 24 to 144 fibers
- 12-fiber water-blocked sub-units
- Moisture-resistant, fungus-resistant and UV-resistant outer jacket
- Hybrid constructions also available

Applications

- Headend termination to a fiber "backbone"
- Termination of fiber rack systems
- Multi-floor deployment where select fibers are used at each floor
- Intrabuilding "backbones"

Cable Components



Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO/IEC | MAXIMUM ATTENUATION (DB/KM) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMB _c (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|--|---------|-----------------------------|---------|---------|---|---------|---------------------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| (6) 62.5 Giga-Link™ 300 | OM1 | 3.5 | 1.2 | N/A | 200 | 600 | N/A | 300 | 550 | 32 | — |
| (5) 50 Giga-Link™ 600 | OM2 | 3.5 | 1.5 | N/A | 500 | 500 | N/A | 600 | 600 | 82 | — |
| (L) 50 Laser-Link 300 | OM3 | 3.0 | 1.2 | N/A | 1,500 | 500 | 2,000 | 1,000 | 550 | 300 | — |
| (C) 50 Laser-Link 550 | OM4 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (W) AFL Wideband Multimode | OM5 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (9) Single-mode (ITU G.652.D/G.657.A1) | OS2 | N/A | 0.5 | 0.5 | N/A | N/A | N/A | N/A | 5,000 | N/A | 10,000 |



STOCK ITEM

Multi-Unit Circular Premise Cable

Mechanical Data

| CABLE TYPE | AFL NO. | | FIBER COUNT | NOMINAL DIAMETER | WEIGHT | | TENSION | | BENDING RADIUS | | |
|----------------------------|--------------|--------------|-------------|--------------------------|-------------|--------------------|--------------------|--------------|----------------|--------------|-----------|
| | RISER | PLENUM | | | Inches (mm) | RISER | PLENUM | lbs (N) | | inches (cm) | |
| | | | | | | lbs/1000ft (kg/km) | lbs/1000ft (kg/km) | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| CPC with 12 Fiber Subunits | CR024★501##1 | CP024★551##1 | 24 | 0.30 x 0.52 (7.6 x 13.2) | 57 (86) | 62 (92) | 300 (1320) | 150 (660) | 5.0 (12.0) | 4.0 (10.0) | |
| | CR036★501##1 | CP036★551##1 | 36 | 0.56 (14.3) | 105 (155) | 134 (200) | 300 (1320) | 150 (660) | 9.1 (23.1) | 6.1 (15.4) | |
| | CR048★501##1 | CP048★551##1 | 48 | 0.56 (14.3) | 105 (155) | 134 (200) | 300 (1320) | 150 (660) | 9.1 (23.1) | 6.1 (15.4) | |
| | CR060★501##1 | CP060★551##1 | 60 | 0.68 (17.3) | 160 (235) | 211 (315) | 300 (1320) | 150 (660) | 10.4 (26.4) | 6.9 (17.6) | |
| | CR072★501##1 | CP072★551##1 | 72 | 0.68 (17.3) | 160 (235) | 211 (315) | 300 (1320) | 150 (660) | 11.4 (29.0) | 7.6 (19.3) | |
| | CR096★501##1 | CP096★551##1 | 96 | 0.81 (20.6) | 280 (410) | 295 (440) | 300 (1320) | 150 (660) | 13.5 (34.2) | 9.0 (22.8) | |
| | CR144★501##1 | CP144★551##1 | 144 | 0.92 (23.4) | 288 (430) | 302 (450) | 300 (1320) | 150 (660) | 15.0 (38.1) | 10.0 (25.4) | |

★ Fiber Types – Replace asterisk (★) in AFL number with number in the Fiber Specifications table on previous page.
 # Outer Jacket Color – Replace hashtag (#) in AFL number with number in the Cable Jacket Color table below.

Cable Jacket Color Options

| | |
|------------|-----------------------------|
| 1 - Blue | 8 - Black |
| 2 - Orange | 9 - Yellow |
| 3 - Green | A - Violet |
| 4 - Brown | B - Rose |
| 5 - Slate | C - Aqua |
| 6 - White | K - Erika Violet (RAL 4003) |
| 7 - Red | |

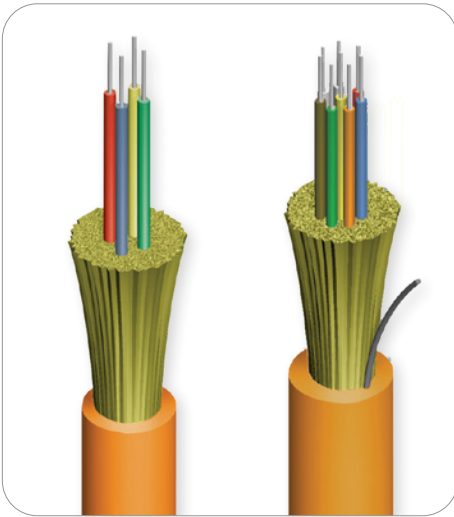
Qualifications

| GOVERNING BODY | STANDARD CODE | COMPONENT |
|----------------|---------------|-----------|
| Telcordia | GR-409-CORE | Sub-units |
| EIA/TIA | 568-A | Sub-units |
| ICEA | S-104-696 | Sub-units |
| NFPA | 262 | Cable |
| RoHS | 2002/95/EC | Cable |

Temperature Specifications

| | TEMPERATURE RANGE | |
|---------------------|-------------------|----------------|
| | PLENUM | RISER |
| INSTALLATION | 0°C to +70°C | -20°C to +70°C |
| OPERATION | 0°C to +70°C | -20°C to +70°C |
| STORAGE | -40°C to +75°C | -40°C to +75°C |

Contact AFL for further details.



Low Smoke Zero Halogen Distribution Cable

The Low Smoke Zero Halogen (LSZH) Distribution cable family from AFL offers all of the benefits of a traditional 900 µm based optical cable while supporting compliance to stringent international standards for jacket material composition and flame safety. Additionally, AFL's LSZH distribution cable design complies with UL 1666 and UL 1685 standards for OFNR-LS criteria. Circular Premise cable based on 900 µm tight buffer constructions provide the performance and density demanded by today's optical network installation demands. These cable designs support either direct or indirect termination schemes while enabling efficient routing through industry-standard Fiber Management Systems. Cable constructions support the application of Industry-leading multimode fiber as well as single-mode solutions. Both fiber configurations are available in bend-insensitive designs as well.

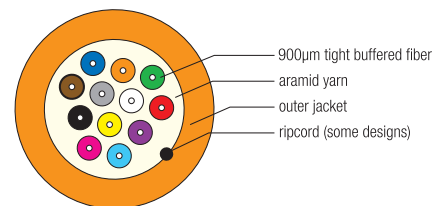
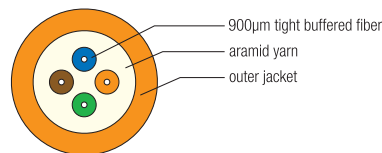
Features

- 900 µm tight buffer construction
- Fiber counts of 4 to 24 available
- Support either direct or indirect termination schemes
- Mixed fiber designs available

Applications

- Routing between communications closets and equipment rooms
- Data center trunk cabling
- LAN distribution/intrabuilding backbones
- Environments requiring zero-halogen safety features
- Pre-terminated optical assembly

Cable Components



Fiber Specifications

| CORE SIZE/FIBER TYPE | ISO/IEC | MAX. ATTENUATION (dB/km) | | | OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km) | | EMBC (MHz•km) | GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | | 10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters) | |
|--|---------|--------------------------|---------|---------|---|---------|---------------|--|---------|---|---------|
| | | 850 nm | 1300 nm | 1550 nm | 850 nm | 1300 nm | | 850 nm | 1300 nm | 850 nm | 1300 nm |
| (6) 62.5 Giga-Link™ 300 | OM1 | 3.5 | 1.2 | N/A | 200 | 600 | N/A | 300 | 550 | 32 | — |
| (5) 50 Giga-Link™ 600 | OM2 | 3.5 | 1.5 | N/A | 500 | 500 | N/A | 600 | 600 | 82 | — |
| (L) 50 Laser-Link 300 | OM3 | 3.0 | 1.2 | N/A | 1,500 | 500 | 2,000 | 1,000 | 550 | 300 | — |
| (C) 50 Laser-Link 550 | OM4 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (W) AFL Wideband Multimode | OM5 | 3.0 | 1.2 | N/A | 3,500 | 500 | 4,700 | 1,040 | 550 | 550 | — |
| (9) Single-mode (ITU G.652.D/G.657.A1) | OS2 | N/A | 0.5 | 0.5 | N/A | N/A | N/A | N/A | 5,000 | N/A | 10,000 |



Low Smoke Zero Halogen Distribution Cable (cont.)

Mechanical Data

| CABLE TYPE | AFL NO. | FIBER COUNT | NOMINAL DIAMETER | WEIGHT | TENSION | | BENDING RADIUS | |
|------------|--------------|-------------|------------------|---------------------|--------------|-----------|----------------|-----------|
| | | | | | lbs (N) | | inches (cm) | |
| | LSZH | | inches (mm) | lbs/1000 ft (kg/km) | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| QUAD-Link | UE004★481#0E | 4 | 0.189 (4.8) | 14 (21) | 200 (890) | 45 (198) | 3.8 (9.6) | 1.9 (4.8) |
| CPC | CE006★521#0E | 6 | 0.205 (5.2) | 17 (26) | 200 (890) | 45 (198) | 4.1 (10.4) | 2.1 (5.2) |
| | CE008★541#0E | 8 | 0.213 (5.4) | 19 (29) | 200 (890) | 45 (198) | 4.3 (10.8) | 2.2 (5.4) |
| | CE012★601#0E | 12 | 0.236 (6.0) | 26 (38) | 200 (890) | 45 (198) | 4.8 (12.0) | 2.4 (6.0) |
| | CE018★761#0E | 18 | 0.299 (7.6) | 39 (58) | 300 (1320) | 90 (396) | 6.0 (15.2) | 3.0 (7.6) |
| | CE024★841#0E | 24 | 0.331 (8.4) | 50 (75) | 300 (1320) | 90 (396) | 6.5 (16.4) | 3.3 (8.4) |

★ Fiber Types – Replace asterisk (★) in AFL number with number in the Fiber Specifications table on previous page.

Outer Jacket Color – Replace hashtag (#) in AFL number with number in the Cable Jacket Color table below.

Cable Jacket Color Options

| | |
|------------|-----------------------------|
| 1 - Blue | 8 - Black |
| 2 - Orange | 9 - Yellow |
| 3 - Green | A - Violet |
| 4 - Brown | B - Rose |
| 5 - Slate | C - Aqua |
| 6 - White | K - Erika Violet (RAL 4003) |
| 7 - Red | |

Qualifications

| GOVERNING BODY | STANDARD CODE |
|----------------|----------------------|
| EIA/TIA | 568 |
| Telcordia | GR-409-CORE Issue 2 |
| IEC | 60332, 60754, 61034 |
| UL | 1666, 1685 (OFNR-LS) |
| RoHS | 2002/95/EC |
| REACH | SVHC |

Temperature Specifications

| TEMPERATURE RANGE | |
|-------------------|----------------|
| INSTALLATION | -10°C to +60°C |
| OPERATING | -40°C to +70°C |
| STORAGE | -40°C to +70°C |

Contact AFL for further details.

FlexScan® FS300 Quad OTDR

Be ready for anything with this all-in-one solution



Features

- Multimode and Single-mode OTDR, including PON test
- SmartAuto® 1-button automated testing for fast results
- Pocket-sized, weighs less than 1 pound, 12-hour battery
- LinkMap® color-coded icons for easy troubleshooting
- Integrated Source, Power Meter and VFL
- Robust reporting including Print-to-PDF
- Available with field-replaceable connector

Applications

- OTDR and insertion loss test and reporting
- Fast, accurate Pt-to-Pt and PON verification and troubleshooting
- Locate faults exceeding industry or user pass/fail thresholds
- Visually pinpoint location of macrobends or breaks

AFL's FlexScan FS300 Quad OTDR is an all-in-one solution for detecting, identifying, locating and resolving single-mode and multimode optical network issues. It is designed for both novice and expert technicians working in a range of environments from data centers to fiber-to-the-home, as well as local and wide area networks. The FlexScan FS300 automates test setup, shortens test time and simplifies results interpretation, improving efficiency and reducing costs.

All-in-one test capability: The FlexScan FS300 includes an integrated VFL, power meter and light source. It can be easily paired to AFL's award-winning FOCIS family of inspection scopes for single-fiber and/or MPO and OptiTip® multifiber inspection, ensuring technicians have everything they need to locate and resolve optical network issues.

Performance-packed: With SmartAuto automated multi-pulse acquisition, 37 dB dynamic range and best-in-class dead zones, FlexScan Quad OTDRs test multimode and single-mode networks – including FTTH PONs and POLANs up to 1:64 split ratio – while still detecting and measuring events <2 meters apart.

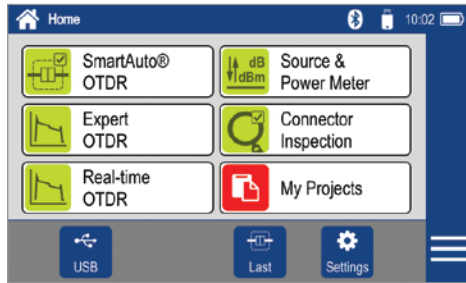
User-friendly: The FS300 enables both expert and novice technicians to quickly and accurately detect, locate, identify and measure optical network components and faults. It applies industry-standard or user-set pass/fail criteria and displays results using LinkMap color-coded icons that immediately show the health of the network.

Pocket-sized: The FlexScan FS300's small form factor still delivers 12-hour battery operation plus a large, bright, indoor/outdoor, 5-inch 800 x 480 touchscreen display that doesn't need a stylus.

Multiple Reporting Options: Reports can be generated directly from the unit using Print-to-PDF feature or files can be transferred wirelessly or uploaded via USB to the included Windows® compatible TRM® 3.0 Test Results Manager software.

Field-replaceable connector: With AFL's optional field-replaceable connector, avoid expensive service repairs to replace connectors damaged due to poor cleaning practices and/or normal wear-and-tear.

FlexScan® FS300 Quad OTDR



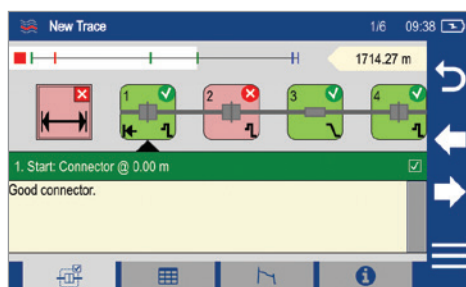
Dramatically Reduces Test Time

In SmartAuto mode, FlexScan OTDRs automatically analyze and test the network using a variety of network-optimized settings to precisely locate, characterize and identify network events with one button push. Loss and reflectance are measured for connectors, splices, splitters and macro-bends. FlexScan even checks for live fiber and verifies OTDR launch quality before initiating a test.

Simplifies Network Troubleshooting

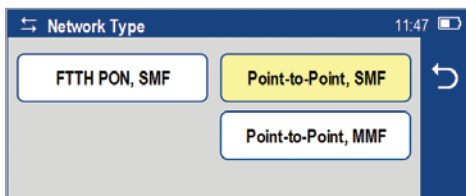
LinkMap® color-coded icons enable even novice users to easily and accurately troubleshoot optical networks. LinkMap clearly identifies fiber start, end, connectors, splices, PON splitters, and macro-bends.

A LinkMap Summary provides end-to-end link length, loss and ORL. Loss and reflectance of detected events is compared to industry-standard or user-defined pass/fail thresholds and displayed with clear pass/fail indications. Users can instantly toggle between LinkMap and Trace views.



Multimode and Single-mode plus PON Testing in One OTDR

FlexScan Quad OTDRs are the ideal test tool for verifying and/or maintaining both single-mode and multimode networks. Unlike most Quad OTDRs, FS300 OTDRs test both point-to-point networks and FTTH PONs/Passive Optical LANs (POLANs).



Connectivity

FlexScan OTDRs easily pair with AFL's ward-winning FOCIS® family of connector inspection probes for fast, easy single-fiber and/or multi-fiber connector end-face inspection. Images and pass/fail results can be transferred to the FlexScan for display and/or archiving with OTDR results.

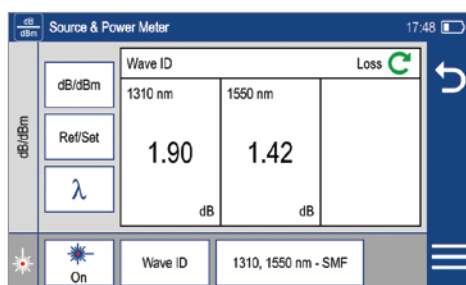
FlexScan results can be transferred wirelessly via the free FlexScan App to a smart device for real-time reporting using the included Windows-based TRM® 3.0 Test Results Manager software. Monitoring test results in real-time can detect mistakes while the tech is still in the field, preventing future truck rolls.



OTDR, OLTS, and VFL Testing with a Single Tool

FlexScan optionally includes a Wave ID optical light source (OLS) and optical power meter (OPM). With Wave ID, the OPM auto-synchronizes to a single or multi-wavelength Wave ID optical signal transmitted by an AFL light source. The OPM reports detected wavelengths and measures power and loss at each wavelength, saving significant test time and eliminating setup errors.

The integrated Visual Fault Locator's eye-safe red laser enables users to visually pinpoint the location of macro-bends and fiber breaks often found in splice closures and fiber cabinets.



FlexScan® FS300 Quad OTDR

Specifications^a

| OTDR | MULTIMODE | SINGLE-MODE |
|------------------------------------|---|--|
| Emitter Type | Laser | |
| Safety Class ^b | Class I | |
| Fiber Type | Multimode; compatible with OM1-OM5 | Single-mode; compatible with all G.65x |
| Wavelengths ^c | 850/1300 ±20 nm | 1310/1550 ±20 nm |
| Network Type | Point-to-point | Point-to-point & PON up to 1:64 |
| Connector Type | User-specified APC or UPC ferrule with interchangeable UCI adapters | |
| Dynamic Range ^d | ≥29/29 dB @ 850/1300 nm | ≥37/36 dB @ 1310/1550 nm |
| Event Dead Zone ^e | ≤0.8 m @ 850/1300 nm typical | ≤0.8 m @ 1310/1550 nm typical |
| Attenuation Dead Zone ^f | ≤3.0 m | ≤3.5 m |
| PON Dead Zone ^g | Not applicable | ≤25 m |
| Pulse Widths | 3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns; 1 μs | 3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns; 1, 2, 3, 5, 10, 20 μs |
| Range Settings | 250 m to 30 km | 250 m to 240 km |
| Data Points | Up to 300,000 | |
| Data Spacing | ≥5 cm to ≤16 m | |
| Group Index of Refraction | 1.3000 to 1.7000 | |
| Distance Uncertainty | ±(1 + 0.0025% x distance + data point spacing) m | |
| Linearity | ±0.03 dB/dB | |
| Loss Resolution | 0.001 dB | |
| Reflectance Range | 850 nm: -20 to -58 dB; 1300 nm: -20 to -63 dB | 1310/1550 nm: -20 to -65 dB |
| Reflectance Resolution | 0.01 dB | |
| Reflectance Accuracy | ±2 dB | |
| ORL Range | 20 to 60 dB | |
| ORL Resolution | 0.01 dB | |
| ORL Accuracy | ±2 dB over range 30 to 55 dB; ±4 dB over range 20-30 dB and 55-60 dB | |
| Trace File Format | .SOR, Telcordia SR-4731 Issue 2 | |
| OTDR Results Storage | Internal or external USB memory | |
| Internal Storage | Minimum 4 GB internal non-volatile memory (App SW + >5000 traces typical) | |
| Internal Launch Fiber | ≥30 m internal MM launch fiber | ≥50 m internal SM launch fiber |
| OTDR Modes | Supports SmartAuto, Expert, Real-Time for PON & point-to-point networks | |
| Real-time Refresh Rate | 1 to 4 Hz | |
| Live Fiber Protection | No OTDR damage when connected to live fiber delivering ≤ +18 dBm at wavelength(s) in range 825 to 1675 nm | |
| Live Fiber Detection | Reports live fiber with input signal ≥ -35 dBm for wavelength(s) in range 825 to 1675 nm | |

Notes:

- a. All specifications valid at 25 °C unless otherwise specified.
- b. FDA 21 CFR 1040.10 & 1040.11, IEC 60825-1: 2014.
- c. Measured with laser in CW mode at 23 °C ±3 °C.
- d. SNR=1, longest range and pulse width, 3 minute averaging.
- e. Maximum distance between two points 1.5 dB down each side of a reflective peak caused by an event with a -45 dB (or smaller) reflectance. Test pulse width is 3 or 5 ns.
- f. Maximum distance from the start of a trace spike caused by an event with a -45 dB (or smaller) reflectance, to the point where the trace returns to and stays within ±0.5 dB of backscatter. Test pulse width is 3 or 5 ns.
- g. Recovery to within 0.5 dB of backscatter after 1:16 splitter (≤13 dB loss) using 100 ns pulse width.

FlexScan® FS300 Quad OTDR

Specifications^a

| OPM - OPTICAL POWER METER (P1 Option) | |
|---------------------------------------|---|
| Calibrated Wavelengths | 850, 1300, 1310, 1490, 1550, 1625, 1650 nm |
| Detector Type | InGaAs PIN, 2 mm diameter |
| Measurement Range | +3 to -70 dBm (+3 to -65 dBm @ 850 nm) |
| Tone Auto-Detect | 270 Hz, 330 Hz, 1 kHz, 2 kHz |
| Tone Detect Range | +3 to -50 dBm @1300, 1310, 1550 nm; +3 to -40 dBm @850 nm; |
| Wave ID | Auto-synchronizes & measures 1, 2 or 3 wavelengths |
| Wave ID Range | +3 to -50 dBm @1300, 1310, 1550 nm; +3 to -40 dBm @850 nm |
| Accuracy | ±5% @ -10 dBm |
| Linearity | ±0.1 dB (-3 to -40 dBm); ±0.25 dB (-40 to -70 dBm) |
| Resolution | 0.01 dB |
| Measurement Units | Power in dBm, nW, µW, mW; Loss in dB |

| OLS - OPTICAL LIGHT SOURCE (P1 Option) | |
|--|--|
| Wavelengths | 850/1300/1310/1550 nm |
| Emitter Type | Laser |
| Safety Class | Class I ^b |
| Launch Condition | Controlled Launch at 850 nm (comparable to encircled flux on OM4 fiber) |
| Center λ (CW Mode) | ±20 nm |
| Spectral Width | 5 nm maximum (FWHM, CW Mode) |
| Internal Modulation | 270 Hz, 330 Hz, 1 kHz, 2 kHz, CW, Wave ID |
| SM Output Stability | Short-term ^c : ±0.1 dB; Long-term ^d : ±0.05 dB |
| MM Output Stability | Short-term ^e : ±0.20 dB; Long-term ^f : ±0.15 dB |
| Output Power | 1310/1550 nm: -7 dBm ±1.5 dB (CW, G.652.C/D) 1300 nm: -7 dBm ±1.5 dB (CW, 50 µm MMF) 850 nm: 0 dBm ±1.5 dB (CW, 50 µm MMF) |

| VFL - VISUAL FAULT LOCATOR | |
|----------------------------|---|
| Emitter Type | Laser, Class IIIa / Class 3R ^b |
| Wavelength | 635 nm ±10 nm |
| Output Power | 1.5 mW (~+2 dBm ±0.5 dB) into SMF-28 |
| Modes | CW and 1 Hz flashing |

Notes:

- a. All specifications valid at 25 °C unless otherwise specified.
- b. FDA 21 CFR 1040.10 and 1040.11, and IEC 60825-1:2014.
- c. Typical maximum deviation over 15 minute after 15 minute warm-up.
- d. Typical maximum deviation over 8 hours after 1 hour warm-up.
- e. 15 minutes after 30 minutes warm-up.
- f. 8 hours after 1 hour warm-up.

| GENERAL | |
|-----------------------|--|
| Size (in boot) | 98 x 175 x 52.5 mm |
| Weight | 0.8 kg |
| Operating Temperature | -10 °C to +50 °C, 0 to 95% RH (non-condensing) |
| Storage Temperature | -30 °C to +70 °C, 0 to 95% RH (non-condensing, battery removed) -20 °C to +60 °C, 0 to 95% RH (non-condensing, battery installed) |
| Power | Rechargeable Lithium polymer battery; AC adapter |
| AC Adapter | 100-240 VAC, 50-60 Hz input; 5VDC, 2A output |
| Battery Life (OTDR) | ≥12 hours, Telcordia test conditions, 4 hours recharge |
| Display | 5-inch color LCD, 800 x 480 pixels, backlit |
| Shock and Vibration | GR-196-CORE, drop test, 0.75 m (30 in.), 6 planes |
| Dust Protection | GR-196-CORE, rubber dust caps for all ports |
| OTDR/OLS Ports | MM: UPC; SM: UPC or APC; includes tool-free, interchangeable SC adapters |
| OPM and VFL Ports | Universal, 2.5 mm adapter (SC, FC, ST); others available |
| USB Ports | USB host port; micro-USB function port |
| Bluetooth Interface | W1 option; compatible with Windows PC and Android |
| WiFi Interface | W1 option; compatible with IEEE 802.11 / WLAN |
| CE Safety | Compliant with EN61010-1 |
| CE EMI/RFI | EN55011, EN61326-1, GR-196-CORE 4.5.1 |
| RoHS | Compliant with RoHS directive 2011/65/EU |

FlexScan® FS300 Quad OTDR

FlexScan FS300 models are available in five kit configurations: Basic, PLUS, PRO, BIPM, and MPO. All kits include FS300 with AC charger, battery, carry strap, SC/2.5 mm connector adapters, TRM® 3.0, quick reference user guide, and carry case.

