



**FIBER TO THE
PEOPLE**

FTTx PRODUCT SOLUTION GUIDE

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Introduction

Optical fiber is the future that is here now. There is no comparison for speed, bandwidth and latency in any other transmission medium. With continued advancement in the electronics used over the fiber medium, fiber is a communications pipeline built to last. As wireless advancements like 5G make news headlines, they are increasingly relying on deeper fiber networks to backhaul information. No matter how far fiber is going in your network, trust AFL to provide solutions to meet your needs.

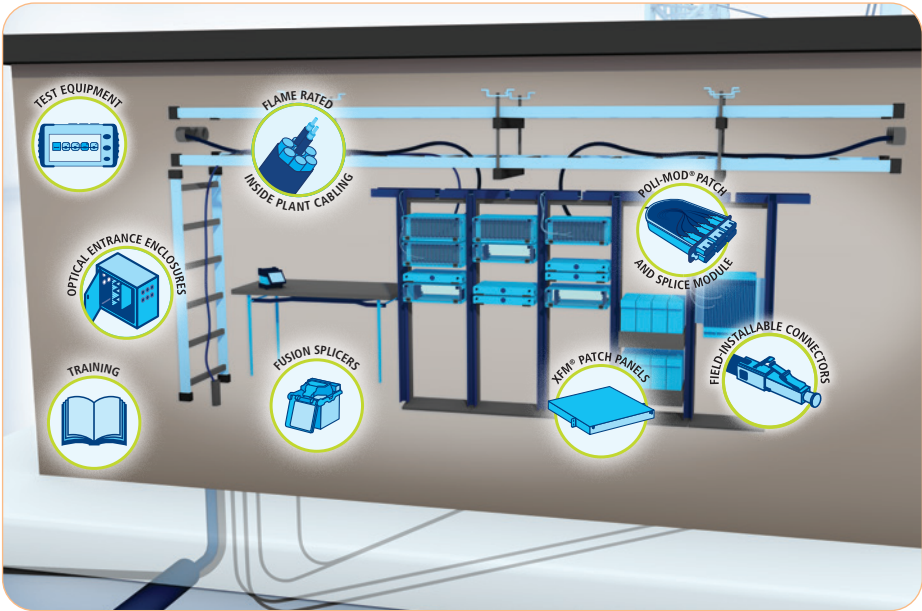
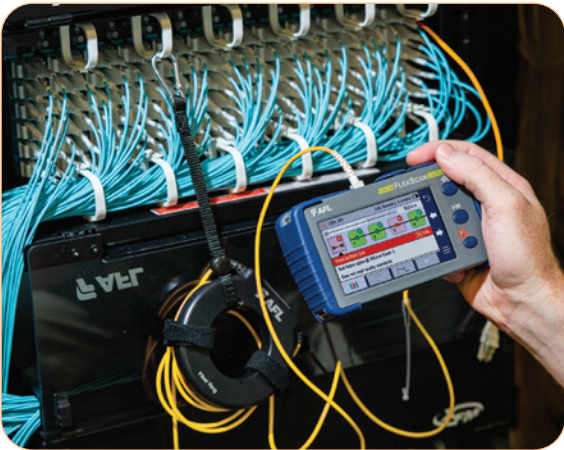
AFL offers unmatched end-to-end solutions to meet the demands of a fiber-to-the-x (FTTx) project. For electric utilities, enterprise, and service providers, we provide a full solution of passive components. From the central office to the end point of the network, AFL has a wide variety of fiber cable, hardware, and optical connection products. In addition to these products, AFL also boasts industry leading fusion splicers and testing and inspection equipment.

This guide walks through some typical FTTx network solutions from the headend to “x” – for whatever you are taking fiber to, highlighting some of the typical passive AFL products that can be used for your network to bring FIBER TO THE PEOPLE™.



CENTRAL OFFICE

All fiber networks have a start point. At the central office or headend, and possibly at different aggregation points throughout the network, clean and compact fiber management is important. From traditional to high-density rack mount applications to a simple wall-mount panel, AFL has a solution to meet your needs.