Ordering Information

FS300-325 Basic, Plus, PRO, BIPM kits Order Entry: **FS300-325-[KIT]-[Pn]-[Wn]-[C]-[CC]-[LNG]-[AC]-[SMFR]-[MMFR]-[TIP]**

FS300-325 MPO kits (SMF and MMF) Order Entry: **FS300-325-[MKIT]-P1-[Wn]-[LNG]-[AC]-[MPOC]** where:

| [KIT] | FS300 FlexScan Kit Configuration |
|-------------|---|
| BAS | Includes: FS300, soft case, TRM® 3.0 Basic, USB cable ^a |
| PLUS | Includes: BAS kit plus 150 m SMF & MMF Fiber Rings, One-Click Cleaner, upgrade to TRM 3.0 Advanced, user-selected soft or hard carry case |
| PRO | Includes: PLUS kit plus FOCIS Flex with two user-selected adapter tips |
| BIPM | Includes: PRO kit plus OFI-BIPMe |

| [MKIT] | FS300-325 MPO Kit Configuration |
|-------------|--|
| SMPO | SMF MPO test kit; Includes SMF MPO switch, launch cables, carry case |
| MMPO | MMF MPO test kit; Includes MMF MPO switch, launch cables, carry case |

| [PN] | OPTICAL LIGHT SOURCE (OLS) and Optical Power Meter (OPM) |
|-----------|--|
| P0 | No OLS, no OPM |
| P1 | 850/1300 MM; 1310/1550 SM Source and Power Meter |

| [WN] | Bluetooth/WiFi Configuration |
|-----------------------|------------------------------|
| W0 | No Bluetooth or WiFi |
| W1^b | Includes WiFi and Bluetooth |

| [C] | OTDR / Source Connector Type |
|----------|------------------------------|
| A | APC (recommended) |
| U | UPC |

| [CC] ^c | Carry Case Option |
|-------------------|---|
| S1 | Standard soft case for FlexScan, Fiber Rings, FOCIS Flex, accessories (Basic, PLUS, PRO kits only) |
| S2 | Large soft case for FlexScan, Fiber Rings, FOCIS Flex, OFI-BIPMe, accessories (PLUS, PRO, BIPM kits only) |
| H1 | Hard carry case (PLUS, PRO, BIPM Kits only) |

| [LNG] | Language |
|------------|---------------|
| ENG | English |
| CHS | Chinese Simp. |
| CHT | Chinese Trad. |
| CZE | Czech |
| DEU | German |
| DNK | Danish |

| [LNG] | Language |
|------------|-----------|
| FIN | Finnish |
| FRA | French |
| ITA | Italian |
| JPN | Japanese |
| KOR | Korean |
| NOR | Norwegian |

| [LNG] | Language |
|------------|------------|
| POL | Polish |
| POR | Portuguese |
| SPA | Spanish |
| TUR | Turkish |
| VNM | Vietnamese |

| [AC] | Destination Country | AC Plugs |
|-----------|---------------------|------------|
| US | USA | 2-pin, US |
| EU | European Union | 2-pin, EU |
| UK | United Kingdom | 3-pin, UK |
| CN | China, Australia | 2-pin, SAA |

Notes:

- Results can be transferred from FlexScan to TRM® 3.0 using USB cable, or performed wirelessly (W1 option) after downloading FlexScan App from 'Google play' or 'App Store'.
- FlexScans equipped with Bluetooth option (W1) support Bluetooth transfer of results via FlexScan App for remote reporting using TRM 3.0.
- Basic kit always ships with S1 (Standard Soft Case); MPO kit always ships with MPO-specific soft case.

| [SMFR] | 150 m SMF Fiber Ring |
|----------------|----------------------|
| Absent | N/A in Basic kits |
| USC/USC | FR-SMF-150-USC-USC |
| USC/UFC | FR-SMF-150-USC-UFC |
| USC/ULC | FR-SMF-150-USC-ULC |
| USC/UST | FR-SMF-150-USC-UST |
| USC/ASC | FR-SMF-150-USC-ASC |
| USC/AFC | FR-SMF-150-USC-AFC |
| USC/ALC | FR-SMF-150-USC-ALC |
| USC/UE2 | FR-SMF-150-USC-UE2 |
| ASC/UFC | FR-SMF-150-ASC-UFC |
| ASC/ULC | FR-SMF-150-ASC-ULC |
| ASC/UST | FR-SMF-150-ASC-UST |
| ASC/ASC | FR-SMF-150-ASC-ASC |
| ASC/AFC | FR-SMF-150-ASC-AFC |
| ASC/ALC | FR-SMF-150-ASC-ALC |
| ASC/AE2 | FR-SMF-150-ASC-AE2 |

| [MMFR] | 150 m OM1 (62.5 μm) Fiber Ring |
|-----------------|--------------------------------|
| Absent | N/A in Basic kits |
| USC/UST1 | FR-OM1-150-USC-UST |
| USC/USC1 | FR-OM1-150-USC-USC |
| USC/ULC1 | FR-OM1-150-USC-ULC |
| USC/UFC1 | FR-OM1-150-USC-UFC |

| [MMFR] | 150 m OM2 (50 μm) Fiber Ring |
|-----------------|------------------------------|
| Absent | N/A in Basic kits |
| USC/UST2 | FR-OM2-150-USC-UST |
| USC/USC2 | FR-OM2-150-USC-USC |
| USC/ULC2 | FR-OM2-150-USC-ULC |
| USC/UFC2 | FR-OM2-150-USC-UFC |

| [MMFR] | 150 m OM3/4/5-compatible Fiber Ring |
|-----------------|-------------------------------------|
| Absent | N/A in Basic kits |
| USC/UST3 | FR-OM3-150-USC-UST |
| USC/USC3 | FR-OM3-150-USC-USC |
| USC/ULC3 | FR-OM3-150-USC-ULC |
| USC/UFC3 | FR-OM3-150-USC-UFC |

| [TIP] | FOCIS Flex Tips and Cleaning (PRO only) |
|--------------|---|
| Blank | Option not available in Basic and PLUS kits |
| SC | SC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm One-Click |
| FC | FC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm One-Click |
| LC | LC-UPC bulkhead tip, 1.25 mm UPC ferrule tip, 1.25 mm One-Click |
| ASC | SC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm One-Click |
| AFC | FC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm One-Click |
| ALC | LC-APC bulkhead tip, 1.25 mm APC ferrule tip, 1.25 mm One-Click |

| [MPOC] | MPO Launch Cable Network Connector |
|----------|------------------------------------|
| F | Female (unpinned) |
| M | Male (pinned) |

FlexScan® FS300 Quad OTDR

Ordering Information (continued)

Accessories

| DESCRIPTION | AFL NO. |
|---|-------------------|
| FlexScan wrist strap | 1400-05-0230PZ |
| FlexScan neck strap, 36" | 1400-05-0231PZ |
| AC charger 100-240 VAC to 5 VDC | 4050-00-0931PR |
| Soft carry case for FS300 with FOCIS, OFI, and Fiber Ring | 1400-01-0167PZ |
| Soft carry case for FS300-325 MPO kits | 1400-20-0001PZ |
| Soft carry case for FS300 with FOCIS, and Fiber Ring | 1400-20-0002PZ |
| Hard carry case for FS300 kits with FOCIS, OFI, and Fiber Ring | 1400-01-0177PZ |
| FS300 extended temperature replacement battery | 3900-06-0902MR |
| Vehicle charger, 12VDC to 5VDC @2A | 4050-00-0033MR |
| Cable, USB-micro B, 5 pin, 6' | 6000-00-0031MR |
| 5V USB charging cable (1.5 m), type A to barrel (0.9 X 3.2 X 9 mm) | 6000-00-0034PR |
| One-Clicks, fluid, wipes, etc. See www.AFLglobal.com | Cleaning Supplies |

Field-Replaceable OTDR Connector (Optical Port Ferrule Saver)

Protect your OTDR ports from damage due to mating with dirty or damaged launch cables or patch cords or normal wear-and-tear. Equip your FlexScan FS300 with a field-replaceable connector, which installs in seconds and accepts AFL's tool-free interchangeable SC, LC, FC and ST connector adapters.

Replace damaged connectors in the field: When normal wear-and-tear or poor cleaning practices damage the port saver's end-face, replace it in seconds without having to return the OTDR to a service center for an expensive and time-consuming repair.

| DESCRIPTION | AFL NO. |
|---|----------------|
| Field-replaceable connector; APC female to APC male | 2900-58-0001MR |
| Field-replaceable connector; APC female to UPC male | 2900-58-0002MR |
| Field-replaceable connector; UPC female to APC male | 2900-58-0003MR |
| Field-replaceable connector; UPC female to UPC male | 2900-58-0004MR |

Connector Adapters


| CONNECTOR ADAPTER | AFL NO. | | |
|-------------------|----------------|----------------|----------------|
| | OTDR/OLS PORT | OPM PORT | VFL PORT |
| FC | 2900-50-0002MR | 2900-52-0001MR | N/A |
| SC | 2900-50-0003MR | 2900-52-0002MR | N/A |
| ST | 2900-50-0004MR | 2900-52-0003MR | N/A |
| LC | 2900-50-0006MR | 2900-52-0004MR | N/A |
| SC/APC | 2900-50-0011MR | N/A | N/A |
| 2.5 mm Universal | N/A | 2900-52-0005MR | 2900-50-0007MR |
| 1.25 mm Universal | N/A | 2900-52-0006MR | 2900-50-0010MR |

FlexScan® FS300 Quad OTDR

Test Management and Reporting Software


| DESCRIPTION | AFL NO. |
|---|---------------|
| TRM® 3.0 with Basic License (OTDR Trace/OLTS Viewer, Batch Editor and Reports), USB delivery (included with all FS300 kits) | TRM3-BASIC |
| TRM 3.0 upgrade from Basic to Advanced License, USB delivery | TRM3-UPGRADE |
| TRM 3.0 upgrade from Basic to Advanced License, email delivery | TRM3-UP-EMAIL |
| FlexScan App (Android Google play) | Free Download |

Recommended Products



FOCIS Flex and FOCIS Lightning (Multi-Fiber) Connector Inspection

- Self-contained, tether-free, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis
- FOCIS Lightning: extremely fast multi-fiber auto-analysis for datacom and telecom inspection applications



OFI-BIPMe Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|---------------------|---------------------|---|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety/EMC/EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| | Telcordia | Compliant to GR-196-CORE 4.5.1 for requirements on electromagnetic interference |
| | FCC | Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions |
| | FDA | Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products |
| RoHS | IEC | Compliant to IEC 60825-1 for safety of laser products |
| | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |
| Test Method | TIA | Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components |
| | IEC | Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises |
| | AS/NZS | Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises |
| | TIA | Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant |
| | TIA | Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant |
| | IEC | Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling |
| | AS/NZS | Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling |
| | IEC | Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant |
| Generic Requirement | IEC | Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant |
| | Telcordia | Compliant to GR-196-CORE for generic requirements for OTDR-type equipment |
| | Telcordia | Compliant to SR-4731 Issue 2 for OTDR data format |
| | IEC | Compliant to IEC 61746-1 for requirements on calibration of OTDR |

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about FlexScan FS300 OTDR.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

FlexScan® FS200 Single-mode OTDR

Pocket-sized, Performance-packed, User-friendly, and Affordable



Features

- Flexpress® mode completes OTDR tests in <5 seconds
- Test up to 1:64 PON with 25 m PON dead zone
- Easy to understand LinkMap® results with pass/fail indications
- Single, dual or triple wavelength single-mode
- Single port for in- and out-of-service OTDR tests
- Integrated source, power meter, VFL (visual fault locator)
- Integrated MPO Switch control via USB
- Rugged, lightweight, hand-held for field use
- Available with field-replaceable Port Saver connector

Applications

- PON or point-to-point network verification or troubleshooting
- OTDR testing plus insertion loss and power measurements
- Locate faults exceeding industry or user pass/fail thresholds
- Visually pinpoint location of macro-bends or breaks

AFL's FlexScan FS200 OTDR is an all-in-one solution for detecting, identifying, locating, and resolving single-mode optical network issues. It is designed for both novice and expert technicians working in a range of environments, from FTTH PON to point-to-point networks. It applies industry-standard or user-set pass/fail criteria and displays results using LinkMap color-coded icons to show the health of the network. FlexScans automate test setup, shorten test time, and simplify results interpretation improving efficiency and reducing costs.

All-in-one test capability: The FlexScan FS200 includes an integrated VFL, power meter, and light source. It can be easily paired to AFL's award-winning FOCIS family of inspection scopes, ensuring technicians have everything they need to locate and quickly resolve optical network issues.

Performance-packed: With SmartAuto multi-pulse acquisition, up to 37 dB dynamic range, and best-in-class 25 m PON dead zone, FlexScan FS200 PON OTDRs test FTTH PONs up to 1:64 while still detecting and measuring events only meters apart.

Fast! Flexpress mode completes dual-wavelength tests in <5 seconds – 10 x faster than conventional OTDRs! For multi-fiber testing, FS200s automatically control AFL's MFS Multi-Fiber Switch (12-fiber MPO switch) to further reduce multi-fiber test time.

Pocket-sized: At 3.5 x 6 x 1.75 in. (86 x 160 x 43 mm) and less than one pound (0.4 kg), FlexScan FS200 OTDRs truly fit in your pocket, yet still provide a large, bright indoor/outdoor touchscreen display, and all-day operation.

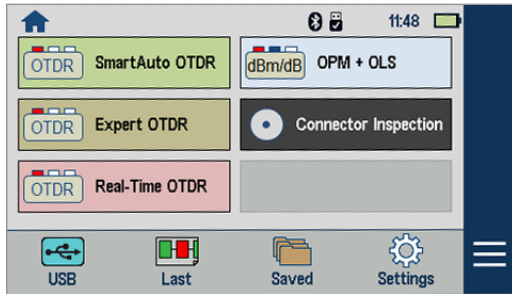
Multiple sharing and reporting options: Results can be stored internally, saved to a USB, and uploaded via USB cable, Bluetooth (via FlexApp) or Wi-Fi for real-time reporting using the included FlexReports Test Results Manager software.

Convenient cost-saving kits: Bundle the FlexScan FS200 with your choice of launch cable, FOCIS Flex connector inspection probe and tips, and/or AFL's universal optical fiber identifier (OFI-BIPMe) for significant cost-savings!

PON-optimized FTTH-PRO kits combine FS200-303/304 with a FOCIS Flex Inspection probe, 4 adapter tips, and launch cables for both SC/APC and LC/APC networks.

Field-replaceable Port Saver connector: With AFL's optional field-replaceable Port Saver, avoid expensive service repairs to replace connectors damaged due to poor cleaning practices and/or normal wear-and-tear.

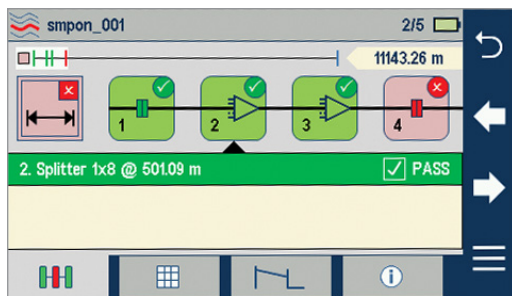
FlexScan® FS200 Single-mode OTDR



Dramatically Reduces Test Time

In SmartAuto mode, FlexScan OTDRs automatically analyze and test the network using a variety of network-optimized settings to precisely locate, characterize and identify network events with one button push. Loss and reflectance are measured for connectors, splices, splitters and macro-bends. FlexScan even checks for live fiber and verifies OTDR launch quality before initiating a test.

FlexScan's Flexpress mode completes dual-wavelength tests in seconds, reducing test time by 10x compared to conventional OTDRs. For multi-fiber testing, FlexScan's automatically control AFL's MPO Switch, testing 12 fibers at the touch of a single button.



Simplifies Network Troubleshooting

LinkMap with pass/fail enables even novice users to easily and accurately troubleshoot optical networks. LinkMap presents an icon-based view of the tested network clearly identifying fiber start, end, connectors, splices, PON splitters, and macro-bends.

A LinkMap summary provides end-to-end link length, loss and ORL. Loss and reflectance are displayed with clear pass/fail indications. Users can instantly toggle between LinkMap and Trace views.



Connectivity

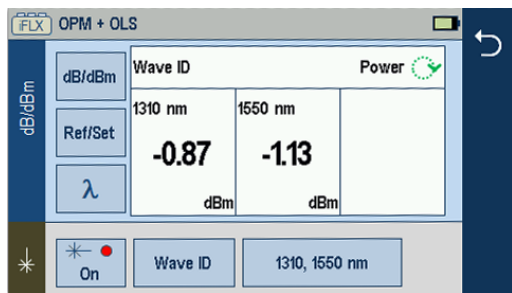
FlexScan OTDRs easily pair with AFL's ward-winning FOCIS® family of connector inspection probes for fast, easy single-fiber and/or multi-fiber connector end-face inspection.

FlexScan results can then be transferred via USB cable, Wi-Fi, or Bluetooth and the free FlexApp running on a mobile device for real-time reporting using the included FlexReports Test Results Manager PC-based software. This real-time monitoring can help avoid mistakes in the field that will require future truck rolls.

OTDR, OLTS, and VFL Testing with a Single Tool

FlexScan optionally includes a Wave ID optical light source (OLS) and optical power meter (OPM). With Wave ID, the OPM auto-synchronizes to a single or multi-wavelength Wave ID optical signal transmitted by an AFL light source. The OPM reports detected wavelengths and measures power and loss at each wavelength, saving significant test time and eliminating setup errors.

The integrated VFL's eye-safe red laser enables users to visually pinpoint the location of macro-bends and fiber breaks often found in splice closures and fiber cabinets.



FlexScan® FS200 Single-mode OTDR

FlexScan OTDRs are available with 1310/1550/1625, 1310/1550/1650, 1310/1550, and 1650 nm only wavelengths. The 1310 and 1550 nm versions are available with integrated optical light source (OLS), optical power meter (OPM), visual fault locator (VFL) and Bluetooth/Wi-Fi.

Specifications^a

| MODEL: FS200-XXX | -60 | -100 | -300 | -303 | -304 |
|---|---|---------------|---------------|------------------------|------------------------|
| OTDR | | | | | |
| Emitter Type | Laser | | | | |
| Safety Class ^b | Class I | | | | |
| Fiber Type | Single-mode | | | | |
| Wavelengths (nm) | 1650 | 1310/ 1550 | 1310/ 1550 | 1310/ 1550/ 1625 | 1310/ 1550/ 1650 |
| Center λ Tolerance ^c | 1310/1550/1650: ± 20 nm; 1625 +30/-5 nm | | | | |
| Dynamic Range ^d (dB) | 37 | 32/30 | 37/35 | 37/35/37 | 37/35/37 |
| Event Dead Zone ^e (m) | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| Atten. Dead Zone ^f (m) | 3.5 | 3.6 | 3.5 | 3.5 | 3.5 |
| PON Dead Zone ^g (m) | 30 | N/A | 25/25 | 25/25/40 | 25/25/40 |
| Max Split Ratio | 1:64 (FS200-60/30x only); N/A (FS200-100) | | | | |
| Pulse Widths | 3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns; 1, 2, 3, 10 μ s; 20 μ s (FS200-300/300/304 only) | | | | |
| Range Settings | 250 m to 240 km | | | | |
| Data Points | Up to 300,000 (Expert mode .SOR file) | | | | |
| Data Spacing | 5 cm to 16 m | | | | |
| Index of Refraction | 1.3000 to 1.7000 | | | | |
| Distance Uncertainty | $\pm(1 + 0.003\% \times \text{distance} + \text{data point spacing})$ m | | | | |
| Linearity (dB/dB) | ± 0.05 | | | | |
| Trace File Format | Telcordia SR-4731 Issue 2 compatible .SOR | | | | |
| Trace Storage Medium | 4 GB internal memory (> 5000 traces typical); External USB memory stick | | | | |
| Data Transfer to PC | USB cable or Bluetooth® (option) | | | | |
| OTDR Modes | SmartAuto, Expert, Real-time | | | | |
| Flexpress Fast Test | FS200-300/303/304 | | | | |
| Display Modes | LinkMap Summary, LinkMap Events, Trace | | | | |
| Refresh Rate | Up to 4 Hz (Real-time mode) | | | | |
| Live Fiber Protection | No OTDR damage with input power $\leq +15$ dBm for wavelength(s) in range 1260 to 1675 nm | | | | |
| Live Fiber Detection | Reports live fiber with input signal ≥ -35 dBm for wavelength(s) in range 1260 to 1675 nm | | | | |
| PON Filter Isolation | >50 dB for 1260 nm \leq wavelength \leq 1600 nm | | | | |
| Live PON OTDR Test | 1625 or 1650 nm using filtered detector when interfering downstream power in range 1600-1675 nm $<$ -38 dBm | | | | |

Notes:

- All specifications valid at 25 °C unless otherwise specified.
- FDA 21 CFR 1040.10 & 1040.11, IEC 60825-1: 2014.
- Using 10 ns pulse width.
- SNR=1, longest range and pulse width, 3-minute averaging.
- Maximum distance between two points 1.5 dB down each side of a reflective peak caused by an event with reflectance ≤ -45 dB using 3 or 5 ns pulse.
- Maximum distance from the start of a trace spike caused by an event with a -45 dB (or smaller) reflectance, to the point where the trace returns to and stays within ± 0.5 dB of backscatter. Test pulse width is 3 or 5 ns.
- Recovery to within 0.5 dB of backscatter after 1:16 splitter (≤ 13 dB loss) using 50 ns pulse width.
- Max temperature while charging is +45 °C.

| MODEL: FS200-XXX | -60 | -100 | -300 | -303 | -304 |
|--|--|---------------|---------------|---------------|---------------|
| VISUAL FAULT LOCATOR (VFL) | | | | | |
| Emitter Type | Visible red laser, 650 ± 20 nm | | | | |
| Safety Class ^b | Class II | | | | |
| Output Power | 0.8 mW into single-mode fiber (-1 dBm ± 0.5 dB) | | | | |
| Modes | CW, 2 Hz flashing | | | | |
| OPTICAL LASER SOURCE - OLS (Optional) | | | | | |
| Emitter Type | Laser | | | | |
| Safety Class ^b | Class I | | | | |
| Fiber Type | Single-mode | | | | |
| Wavelengths (nm) | N/A | 1310/ 1550 | 1310/ 1550 | 1310/ 1550 | 1310/ 1550 |
| Center λ Tolerance | ± 20 nm (CW mode) | | | | |
| Spectral Width (FWHM) | 5 nm (maximum) | | | | |
| Internal Modulation | 270 Hz, 330 Hz, 1 kHz, 2 kHz, CW, Wave ID | | | | |
| Wave ID | Compatible with AFL OPM/OLS | | | | |
| Output Power Stability | $\leq \pm 0.1$ dB (15 minutes); $\leq \pm 0.15$ dB (8 hours) | | | | |
| Output Power | -3 dBm ± 1.5 dB | | | | |
| OPTICAL POWER METER - OPM (Optional) | | | | | |
| Calibrated Wavelengths | 1310, 1490, 1550, 1625, 1650 nm | | | | |
| Detector Type | InGaAs, 1 mm diameter | | | | |
| Measurement Range | +23 to -50 dBm | | | | |
| Tone Detect Range | +3 to -35 dBm | | | | |
| Accuracy | ± 0.25 dB | | | | |
| Resolution | 0.01 dB | | | | |
| Measurement Units | dB, dBm or Watts (nW, μ W, mW) | | | | |
| GENERAL | | | | | |
| Size (in boot) | 86 x 160 x 43 mm | | | | |
| Weight | 0.4 kg | | | | |
| Operational Temperature ^h | -10 °C to +50 °C, 0 to 95 % RH (non-condensing) | | | | |
| Storage Temperature | -40 °C to +70 °C, 0 to 95 % RH (non-condensing) | | | | |
| Power | Rechargeable Li-Pol or AC adapter | | | | |
| Battery Life | >12 hours, Telcordia test conditions | | | | |
| Display | 4.3 in color touchscreen LCD, 480x272, backlight | | | | |
| USB Ports | 1 host; 1 micro-USB function | | | | |
| Bluetooth (optional) | Compatible with Windows PC, Android | | | | |
| Wi-Fi | Download results & update software via IEEE 802.11 Wi-Fi | | | | |

FlexScan® FS200 Single-mode OTDR

Ordering Information

All kits include a FlexScan FS200 with AC charger, battery, carry strap, SC/2.5 mm connector adapters, FlexReports, USB cable, and carry case.

FS200-XXX-Basic, Plus, PRO, BIPM Kits Order Entry: **FS200-[MOD]-[KIT]-[PW]-[C]-[CC]-[LNG]-[AC]-[FR]-[TIP]**

FS200-XXX-MPO Kits Order Entry: **FS200-[MOD]-MPO-P1-W1-[C]-[LNG]-[AC]-[MPOC]**

FS200-303/304-FTTH PRO Kits Order Entry: **FS200-[MOD]-FTTH-PRO-[CC]-[LNG]-[AC]** where:

| [MOD] | FS200 FlexScan OTDR Configuration |
|-------|---|
| 60 | 1650 nm filtered Live PON Troubleshooting OTDR |
| 100 | 1310/1550 nm Verification and Troubleshooting OTDR |
| 300 | 1310/1550 Pt-to-Pt & PON Verification and Troubleshooting OTDR |
| 303 | 1310/1550/1625 Pt-to-Pt and PON Verification and Troubleshooting OTDR |
| 304 | 1310/1550/1650 Pt-to-Pt and PON Verification and Troubleshooting OTDR |

| [KIT] | FS200 FlexScan Kit Configuration / Kit Contents |
|----------|---|
| BAS | Includes: FS200, FlexReports Basic, USB cable ^a , soft case |
| PLUS | Includes: BAS Kit plus 150 m SMF Fiber Ring, One-Click Cleaner, upgrade to FlexReports Advanced, soft or hard carry case |
| PRO | Includes: PLUS Kit plus FOCIS Flex with two user-selected adapter tips |
| FTTH-PRO | Includes: BAS Kit, 150 m SC/APC & LC/APC Fiber Rings, FOCIS Flex, SC/APC & LC/APC bulkhead and ferrule adapters, SC & LC One-Click Cleaners, Port Saver, FlexReports Advanced, soft or hard carry case (FS200-303/304 only) |
| BIPM | Includes: PRO Kit plus OFI-BIPMe |
| MPO | Includes: FlexScan plus MFS Multi-Fiber Switch, MPO launch cable, OTDR-to-Switch patch cord, OTDR-to-Switch USB cable, FlexReports Advanced |

| [PW] | Power Meter / Wireless Option |
|--------------------|--|
| P0-W0 | No Source, Power Meter, or Bluetooth/WiFi (FS200-60/100 only) |
| P0-W1 ^b | No Source or Power Meter; Includes Bluetooth/WiFi (FS200-300/304 only) |
| P1-W0 | No Bluetooth/WiFi (-303/304 only); Includes Source, Power Meter |
| P1-W1 ^b | Includes Source, Power Meter, Bluetooth/Wi-Fi |

| [C] | OTDR / Source Connector Type |
|-----|---|
| A | APC (recommended) |
| U | UPC (available in all models except FS200-60) |

| [CC] ^c | Carry Case Option (PLUS, PRO, FTTH-PRO, BIPM Kits) |
|-------------------|---|
| S1 | Large soft case for FS200, fiber ring, FOCIS Flex, OFI-BIPMe, accessories |
| S2 | Medium soft case for FS200, fiber ring, FOCIS Flex, accessories |
| H1 | Hard carry case for FS200, fiber ring, FOCIS Flex, OFI-BIPMe, accessories |

| [LNG] | Language |
|-------|---------------------|
| ENG | English |
| CHS | Chinese Simplified |
| CHT | Chinese Traditional |
| CZE | Czech |
| DEU | German |
| DNK | Danish |
| FIN | Finnish |
| FRA | French |
| ITA | Italian |

| [LNG] | Language |
|-------|------------|
| JPN | Japanese |
| KOR | Korean |
| NOR | Norwegian |
| POL | Polish |
| POR | Portuguese |
| SPA | Spanish |
| TUR | Turkish |
| VNM | Vietnamese |

| [AC] | Destination Country | AC Plugs |
|------|---------------------|------------|
| US | USA | 2-pin, US |
| EU | European Union | 2-pin, EU |
| UK | United Kingdom | 3-pin, UK |
| CN | China, Australia | 2-pin, SAA |

| [FR] | 150 m SMF Fiber Ring |
|---------|----------------------|
| Absent | N/A in Basic Kits |
| USC/USC | FR-SMF-150-USC-USC |
| USC/UFC | FR-SMF-150-USC-UFC |
| USC/ULC | FR-SMF-150-USC-ULC |
| USC/UST | FR-SMF-150-USC-UST |
| USC/ASC | FR-SMF-150-USC-ASC |
| USC/AFC | FR-SMF-150-USC-AFC |
| USC/ALC | FR-SMF-150-USC-ALC |
| USC/UE2 | FR-SMF-150-USC-UE2 |
| ASC/UFC | FR-SMF-150-ASC-UFC |
| ASC/ULC | FR-SMF-150-ASC-ULC |
| ASC/UST | FR-SMF-150-ASC-UST |
| ASC/ASC | FR-SMF-150-ASC-ASC |
| ASC/AFC | FR-SMF-150-ASC-AFC |
| ASC/ALC | FR-SMF-150-ASC-ALC |
| ASC/AE2 | FR-SMF-150-ASC-AE2 |

| [TIP] | FOCIS Flex Tips and Cleaning (PRO only) |
|-------|--|
| Blank | Option not available in Basic & PLUS Kits |
| SC | SC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning |
| FC | FC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning |
| LC | LC-UPC bulkhead tip, 1.25 mm UPC ferrule tip, 1.25 mm cleaning |
| ASC | SC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning |
| AFC | FC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning |
| ALC | LC-APC bulkhead tip, 1.25 mm APC ferrule tip, 1.25 mm cleaning |

| [MPOC] | MPO Launch Cable Network Connector |
|--------|--|
| F | Female (unpinned) to Female (unpinned) |
| M | Female (unpinned) to Male (pinned) |

Notes:

- Results can be transferred from FlexScan OTDR to FlexReports using USB cable, or performed wirelessly (W1 option) after downloading free FlexApp. The FlexApp is available as a free download from 'Google play' or 'App Store'.
- FlexScans equipped with Bluetooth option (W1) support Bluetooth transfer of results via FlexApp for remote reporting using FlexReports.
- Basic Kit always ships with S2 (Medium Soft Case); MPO Kit always ships with MPO-specific soft case.

FlexScan® FS200 Single-mode OTDR

Ordering Information

Accessories

| DESCRIPTION | AFL NO. |
|---|-------------------|
| FlexScan wrist strap | 1400-05-0230PZ |
| FlexScan neck strap, 36" | 1400-05-0231PZ |
| AC charger 100-240 VAC to 5 VDC | 4050-00-0931PR |
| Soft carry case for FS200 kits with FOCIS Flex and Fiber Ring | 1400-01-0111PZ |
| Soft carry case for FS200 kits with FOCIS Flex, OFI-BIPMe and Fiber Ring | 1400-01-0128PZ |
| Hard carry case for FS200 kits with FOCIS Flex, OFI-BIPMe and Fiber Ring | 1400-01-0134PZ |
| Vehicle charger, 12VDC to 5VDC @2A | 4050-00-0033MR |
| Cable, USB-micro B, 5 pin, 6' | 6000-00-0031MR |
| 5V USB charging cable (1.5 m), type A to barrel (0.9 X 3.2 X 9 mm) | 6000-00-0034PR |
| One-Clicks, fluid, wipes, etc. See www.AFLglobal.com | Cleaning Supplies |

Field-Replaceable OTDR Connector (Optical Ferrule Port Saver)

Protect your OTDR ports from damage due to mating with dirty or damaged launch cables or patch cords or normal wear-and-tear. Equip your FlexScan FS200 with a field-replaceable connector, which installs in seconds and accepts AFL's tool-free interchangeable SC, LC, FC and ST connector adapters.

Replace damaged connectors in the field: When normal wear-and-tear or poor cleaning practices damage the port saver's end-face, replace it in seconds without having to return the OTDR to a service center for an expensive and time-consuming repair.

| DESCRIPTION | AFL NO. |
|---|----------------|
| FlexScan-facing APC female to APC male field-replaceable Port Saver connector | 2900-58-0001MR |
| FlexScan-facing APC female to UPC male field-replaceable Port Saver connector | 2900-58-0002MR |
| FlexScan-facing UPC female to APC male field-replaceable Port Saver connector | 2900-58-0003MR |
| FlexScan-facing UPC female to UPC male field-replaceable Port Saver connector | 2900-58-0004MR |

Connector Adapters


| CONNECTOR ADAPTER | AFL NO. | | |
|-------------------|----------------|----------------|----------------|
| | OTDR/OLS PORT | OPM PORT | VFL PORT |
| FC | 2900-50-0002MR | 2900-52-0001MR | N/A |
| SC | 2900-50-0003MR | 2900-52-0002MR | N/A |
| ST | 2900-50-0004MR | 2900-52-0003MR | N/A |
| LC | 2900-50-0006MR | 2900-52-0004MR | N/A |
| SC/APC | 2900-50-0011MR | 2900-52-0002MR | N/A |
| 2.5 mm Universal | N/A | 2900-52-0005MR | 2900-50-0007MR |
| 1.25 mm Universal | N/A | 2900-52-0006MR | 2900-50-0010MR |

FlexScan® FS200 Single-mode OTDR

Test Management and Reporting Software


| DESCRIPTION | AFL NO. |
|---|-------------------|
| FlexReports Advanced, one seat license on USB | RPTS-AD-USB-1 |
| FlexReports Advanced, one seat, Upgrade from TRM® 3 Advanced on USB. Users must have TRM-3 Advanced license | RPTS-UP-TRM3-1 |
| FlexReports Basic, available for download on AFL Software Resources website | FlexReports Basic |
| FlexApp data transfer mobile App, available on Google Play and Apple App Store | FlexApp |

Recommended Products



FOCIS Flex and FOCIS Lightning (Multi-Fiber) Connector Inspection

- Self-contained, tether-free, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis
- FOCIS Lightning: extremely fast multi-fiber auto-analysis for datacom and telecom inspection applications



OFI-BIPMe Optical Fiber Identifier

- Works on all fiber types including BIF
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|---------------------|---------------------|---|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety/EMC/EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| | Telcordia | Compliant to GR-196-CORE 4.5.1 for requirements on electromagnetic interference |
| | FCC | Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions |
| | FDA | Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products |
| RoHS | IEC | Compliant to IEC 60825-1 for safety of laser products |
| | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |
| Test Method | TIA | Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components |
| | IEC | Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises |
| | AS/NZS | Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises |
| | TIA | Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant |
| | TIA | Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant |
| | IEC | Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling |
| | AS/NZS | Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling |
| | IEC | Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant |
| Generic Requirement | IEC | Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant |
| | Telcordia | Compliant to GR-196-CORE for generic requirements for OTDR-type equipment |
| | Telcordia | Compliant to SR-4731 Issue 2 for OTDR data format |
| | IEC | Compliant to IEC 61746-1 for requirements on calibration of OTDR |

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about FlexScan FS200 OTDR.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

OTDR Fiber Rings



Features

- Compact, rugged, lightweight
- 150, 500, and 1000 m lengths standard
- Available with a variety of connector styles
- Compact! Fits easily in OTDR cases or kits

Applications

- Use to test link loss with an OTDR
- For use as OTDR launch cable
- For use as OTDR receive cable
- Measure insertion loss and reflectance of near- and far-end connections

Fiber Rings are often a necessity when testing with an OTDR or Optical Troubleshooter. A launch cable, which connects the OTDR or Optical Troubleshooter to the link under test, reveals the insertion loss and reflectance of the near-end connection. A receive cable, which connects to the far-end of the link, reveals the insertion loss and reflectance of the far-end connection. Launch and receive test cables can range from 150 m to 1 km (or longer) in length. Because very long test cables are impractical to transport and use, AFL offers coiled lengths of 50 μm multimode, 62.5 μm multimode, or single-mode fiber packaged in compact rings.

Fiber Rings of 150 m of fiber are ideal for premises fiber network test applications. Fiber Rings of 500 m and 1 km of single-mode fiber are designed for broadband, long haul fiber network test applications.

OTDR Fiber Rings

Fiber Rings Part Number Order Entry

Single Fiber (SM or MM) Fiber Rings

AFL NO. = FR-FFF-LLLL-CC1-CC2, where:

FR = Fiber Ring (single fiber)

FFF = Fiber Type

SMF= Single-mode (G.652)

BIF = Bend Insensitive (G.657)

OM1 = 62.5 μm multimode

OM2 = 50 μm multimode

OM3 = 50 μm laser optimized

OM4 = 50 μm laser optimized

LLLL = Fiber Length (meters)

150 = 150 m (492 ft)

500 = 500 m (1640 ft)

1000 = 1000 m (3280 ft)

CC1 = Connector Configuration OTDR end (see below)

CC2 = Connector Configuration Network end (see below)

MPO-terminated Multi-Fiber (SM or MM) Fiber Rings

AFL NO. = FRM1-FF-LLLL-P-MC1-MC2, where:

FRM1 = MPO-terminated 12-fiber fiber ring

FF = Fiber Type

S2 = Standard single-mode (G.652)

M4 = OM4 50 μm laser optimized

LLLL = Fiber Length (meters)

61 = 61 m (200 ft)

P = Polarity

A = Type A polarity (straight through, fiber 1 to fiber 1)

B = Type B polarity (fiber 1 to fiber 12)

MC1, MC2 = MPO Connector (OTDR end and Network end, respectively)

AF = APC, female (unpinned)

AM = APC, male (pinned)

UF = UPC, female (unpinned)

UM = UPC, male (pinned)

Supported Single Fiber Single-mode Fiber Ring Configurations

| CONNECTOR TYPE | | STANDARD SMF FIBER RINGS | | SPECIAL ORDER SMF FIBER RINGS ^a | |
|----------------|-------------|--------------------------|----------------------------|--|-----|
| ID | DESCRIPTION | CC1 | CC2 | CC1 | CC2 |
| USC | SC/UPC | ◆ | ◆ | | |
| ASC | SC/APC | ◆ | ◆ | | |
| ULC | LC/UPC | | ◆ | ◆ | ◆ |
| ALC | LC/APC | | ◆ | ◆ | ◆ |
| UFC | FC/UPC | | ◆ | ◆ | ◆ |
| AFC | FC/APC | | ◆ | ◆ | ◆ |
| UST | ST/UPC | | ◆ | ◆ | ◆ |
| UE2 | E2000/UPC | | Special Order ^a | | ◆ |
| AE2 | E2000/APC | | Special Order ^a | | ◆ |
| OTA | OptiTap APC | | Special Order ^a | | |

Supported Single Fiber Multimode Fiber Ring Configurations

| CONNECTOR TYPE | | STANDARD SMF FIBER RINGS | | SPECIAL ORDER SMF FIBER RINGS ^a | |
|----------------|-------------|--------------------------|----------------------------|--|-----|
| ID | DESCRIPTION | CC1 | CC2 | CC1 | CC2 |
| USC | SC/UPC | ◆ | ◆ | | |
| ULC | LC/UPC | | ◆ | ◆ | ◆ |
| UFC | FC/UPC | | ◆ | ◆ | ◆ |
| UST | ST/UPC | | ◆ | ◆ | ◆ |
| UE2 | E2000/UPC | | Special Order ^a | | |

OTDR Fiber Rings

Ordering Information

Standard SMF Fiber Rings

| DESCRIPTION | AFL NO. |
|--|---------------------|
| Fiber Ring, 150 m, G.652 SMF, CC1-CC2 | FR-SMF-150-CC1-CC2 |
| Fiber Ring, 500 m, G.652 SMF, CC1-CC2 | FR-SMF-500-CC1-CC2 |
| Fiber Ring, 1000 m, G.652 SMF, CC1-CC2 | FR-SMF-1000-CC1-CC2 |

Special Order SMF Fiber Rings^a

| DESCRIPTION | AFL NO. |
|---|---------------------|
| Fiber Ring, 150 m, G.652 SMF, CC1-CC2 | FR-SMF-150-CC1-CC2 |
| Fiber Ring, 500 m, G.652 SMF, CC1-CC2 | FR-SMF-500-CC1-CC2 |
| Fiber Ring, 1000 m, G.652 SMF, CC1-CC2 | FR-SMF-1000-CC1-CC2 |
| Fiber Ring, 150 m, G.657.A2 BIF, CC1-CC2 | FR-BIF-150-CC1-CC2 |
| Fiber Ring, 500 m, G.657.A2 BIF, CC1-CC2 | FR-BIF-500-CC1-CC2 |
| Fiber Ring, 1000 m, G.657.A2 BIF, CC1-CC2 | FR-BIF-1000-CC1-CC2 |

Standard OM1, OM2, OM3, OM4 Multimode Fiber Rings

| DESCRIPTION | AFL NO. |
|---|--------------------|
| Fiber Ring, 150 m, OM1 (62.5 mm) MMF, CC1-CC2 | FR-OM1-150-CC1-CC2 |
| Fiber Ring, 150 m, OM2 (50 mm) MMF, CC1-CC2 | FR-OM2-150-CC1-CC2 |
| Fiber Ring, 150 m, OM3 (50 mm laser-optimized) MMF, CC1-CC2 | FR-OM3-150-CC1-CC2 |
| Fiber Ring, 150 m, OM4 (50 mm laser-optimized) MMF, CC1-CC2 | FR-OM4-150-CC1-CC2 |

Special Order OM1, OM2, OM3, OM4 Multimode Fiber Rings^a

| DESCRIPTION | AFL NO. |
|---|--------------------|
| Fiber Ring, 150 m, OM1 (62.5 mm) MMF, CC1-CC2 | FR-OM1-150-CC1-CC2 |
| Fiber Ring, 150 m, OM2 (50 mm) MMF, CC1-CC2 | FR-OM2-150-CC1-CC2 |
| Fiber Ring, 150 m, OM3 (50 mm laser-optimized) MMF, CC1-CC2 | FR-OM3-150-CC1-CC2 |
| Fiber Ring, 150 m, OM4 (50 mm laser-optimized) MMF, CC1-CC2 | FR-OM4-150-CC1-CC2 |

Standard MPO-terminated Multi-fiber Single-mode and Multimode Fiber Rings^b

| DESCRIPTION | AFL NO. |
|--|--------------------|
| MPO Fiber Ring, 61 m (200 ft), G.652 SMF, Type A, APC unpinned to APC unpinned | FRM1-S2-61-A-AF-AF |
| MPO Fiber Ring, 61 m (200 ft), G.652 SMF, Type A, APC unpinned to APC pinned | FRM1-S2-61-A-AF-AM |
| MPO Fiber Ring, 61 m (200 ft), OM4 MMF, Type A, UPC unpinned to UPC unpinned | FRM1-M4-61-A-UF-UF |
| MPO Fiber Ring, 61 m (200 ft), OM4 MMF, Type A, UPC unpinned to UPC pinned | FRM1-M4-61-A-UF-UM |

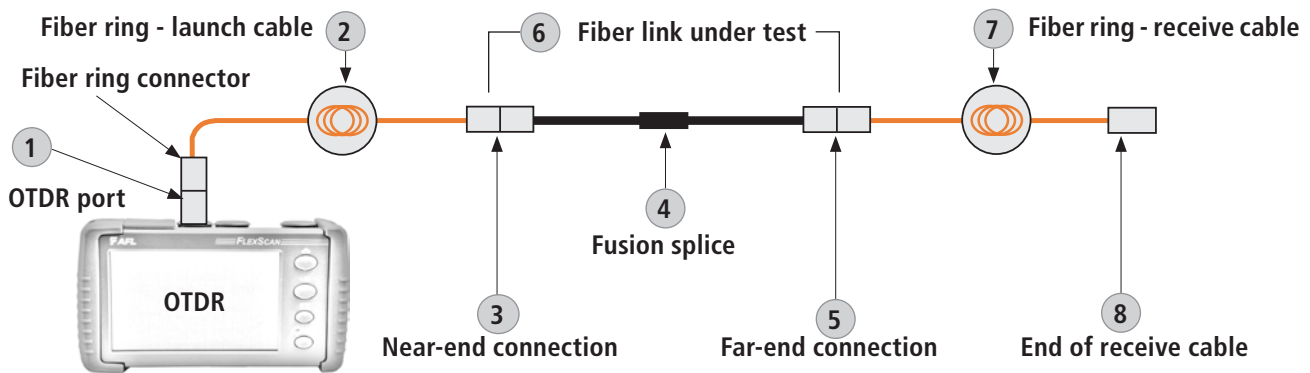
Notes:

- a. Contact AFL for special order fiber rings. Not all combinations of lengths and connectors are supported.
- b. Contact AFL for other special order configurations of MPO-terminated multi-fiber single-mode or multimode fiber rings.

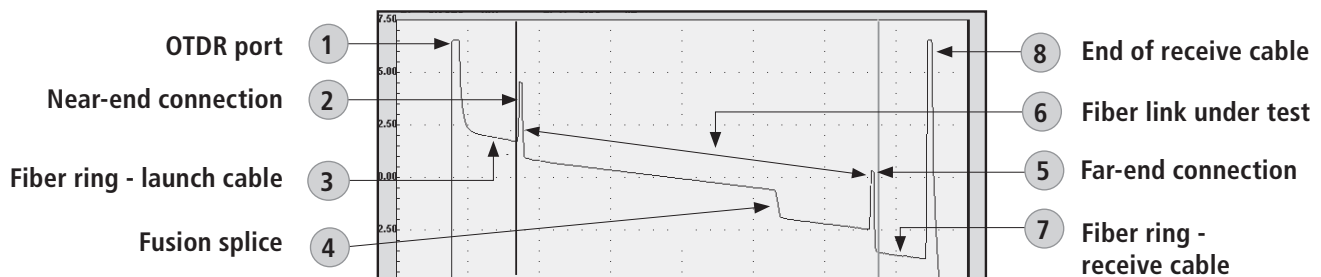
OTDR Fiber Rings

How to Generate a Baseline Trace Using Fiber Rings

- Use the Fiber Ring as a launch cable. Connect the Fiber Ring between your OTDR and the fiber link under test. This will allow you to measure the loss of the near-end connection.
- Use the Fiber Ring as a receive cable. Connect the Fiber Ring to the far-end connector of your fiber link under test. This will allow you to measure the loss of the far-end connection.
- By using Fiber Rings as both launch and receive cables, as shown in the diagram below, you can measure total insertion loss of the fiber link under test under test.




Example OTDR Test Configuration with Launch and Receive Cables




OTDR Trace Made using Launch and Receive Cables

Recommended Products



FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



FlexScan® TS100 FTTH PON Troubleshooter

- Locate faults in <3 seconds with the press of a button
- Displays link length, loss, ORL, and pass/fail results
- Single-ended test reduces time and cost
- Rugged, lightweight, hand-held for field use

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

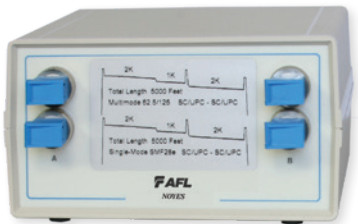
Visit www.AFLglobal.com/Test to learn more about Fiber Rings.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

NS and NSR Series Fiber Optic Network Simulators



NSR-Series Rack-mountable Network Simulators



NS-Series NS Bench Top Network Simulators

Features

- User-specified fiber types and lengths
- User-specified events such as splices, connections, macro-bends
- OTDR trace is provided
- A variety of connector styles are available
- Rugged, field-portable

Applications

- Laboratory testing
- Classroom training
- Field troubleshooting
- OTDR calibration

Fiber Optic Network Simulators from AFL are custom built “fiber boxes” intended to duplicate installed fiber optic facilities.

Training schools, laboratory testing or field troubleshooting are just few of the many applications for units. Network simulators may be ordered with customer-specified lengths of multimode or single-mode fiber. Events such as connections, fusion splices, macro-bends and mechanical splices can be added at various points within the fiber to duplicate installed networks. A full range of connector types are available including SC, ST, FC and LC. Angled or non- angled connectors can be specified. Each network simulator includes full documentation for insertion loss, attenuation/km and event location/value.


NS network simulators are housed in rugged field-portable, bench top cases. The NS models accommodates up to 15 km of optical fiber.

NSR network simulators are custom built models housed in either 18 or 23-inch rack-mountable boxes. These network simulators can accommodate up to 100 km of fiber.

Ordering Information


Contact AFL at (800) 321-5298 or (603) 528-6278 for a quote for your custom Network Simulator.

Recommended Products



FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



FlexScan® TS100 FTTH PON Troubleshooter

- Locate faults in <3 seconds with the press of a button
- Displays link length, loss, ORL, and pass/fail results
- Single-ended test reduces time and cost
- Rugged, lightweight, hand-held for field use

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about network simulators.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

FOCIS Flex – Fiber Optic Connector Inspection System

Easy, Fast, Compact, Tether-free

U.S. Patent 9,217,688

Fiber Inspection



Features

- 1-button to auto-focus, center, capture, analyze, and save
- IEC, IPC, and user-defined pass/fail analysis
- Untethered, compact, hand-held inspection
- Use independently or pair with OTDR
- Save 10K results internally or share via WiFi or USB

Applications

- Inspect connectors on patch cords or in bulkhead adapters
- Optical network installation, troubleshooting, and maintenance
- Inspect MPO/MTP multi-fiber connectors
- Assure critical fiber infrastructure performs properly
- Keep fiber connections working at optimal performance levels
- Verify proper connector cleaning practices are being used

FOCIS Flex makes connector inspection simple, fast, and convenient. With the press of a single button, FOCIS Flex auto-focuses, captures and centers the end-face image, applies Pass/Fail rules, displays image and Pass/Fail results, saves results internally and/or wirelessly transfers data to a paired FlexScan OTDR or a smart device. It is fast, small, and easy to use to enable 100% connector inspection.

Independent, untethered operation: With rechargeable battery and integrated display, FOCIS Flex can be used independently without requiring an external OTDR or display unit.

Optional pairing with FlexScan OTDR or smart devices: Captured images and Pass/Fail results can be immediately displayed and easily saved on either paired FlexScan OTDR or a smart device equipped with the AFL's free FOCIS Flex App. This capability enables inspection results to be included in reporting and archiving.

Save results internally or externally: FOCIS Flex internally stores up to 10,000 results using file-naming capabilities similar to those of the FlexScan OTDR. A micro-USB port supports fast upload of internally stored results to PC and ensures your FOCIS Flex software can be updated to the latest features and supported languages.

Wide range of adapter tips: Interchangeable adapter tips support connector inspection for a wide range of both single-fiber and multi-fiber patchcords and bulkhead-mounted connectors having either PC or APC polished end-faces.

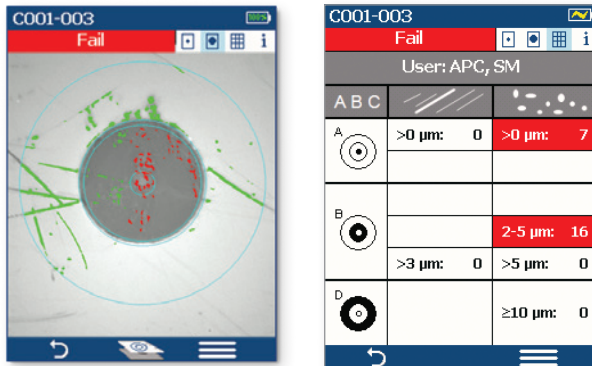
Bundled kits for significant savings: FOCIS Flex is available in kits that include a Basic license for Test Result Manager (TRM® 3.0), user-selected adapter tips and cleaning supplies, and a soft carry case.

Easy reporting and archiving: Included Test Result Manager (TRM 3.0) provides data processing and reporting locally via a PC. The FOCIS Flex mobile App is available for free download from Google play or App Store for sharing data with smart devices.

FOCIS Flex – Fiber Optic Connector Inspection System

Easy, Fast, Compact, Tether-free

U.S. Patent 9,217,688



Pass/Fail results in seconds: With the press of a single button, FOCIS Flex auto-focuses, captures and centers the end-face image, applies Pass/Fail rules, displays image and Pass/Fail results. Captured Pass/Fail results are easily viewed in either Image or Table view.

Image view shows end-face image with Pass/Fail region overlay, failing scratches/defects highlighted in red, and passing scratches/defects highlighted in green.

Table view shows analysis rule applied to determine Pass/Fail, analysis Zone IDs (A, B, C, D), scratch analysis results for each zone, and defect analysis results for each zone.

Specifications ^a

| OPTICAL PERFORMANCE | |
|---|---|
| Field of View (viewed on FOCIS Flex) | Live: 710 x 860 µm; Captured, Zoomed Out: 560 x 600 µm; Captured, Partially Zoomed In: 360 x 390 µm; Captured, Fully Zoomed In: 180 x 195 µm |
| Field of View (Viewed on a PC) | Stored, Zoomed Out: 700 x 525 µm; Stored, Fully Zoomed In: 240 x 180 µm |
| Manual Detection Capability (minimum) | 0.25 µm |
| Auto Analysis Resolution | <1.0 µm |
| Captured Image Size (Pixels) | 648 x 480 VGA; Images stored internally in three .JPG files, one at each FOV |
| OPERATING FEATURES | |
| Focus | Auto-focus and manual focus |
| Centering | Auto-centering after capture |
| Pass/Fail Analysis | IEC 61300-3-35 (2015), IPC and user-defined criteria |
| Image Capture and File Storage Capacity | 10,000 files |
| File Format (Image and Pass/Fail Results) | jpg, gif |
| Bluetooth Characteristics | SPP to FlexScan and FlexTester OTDRs; IAP to iOS devices |
| USB Characteristics | USB 1.1 mass storage device |
| Supported Languages | English, Chinese Simplified, Chinese Traditional, Finnish, French, German, Italian, Japanese, Korean, Polish, Russian, Spanish, Turkish |
| PHYSICAL AND POWER CHARACTERISTICS | |
| Display size, type, resolution | 2.4", TFT, 240 x 320 with brightness control |
| Battery Type | NiMH, user replaceable |
| Battery Operating Time (typical) | 8 hours (60 tests in 20 minutes each hour; auto-off enabled) |
| Recharge Time | <4.5 hours |
| Power Save Features | Auto-off (disabled, 2, 5, 10 minutes) |
| AC Charger voltage, frequency, current | 100-240 V, 50/60 Hz, 5VDC, 2A |
| Size | 47 x 37 x 183 mm (1.8 x 1.5 x 7.2 in) |
| Weight | 240 g (0.5 lb) |
| ENVIRONMENTAL CHARACTERISTICS | |
| Operating Temperature | 0 to +50 °C |
| Storage Temperature | -40 to +70 °C |
| Relative Humidity | 95%, non-condensing |
| Transit and shock | 2G vibration, 30G shock |

Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).

FOCIS Flex – Fiber Optic Connector Inspection System

Easy, Fast, Compact, Tether-free

U.S. Patent 9,217,688

FlexScan OTDR PRO and BIPM Kits with FOCIS Flex

PRO Kits include the following items:

- FlexScan with accessories (AC charger, carry strap, SC/2.5 mm connector adapters, TRM® 3.0 Advanced Test Results Manager, carry case)
- FOCIS Flex Fiber Optic Connector Inspection System with accessories (AC charger, USB cable, soft carry case/holster)
- Two user-selected adapter tips and one user-selected One-Click Cleaner
- 150 m Fiber Ring (launch cable) with user-specified connectors

Complete kits expand on PRO Kits by adding bend insensitive fiber identifier with optional power meter (OFI-BIPM).

See FlexScan data sheet for FlexScan PRO and Complete Kit ordering information.

FOCIS Flex Adapter Tips (Contact AFL for adapter tips for other connector types)

| DESCRIPTION | AFL NO. |
|---|----------------|
| SC-UPC bulkhead adapter tip | FFLX-01-SC |
| FC-UPC bulkhead adapter tip | FFLX-01-FC |
| ST-UPC bulkhead adapter tip | FFLX-01-ST |
| LC-UPC bulkhead adapter tip | FFLX-01-LC |
| Universal 2.5 mm, UPC ferrule adapter tip | FFLX-01-U25 |
| Universal 1.25 mm, UPC ferrule adapter tip | FFLX-01-U125 |
| SC-APC bulkhead adapter tip | FFLX-4S-ASC |
| FC-APC bulkhead adapter tip | FFLX-4S-AFC |
| LC-APC bulkhead adapter tip | FFLX-4S-ALC |
| Universal 2.5 mm, APC ferrule adapter tip | FFLX-01-A25 |
| Universal 1.25 mm, APC ferrule adapter tip | FFLX-01-A125 |
| FOCIS Flex adapter extension tube, straight, 46 mm | FFLX-01-EXTS46 |
| FOCIS Flex adapter extension tube, straight, 80 mm: | FFLX-01-EXTS80 |
| E2000 PC/UPC bulkhead adapter tip | FFLX-4S-E2K |
| E2000 APC bulkhead adapter tip | FFLX-4S-E2KA |
| Tip for SC/APC (OptiTap®) bulkhead adapter | FFLX-4S-OTA |
| Tip for OptiTip® APC ferrule and bulkhead adapter | DFS1-01-0013MR |
| MTP/PC ferrule & bulkhead adapter extended tip kit (base plus MTP/PC front end tip) | DFS1-00-0037MR |
| MTP/PC and MTP/APC ferrule & bulkhead adapter extended tip kit (base, MTP/PC, MTP/APC front end tips) | DFS1-00-0042MR |
| MTP/APC ferrule and bulkhead adapter extended tip kit (base plus MTP/APC front end tip) | DFS1-01-0010MR |

Ordering Information

| DESCRIPTION | AFL NO. |
|--|-----------------|
| FOCIS Flex Kit, soft carry case/holster, USB cable, AC charger, TRM® 3.0 reporting software, reference guide, no tips | FOCIS-FLX-P4XN |
| FOCIS Flex Kit, soft carry case/holster, USB cable, AC charger, TRM 3.0 reporting software, reference guide, 2 user-selected UPC adapter tips (ferrule and bulkhead), user-selected One-Click cleaner | FOCIS-FLX-P4XU |
| FOCIS Flex Kit, soft carry case/holster, USB cable, AC charger, TRM 3.0 reporting software, reference guide, 2 user-selected APC adapter tips (ferrule and bulkhead), user-selected One-Click cleaner | FOCIS-FLX-P4XA |
| FOCIS Flex Kit, soft carry case/holster, USB cable, AC charger, TRM 3.0 reporting software, reference guide, user-selected UPC adapter tips (ferrule and bulkhead), 2 user-selected APC adapter tips (ferrule and bulkhead), user-selected One-Click cleaner | FOCIS-FLX-P4XUA |

FOCIS Flex – Fiber Optic Connector Inspection System


Easy, Fast, Compact, Tether-free

U.S. Patent 9,217,688

Test Management and Reporting Software


| DESCRIPTION | AFL NO. |
|--|---------------|
| TRM 3.0 with Basic License, USB delivery (included with all FOCIS Flex kits) | TRM3-BASIC |
| TRM 3.0 upgrade from Basic to Advanced License, USB delivery | TRM3-UPGRADE |
| TRM 3.0 upgrade from Basic to Advanced License, email delivery | TRM3-UP-EMAIL |
| FOCIS Flex App (Google play or App Store) | Free Download |

Recommended Products



FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



OFI-BIPM Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|------------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety /EMC /EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| | FCC | Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions |
| | FDA | Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products |
| RoHS | EU | Compliant to IEC 60825-1 for safety of laser products |
| Test Method | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |
| | IEC | Compliant to IEC 61300-3-35 for visual inspection of fiber optic connectors and fiber-stub transceivers |
| | IPC | Compliant to IPC-8497-1 for cleaning methods and contamination assessment for optical assembly |

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about FOCIS Flex.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts.

FOCIS Lightning[®]2 Multi-Fiber Optic Connector Inspection System

Fiber Inspection



Mobile App



PC Software



Features

- Large, simple-to-use touch screen
- Self-contained, tether-free, compact, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- Up to 8x zoom for enhanced fiber end-face viewing
- Stores 10k images or easily shares data via USB or Bluetooth connectivity
- IEC, IPC, AT&T, and user-defined auto-analysis
- Wide variety of adapter tips for MPO and single-fiber connector types

Applications

- Inspect multi-fiber and single-fiber connectors and adapters
- Data center fiber network installation, turn-up, and troubleshooting
- Inspect hardened connectors in FTTx network
- Verify proper connector cleaning practices
- Pair with OTDR for comprehensive reporting

FOCIS Lightning2 is a compact self-contained inspection probe that captures and displays the entire MPO end-face image in less than two seconds. One button provides auto-focusing, centering, and Pass/Fail analysis at the connector and individual fiber level. It can be used to inspect MPO-8, -12, -16, -24 and -32 connectors. Results can be easily shared via USB and Bluetooth[®].

Pass/Fail results in seconds: FOCIS Lightning2 was designed to quickly inspect multi-fiber connectors and bulkheads, such as MPO and MTP[®], including multi-row varieties. It can perform industry standard and user-defined end-face cleanliness analysis at a rate of about 1 second per fiber – significantly speeding up inspection time when compared with other technologies.

Internal storage and multiple export options: FOCIS Lightning2 can store 10,000 individual fiber images, analysis, overlays, and zones tables locally and can provide optional Bluetooth wireless links for archiving and reporting. AFL's FlexApp (iOS and Android) provides a comprehensive and user-friendly feature set as well as connectivity with AFL's FlexReporter-Cloud.

Untethered operation: With rechargeable battery and integrated 3.5" TFT color LCD touchscreen, FOCIS Lightning2 can be used independently.

Multi-fiber front-end adapter tips: Multi-fiber front-end adapter tips support single row and multi-row MPO connector inspection for a wide range of patch cords and bulkhead-mounted connectors having either PC/UPC or APC polished end-faces. The probe snout includes a key which in combination with a slot on the adapter tips ensures that adapter tips never loosen during use, under any circumstances.

Easy reporting and archiving: The FlexReporter[™] software suite is a complete platform for report generation and results sharing. This platform includes FlexApp, a mobile App that wirelessly transfers test results from the field to the Cloud. These results can be accessed via FlexReports that provide a variety of easy-to-use options for report generation. FlexReports Basic is included with all AFL OTDRs and enables users to quickly view and analyze results, generate simple single-fiber OTDR and OLTS reports. FlexReports Basic also includes a 60-day Advanced trial that includes full reporting and OTDR Trace Batch Editing.

FOCIS Lightning[®]2 Multi-Fiber Optic Connector Inspection System

Specifications^a

| OPTICAL PORT PARAMETERS | SPECIFICATION |
|---|---|
| Field of View (FOV; viewed on FOCIS Lightning2) | LFOV ^b Live: 4333 x 6500 μm and 4333 x 5418 μm LFOV ^b Captured: 4333 x 5418 μm Multi Fibers Live: 3200 x 4800 μm and 3200 x 4000 μm Multi Fibers Captured: 3200 x 4000 μm Multi Fibers Captured, Details: 200 x 225 μm Single Fiber Live: 1314 x 2144 μm and 1314 x 1788 μm Single Fiber Captured: 1314 x 1626 μm |
| Field of View (FOV; viewed on a PC) | LFOV ^b : 4333 x 6500 μm Multi Fibers: 3200 x 4800 μm Single Fiber: 1314 x 2144 μm |
| Manual Detection Capability (minimum) | 0.25 μm |
| Auto Analysis Resolution | <1.0 μm |
| Internally Stored Image Size (pixels) | LFOV ^b : 3840 x 2560 JPG file Multi Fibers: 3840 x 2560 JPG file, N x 160 x 160 pixels .GIF files Single Fiber: 3840 x 2560 JPG file, 468 x 468 pixels .GIF file |
| Bluetooth Image and Overlay | 2 x QVGA (320 x 240; image + overlay) to AFL test instruments 2 x VGA (640 x 480; image + overlay) files to Apple iOS and Android devices (IAP / MFi) |
| Maximum No Damage Live Fiber Power Level | +20 dBm; image cannot be viewed if fiber is live |
| Focus Methods | Auto-focus and manual focus |
| Centering | Auto-centering captured single fiber images |
| Zoom in Live Mode | 1x / 2x / 4x / 8x zoom |
| Image Capture with Pass/Fail Analysis | IEC 61300-3-35 (2015), AT&T TP-76461, IPC-8497-1, user-set criteria |
| Results Storage (Image and Pass/Fail Results) | Yes |
| File Format | JPG, GIF |
| File Storage Capacity | 10,000 files |
| Result Storage Capacity | Multi Fibers: 1000; Single Fiber:1500 |
| OPERATING FEATURES | |
| Bluetooth Characteristics (Wireless only) | IAP (iPod Accessory Protocol), SPP 0 x 1101, Apple MFi |
| USB Characteristics | Connector USB-C, Charging, USB 2.0 Mass Storage Device |
| ENVIRONMENT PARAMETERS | |
| Storage Temperature | -40 °C to +70 °C |
| Operating Temperature | 0 °C to +50 °C |
| Relative Humidity | 0 to 95% RH |
| Vibration Limits | 2G (transportation) |
| Transit Drop (without soft case) | 300 mm (12 inches, all sides, dust cover installed) |
| Transit Drop (with soft case) | 460 mm (18 inches, all sides, dust cover installed) |

Notes:

- All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).
- Large Field of View (LFOV) parameters are provided using LFOV MPO PC and APC adapters.
- Operating conditions: 60 tests in 20 minutes, then auto-off; repeat each hour.
- Trademarks are the property of their respective owners.

FOCIS Lightning[®]2 Multi-Fiber Optic Connector Inspection System

Specifications^a

| PHYSICAL AND POWER CHARACTERISTICS | |
|------------------------------------|---|
| Display Size, Type, Resolution | 3,5" color TFT touch screen with backlit, 320 x 480 with brightness control |
| Battery Type | Li-Pol, user-replaceable |
| Operating Time (typical) | 8 hours ^c ; 5 hours continuous ^c |
| Power Save Features | Auto-off (disabled, 2, 5, 10 min) |
| Low-Battery Warning | Alerts when ≤15 minutes battery operation remains |
| Size | 67 x 32 x 190 mm (2.7 x 1.3 x 7.5 in) |
| Weight | 280 g (0.62 lb) |
| Safety & Compliance Certifications | UL, CE, FCC |

Ordering Information

| DESCRIPTION | AFL NO. |
|---|-------------------|
| FOCIS Lightning2 Kit, soft carry case, USB cable, with no tips or One-Click [®] cleaner | FOCIS-LT2-N |
| FOCIS Lightning2 Kit, soft carry case, USB cable, (1) UPC ferrule and bulkhead adapter tip, (2) One-Click MPO cleaners | FOCIS-LT2-U |
| FOCIS Lightning2 Kit, soft carry case, USB cable, (1) APC ferrule and bulkhead adapter tip, (2) One-Click MPO cleaners | FOCIS-LT2-A |
| FOCIS Lightning2 Kit, soft carry case, USB cable, (1) UPC and (1) APC ferrule and bulkhead adapter tips, (2) One-Click MPO cleaners | FOCIS-LT2-UA |
| FOCIS Lightning2 Kit, soft carry case, USB cable, (1) UPC and (1) APC ferrule and bulkhead adapter tips, (2) One-Click MPO cleaners, single fiber adapter | FOCIS-LT2-UASF |
| FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, with no tips or One-Click cleaner | FOCIS-LT2-NW-N |
| FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, (1) UPC ferrule and bulkhead adapter tip, (2) One-Click MPO cleaners | FOCIS-LT2-NW-U |
| FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, (1) APC ferrule and bulkhead adapter tip, (2) One-Click MPO cleaners | FOCIS-LT2-NW-A |
| FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, (1) UPC and (1) APC ferrule and bulkhead adapter tips, (2) One-Click MPO cleaners | FOCIS-LT2-NW-UA |
| FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, (1) UPC and (1) APC ferrule and bulkhead adapter tips, (2) One-Click MPO cleaners, single-fiber adapter | FOCIS-LT2-NW-UASF |

FOCIS Lightning Adapter Tips and Accessories

| DESCRIPTION | TIP ID | AFL NO. |
|---|--------|---------------|
| Adapter tip for MPO-12/24 APC bulkhead (with key) | M12A | FLTNG-01-M12A |
| Adapter tip for MPO-12/24 UPC bulkhead (with key) | M12U | FLTNG-01-M12U |
| Adapter tip for MPO-16/32 UPC bulkhead (with key) | M16U | FLTNG-01-M16U |
| Adapter tip for MPO-12/16/24/32 UPC bulkhead (no key) | MPOU | FLTNG-01-MPOU |
| Adapter Tip for MPO-12/16/24/32 APC connector (with key) | MAC | FLTNG-01-MAC |
| Adapter Tip for MPO-12/16/24/32 UPC connector (with key) | MUC | FLTNG-01-MUC |
| Adapter Tip for OptiTip male (pinned) connector | OPTM | FLTNG-01-OPTM |
| Adapter Tip for OptiTip female (unpinned) connector | OPTF | FLTNG-01-OPTF |
| Coupler for most 'FFLX' single fiber connector adapter tips | SFC | FLTNG2-01-SFC |
| Extended adapter tip for LC-APC bulkhead | ALCM | FLTNG-01-ALCM |
| Extended adapter tip for LC-UPC bulkhead | ULCM | FLTNG-01-ULCM |
| MPO extender barrel | MPE | FLTNG-01-MPE |
| Adapter tip for Large Field of View (LFOV) - UPC | LVU | FLTNG2-01-LVU |

Notes:

- All specifications valid at 23 °C ±2°C (73.4 °F ±3.6 °F).
- Large Field of View (LFOV) parameters are provided using LFOV MPO PC and APC adapters.
- Operating conditions: 60 tests in 20 minutes, then auto-off; repeat each hour.
- Trademarks are the property of their respective owners.


FOCIS Lightning®2 Multi-Fiber Optic Connector Inspection System

Test Management and Reporting Software

FlexReports Basic software is available as free download on AFL Software Resources website. FlexReports Basic includes a 60-day Advanced software trial. Once the evaluation period ends, users must upgrade to FlexReports Advanced software license to continue using FlexReports Advanced features.


| DESCRIPTION | AFL NO. |
|---|-------------------|
| FlexReports Advanced, one seat license on USB | RPTS-AD-USB-1 |
| FlexReports Advanced, one seat, Upgrade from TRM® 3 Advanced on USB. Users must have TRM-3 Advanced license | RPTS-UP-TRM3-1 |
| FlexReports Basic, available for download on AFL Software Resources website | FlexReports Basic |
| FlexApp data transfer mobile App, available on Google Play and Apple App Store | FlexApp |

Recommended Products



FlexScan® FS300 (quad) and FS200 (single-mode) OTRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- Flexpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



One-Click® Cleaner MPO / MPO-16

- Ideal for Data Centers and high density optical networks
- Designed to work on MTP®/MPO multi-fiber connectors
- Cleans connectors on jumpers and in adapters

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|------------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety /EMC /EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| | FCC | Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions |
| RoHS | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |
| Test Method | IEC | Compliant to IEC 61300-3-35 for visual inspection of fiber optic connectors and fiber-stub transceivers |
| | IPC | Compliant to IPC-8497-1 for cleaning methods and contamination assessment for optical assembly |

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about FOCIS Lightning2.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts.

FOCIS WiFi[®] Fiber Optic Connector Inspection System

Fiber Inspection



Features

- Trim, lightweight, ergonomic and highly productive tool
- App-based automatic and manual focus; auto-centering after image capture
- One button workflow using rapid LED feedback on probe
- Multi-color LED on probe for fast pass/fail user inspection feedback
- Pairs with an iOS or Android smart device or the aeRos[®] cloud-based workflow management platform
- IEC, IPC, AT&T and user-defined pass/fail analysis when paired with a smart device
- Wide range of adapter tips including MPO/MTP multi-fiber connectors and bulkheads
- Over 8 hours operation with rechargeable Li-Ion battery

Applications

- Inspection of connectors on patch cords or in bulkhead adapters
- Installation, troubleshooting and maintenance of fiber network
- Inspection of multi-fiber connectors including MPO16 and MXC[®]
- Critical fiber infrastructure performance assurance
- Verification of proper connector cleaning methods of procedure

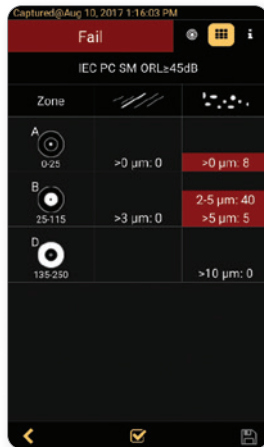
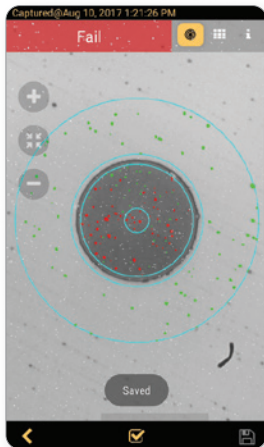
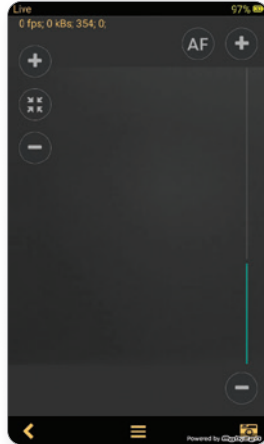
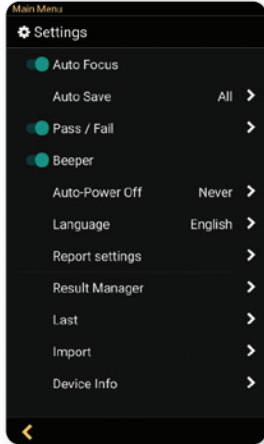
FOCIS WiFi2 is an ergonomic Fiber Optic Connector Inspection System that, when paired with an iOS or Android smart device, provides fast and accurate IEC/IPC/AT&T compliant and user-defined pass/fail end-face cleanliness analysis. Free of charge iOS and Android companion apps support a comprehensive and user-friendly feature set.

Pass/fail results in seconds: With the press of a single button, FOCIS WiFi2 auto-focuses, captures, centers and analyzes the end-face image to industry standard IEC 61300-3-35 (2015), IPC-8497-1, AT&T TP-76461 and user-defined criteria.

Untethered operation: App-based report generator with results/reports transferable to the aeRos cloud. With rechargeable battery and convenient pass/fail LED feedback, FOCIS WiFi2 can be used semi-independently.

Wide range of adapter tips: Interchangeable adapter tips support single and multi-fiber connector inspection for a wide range of patch cords and bulkhead-mounted connectors having either PC/UPC or APC polished end-faces.

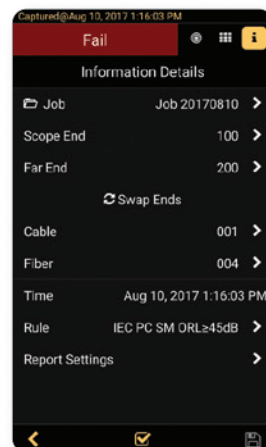
FOCIS WiFi[®] Fiber Optic Connector Inspection System



Smart Device Apps: FOCIS WiFi

Features

- Live image video streaming
- Auto-focus and auto centering
- IEC, IPC, industry standard, and user-defined inspection rules
- Pinch-to-zoom fiber end-face images
- Report generation
- Multi-language Graphical User Interface (GUI)
- Day/time stamped job saving



FOCIS WiFi2® Fiber Optic Connector Inspection System

Specifications^a

| OPTICAL PERFORMANCE | |
|--|--|
| Field of View (FOV) ^b | Live and Captured: 612 x 460 µm; |
| Manual Detection Capability (minimum) | 0.25 µm |
| Auto Analysis Resolution | <1.0 µm |
| Stored ^c Image Size | 2592 x 1944 (5M) pixels |
| End-face Illumination | Coaxial blue LED 476 nm |
| Maximum No Damage Live Fiber Power Level | +20 dBm (Image cannot be viewed if fiber is live) |
| OPERATING FEATURES | |
| WiFi Characteristics | IEEE 802.11bng |
| Focus | Auto-focus (≤3 sec) and manual focus |
| Centering | Auto-centering (<1 sec) |
| Button Functionality | Power On/Off (>3 secs); Capture/Analysis/Auto-save/Live |
| Main LED Functionality | Blue = Power On, Green = Pass, Red = Fail, White = No Fiber |
| Magnification ^b | Variable from 80X to 700X, in Live and Capture modes |
| Applications Compatibility | Android ≥4.0.3, iOS ≥8.1 |
| Image Capture with Pass/Fail Analysis ^c | IEC 61300-3-35 (2015), AT&T TP-76461, IPC-8497-1, user-set criteria |
| Image File Format | JPEG, GIF |
| Image & Pass/Fail Results Storage ^c | Yes |
| File Storage Capacity ^c | Unlimited |
| Result Manager ^c | Storage, rename, delete, transfer |
| Reporting ^c | Built-in fillable PDF reporter |
| Supported Languages ^c | English, French, German, Japanese, Korean, Russian, Spanish |
| PHYSICAL AND POWER CHARACTERISTICS | |
| Battery Type | Li-Ion, non-replaceable by user |
| Maximum Charger Current Draw | 1.2A, battery charge current + device consumption current |
| Operating Time (typical) | 60 hours ^d ; 8 hours continuous |
| Recharge Time | ≤4 hours |
| Low-Battery Warning | Viewed on smart device |
| Charging LED Status; viewed on smart device | Red = Charging, Green = Fully Charged, Blinking Red/Green = Battery Fault |
| Power Save Features (Controlled by App) | Probe Auto-Off – disabled, 5, 10, 30, 60 minutes; Probe WiFi Not Connected – 5 minutes |
| AC Charger Voltage, Frequency, Current | 100-240VAC, 50/60Hz, 5VDC, 2A |
| Charger Jack | 0.9 x 3.2 mm barrel, center (tip) positive |
| Size (Max Diameter x Length) | Ø 40 x 226 mm (Ø 1.6 x 8.9 in) |
| Weight | 150 g (5.3 oz) |
| ENVIRONMENTAL CHARACTERISTICS | |
| Operating Temperature | 0 to +50 °C; 95% RH, non-condensing |
| Storage Temperature | -40 to +70 °C; 95% RH, non-condensing |

Notes:


- a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).
- b. Viewed on Smart Device.
- c. In iOS & Android Apps.
- d. Operating conditions: 60 tests in 20 minutes, then auto-off; Repeat each hour

Ordering Information

| DESCRIPTION | AFL NO. |
|---|----------------|
| FOCIS WiFi2 Kit, soft carry case, AC charger, with NO tips or One-Click cleaner | FOCIS-WIFI2-N |
| FOCIS WiFi2 Kit, soft carry case, AC charger, user-selected: (2) UPC ferrule & bulkhead adapter tips and (1) One-Click cleaner | FOCIS-WIFI2-U |
| FOCIS WiFi2 Kit, FOCIS WiFi2, soft carry case, AC charger, user-selected: (2) APC ferrule & bulkhead adapter tips and (1) One-Click cleaner | FOCIS-WIFI2-A |
| FOCIS WiFi2 Kit, soft carry case, AC charger, user-selected: (2) UPC and (2) APC ferrule & bulkhead adapter tips and (1) One-Click cleaner | FOCIS-WIFI2-UA |


FOCIS WiFi2® Fiber Optic Connector Inspection System

Recommended Products



FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- Flexpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



OFI-BIPM Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|------------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety /EMC /EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| RoHS | FCC | Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions |
| Test Method | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |
| | IEC | Compliant to IEC 61300-3-35 for visual inspection of fiber optic connectors and fiber-stub transceivers |
| | IPC | Compliant to IPC-8497-1 for cleaning methods and contamination assessment for optical assembly |

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International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

ROGUE® OLTS Certifier

Measure insertion loss, return loss and length on multimode and single-mode fiber optic networks



Features

- Bi-directional testing on up to 2 fibers at once
- Pass/Fail certification to ISO/IEC/TIA/IEEE and custom test limits
- Automatic dual-wavelength identification (Wave ID)
- Test cord reference wizard and built-in encircled flux compliance
- Integrated power meter and visual fault identifier
- 12-fiber MPO certification with optional Multi-fiber switch (MFS)
- Reporting with TRM® PC software and optional cloud-based workflow integration with aeRos®

Applications

- Certify Tier 1 networks to industry standards
- Test LAN structured cabling and data center networks with single fiber (LC, SC, FC, ST) and multi-fiber (MTP/MPO) connectivity
- Test access, metro and core networks
- Document network installations

AFL's ROGUE OLTS Certifier measures insertion loss, return loss, and length bi-directionally to industry standards on both multimode and single-mode networks. ROGUE OLTS Certifier is offered as a matched pair of units, with each unit featuring 4 test ports. Two of the ports combine a light source and power meter to enable bi-directional testing on single or dual fibers. The other two ports are a dedicated power meter and a visual fault identifier (VFI) to help troubleshoot networks.

ROGUE OLTS Certifier is available as an intelligent base (iB1) model with an integrated display. It can provide either single-fiber testing on quad SM/MM wavelengths (850/1300/1310/1550 nm) or single and dual-fiber testing at 1310/1550 nm.

Test Management and Reporting Software: All ROGUE OLTS Certifier kits include a basic license for Test Result Manager (TRM® 3.0) providing data processing and reporting locally via a PC. The optional aeRos® Pro test management software provides cloud-based workflow integration to remotely build projects, assign jobs, collect results, track progress and generate reports.

ROGUE® OLTS Certifier

Specifications^a

| OLTS | MULTIMODE | SINGLE-MODE |
|--------------------------|--|---|
| Emitter Type | LED | Laser |
| Wavelengths | 850 ±30 nm; 1300 ±20 nm | 1310, 1550 ±20 nm |
| Safety Class | Class I FDA 21 CFR 1040.10 and 1040.11, IEC EN60825-1: 2007-03 | |
| Detector Type | InGaAs | InGaAs |
| Launch Condition | Encircled Flux Compliant ^b | N/A |
| Length Measurement Range | 5 km | 200 km (SMF28e) |
| Power Measurement Range | +3 to -60 dBm | +3 to -60 dBm |
| Output Power | -24/-23 dBm, 62.5/50 µm | -3 dBm, 9 µm |
| Stability ^c | ±0.1 dB over 1 hour ±0.15 dB over 8 hours | ±0.1 dB over 1 hour ±0.15 dB over 8 hours |
| Wave ID Transmit | Yes | Yes |
| Tone Generation | 330 Hz, 1 kHz, 2 kHz | 330 Hz, 1 kHz, 2 kHz |
| Input Connector | Interchangeable connector adapter (LC standard, SC, ST, FC optional) | |

| OPTICAL POWER METER (OPM) | |
|---------------------------|--|
| Calibrated Wavelengths | 850, 1300, 1310, 1490, 1550, 1625, 1650 nm |
| Detector Type | InGaAs PIN, 2 mm diameter |
| Measurement Range | +3 to -70 dBm |
| Wave ID | Automatically synchronizes and measures 1, 2 or 3 λ Wave ID combinations |
| Range | +3 to -40 dBm @ 850 nm; +3 to -50 dBm @ 1300, 1310, 1550 nm |
| Tone Detect | Auto-detects 270, 330 Hz; 1, 2 kHz tones; |
| Accuracy | ±5% @-10 dBm |
| Linearity | ±0.1 dB (-3 to -40 dBm); ±0.25 dB (-40 to -50 dBm) |
| Measurement Units | Power in dBm, nW, µW, mW; Loss in dB; 0.01 dB resolution |

| VISUAL FAULT LOCATOR (VFL) | |
|----------------------------|---|
| Emitter Type | Visible red laser, 650 ±20 nm |
| Safety Class | Class II FDA 21 CFR 1040.10 and 1040.11, IEC EN60825-1: 2007-03 |
| Output Power (nominal) | 0.8 mW into single-mode fiber |
| Modes | CW and 2 Hz flashing |

| GENERAL | iB1 |
|-----------------------|---|
| Size | 23.5 x 13.3 x 7.6 cm (9.25 x 5.25 x 3.0 in) |
| Weight | 1.56 kg (3.46 lb) |
| Operating Temperature | -10 °C to +50 °C, 0 to 90 % RH (non-condensing) |
| Storage Temperature | -20 °C to +60 °C, 0 to 90 % RH (non-condensing) |
| Power | Rechargeable Li-Ion or AC power adapter |
| Battery Life | >8 hours continuous testing |

Notes:

- a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.
- b. TIA-526-14-B, ISO/IEC 14763-3 and IEC 61280-4-1.
- c. After 15 minutes warm-up.

ROGUE® OLTS Certifier

Ordering Information

Each ROGUE OLTS Certifier kit includes two (2) of each: ROGUE iB1 Base, kit-specific ROGUE Modules, battery, AC charger, carry strap, carry case. Each ROGUE OLTS Certifier kit includes (1) One-Click Cleaner SC/2.5 mm, (1) One-Click Cleaner LC/1.25 mm, switchable test port adapters and test accessories.

| DESCRIPTION | CONTAINS (two of each) | AFL NO. |
|---|---|--------------|
| ROGUE OLTS Certifier kit with iB1 Base, Quad SM/MM | ROGUE iB1 Base, Quad SM/MM Module, battery, AC charger, adjustable carry strap, carry case | RGK-CERT01B1 |
| ROGUE OLTS Certifier kit with iB1 Base, Dual SM ports | ROGUE iB1 Base, Dual Ports SM Module, battery, AC charger, adjustable carry strap, carry case | RGK-CERT03B1 |

ROGUE Hardware and Accessories

| DESCRIPTION | AFL NO. |
|---|----------------|
| ROGUE OLTS with iB1 Base; contains ROGUE iB1 Base, Dual Ports SM Module, battery, AC charger, adjustable carry strap | RGK-OLTS03B1 |
| ROGUE iB1, Intelligent Base; contains ROGUE iB1 Base, battery, AC charger, adjustable carry strap | RG-B01 |
| ROGUE OLTS Certifier Quad Module; contains Quad Module; test port adapters: (2) SC for OLS port, SC and LC for OPM port | RG-1100-Q01 |
| ROGUE OLTS Certifier SM Module; contains SM Module; test port adapters (2) SC for OLS port, SC and LC for OPM port | RG-1100-S01-D |
| ROGUE Kit Carry Case | RGA-CASE-01 |
| ORL Referencing Mandrel | 5400-00-0200 |
| Adjustable Carry Strap | RGA-STRAP-01 |
| AC charger for cB1 Base | 4050-00-0132PR |
| AC charger for iB1 Base | 4050-00-0918PR |
| Reference cable, SC/UPC-LC/UPC, SMF28E/E+, 2 m | 8700-00-0081 |
| Reference cable, SC/APC-LC/UPC, SMF, 2 m | 8700-00-0050 |
| Reference grade cable, SC/UPC-LC/UPC, MMF, 50 μm, OM4, 2 mm, Red, 2 m | 8700-04-0007MR |



ROGUE OLTS Certifier kit with iB1 Bases

ROGUE® OLTS Certifier

ROGUE OLTS Certifier Adapters


| DESCRIPTION | TEST PORT USAGE | AFL NO. |
|-------------|-----------------|----------------|
| FC | OLS | 2900-50-0002MR |
| SC | OLS | 2900-50-0003MR |
| ST | OLS | 2900-50-0004MR |
| LC | OLS | 2900-50-0006MR |
| FC | OPM | 2900-52-0001MR |
| SC | OPM | 2900-52-0002MR |

| DESCRIPTION | TEST PORT USAGE | AFL NO. |
|-------------------|-----------------|----------------|
| ST | OPM | 2900-52-0003MR |
| LC | OPM | 2900-52-0004MR |
| 2.5 mm Universal | OPM | 2900-52-0005MR |
| 1.25 mm Universal | OPM | 2900-52-0006MR |
| 2.5 mm Universal | VFL | 2900-50-0007MR |
| 1.25 mm Universal | VFL | 2900-50-0010MR |

Test Management and Reporting Software

| DESCRIPTION | AFL NO. |
|---|---------------|
| TRM 3.0 upgrade from Basic to Advanced software | TRM3-UGRADE |
| TURBO App (Android Google play) | Free Download |

Recommended Products



Cloud-based Test Management and Reporting

- Seamless interaction with Android™ applications
- Run reports at the push of a button

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|------------------|---------------------|---|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety /EMC /EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| | FCC | Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions |
| | FDA | Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products |
| | IEC | Compliant to IEC 60825-1 for safety of laser products |
| RoHS | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |
| Test Method | TIA | Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components |
| | IEC | Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises |
| | EN | Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises |
| | AS/NZS | Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises |
| | TIA | Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant |
| | TIA | Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant |
| | IEC | Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling |
| | AS/NZS | Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling |
| | IEC | Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant |
| | IEC | Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant |

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about ROGUE OLTS Certifier.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

Multi-Fiber Switch



Multi-fiber Switch paired with ROGUE

Features

- Stand-alone operation as well as pairing with other testers including OTDRs and OLTS
- 12-fiber switching capability
- Dual wavelength, single-mode or multimode
- Rechargeable battery with USB port charging/communication

Applications

- Converts a single port tester into a multi-fiber tester utilizing your existing OLTS, OTDR, and VFL test equipment
- Efficiently test 12-fiber links without disconnecting/reconnecting
- Bi-directional testing without moving cables
- Certify MPO links to industry standards including base 8 applications

The density demands of today’s networks are driving more demand for multi-fiber connectivity. As the adoption of multi-fiber connectors becomes more prevalent in data centers, the ability to test these types of connections accurately and quickly has become even more critical.

AFL’s Multi-Fiber Switch enables the testing of MPO/MTP®-terminated cables. The switch allows you to utilize a single piece of test equipment to verify some or all of the fibers in a multi-fiber connector in a single test, saving you both time and money.

AFL’s Multi-Fiber Switch is compatible with your AFL FlexScan FS200 and FS300 series OTDRs and ROGUE® OLTS Certification equipment. The switch can be manually configured or remotely controlled via USB from both FlexScan OTDRs and ROGUE OLTS.

Specifications^a

| OPTICAL | | |
|---------------------------|---|---------------------------------|
| Wavelength | 1310/1550 nm, SM dual-wavelength | 850/1300 nm, MM dual-wavelength |
| Insertion Loss | 2.8 dB typ. – 3.3 dB max. | 1.8 dB typ. – 2.3 dB max. |
| Optical Return Loss (ORL) | 50 dB min. | — |
| Fiber Length | 4.4 ± 0.5 m | |
| Optical Length Uniformity | ± 0.15 m | |
| GENERAL | | |
| Power | Li-Ion battery or USB interface | |
| Battery Life | 1000 hours continuous operation | |
| Weight | 0.3 kg (0.66 lb) | |
| Dimensions | 12.9 x 6.9 x 3.1 cm (5.1 x 2.7 x 1.2 in) | |
| Operating Temperature | -20 °C to +60 °C, 0 to 90 % RH (non-condensing) | |
| Storage Temperature | -20 °C to +70 °C, 0 to 90 % RH (non-condensing) | |

Notes:

a. All specifications valid at 23 °C ±2 °C (73.4 °F ±3.6 °F) unless otherwise specified.

Multi-Fiber Switch

Ordering Information

| DESCRIPTION | AFL NO. |
|--|------------------|
| Multi-fiber Switch, 12 fibers SM, APC-SC, MPO fiber ring (non-pinned), soft case | MFS-12-SM-ASC-FR |
| Multi-fiber Switch, 12 fibers SM, APC-SC, soft case | MFS-12-SM-ASC |
| Multi-fiber Switch, 12 fibers SM, UPC-SC, soft case | MFS-12-SM-USC |
| Multi-fiber Switch, 12 fibers MM, UPC-SC, soft case | MFS-12-MM-USC |

ROGUE MFS Certification Add-on Kits

Each Multi-Fiber Switch Certification Add-on kit include (2) Multi-Fiber Switches, (2) 6 in. USB-USB mini cables, (2) key up / key down MPO-MPO mating adapters, (2) MFS carry holsters, (1) One-Click Cleaner MPO, (2) MFS kit carry cases, test cords and mating adapters (see table below).


| ADD-ON KIT | CONTAINS (ea.) | | | AFL NO. |
|--------------------|------------------------|----------------------|---|-----------------|
| | 12F MFS SWITCH | REFERENCE TEST CORDS | | |
| | | SC-SC, 0.3 (m) | 12F MPO-MPO, 2 (m) | |
| SM, SC/UPC-MPO/APC | (2) SM, SC/UPC-MPO/APC | (2) SM | (2) SM, type A unpinned; (2) SM, type A pinned/unpinned; (1) SM, type B unpinned | MPO-SM-CERT-ADD |
| MM, SC/UPC-MPO/UPC | (2) MM, SC/UPC-MPO/UPC | (2) MM | (2) OM4, type A unpinned; (2) OM4, type A pinned/unpinned; (1) OM4, type B unpinned | MPO-MM-CERT-ADD |

MFS Multi-Fiber Switch OTDR Add-on Kit

Single-mode and multimode Multi-Fiber Switches (MFS) are available to accelerate OTDR testing of MPO-connectorized, multi-fiber cables. OTDR MFS Add-on Kits include (1) MFS with MPO connector, (1) single-fiber Fiber Ring to connect OTDR to the switch, plus (1) MPO Fiber Ring.


| CONTAINS (ea.) | | | AFL NO. |
|--|--|--|-----------------|
| 12F MFS SWITCH | FIBER RING | MPO FIBER RING | |
| MFS-12-SM-ASC, SM, SC/APC-MPO/APC pinned | SM, 150 m, SC-ASC or ASC-ASC (depending on OTDR connector) | 12F, 61m, MPO/APC-unpinned to MPO; Select pinned or unpinned network MPO connector | MPO-SM-OTDR-ADD |
| MFS-12-MM-USC, MM, SC/UPC-MPO/UPC pinned | OM3/4/5-compatible, SC-SC, 150 m | 12F, 61m, MPO-unpinned to MPO; Select pinned or unpinned network MPO connector | MPO-MM-OTDR-ADD |

Recommended Products



ROGUE® OLTS Certifier

- Bi-directional testing on up to 2 fibers at once
- Pass/Fail certification to ISO/IEC/TIA/IEEE and custom test limits
- Automatic dual-wavelength identification (Wave ID)



FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- Flexpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| RoHS | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |

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Visit www.AFLglobal.com/Test to learn more about Multi-Fiber Switch.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

Optical Loss Test Kits

5 YEAR WARRANTY



SMLP5-5 Kit

Features

- Rugged, dependable, and backed by industry-best 5-year warranty
- Wave ID tests up to three wavelengths simultaneously - slashing test time
- Field-swappable connector adapters for maximum flexibility
- Long battery life from globally available AA batteries

Applications

- Certify multimode and single-mode links per TIA/EIA standards
- Passive Optical Networks (PON) testing
- Certification report generation with TRM® 2.0 software
- Fiber identification for splicing and continuity checking

Optical Loss Test Sets (OLTS) provide the most accurate method for determining the total loss of a link. AFL's OLTS have been an industry favorite for over 30 years with more than 100,000 units shipped. Leading service providers and enterprise customers rely on AFL's OLTS for their ruggedness, reliability, and best-in-the-industry 5-year warranty.

An OLTS test is performed with a light source on one end of the fiber sending a continuous wave at specific wavelength(s) and a power meter on the opposite end measuring the light received. The loss measured is compared to the loss budget, which is usually calculated prior to installation, and reflects the industry standards used to ensure that the link can meet its application requirements.

OLTS are mainly used to certify multimode and single-mode links, test Passive Optical Networks (PONs), identify fibers before splicing, and to ensure network continuity.

Designed for use in outside plant environments: AFL OLTS are extremely rugged and withstand one-meter drops, have splash resistant controls that are easy to use with gloves on, and the field-swappable connector adapters provide flexibility and access for cleaning optical ports at time of test.

Test faster with fewer errors: AFL's Wave ID increases test speed by performing simultaneous multi-wavelength testing that cuts loss measurement time in half or more. AFL's automatic wavelength identification eliminates setup errors and simplifies coordination between users at opposite ends of fiber.

Optical Loss Test Kits

Specifications^a

| OPTICAL SPECIFICATIONS - POWER METERS | | | |
|---------------------------------------|---|---|---|
| MODEL | OPM5-4D | OPM5-3D, OPM4-3D | OPM5-2D |
| Calibrated Wavelengths | 850, 980, 1300, 1310, 1490, 1550, 1625 nm | 850, 1300, 1310, 1490, 1550, 1625 nm | 850, 1300, 1310, 1490, 1550 nm |
| Detector Type | Filtered InGaAs | InGaAs | Germanium (Ge) |
| Measurement Range | +26 to -50 dBm | +10 to -75 dBm | +6 to -60 dBm |
| Tone Detect Range | +6 to -30 dBm +6 to -25 dBm for 850 nm | +10 to -50 dBm +10 to -45 dBm for 850 nm | +6 to -50 dBm +6 to -45 dBm for 850 nm |
| Wavelength ID Range | +6 to -30 dBm +6 to -25 dBm for 850 nm | +10 to -50 dBm +10 to -45 dBm for 850 nm | +6 to -50 dBm +6 to -45 dBm for 850 nm |
| Accuracy | ±0.1 dB (typical); ±0.25 dB | | |
| Resolution | 0.01 dB | | |
| Measurement Units | dB, dBm, µW | | |

| OPTICAL SPECIFICATIONS: OLS7 MODELS | | | |
|-------------------------------------|--|---------|---------|
| MODEL | OLS7-FTTH (Single Port) | | |
| Wavelength (±20 nm) | 1310 nm | 1490 nm | 1550 nm |
| Spectral Width | 5 nm | 3 nm | 5 nm |
| Emitter Type | Laser | | |
| Safety Class | Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03 | | |
| Output Power | -5 dBm (typical), 9/125 fiber | | |
| Output Stability | ±0.05 dB over 1 hour (after 15 minutes warm-up) ±0.1 dB over 8 hours (after 15 minutes warm-up) | | |
| Tone Output | 270 Hz, 330 Hz, 1 kHz, 2 kHz | | |

| OPTICAL SPECIFICATIONS: OLS4, OLS2-DUAL & OLS1-DUAL MODELS | | | | | | |
|--|--|-----------------|--|-------------|--------------------------------------|-------------|
| MODEL | OLS4 (MM Optical Port) | | OLS4 (SM Optical Port) | | OLS2-DUAL (Single Port) | |
| Wavelength | 850 ±30 nm | 1300 +30/-20 nm | 1310 ±20 nm | 1550 ±20 nm | 1310 ±20 nm | 1550 ±20 nm |
| Spectral Width | 45 nm (typ) | 120 nm (typ) | 5 nm (max) | 5 nm (max) | 5 nm (max) | |
| Emitter Type | LED | | Laser | | Laser | |
| Safety Class | Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03 | | | | | |
| Output Power | >-20 dBm, 62.5 µm multimode ^b | | 0 dBm, 9 µm single-mode | | 0 dBm, 9 µm single-mode ^c | |
| Output Stability | ±0.1 dB over 8 hours (after 5 minutes warm-up) | | ±0.05 dB over 1 hour (after 15 minutes warm-up) ±0.1 dB over 8 hours (after 15 minutes warm-up) | | | |
| Tone Output | N/A | | 2 kHz | | 270 Hz, 330 Hz, 1 kHz, 2 kHz | |

| GENERAL SPECIFICATIONS: ALL OPM AND OLS MODELS | |
|--|---|
| Available Adapters | SC FC, ST, LC |
| Power | 2 AA batteries |
| Operating Temperature | -10 °C to 50 °C, 90 % RH (non-condensing) |
| Storage Temperature | -30 °C to 60 °C, 90 % RH (non-condensing) |
| Size (H x W x D) | 14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in) |
| Weight | 0.29 kg (0.65 lb) |

Notes:

- All specifications valid at 25°C unless otherwise specified.
- May be used to test 50 or 62.5 µm fiber with supplied mandrels.
- Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.
- Adjustable 2 dB.

Optical Loss Test Kits

Ordering Information

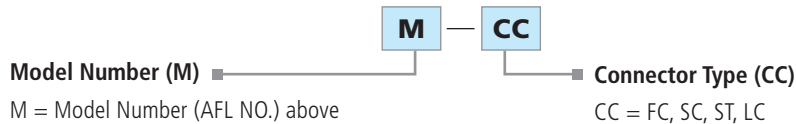
Test kits include light source, power meter, protective rubber boots, AA batteries, adapter caps, and carry case.

| AFL NO. | POWER METER | LIGHT SOURCE | FIBER TYPE | LOSS MEASUREMENTS (nm) | | | | | DYNAMIC RANGE (dB) | TRM® 2.0 PC REPORTING |
|-----------|-------------|--------------|------------|------------------------|------|------|------|------|---|-----------------------|
| | | | | 850 | 1300 | 1310 | 1490 | 1550 | | |
| SLP5-6 | OPM5-3D | OLS2-DUAL | SM | | | ◆ | | ◆ | 70 ^b | ◆ |
| SLP5-FTTH | OPM5-4D | OLS7-FTTH | SM | | | ◆ | ◆ | ◆ | 45 ^b | ◆ |
| SMLP5-5 | OPM5-2D | OLS4 | MM SM | ◆ | ◆ | ◆ | | ◆ | 40 @ 850/1300 nm ^a 60 @ 1310/1550 nm ^b | ◆ |

Notes:

- a. On 62.5/125 µm multimode fiber.
- b. On 9/125 µm single-mode fiber.

Part Number – Connector Specification



Examples: SMLP5-5-SC => (SMLP5-5 Test Kit with SC adapters)

Accessories

| DESCRIPTION | AFL NO. |
|---|----------------|
| LIGHT SOURCE CONNECTOR ADAPTERS | |
| FC connector adapter | 2900-50-0002MR |
| SC connector adapter | 2900-50-0003MR |
| ST connector adapter | 2900-50-0004MR |
| LC connector adapter | 2900-50-0006MR |
| POWER METER CONNECTOR ADAPTERS | |
| FC connector adapter | 8800-00-0200 |
| SC connector adapter | 8800-00-0209 |
| ST connector adapter | 8800-00-0202 |
| LC connector adapter | 8800-00-0225 |
| MULTIMODE TEST CORDS (50/125 µm – 2 meters) | |
| FC/FC | 8700-00-0093 |
| SC/ST | 8700-00-0064 |
| SC/SC | 8700-00-0065 |
| LC/LC | 8700-00-0082 |
| SINGLE-MODE TEST CORDS (9/125 µm – 2 meters) | |
| FC/FC | 8700-00-0005 |
| FC/ST | 8700-00-0016 |
| ST/ST | 8700-00-0017 |
| SC/SC | 8700-00-0018 |
| FC/SC | 8700-00-0021 |
| SC/ST | 8700-00-0022 |
| SC/LC | 8700-00-0046 |
| FC/LC | 8700-00-0071 |
| LC/LC | 8700-00-0097 |


| DESCRIPTION | AFL NO. |
|------------------------------------|-----------------|
| MATING ADAPTERS (Bulkheads) | |
| FC/FC | 8400-00-0004MR |
| SC/SC | 8400-00-0045MR |
| ST/ST | 8400-00-0020 |
| LC/LC | 8400-00-0075 |
| CLEANING SUPPLIES | |
| One-Click Cleaner SC/ST/FC | 8500-05-0001MZ |
| One-Click Cleaner LC | 8500-05-0002MZ |
| Cletop –SB Cassette Cleaner | 8500-10-0016MZ |
| Cletop –SB Refill Cartridge | 8500-10-00017MZ |

Optical Loss Test Kits

Test Management and Reporting Software


| DESCRIPTION | AFL NO. |
|--|---------------|
| TRM® 2.0 with Basic License (OTDR Trace/OLTS Viewer, Batch Editor and Reports), USB delivery | TRM-00-0900PR |

Recommended Products



OFI-BIPM Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option



One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|---------------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety/EMC/EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| | FDA | Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products |
| RoHS | IEC | Compliant to IEC 60825-1 for safety of laser products |
| | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |
| Test Method | TIA | Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components* |
| | IEC | Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises* |
| | EN | Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises* |
| | AS/NZS | Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises* |
| | TIA | Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant |
| | TIA | Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant* |
| | IEC | Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling* |
| | AS/NZS | Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling* |
| | IEC | Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant* |
| | IEC | Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant |
| Generic Requirement | IEC | Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters |

* A complementary encircled flux mode conditioner may be needed to comply with encircled flux launch conditions for testing multimode optical fiber cabling and components

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about OLTS kits.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

OPM5 and OPM4 Optical Power Meters

5 YEAR WARRANTY



OPM5 Optical Power Meter

Features

- Rugged, dependable, and backed by industry-best 5-year warranty
- Wave ID tests up to three wavelengths simultaneously - slashing test time
- Field-swappable connector adapters for maximum flexibility
- Long battery life from globally available AA batteries

Applications

- Passive Optical Networks (PON) testing
- OPM(5/4)-4D (Filtered-InGaAs) for high power (+26 dBm) CATV broadband networks or DWDM system applications
- OPM(5/4)-3D (InGaAs) for telecommunications networks
- OPM(5/4)-2D (Ge) for premises LAN/WAN multimode or single-mode networks
- OPM4-1D (Silicon) for multimode/plastic optical fiber applications

AFL is a trusted supplier of optical testing equipment with more than 30 years of experience and tens of thousands of units in use in the field. AFL's full range of power meters are used for testing single-mode and/or multimode fiber networks. Power meters with wave ID can detect two or more wavelengths simultaneously – decreasing test time and reducing user errors when paired with AFL wave ID light sources.

Designed for the real world: AFL's power meters are designed to meet the demands of the outside plant environment. They withstand the one-meter drop test and have splash resistant controls that are easy to use, even with gloves on.

Flexible and efficient: A range of field-swappable output adapters enables access for cleaning optical ports and supports multiple connector styles. The efficient design provides long test time from globally available AA batteries. Equipped with five-minute auto-off feature to save power.

Reduce test time and errors: Wave ID (Triple, Dual, or Single) decreases test time while reducing technician errors.

Stores test results: AFL's OPM5 stores optical reference at each calibrated wavelength. This enables technicians to organize test results into multiple files and transfer stored results via USB to the included PC-based TRM® 2.0 software for analyzing, generating reports, and printing. Users can generate network Pass/Fail results demonstrating compliance to industry standards and illustrate headroom. Fully N.I.S.T. traceable.

OPM5 and OPM4 Optical Power Meters

Specifications ^a

| OPTICAL | | | | |
|------------------------|---|---|---|------------------|
| MODEL | OPM5-4D, OPM4-4D | OPM5-3D, OPM4-3D | OPM5-2D, OPM4-2D | OPM4-1D |
| Calibrated Wavelengths | 850, 980, 1300, 1310, 1490, 1550, 1625 nm | 850, 1300, 1310, 1490, 1550, 1625 nm | 850, 1300, 1310, 1490, 1550 nm | 650, 660, 850 nm |
| Detector Type | Filtered InGaAs | InGaAs | Germanium (Ge) | Silicon (Si) |
| Measurement Range | +26 to -50 dBm | +10 to -75 dBm | +6 to -60 dBm | +6 to -70 dBm |
| Tone Detect Range | +6 to -30 dBm +6 to -25 dBm for 850 nm | +10 to -50 dBm +10 to -45 dBm for 850 nm | +6 to -50 dBm +6 to -45 dBm for 850 nm | +6 to -45 dBm |
| Wavelength ID Range | +6 to -30 dBm +6 to -25 dBm for 850 nm | +10 to -50 dBm +10 to -45 dBm for 850 nm | +6 to -50 dBm +6 to -45 dBm for 850 nm | — |
| Accuracy ^b | ±0.1 dB (typical); ±0.25 dB | | | |
| Resolution | 0.01 dB | | | |
| Measurement Units | dB, dBm, µW | | | |

| GENERAL | |
|-----------------------|---|
| Power | 2 x AA batteries, accepts standard mini-USB power adapter |
| Adapter Caps | Order with one: 1.25 mm Universal, 2.5 mm Universal, FC, SC, ST, LC. Other connector adapters available |
| Battery Life | 300 hours |
| Operating Temperature | -10 °C to 50 °C, 95 % RH (non-condensing) |
| Storage Temperature | -30 °C to 60 °C, 95 % RH (non-condensing) |
| Size (H x W x D) | 14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in) |
| Weight | 0.26 kg (0.58 lb) |

Notes:

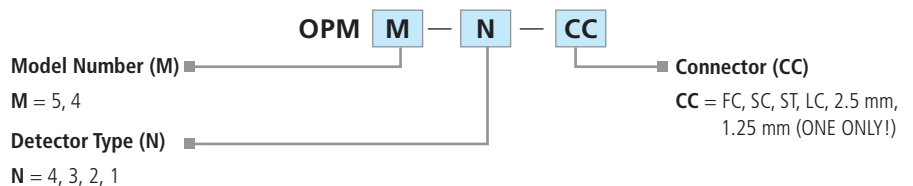
- a. All specifications valid at 25°C unless otherwise specified.
- b. Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.

Ordering Information

All OPM models include optical power meter, 2 AA batteries, protective rubber boot, customer specified adapter cap, and carry case. OPM5 models also include TRM[®] 2.0 software (Basic License).

When placing an order, select options as follows:

- Model Number (M)
- Detector Type (N)
- Connector Configuration (CC)



| MODEL | CALIBRATED WAVELENGTHS (nm) | | | | | | | | | DETECTOR TYPE | MEASUREMENT RANGE (dBm) | PC SOFTWARE |
|---------|-----------------------------|-----|-----|-----|------|------|------|------|------|---------------|-------------------------|-------------|
| | 650 | 660 | 850 | 980 | 1300 | 1310 | 1490 | 1550 | 1625 | | | |
| OPM5-4D | | | ◆ | ◆ | | ◆ | ◆ | ◆ | ◆ | InGaAs | +26 to -50 | TRM 2.0 |
| OPM5-3D | | | ◆ | | ◆ | ◆ | ◆ | ◆ | ◆ | InGaAs | +10 to -75 | TRM 2.0 |
| OPM5-2D | | | ◆ | | ◆ | ◆ | ◆ | ◆ | | Germanium | +6 to -60 | TRM 2.0 |
| OPM4-4D | | | ◆ | ◆ | | ◆ | ◆ | ◆ | ◆ | InGaAs | +26 to -50 | |
| OPM4-3D | | | ◆ | | ◆ | ◆ | ◆ | ◆ | ◆ | InGaAs | +10 to -75 | |
| OPM4-2D | | | ◆ | | ◆ | ◆ | ◆ | ◆ | | Germanium | +6 to -60 | |
| OPM4-1D | ◆ | ◆ | ◆ | | | | | | | Silicon | +6 to -70 | |

OPM5 and OPM4 Optical Power Meters

OPM Accessories


| DESCRIPTION | AFL NO. | | |
|---|----------------------------------|---------------------|----------------|
| ADAPTER CAPS | | | |
| 2.5 mm Universal (accepts FC, SC, and ST ferrules) | 8800-00-0214 | | |
| 1.25 mm Universal (accepts LC and MU ferrules) | 8800-00-0224 | | |
| FC | 8800-00-0200 | | |
| SC | 8800-00-0209 | | |
| ST® | 8800-00-0202 | | |
| LC simplex | 8800-00-0225 | | |
| E-2000 | 8800-00-0221 | | |
| 2.5 mm open Universal. Accepts SC duplex, OptiTap connector for measuring optical power. | 8800-00-0219 | | |
| SMA | 8800-00-0203 | | |
| D4 | 8800-00-0201 | | |
| Biconic | 8800-00-0204 | | |
| USB CABLE | | | |
| USB Cable: PC (USB-A) to OPM (USB-MINI B): | OPM5 MODEL | OPM4 MODEL | 6000-00-0024MR |
| <ul style="list-style-type: none"> • Connect OPM to PC for data upload to TRM® 2.0 • External Power for OPM (when used with customer supplied USB-A power source) | Connect to PC and External power | External power only | |

Test Management and Reporting Software

| DESCRIPTION | AFL NO. |
|--|---------------|
| TRM® 2.0 with Basic License (OTDR Trace/OLTS Viewer, Batch Editor and Reports), USB delivery | TRM-00-0900PR |

OPM5 and OPM4 Optical Power Meters

Recommended Products



FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



Optical Light Sources

- Encircled Flux Compliant
- 5-Year Product Warranty
- Integrated LED and Laser light sources

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|---------------------|---------------------|---|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety/EMC/EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| RoHS | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |
| Test Method | TIA | Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components |
| | IEC | Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises |
| | EN | Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises |
| | AS/NZS | Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises |
| | TIA | Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant |
| | TIA | Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant |
| | IEC | Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling |
| | AS/NZS | Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling |
| | IEC | Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant |
| | IEC | Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant |
| Generic Requirement | IEC | Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters |

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about OPM5 and OPM4 optical power meters.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

MFIS Multi-Fiber Identification System

Fiber Identification



Features

- Identifies up to 12 fibers at a time
- Light-weight, rugged, and can be operated with one hand
- Optimized for use on 250 μm , 900 μm , and ribbon fiber
- Three-year calibration interval

Applications

- Multi-fiber network continuity assurance
- Fiber identification on both MFP power meter and MFI identifier
- Verify long-haul networks (up to 110 miles)
- Quickly verify FlexNap[®] network mapping

Multi-fiber network construction is time consuming, complicated, and often built by more than one contractor with mixed sets of documentation. There are guaranteed to be mislabeled and cross-connected fibers, which cost valuable time to find and fix. AFL's Multi-Fiber Identification System (MFIS) is a simple user-friendly way to verify network construction quickly and efficiently.

Rugged lightweight tools that can be operated with one hand: MFIS is a set of three tools that can be used to easily verify the fiber ID. The MFT (Multi-Fiber Trace) features 12 discrete laser sources (1550 nm single-mode) and an MTP fan-out connector. The digitally-coded light is then detected by either the MFI (Multi-Fiber Identifier), which clamps onto the fiber under test or the MFP (Multi-Fiber Power Meter), which plugs into the fiber under test.

Slash multiple fiber activations cost by up to 75% over conventional method: During service activation field technicians often run into unlabeled, mislabeled, and cross-connected fibers that can take two technicians hours to figure out - increasing cost and delaying service for customers. MFIS enables one technician to verify up to 12 fibers at a time, slashing the time it takes to activate new customers.

Ensure 100% multi-fiber network continuity: MFIS can be used to efficiently verify potentially cross-connected fibers at any point of an existing network – providing peace of mind to network managers.

MFIS Multi-Fiber Identification System

MFT Multi-Fiber Tracer Specifications^a

| | |
|-------------------------------|--|
| OPTICAL | |
| Wavelength | 1550 ±20 nm |
| Spectral Width | 5 nm (maximum) |
| Output Power | +1.75 dBm ±1 dB peak into 9/125 µm fiber @ +25 °C |
| GENERAL | |
| Power Supply | 2 X 1.5 V AA alkaline batteries |
| Battery Life (Alkaline) | @ +25 °C: 40 hours (minimum); 50 hours (typical) |
| Connectors | SM: MTP/MPO-APC (unpinned) 12-fiber connector. |
| Size (without boot) W x L x H | 96 x 145 x 35 mm (3.8 x 5.7 x 1.4 in) |
| Weight | 307 g (0.676 lb) without boot; 458 g (1.01 lb) with boot |
| Operational Temperature | -20 °C to +50 °C 90 % RH (non-condensing) |
| Storage Temperature | -30 °C to +60 °C 90 % RH (non-condensing) |

MFI Multi-Fiber Identifier Specifications^{a, b}

| FIBER TYPE | PARAMETER | WAVELENGTH, SIGNAL | DETECTABLE SIGNAL RANGE |
|------------------------------|---|--------------------------|-------------------------|
| 250 µm ribbon fiber, SMF28e+ | Minimum data detect level (peak power, typical) | 1550 nm, Data – Fiber ID | -35 dBm (typical) |
| | Insertion loss (typical/maximum) | 1550 nm | 2.5 dB/3.0 dB |

| | |
|--------------------------------------|---|
| OPTICAL | |
| Detector Type | InGaAs |
| Calibrated Fiber Size and Wavelength | 250 µm @1550 nm (SMF-28/28E) ribbon fiber |
| Working Fiber Size | 250 µm ribbon fiber |
| Data Detection Range | +2 to -35 dBm |
| GENERAL | |
| Display Type | Multi 7-segment LCD, 3 LEDs |
| Power Supply | 2 X 1.5 V AAA, alkaline batteries |
| Battery Life (backlight off) | >10,000 operations ^c |
| Operation Temperature | -20 °C to +50 °C 90 % RH (non-condensing) |
| Storage Temperature | -30 °C to +60 °C 90 % RH (non-condensing) |
| Dimensions (H x W x D) | 22 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in) |
| Weight | 168 g (6 oz) |

- Notes:**
- a. All specifications valid at 25 °C unless otherwise specified.
 - b. All specs are typical unless otherwise noted. Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, active fiber position, and other factors.
 - c. Operation is defined as turning unit on by taking 1 reading in a 10 second period.

MFIS Multi-Fiber Identification System

MFP Multi-Fiber Power Meter Specifications^a

| OPTICAL | |
|--------------------------------|--------------------------------------|
| Detector Type | InGaAs |
| Detector Size | 1 mm |
| OPM Mode | |
| Calibrated Wavelength | 850, 1300, 1310, 1490, 1550, 1625 nm |
| Measurement Range | +10 to -75 dBm |
| Accuracy ^b | ±0.25 dB |
| Resolution | 0.01 dB |
| Measurement Units | dB, dBm, µW |
| Fiber ID Mode ^e | |
| Wavelength | 1550 nm |
| Measurement Range ^c | +10 to -35 dBm |
| Accuracy ^d | ±0.5 dB |
| Resolution | 0.01 dB |
| Measurement Units | dB, dBm, µW |

| GENERAL | |
|-----------------------|---|
| Power | 2 x AA batteries, accepts standard mini-USB power adapter |
| Adapter Caps | Order with one: 1.25 mm Universal, 2.5 mm Universal, FC, SC, ST, LC. Other connector adapters available |
| Battery Life | 300 hours |
| Operating Temperature | -10 °C to 50 °C, 90 % RH (non-condensing) |
| Storage Temperature | -30 °C to 60 °C, 90 % RH (non-condensing) |
| Size (H x W x D) | 14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in) |
| Weight | 0.26 kg (0.58 lb) |

Notes:

- a. All specifications valid at 25 °C unless otherwise specified.
- b. Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.
- c. Measured using MFT (Multi-Fiber Tracer) as the light source.
- d. Accuracy measured at 25 °C with MFT (Multi-tiber Tracer).
- e. Subject to change.

Ordering Information

| DESCRIPTION | AFL NO. |
|--|----------------|
| Multi-Fiber Identifier, no case | MF11-00-0900MR |
| Multi-Fiber Power Meter, no case | MFP1-12-0900MR |
| Multi-Fiber Tracer & Identifier with soft case | MFTI-12-BAS |
| Multi-Fiber Tracer & Power Meter with soft case | MFTP1-12-BAS |
| Multi-Fiber Tracer, Identifier, and Power Meter with soft case | MFTIP1-12-BAS |
| ACCESSORIES | |
| Cable, MPO/APC(M)-SC/APC, 12-fiber, SM, fan-out, 3 meters | 8700-00-0198MR |
| Cable, MPO/APC (M) - SC/UPC, 12-fiber, SM, fan-out, 3 meters | 8700-00-0200MR |
| Cable, MPO/APC (M) - LC/UPC, 12-fiber, SM, fan-out, 3 meters | 8700-00-0201MR |
| One-Click Cleaner MPO (500+ cleans) | 8500-05-0030MZ |
| One-Click Cleaner Mini-100 SC, ST, FC (100+ cleans) | 8500-05-0005MZ |

MFIS Multi-Fiber Identification System

Recommended Products



FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|---------------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety/EMC/EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| | FDA | Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products |
| | IEC | Compliant to IEC 60825-1 for safety of laser products |
| RoHS | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |
| Generic Requirement | IEC | Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters |

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OFI-BIPM and OFI-BIPMe Optical Fiber Identifiers

Fiber Identification



OFI-BIPM

OFI-BIPMe

Features

- World-class signal detection sensitivity
- Positive-stop trigger lock for optimum detection
- Integrated optical power meter
- 2.4" color touchscreen with backlight
- Up to 4 Tones detection (OFI-BIPMe only)

Applications

- Maintenance of fiber optic networks
- Troubleshooting network issues
- Identification of live fibers or trace fibers
- Power levels verification

The OFI-BIPM/-BIPMe optical fiber identifier is an easy-to-use tool that determines if a fiber is live, the transmission direction, and the relative core power on standard and bend-insensitive single-mode and multimode fibers. Its positive-stop trigger mechanism provides the right amount of pressure every time to assure proper detection, while keeping loss to a minimum. This ensures that traffic will not be interrupted and the fiber will not be damaged.

Nicknamed "The Job saver": The OFI-BIPM/-BIPMe removes the need to access the optical fiber at a connection or splice point, eliminating the possibility of interrupting service to a customer.

No heads to change or lose: The universal head of the OFI-BIPM/-BIPMe eliminates the need to change an adapter head for jacketed, coated, or ribbon fibers, making it extremely easy to use in the field.

Integrated optical power meter: The optical power meter mode verifies power levels during installation or troubleshooting.

Color touchscreen: The touchscreen provides simple-to-follow setup instructions and clear results that are easy to read.

Field technician favorite: The OFI-BIPM/-BIPMe is a favorite of technicians for its accuracy, ease of use, integrated power meter, and ergonomic design.

Doesn't damage delicate fibers: The positive-stop trigger ensures that the right pressure is applied every time, while the slim head makes it easier to reach and test tightly-packed fibers without damaging them.

OFI-BIPM and OFI-BIPMe Optical Fiber Identifiers

Specifications^a

| OPTICAL (OFI) | | | | | | | |
|--|---|--|------------------------|---------|------------------------|---------|------------------------|
| Fiber Type | 0.25 mm SM and MM fiber; SM and MM ribbon fiber (up to 12 ribbon fiber) 1.1 mm/1.5 mm/1.7 mm/2.0 mm/3.0 mm SM and jacketed fiber | | | | | | |
| Optical Characteristic | Wavelength Range | 900 to 1700 nm | | | | | |
| | Detectable Light Signals | CW, Traffic or 270 Hz, 330 Hz (OFI-BIPMe only), 1 kHz, 2 kHz Tone ^b | | | | | |
| Insertion Loss (IL) & Minimum Detect Level ^c at Normal, Fast or Fine operation mode | Wavelength | 1310 nm | | 1550 nm | | 1650 nm | |
| | Fiber Type | IL (dB) | Normal/Fast/Fine (dBm) | IL (dB) | Normal/Fast/Fine (dBm) | IL (dB) | Normal/Fast/Fine (dBm) |
| | 0.25 mm (R=30 mm) | 0.2 | -58/-53/-64 | 1.0 | -67/-62/-73 | 2.5 | -67/-62/-73 |
| | 0.25 mm (R=15 mm), Ribbon | 0.1 | -44/-39/-50 | 0.3 | -57/-52/-63 | 1.0 | -57/-52/-63 |
| | 0.5 mm (R=15 mm) | 0.2 | -58/-53/-64 | 1.0 | -67/-62/-73 | 2.5 | -67/-62/-73 |
| | 1.1 mm/1.5 mm Jacketed | 0.3 | -43/-37/-53 | 1.0 | -55/-50/-61 | 2.5 | -57/-52/-63 |
| | 1.7 mm/2.0 mm Jacketed | 0.5 | -22/-17/-28 | 2.0 | -27/-22/-33 | 3.0 | -27/-22/-33 |
| | 3.0 mm Jacketed | 1.0 | -20/-15/-25 | 3.0 | -23/-18/-28 | 3.0 | -23/-18/-28 |

| POWER METER (OPM) | |
|-------------------------|--|
| Wavelength | 1310 nm, 1490 nm, 1550 nm |
| Detectable Light Signal | CW, Traffic or 270 Hz, 330 Hz (OFI-BIPMe only), 1 kHz, 2 kHz Tone ^b |
| Detector Sensitivity | +10 to -60 dBm at modulated tone; +10 to -40 dBm at CW or Traffic ^b |
| Accuracy ^d | ±0.3 dB @1310/1550 nm; ±0.6 dB @1490 nm |

| GENERAL | |
|------------------------|--|
| Operation Conditions | -10 to +50 °C, 0 to 95 % RH (non-condensing) |
| Storage Conditions | -20 to +60 °C, 0 to 95 % RH (non-condensing) |
| Power Supply | 2 x AA batteries; 1.2 to 1.5 V DC |
| Battery Life | 8 hours ^e |
| Dimensions (W x H x D) | 5.0 x 11.5 x 21.2 cm (1.9 x 4.5 x 8.3 in) ^f |
| Weight | 230 g (8.1 oz) including battery |

Notes:


- a. All specifications valid at 25°C unless otherwise specified.
- b. Traffic is a light signal modulated by a random data sequence.
- c. Typical value. The minimum detect level (core power) the insertion loss varies due to coating material, color, etc.
- d. Under the condition of temperature 25°C with input power at -20 dBm.
- e. Using 2 Alkaline AA Batteries.
- f. Except protruding part.

OFI-BIPM and OFI-BIPMe Optical Fiber Identifiers

Ordering Information

| DESCRIPTION | AFL NO. |
|---|------------|
| BI Optical Fiber Identifier with integrated Optical Power Meter. The kit includes one 2.5 mm Universal Power Meter Port Adapter, BIPM-00-25. | OFI-BIPM |
| BI Enhanced Optical Fiber Identifier with integrated Optical Power Meter. The kit includes one 2.5 mm Universal Power Meter Port Adapter, BIPM-00-25. | OFI-BIPMe |
| OPTIONAL ADAPTERS (ordered separately) | |
| 2.5 mm Universal Power Meter Port Adapter | BIPM-00-25 |
| SC Power Meter Port Adapter | BIPM-00-SC |
| FC Power Meter Port Adapter | BIPM-00-FC |
| ST Power Meter Port Adapter | BIPM-00-ST |
| LC Power Meter Port Adapter | BIPM-00-LC |

Recommended Products



FlexScan® FS300 (quad) and FS200 (single-mode) OTRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



Optical Light Sources

- Encircled Flux Compliant
- 5-Year Product Warranty
- Integrated LED and Laser light sources

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|------------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety /EMC /EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| | FCC | Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions |
| RoHS | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |

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International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

OFI-400 Series Optical Fiber Identifiers



Features

- 5-year product warranty; 3-year recommended calibration interval
- Rugged, hand-held, lightweight, and easy-to-use
- Unique optical head with two-position plunger for use with all fiber types
- Built-in power meter with Set Reference feature

Applications

- Live fiber detection to avoid technician-induced outages
- Fiber identification and tracing with CW or tones
- Core power measurements
- Testing 250 μm , 900 μm , and ribbon fiber or 2 mm and 3 mm jacketed fiber

AFL's OFI-400 Optical Fiber Identifiers are rugged, hand-held, and easy-to-use fiber optic test instruments designed to detect and measure the core power levels of optical signals on single-mode optical fiber without disrupting traffic on that fiber. They are simply clamped onto a fiber and display the presence and direction of traffic, continuous test signals, and modulated test tones. This permits network personnel to easily and quickly identify a specific fiber without the risk of disrupting service. All of AFL's optical light sources are ideal companions to the OFI-400 family of optical fiber identifiers.

No adapters to purchase, store, swap, or misplace: Each OFI-400 uses a unique optical head design featuring a two-position plunger that enables it to be used with 250 μm , 900 μm , and ribbon fiber or 2 mm and 3 mm jacketed fiber. Other brands of optical fiber identifiers require users to purchase, store and change optical plungers each time a different type of fiber is tested.

Low insertion loss for in-service ID tasks: OFI-400's optical heads induces a safe, repeatable macro-bend to the fiber that allows a small amount of light to escape for analysis. The insertion loss induced by the macro-bend is too small to affect the signal on the fiber and the integrity of the fiber is unaffected by the measurement process.

Designed for the real world: The OFI-400 family are simple, easy-to-use tools that feature rugged, drop-proof construction - perfect for inside or outside plant use. Their ergonomically designed macro-bend trigger is comfortable to use and the integrated, backlit LCD display enables them to be used in dimly lit spaces. Each OFI-400 uses readily available 1.5 V AAA batteries which can power thousands of fiber tests before needing to be replaced.

OFI-400 model: The OFI-400 is designed for use with a wide range of single-mode fibers including 250 μm (bare) coated, 900 μm buffered and ribbon fibers or 2 mm and 3 mm jacketed fibers. The OFI-400 is ideal for network personnel involved in installation, reconfiguration, restoration and maintenance tasks that involve bare, buffered, jacketed or ribbon fibers in outside plant pedestals, fiber cabinets, aerial enclosures and inside plant premises demarcation cabinets. The slim design of the OFI-400 head facilitates access in crowded splice trays.

OFI-400C model: Designed specifically for use with 2 mm or 3 mm jacketed single-mode fibers, the OFI-400C is ideal for general purpose maintenance, configuration and installation tasks. The OFI-400C is functionally equivalent to the OFI-400 but includes an optical head design and a calibration scheme optimized for use with jacketed fiber.

OFI-400HP model: The OFI-400HP is designed for use where high levels of optical power are present. This includes fibers carrying a single high-power signal, CWDM or DWDM signals with high total power levels, amplified optical signals, or pump lasers associated with EDFA or Raman amplifiers. When display reaches +23 dBm (200 mW) or greater, the OFI-400HP will display "High" warning indication.

OFI-400 Series Optical Fiber Identifiers

Specifications^a

| DETECTABLE SIGNAL RANGE | | | | | |
|--|---------------------------------------|---|-------------------------------|-------------------------------|--------------------------------|
| FIBER TYPE ^b | PARAMETER | TEST CONDITIONS ^c | OFI-400 | OFI-400C | OFI-400HP |
| 250 µm coated fiber (SMF-28 with 250 µm CPC6 coating) | Minimum level detected, average power | 1310 nm, CW, Tone, Traffic 1550 nm, CW, Tone, Traffic | -45 dBm -50 dBm | N/A | N/A |
| | Insertion loss (typical) | @ 1310 nm @ 1550 nm | 0.6 dB 2.5 dB | N/A | N/A |
| 3 mm jacketed fiber (SMF-28/28E with 250 µm CPC6 coating and 3 mm, yellow jacket) | Minimum level detected, average power | 1310 nm, CW, Tone, Traffic 1550 nm, CW, Traffic 1550 nm, Tone | -30 dBm -33 dBm -33 dBm | -35 dBm -40 dBm -40 dBm | -30 dBm -40 dBm -35 dBm |
| | Insertion loss (typical) | @ 1310 nm @ 1550 nm | 1.0 dB 2.8 dB | 1.0 dB 2.8 dB | 0.2 to 0.5 dB 0.8 to 1.3 dB |

| OPTICAL SPECIFICATIONS ^d | OFI-400 | OFI-400C | OFI-400HP |
|---|--|-------------------------------|--------------------------------|
| Calibrated Fiber and Wavelength | 250 µm @ 1550 nm (SMF-28/28E) | 3 mm @ 1550 nm (SMF-28/28E) | |
| Working Fiber Size | 250 µm, 900 µm, ribbon, 2 mm and 3 mm jacketed | 2 mm and 3 mm jacketed | |
| Core Power Measurement Range ^e | +13 to -50 dBm @ 1550 nm, 250 µm | +13 to -40 dBm @ 1550nm, 3 mm | +33 to -40 dBm @ 1550 nm, 3 mm |
| Detector Type | InGaAs | | |
| Wavelength Range | 800 - 1700 nm | | |
| Measurement Units | dBm, dB | | |
| Fiber Stress | <100 kPSI max | | |
| Tone Detection | 270, 330, 1000, 2000 Hz (±5 %) | | |

| GENERAL SPECIFICATIONS | ALL OFI-400 MODELS |
|------------------------|---|
| User Interface | Multi 7 segment LCD; 3 LEDs; 1 piezo buzzer |
| Power | 2 x 1.5 V AAA alkaline |
| Battery Life | >10,000 operations typical |
| Operation Temperature | -5°C to 50°C 95 % RH (Non-condensing) |
| Storage Temperature | -30°C to +60°C 95 % RH (Non-condensing) |
| Dimensions (H x W x D) | 21.5 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in) |
| Weight | 168 g (6 oz) |

Notes:

- All specifications stated above are as measured at 25°C.
- 250 µm coated fiber parameters are specified with OFI plunger in the "250 / 900 / RIB" position. 2 mm / 3 mm jacketed fiber parameters are specified with OFI plunger in the "2 mm / 3 mm" position.
- CW is a light signal that is not modulated. Traffic is a light signal modulated by high speed user data. Tone is a light signal modulated into a nominal 50 % duty cycle square wave.
- Unless noted otherwise, all specifications are typical. Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, and other factors.
- SMF-28/28E.


OFI-400 Series Optical Fiber Identifiers

Ordering Information

All OFI-400 products include a user's guide, 2 AAA batteries and a soft carry case. Each carries a 5-year warranty and a 3-year recommended calibration interval.

| INCLUDES | AFL NO. |
|---|-----------|
| Users guide, 2 AAA batteries, soft carry case | OFI-400 |
| Users guide, 2 AAA batteries, soft carry case | OFI-400C |
| Users guide, 2 AAA batteries, soft carry case | OFI-400HP |

Recommended Products



FlexScan® F300 (quad) and F200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (F200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



Optical Light Sources

- Encircled Flux Compliant
- 5-Year Product Warranty
- Integrated LED and Laser light sources

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|------------------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety /EMC /EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| RoHS | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about Optical Fiber Identifiers.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

OFI-200 Optical Fiber Identifier

Fiber Identification



Features

- 5-year product warranty; 3-year recommended calibration interval
- Rugged, hand-held, lightweight, and easy-to-use
- Unique optical head with two-position plunger for use with all fiber types
- Visually and audibly indicates tone signal across 2 kHz range

Applications

- Live fiber identification to avoid technician-induced service outages
- Fiber tracing or identification with CW or test tones
- Testing 250 μm , 900 μm coated, 2 mm, 3 mm jacketed, and ribbon fiber

AFL Optical Fiber Identifiers are rugged, hand-held, and easy-to-use fiber optic test instruments designed to detect optical signals transmitted through a single-mode fiber without disrupting traffic.

The OFI-200 is simply clamped onto a fiber and indicates if there is NO SIGNAL, TONE, or TRAFFIC and the associated signal direction. This permits network personnel to easily and quickly identify a specific fiber without the risk of disrupting service. When testing coated fibers, the slim design of the OFI-200 allows easier access on a splice tray where the amount of workspace is limited.

No adapters to purchase, store, swap, or misplace: The OFI-200 uses a unique optical head design featuring a two-position plunger that enables it to be used with 250 μm , 900 μm , and ribbon fiber or 2 mm and 3 mm jacketed fiber. Other brands of optical fiber identifiers require users to purchase, store, and change optical plungers each time a different type of fiber is tested.

Low insertion loss for in-service ID tasks: The OFI-200 optical head induces a safe, repeatable macro-bend to the fiber that allows a small amount of light to escape for analysis. The insertion loss induced by the macro-bend is too small to affect the signal on the fiber and the integrity of the fiber is unaffected by the measurement process.

Designed for the real world: The OFI-200 is a simple, easy-to-use tool that features rugged, drop-proof construction perfect for inside or outside plant use. Its ergonomically designed macro-bend trigger is comfortable to use and the integrated, backlit LCD display enables it to be used in dimly lit spaces. The OFI-200 uses readily available 1.5 V AAA batteries, which power thousands of fiber tests before needing to be replaced.

OFI-200 Optical Fiber Identifier

Specifications ^a

| DETECTABLE SIGNAL RANGE | | | |
|---|---|--|--|
| FIBER TYPE ^b | PARAMETER | TEST CONDITIONS ^c | OFI-200D |
| 250 µm coated fiber (SMF-28 with 250 µm CPC6 coating) | Minimum level detected, average power | 1310 nm, CW or Traffic 1310 nm, Tone 1550 nm, CW or Traffic 1550 nm, Tone | -40 dBm -43 dBm -45 dBm -50 dBm |
| | Insertion loss (typical) | 1310 nm 1550 nm | 0.6 dB 2.5 dB |
| 3 mm jacketed fiber (SMF-28 with 250 µm CPC6 coating and 3 mm, yellow jacket) | Minimum level detected, average power | 1310 nm, CW or Traffic 1310 nm, Tone 1550 nm, CW or Traffic 1550 nm, Tone | -30 dBm -32 dBm -33 dBm -37 dBm |
| | Insertion loss (typical) | 1310 nm 1550 nm | 0.8 dB 2.5 dB |
| OPTICAL SPECIFICATIONS ^d | | | |
| Detector Type | InGaAs | | |
| Wavelength Range | 800 - 1700 nm | | |
| Calibrated Size of Fiber and Wavelength | N/A | | |
| Fiber Stress | <100 kPSI max | | |
| Fiber Size | 250 µm, 900 µm, ribbon, 2 mm or 3 mm and jacketed fiber | | |
| Tone Detection | 2000 ± 100 Hz | | |
| GENERAL SPECIFICATIONS | | | |
| Display Type | N/A | | |
| Power | 1 9-Volt Alkaline | | |
| Battery Life | >10,000 operations typical | | |
| Operation Temperature | 0°C to 50°C 90 % RH (Non-condensing) | | |
| Storage Temperature | -30°C to +60°C 90 % RH (Non-condensing) | | |
| Dimensions (H x W x D) | 22 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in) | | |
| Weight | 210 g (7.5 oz) | | |

Notes:


- All specifications stated above are as measured at 25°C.
- 250 µm coated fiber parameters are specified with OFI plunger in the "250/900/RIB" position. 2 mm/ 3 mm jacketed fiber parameters are specified with OFI plunger in the "2 mm/3 mm" position.
- CW is a light signal that is not modulated. Traffic is a light signal modulated by a random data sequence. Tone is a light signal modulated into a nominal 50% duty cycle square wave.
- Unless noted otherwise, all specifications are typical. Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, and other factors.

OFI-200 Optical Fiber Identifier

Ordering Information

| INCLUDES | AFL NO. |
|----------------------------|----------|
| Users guide and carry case | OFI-200D |

Recommended Products



FlexScan® FS300 (quad) and FS200 (single-mode) OTRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



Optical Light Sources

- Encircled Flux Compliant
- 5-Year Product Warranty
- Integrated LED and Laser light sources

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|------------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety /EMC /EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| RoHS | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |

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VFI4 Visual Fault Identifiers

Fiber Identification



VFI4 High Power Model

VFI4-L Low Power Model

Features

- Eye-safe Class 3R visible red laser source, 650 nm (High power version)
- Output power of 5.0 mW with 10 km range (High power version)
- Universal connector interface for quick connection
- 2.5 mm universal adapter (included) accepts FC, SC, ST, etc. connectors
- 1.25 mm universal adapter (included in High power version only) accepts LC and MU connectors
- Low power model - VFI4-L is available with output power of 1.0 mW with 4 km range

Applications

- Identify and trace fibers during activation and installation
- Identify poorly mated connectors
- Verify AFL's FASTConnect® field-installable connector installation
- Find faults inside OTDR dead zones

A Visible Fault Identifier (VFI), also referred to as a Visual Fault Locator (VFL), is an essential tool for fiber installation and maintenance technicians.

AFL's compact VFI4 injects high-powered red-laser light to provide exceptional brightness and range for locating defects in single-mode and multimode fibers. The light generated by these units will escape from sharp bends and breaks in jacketed or bare fibers, as well as poorly mated connectors enabling technicians to quickly spot faults. The universal connector interface mates with many connector styles without needing an adapter.

Rugged and Compact: The rugged VFI4 is designed for the rigors of real-life field testing. It has a range of up to 10 km, fits on a keychain, and features extensions that protect the red-laser port. It has both CW and pulsating modes and is powered by a single AA battery for up to 30 hours of operation.

Installation and Activation: VFI4 is used for quick continuity checks, fiber tracing, splice verification, and Pass/Fail validation for mechanical connectors. VFI4 is also an excellent complement to any OTDR because it can locate faults inside the OTDR's dead zone.

Essential Troubleshooting Tool: The VFI4 highlights sharp bends, breaks, faulty connectors, and other defects that "leak" light. Other applications include end-to-end continuity checks, as well as identifying connectors in patch panels and fibers during splicing operations.

VFI4 Visual Fault Identifiers

Specifications^a

| OPTICAL | VFI4 | VFI4-L |
|--------------|---|--|
| Emitter Type | Laser, Class IIIa FDA 21 CFR 1040.10 and 1040.11, Class 3R IEC 60825-1:2014 | Laser, Class II FDA 21 CFR 1040.10 and 1040.11, Class 2 IEC 60825-1:2014 |
| Wavelength | 650 nm ±15 nm | |
| Output Power | 5 mW maximum | 1 mW maximum |
| Modulation | 2 Hz or CW selected | |

Notes:

a. All specifications valid at 25°C unless otherwise specified.

| GENERAL | VFI4 | VFI4-L |
|-----------------------|---|--------------------------------------|
| Adapter | 2.5 mm Universal, 1.25 mm Universal | |
| Power | 1 AA battery, <30 hours (flash mode) | 1 AA battery, <50 hours (flash mode) |
| Operating Temperature | -10°C to 50°C, 85 % humidity non condensing | |
| Storage Temperature | -30°C to 60°C, 95 % humidity non condensing | |
| Size (H x W x D) | 7.9 x 5.1 x 2.2 cm (3.1 x 2.0 x 0.9 in) | |
| Weight | 43 g (1.5 oz) | |


Ordering Information

| DESCRIPTION | AFL NO. |
|---|----------------|
| VFI4 visual fault identifier with 2.5 mm and 1.25 mm adapters | VFI4-01-0900PR |
| VFI4-L visual fault identifier with 2.5 mm adapter | VFI4-02-0900PR |

Adapters


| DESCRIPTION | AFL NO. |
|--------------------------------|----------------|
| 2.5 mm Universal for VFI port | 2900-50-0013MR |
| 1.25 mm Universal for VFI port | 2900-50-0012MR |

Recommended Products



One-Click® Cleaner Mini

- Small compact design with single action cleaning
- Automatically advance ensures each clean is performed with fresh cleaning tape
- 100 clean and 500 clean versions available
- Low cost per clean



FASTConnect® Field-Installable Connectors

- Field-installable, takes less than a minute to complete
- Fast and easy to terminate
- Low insertion/return loss
- Reusable

Qualifications

| CATEGORY | REGULATION/STANDARD | QUALIFICATION |
|----------------|---------------------|--|
| CE Marking | EU | Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking |
| Safety/EMC/EMI | IEC | Compliant to IEC 61010-1 for safety requirements for electrical equipment |
| | EN | Compliant to EN 61010-1 for safety requirements for electrical equipment |
| | IEC | Compliant to IEC 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 61326-1 for EMC requirements for electrical equipment |
| | EN | Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment |
| | FDA | Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products |
| | IEC | Compliant to IEC 60825-1 for safety of laser products |
| RoHS | EU | Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3) |

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Test to learn more about VFI4 Visual Fault Identifier.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts.

NEW

Push-Type Cleaners

One-Click® Cleaners

Features

- Patented single-action cleaning in a small ergonomic design
- Variety of sizes and types for different connector styles
- Cleans connectors in both jumpers and bulkhead adapters
- Low cost per clean

Applications

- Removing oil, dust, and dirt without damaging delicate fiber end-faces
- Both dry and wet cleaning (add cleaning fluid)
- Clean connectors in tight spaces
- Field or laboratory use

One-Click Cleaner

Easy-to-use solution for cleaning fiber optic connectors on jumpers and in adapters. Since over 85% of network outages are attributed to dirty and/or damaged connectors, it is critical to clean every connector! The patented One-Click Cleaner uses the mechanical push action to advance an optical grade cleaning tape while the cleaning tip is rotated to ensure the fiber end-face is effectively, but gently, cleaned. It is a favorite of field technicians for its ease of use, durability, effectiveness, and small size.

One-Click® Cleaner PRO - The One-Click Cleaner PRO is a high-performance cleaner built for speed and efficiency. It features an integrated guide cap design that reduces cleaning time up to 50% by eliminating constant switching of caps for cleaning the ferrule end-face on connectors, in or out of bulkhead adapters. The One-Click Cleaner Pro boasts over 775 cleaning cycles in an ergonomic push-type cleaner, which is a significant increase from the previous model's 500 clean limitation. Designed to meet the needs of data centers, factories, and FTTH environments, One-Click Cleaner PRO optimizes optical connectivity, reduces downtime, and improves efficiency, making it an essential tool for fiber connector cleaning.

Compact One-Click Cleaner Mini - Offering the same technology and performance as the original, the One-Click Cleaner mini enables cleaning connectors in tighter places. Its smaller size also makes it a great addition to test kits and cleaning kits. The mini One-Click Cleaners come in both 100+ or 500+ cleans per unit.

One-Click Ultra Cleaner 2.5 - The One-Click Ultra Cleaner 2.5 has an enlarged cleaning area to clean more of the connector end-face. Cleaning up to a 2 mm diameter area of the connector end-face, the One-Click Ultra Cleaner 2.5 is a superior cleaner for SC, ST, and FC connectors.

One-Click Cleaner D-LC (Duplex LC) - The One-Click Cleaner D-LC cuts cleaning time in half by effectively cleaning both connectors of a duplex LC connector simultaneously. Available in a long-lasting 500+ clean pen shape.



SC PRO LC PRO SC/ST/FC MU/LC



Mini-100 SC, ST, FC Mini-100 MU/LC



Ultra 2.5 D-LC

Push-Type Cleaners

One-Click® Cleaners

One-Click Cleaner MPO and MPO-16

The One-Click Cleaner MPO/MPO-16 is a revolutionary push-type cleaner that simplifies cleaning of the ferrule end-face of MPO/MTP® connector. The One-Click MPO-16 cleans 16-fiber MPO/MTP connectors, both pinned (male) and socketed (female). MPO-16 is used with IEEE 802.3bs 400G trunk cabling with each fiber carrying 25 Gbps data signals (400GBASE-SR16 for example), among other applications.



MPO

MPO-16

One-Click Cleaner CS/MDC Duplex

The One-Click Cleaner CS/MDC cuts cleaning time in half by effectively cleaning both connectors of a duplex CS/MDC at one time.

One-Click Cleaner SN Duplex

The One-Click Cleaner SN cuts cleaning time in half by effectively cleaning both connectors of a duplex SN at one time.

One-Click Cleaner HOC

The Hardened Outdoor Connector (HOC) One-Click Cleaner is an essential cleaning tool for OptiTap®, TITAN RTD®, TRIDENT®, and SC connectors. The new design of the HOC Cleaner allows it to be used for Plug/Receptacle without the need for the conventional guide cap.



CS, MDC

SN Duplex

HOC

Ordering Information

| DESCRIPTION | AFL NO. |
|--|----------------|
| One-Click Cleaner SC, ST, FC (500+ cleans) | 8500-05-0001MZ |
| One-Click Cleaner MU/LC (500+ cleans) | 8500-05-0002MZ |
| One-Click Cleaner ODC, outdoor connector (500+ cleans) | 8500-05-0004MZ |
| One-Click Cleaner Mini-100 SC, ST, FC (100+ cleans) | 8500-05-0005MZ |
| One-Click Mini-100 MU/LC (100+ cleans) | 8500-05-0006MZ |
| One-Click Cleaner Mini-500 SC, ST, FC (500+ cleans) | 8500-05-0009MZ |
| One-Click Cleaner Mini-500 MU/LC (500+ cleans) | 8500-05-0010MZ |
| One-Click Ultra Cleaner 2.5 (enlarged cleaning) SC, ST, FC (500+ cleans) | 8500-05-0007MZ |
| One-Click Cleaner D-LC, Duplex LC (2 x 500+ cleans) | 8500-05-0008MZ |
| One-Click Cleaner MPO (500+ cleans) | 8500-05-0030MZ |
| One-Click Cleaner MPO-16 (500+ cleans) | 8500-05-0013MZ |
| One-Click Cleaner MT-RJ (500+ cleans) | 8500-05-0031MZ |
| One-Click Cleaner M20, 2.0 mm ferrule (500+ cleans) | 8500-05-0014MZ |
| One-Click Cleaner CS, MDC Duplex (500+ cleans) | 8500-05-0015MZ |
| One-Click Cleaner SN Duplex (500+ cleans) | 8500-05-0016MZ |
| One-Click Cleaner HOC, Hardened Optic Connectors (500+ cleans) | 8500-05-0018MZ |
| One-Click Cleaner SC Pro (775+ cleans) | 8500-05-PRO-SC |
| One-Click Cleaner LC Pro (775+ cleans) | 8500-05-PRO-LC |
| BOXES OF 5 UNITS | |
| One-Click Cleaner SC, ST, FC (box of 5 units) | 8500-05-0021MZ |
| One-Click Cleaner MU/LC (box of 5 units) | 8500-05-0022MZ |
| One-Click Cleaner Mini-100 SC, ST, FC (box of 5 units) | 8500-05-0025MZ |
| One-Click Cleaner Mini-100 MU/LC (box of 5 units) | 8500-05-0026MZ |
| One-Click Ultra Cleaner 2.5 SC, ST, FC (box of 5 units) | 8500-05-0027MZ |
| One-Click Cleaner MPO-16 (box of 5 units) | 8500-05-0023MZ |

Push-Type Cleaners

NEOCLEAN Cleaners



NEOCLEAN-E Models (E1, E2, E3)



NEOCLEAN-M

Features

- Push action
- Replaceable cleaning cartridge - 750 cleaning per cartridge (NEOCLEAN-E)
- Low cost per clean

Applications

- Cleans connectors on jumpers or in adapters
- SC, FC, ST, E2000, LC, and MU connectors
- MPO and MTP connectors
- Suitable for field or laboratory use

NEOCLEAN-E uses a push action to clean contamination from the end-face of connectors on jumpers or in adapters. The replaceable cleaning cartridge can perform 750 cleans, reducing cleaning cost.

NEOCLEAN-M is designed for cleaning MPO and MTP multi-fiber connectors used in data centers and other high-density optical networks. It uses a one-push operation, which simplifies cleaning of the ferrule end-face of both MPO and MTP connectors and connectors in adapters.

Ordering Information

| MODEL | APPLICABLE CONNECTORS & DESCRIPTION | # OF CLEANS | AFL NO. |
|-------------|--|-------------|----------------|
| NEOCLEAN-E1 | For MU, LC with UPC/APC polishes | 750+ | 8500-15-0900MZ |
| NEOCLEAN-E2 | For SC,FC with UPC/APC polishes; OptiTap | | 8500-15-0901MZ |
| NEOCLEAN-E3 | For SC, ST, FC, E2000 with UPC/APC polishes; OptiTap | | 8500-15-0902MZ |
| NEOCLEAN-M | For MPO/MTP | 600+ | 8500-15-0909MZ |

Recommended Products



FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



Cletop Cleaners

- Simple push-button shutter application
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape



FCC2 Cleaning Fluid

- Unique dispenser for use with AFL Connector Cleaning Tips and FiberWipes
- Dissipates static charge
- Up to 400+ cleanings per can

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Clean to learn more about Push-Type Cleaners.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

CleTOP Optical Fiber Connector Cleaner

Cleaning Supplies



Features

- Simple push-button shutter application
- Compact lightweight design
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape

Applications

- Ideal for labs, assembly lines, and field use
- Cleans a wide variety of connector types
- Excellent anti-static properties for static sensitive applications

The CleTOP Optical Fiber Connector Cleaner is a rugged palm-sized cleaner that offers exceptional performance with a proven track record. The choice of many leading manufacturers and telecom carriers worldwide for nearly 20 years, CleTOP is a name you can rely on.

CleTOP Options

- CleTOP Series – Original
- CleTOP –S Series - Second generation cleaner offering “Drop-in” replacement tape cartridge and ergonomic design
- Type A & -SA - Designed for single 2.5mm ferrules (SC, FC, ST, & D4)
- Type B & -SB - Cleans SC, SC2, FC, ST®, DIN, D4, MU, LC, MT, MPO/MTP® without pins

Ordering Information

| DESCRIPTION | AFL NO. |
|---------------------------------|----------------|
| CLETOP – S SERIES | |
| CleTOP -SA with Blue Tape | 8500-10-0020MZ |
| CleTOP -SB with Blue Tape | 8500-10-0029MZ |
| CleTOP -SB with White Tape | 8500-10-0016MZ |
| Replacement Tape Type S - Blue | 8500-10-0021MZ |
| Replacement Tape Type S - White | 8500-10-0017MZ |

| DESCRIPTION | AFL NO. |
|---|----------------|
| CLETOP ORIGINAL SERIES | |
| CleTOP Type A with Blue Tape | 8500-10-0027MZ |
| CleTOP Type A with White Tape | 8500-10-0011MZ |
| CleTOP Type B with Blue Tape | 8500-10-0028MZ |
| CleTOP Type B with White tape | 8500-10-0014MZ |
| CleTOP for MT-RJ with pins (White Tape) | 8500-10-0032MZ |
| CleTOP for MPO/MTP with pins (White Tape) | 8500-10-0033MZ |
| Replacement Tape Blue | 8500-10-0012MZ |
| Replacement Tape White | 8500-10-0015MZ |

Recommended Products



Cleaning Kits

- Complete kits for cleaning variety of connectors
- Includes wet and dry cleaning products
- Convenient refill options



One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean



WFW FiberWipes™

- Lint free and fully optical grade
- Robust and tear-resistant
- Softer than traditional cellulose wipes

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Clean to learn more about CleTOP Optical Fiber Connector Cleaners.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

Cleaning Fluids and Wipes

FCC2 Enhanced Fiber Connector Cleaner and Preparation Fluid



Features

- Not Hazardous/Not Regulated for all modes of transport, including air cargo
- Unique dispenser for use with AFL Connector Cleaning Tips and FiberWipes™
- Dissipates static charge
- Up to 400+ cleanings per can

Applications


- Cleans of all types of connector end-faces
- Cleans bare fiber before field terminating or fusion splicing
- Removes oils, salts, dust, dirt, and uncured epoxies
- Safe on glass, ceramic, metal, plastic optical fiber

FCC2 Enhanced Fiber Connector Cleaner and Preparation Fluid is a nonflammable, environmentally safe, residue-free solvent engineered to clean fiber connector end-faces and bare fiber. The 3-way dispenser provides easy one-handed use as tap dispenser for fiber wipes, a well for CCT Connector Cleaning Tips, and a spray nozzle for larger areas. Packaged in a spill-proof container, it can be shipped with connector cleaning and termination kits providing everything techs need in the field. FCC2 was developed with Micro Care Corporation, a world leader in cleaning solvents.

Ordering Information


| DESCRIPTION | AFL NO. |
|--|--------------|
| Fiber Connector Cleaner and Preparation Fluid in 3 oz / 85 g can | FCC2-00-0902 |
| Fiber Connector Cleaner and Preparation Fluid , Case of 12 cans | FCC2-00-0903 |

Recommended Products



FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean



Cleto Cleaners

- Simple push-button shutter application
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape

Cleaning Fluids and Wipes

Debris Destroyer® Fiber Cleaning Pen



Features

- Precise applicator tip for controlled cleaning
- Eliminates electrostatic charge
- Designed for use with One-Click® Cleaners, FiberWipes™, CleanWipes™
- Safe for plastic components

Applications

- Cleaning fiber optic connector end-faces and bare fiber
- Wet to dry cleaning with wipes and One-Click cleaners
- Ideal for bare fiber preparation prior to fusion splicing
- Remove dirt, dust, oils, and other debris from fiber optic components

The Debris Destroyer is a cleaning pen for fiber optic connectors and bare fiber. It can be used for controlled application of cleaning fluid to cassette cleaners and wipes. AFL offers multiple products that can be used with the Debris Destroyer, including CLETOP-S, OPTIPOP-R, FiberWipe, and CleanWipe. The Debris Destroyer can also be used to moisten the tip of One-Click cleaners, turning them into a wet cleaning solution for tough end-face contamination.



Ordering Information

| DESCRIPTION | AFL NO. |
|---|--------------|
| Debris Destroyer Fiber Cleaning Pen, 9 grams/0.32 oz. | FCC3-00-PEN1 |

Recommended Products



FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



CleTOP Cleaners

- Simple push-button shutter application
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape



One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

Cleaning Fluids and Wipes

Optical Cloth Wipes



FiberWipes

Features

- Lint free and fully optical grade
- Robust and tear-resistant
- Softer than traditional cellulose wipes

Applications

- Cleaning optical fibers prior to termination or splicing
- Cleaning fiber optic connector ferrule end-faces
- Cleaning lenses, mirrors, and other optical surfaces
- Use for wet cleaning with FCC2 Connector Cleaning Fluid or FCC3 Fiber Cleaning Pen

Specifically designed to lift and trap common contaminants found in fiber optic installations, AFL wipes provide superior cleaning results because they are made from material that is stronger, softer, and more absorbent than traditional cellulose wipes. Packaged in a clean room, the fabric is optical-quality grade and comes in two convenient form factors and are perfect additions to both tool kits and test kits.

WFW FiberWipes™

- Rugged 90-wipe mini-tub ideal for laboratory and field use
- Hexagonal cover minimizes rolling distance when dropped
- Solvent safe – wipes may be moistened to provide wet / dry cleaning

FiberAide 1

- Hermetically sealed wipes remain uncontaminated and ready for use
- Foil-backed wipes protect skin from cleaning solvents and cable gel
- Packaging contains no glues to leach out
- Solvent safe – wipes may be moistened to provide wet / dry cleaning



FiberAide 1

Ordering Information

| DESCRIPTION | AFL NO. |
|---|----------------|
| FiberWipes – case of 24 mini-tubs (2160 total wipes, 90 wipes per mini-tub) | 9000-03-0026MZ |
| FiberAide 1 – case of 600 packets (60 bundles, 10 packets per bundle) | 9000-03-0027MZ |

Recommended Products



FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



Cletop Cleaners

- Simple push-button shutter application
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape



One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Clean to learn more about Cleaning Fluids and Wipes.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

Cleaning Sticks

CCT Connector Cleaning Tips



Features

- Molded sintered polymer construction
- Traps and holds liquid and particle contaminant
- Quality construction with unlimited shelf life

Applications

- Clean ferrule end-faces on jumpers and in adapters
- Clean most common commercial and Mil Spec ferrule sizes
- Combine with AFL's FCC2 Fiber Connector Cleaner for wet/dry cleaning

CCT Connector Cleaning Tips are a unique technology for fiber connector end-face cleaning. Rather than a fabric-covered or foam-covered stick, CCTs are molded cleaning tips that trap contamination and wick cleaning solvents away from connector end-faces. These tips use a molded, sintered polymer that is both porous and pliable, conforming to virtually any fiber end-face polish geometry while trapping and absorbing contaminants. They are designed to be used with AFL's FCC2 Connector Cleaning Fluid for consistent and reliable connector cleaning results.

CCT Connector Cleaning Tips Configurations

- CCTS and CCTX series: cleaning tip is exposed for cleaning ferrule end-faces in alignment sleeves that are recessed within sockets or bulkhead adaptors
- CCTP series: cleaning tip is recessed in the "straw" for cleaning exposed ferrules and termini (jumpers). Fits 2.5 mm and smaller ferrules

Ordering Information

| DESCRIPTION | TUBE COLOR | STICKS QTY | AFL NO. |
|--|------------|------------|----------------|
| CCT CONNECTOR CLEANING TIPS - DOUBLE-ENDED | | | |
| For exposed 2.5 mm, 2.0 mm, 1.6 mm, 1.25 mm ferrules and termini (FC, SC, ST, LC, MU, etc., jumpers, male MIL T 29504/14 for MIL C 28876 and MIL T 29504/04 for MIL C38999) | Yellow | 20 | CCTP-25-0900MZ |
| For 2.5 mm ferrule in adapters or sockets (SC, FC, ST, etc. in adapters) | Blue | 40 | CCTS-25-0900MZ |
| For 1.25 mm ferrule in adapters or sockets (LC, MU, etc., in adapters) | Green | 40 | CCTS-12-0900MZ |
| For MT-RJ connectors and 2.0 mm and 1.6 mm termini in sockets (female MIL T 29504/15 for MIL C 28876 and MIL T 29504/05 for MIL C 38999, MT-RJ both jumpers and adapters) | Orange | 40 | CCTS-16-0900MZ |
| For Biconic and MT ferrule connectors both jumpers and in adapters (Biconic, MTP, MPO, MPX, etc.) | Pink | 20 | CCTX-MT-0900MZ |
| CCT TIPS ARE AVAILABLE IN BULK PACKS OF SINGLE-ENDED STICKS. PACKS OF 50 STICKS PACKAGED IN BOXES OF 6 PACKS (300 sticks) | | | |
| For exposed 2.5 mm, 2.0 mm, 1.6 mm, 1.25 mm ferrules and termini (FC, SC, ST, LC, MU, etc., jumpers, male MIL T 29504/14 for MIL C 28876 and MIL T 29504/04 for MIL C 38999) | Yellow | 300 | CCTP-25-0910MZ |
| For 2.5 mm ferrule in adapters or sockets (SC, FC, ST, etc. in adapters) | Blue | 300 | CCTS-25-0910MZ |
| For 1.25 mm ferrule in adapters or sockets (LC, MU, etc., in adapters) | Green | 300 | CCTS-12-0910MZ |
| For MT-RJ connectors and 2.0 mm and 1.6 mm termini in sockets (female MIL T 29504/15 for MIL C 28876 and MIL T 29504/05 for MIL C 38999, MT-RJ both jumpers and adapters) | Orange | 300 | CCTS-16-0910MZ |
| For Biconic and MT ferrule connectors both jumpers and in adapters (Biconic, MTP, MPO, MPX, etc.) | Pink | 300 | CCTX-MT-0910MZ |

Cleaning Sticks

Cleto Adapter Cleaning Sticks (ACT)



Features

- Easy to use and efficient
- Delivers a consistently high level of cleaning performance
- Available for most common commercial connectors (ST, SC, FC, & MU)

Applications

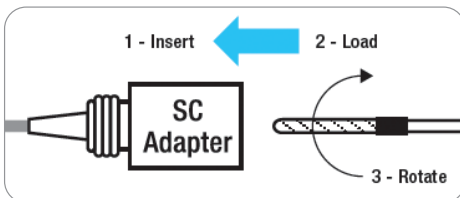
- Clean ferrule end-faces inside the plug-in fiber optic connectors and various adapters
- Cleans adapter alignments sleeves
- Cleans LEMO connectors for video applications

Cleto ACTs offered by AFL are an easy and efficient means of cleaning fiber optics connectors in adapters and cleaning alignment sleeves. Cleto sticks are available in sizes for most common commercial connectors (ST, SC, FC, LC, MU), military connectors, and LEMO connectors for video applications. When connectors need to be cleaned inside adapters, you can rely on the Cleto stick.

Ordering Information

| DESCRIPTION | APPLICABLE CONNECTORS | AFL NO. |
|---|---|----------------|
| ACT-01 — 2.5 mm Cleto Sticks (Box of 200) | FC, SC, ST, D4 | 8500-10-0024MZ |
| ACT-02 — 1.25 mm Cleto Sticks (Box of 200) | LC, MU | 8500-10-0022MZ |
| ACT-03 — 2.0 mm Cleto Sticks (Box of 200) | Military termini, high definition television camera connectors such as LEMO | 8500-10-0023MZ |
| Double-ended 2.0/2.5 mm Cleto Sticks (Box of 100) | Military termini, high definition television camera connectors such as LEMO | 8500-10-0030MZ |

Recommended Cleaning Procedure for ACT Cleaning Sticks



Procedure:

1. **Insert** - Ensure that stick is held straight when inserting into sleeve.
2. **Load** - Apply sufficient pressure (approximately 600-700 g) to ensure ferrule is a little depressed in sleeve.
3. **Rotate** stick clockwise 4-5 times while ensuring direct contact with ferrule end-face is maintained.

Notes:

1. Number of possible wipes: Maintenance (repair) - approximately 1 use; Equipment construction - 4 uses (max.)
2. FCC2 Fluid will improve cleaning performance.

Recommended Products

One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

FiberWipes

- Lint free and fully optical grade
- Robust and tear-resistant
- Softer than traditional cellulose wipes

FCC2 Cleaning Fluid

- Unique dispenser for use with AFL Connector Cleaning Tips and FiberWipes
- Dissipates static charge
- Up to 400+ cleanings per can

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Clean to learn more about Cleaning Sticks and Cleto Sticks.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts

Cleaning Kits



FCP1 Kit



FCP2 Kit



FCP3 Kit

Features

- Mix of wet and dry cleaning products for most applications
- MPO/MTP® Option
- Field portable
- Convenient refill options

Applications

- Field cleaning connectors on jumpers and through bulkhead adapters
- Clean SC, ST, FC, LC, MU, and MPO connectors
- Clean a variety of contaminants

Cleaning saves time and money! Over 85% of network failures can be traced back to dirty and damaged connectors. The foolproof way to avoid these outages is to inspect and clean every connector, every time - without fail. You should even inspect new ones right out of the box. Proper fiber hygiene can extend the life of connectors and reduces replacement costs. FCP Cleaning Kits from AFL offer a complete selection of fiber optic cleaning products for field cleaning of connector end-faces in a convenient carry case.

FCP1 kits consist of a wall or rack mountable carry case, FCC2 Fiber Connector Cleaner and Preparation Fluid, CCT Connector Cleaning Tips, Cletop-SB, and color-coded instructions.

FCP2 kits include FCC2 Fiber Connector Cleaner and Preparation Fluid, FCC3 Debris Destroyer® Fiber Cleaning Pen, WFW FiberWipes™, Cletop SB, One-Click Cleaners for SC, ST, FC, LC/MU, MPO connectors, and a field portable duffle bag.

FCP3 kits include FCC2 Fiber Connector Cleaner and Preparation Fluid, FCC3 Debris Destroyer® Fiber Cleaning Pen, CCT Connector Cleaning Tips, Cletop-SB, One-Click Cleaners for SC, ST, FC, LC/MU, MPO connectors, and an easy-access soft carry case.

Cleaning Kits


Ordering Information

| FCP1 WALL/RACK MOUNTABLE FIELD PORTABLE CLEANING KITS | AFL NO. | | |
|--|--------------|--------------|--------------|
| | FCP1-00-0901 | FCP1-00-0907 | FCP1-00-0914 |
| CONTENTS / ITEMS DESCRIPTION | | | |
| FCC2 Fiber Connector Cleaner And Preparation Fluid (Can) | ◆ | ◆ | ◆ |
| CCTS-12 (for 1.25 mm ferrule) Connector Cleaning Tips | | ◆ | ◆ |
| CCTS-25 (for 2.5 mm ferrule) Connector Cleaning Tips | ◆ | ◆ | ◆ |
| CCTP-25 (for all connectors) Connector Cleaning Tips | ◆ | ◆ | ◆ |
| CCTX-MT (for MTP, MPO, MPX connectors) Connector Cleaning Tips | | ◆ | |
| Cletop-S, Type B with White Tape | ◆ | ◆ | ◆ |
| Color-coded Instructions | ◆ | ◆ | ◆ |
| Wall/Rack Mountable Carry Case | ◆ | ◆ | ◆ |

| FCP2 FIELD PORTABLE DUFFLE BAG CLEANING KITS | AFL NO. | |
|--|--------------|--------------|
| | FCP2-10-0900 | FCP2-00-0901 |
| CONTENTS / ITEMS DESCRIPTION | | |
| FCC2 Fiber Connector Cleaner and Preparation Fluid (Can) | ◆ | ◆ |
| FCC3 Debris Destroyer® Fiber Cleaning Pen | ◆ | ◆ |
| WFW FiberWipes™ | ◆ | ◆ |
| Cletop-S, Type B with White Tape | ◆ | ◆ |
| One-Click Cleaner SC, ST, FC | ◆ | ◆ |
| One-Click Cleaner MU/LC | ◆ | ◆ |
| One-Click Cleaner MPO | | ◆ |
| Field Portable Duffle Bag | ◆ | ◆ |


| FCP3 EASY-ACCESS CLEANING KITS | AFL NO. | |
|--|--------------|--------------|
| | FCP3-00-0900 | FCP3-00-0901 |
| CONTENTS / ITEMS DESCRIPTION | | |
| FCC2 Fiber Connector Cleaner And Preparation Fluid (Can) | ◆ | ◆ |
| FCC3 Debris Destroyer® Fiber Cleaning Pen | ◆ | ◆ |
| CCTS-12 (for 1.25 mm ferrule) Connector Cleaning Tips | ◆ | ◆ |
| CCTS-25 (for 2.5 mm ferrule) Connector Cleaning Tips | ◆ | ◆ |
| Cletop-S, Type B with White Tape | ◆ | ◆ |
| One-Click Cleaner SC, ST, FC | ◆ | |
| One-Click Cleaner MU/LC | ◆ | ◆ |
| One-Click Cleaner Ultra 2.5 (enlarged cleaning) SC, ST, FC | ◆ | ◆ |
| One-Click Cleaner D-LC, Duplex LC | | ◆ |
| One-Click Cleaner MPO | ◆ | ◆ |
| Soft Carry Case | ◆ | ◆ |

Recommended Products



FOCIS Flex & FOCIS Lightning (Multi-fiber) Connector Inspection

- Self-contained, tether-free, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis
- FOCIS Lightning: extremely fast multi-fiber auto-analysis for datacom and telecom inspection applications



FOCIS WiFi2™ Fiber Optic Connector Inspection

- Trim, lightweight, ergonomic and highly productive tool
- App-based automatic and manual focus; auto-centering after image capture
- One button workflow using rapid LED feedback on probe
- Multi-color LED on probe for fast pass/fail user inspection feedback

Contact Sales@AFLglobal.com to schedule a demonstration or learn how to buy.

Visit www.AFLglobal.com/Clean to learn more about Cleaning Kits.

International Sales and Service Contact Information available at www.AFLglobal.com/Test/Contacts





Visit Our New Resource Center!

As an end-to-end solutions provider, AFL has a vast amount of content on the many aspects of fiber optic networks for a variety of broadband and telecom applications—now in one easy-to-find location. Introducing the new resource center, which provides quick and easy viewing of everything “AFL.” Everything from instructional videos to best practices for test and inspection as well as:

- White Papers on industry-related technology and applications
- Quick access to brochures and PDFs
- Articles and blog posts on application-specific topics
- Video tutorials and instructions on various products

Explore the new AFL resource center and discover all that it has to offer! Go to learn.AFLglobal.com