Xpress Fiber Management® (XFM®) Panels – 1RU, 2RU, 4RU

Ordering Information

| DESCRIPTION | MODEL NO. | AFL NO. |
|---|-------------|-------------|
| Xpress Fiber Management 1RU Patch Panel, Black, Empty | XFM-1-U-B-0 | FM002711-BE |
| Xpress Fiber Management 2RU Patch Panel, Black, Empty | XFM-2-U-B-0 | FM002712-BE |
| Xpress Fiber Management 4RU Patch Panel, Black, Empty | XFM-4U-B-0 | FM001090-B |
| Xpress Fiber Management 4RU Patch Panel, Black, Empty, Key Lock | XFM-4U-B-K | FM001218-B |

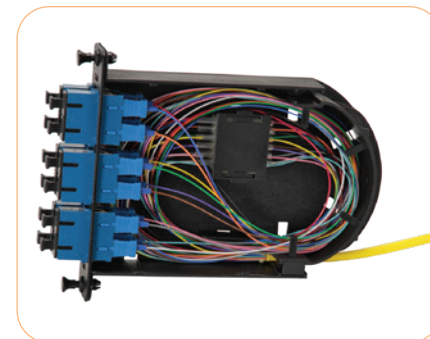


XFM 4RU Patch Panel

Poli-MOD® Patch and Splice Modules

Common Poli-MOD FTTx Configurations

| AFL NO. | DESCRIPTION |
|--------------------|---|
| PM-L-24-ALC-0-S-01 | Poli-MOD loaded with Adapter Plate and Pigtails, 24 fiber per connector, Angle-polish LC, single-mode, standard fiber arrangement, and 1 Poli-MOD per box |
| PM-L-12-ASC-0-S-01 | Poli-MOD loaded with Adapter Plate and Pigtails, 12 fiber per connector, Angle-polish SC, single-mode, standard fiber arrangement, and 1 Poli-MOD per box |



12-Fiber SC/UPC Configuration

Additional Poli-MOD Configurations

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 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 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.

Wall-Mount Panels with One, Two or Four LGX® Mounting Positions

Ordering Information

| EMPTY | |
|-------------|---------|
| DESCRIPTION | AFL NO. |
| WME01 Empty | WME01E |
| WME02 Empty | WME02E |
| WME04 Empty | WME04E |



WME01



WME-02



WME04 shown fully loaded

HALF LOADED: WME WITH ADAPTER PLATES AND ADAPTERS ONLY

| CONN. TYPE | NO. OF FIBERS | AFL NO. UPC SM (BLUE) | APC SM (GREEN) |
|--------------|---------------|--------------------------|----------------------|
| WME01 | | | |
| SC | 6 | WME01AS-USCSM-006000 | WME01AS-ASCSM-006000 |
| | 12 | WME01AS-USCSM-012000 | WME01AS-ASCSM-012000 |
| LC | 6 | WME01AS-UDLSM-006000 | WME01AS-ADLSM-006000 |
| | 12 | WME01AS-UDLSM-012000 | WME01AS-ADLSM-012000 |
| | 24 | WME01AH-UDLSM-024000 | WME01AH-ADLSM-024000 |
| WME02 | | | |
| SC | 6 | WME02AS-USCSM-006000 | WME02AS-ASCSM-006000 |
| | 12 | WME02AS-USCSM-012000 | WME02AS-ASCSM-012000 |
| | 24 | WME02AH-USFSM-024000 | WME02AH-ASFSM-024000 |
| LC | 6 | WME02AS-UDLSM-006000 | WME02AS-ADLSM-006000 |
| | 12 | WME02AS-UDLSM-012000 | WME02AS-ADLSM-012000 |
| | 24 | WME02AH-UDLSM-024000 | WME02AH-ADLSM-024000 |
| WME04 | | | |
| SC | 24 | WME04AS-USCSM-024000 | WME04AS-ASCSM-024000 |
| | 48 | WME04AH-USFSM-048000 | WME04AH-ASFSM-048000 |
| LC | 24 | WME04AS-UDLSM-024000 | WME04AS-ADLSM-024000 |
| | 48 | WME04AH-UDLSM-048000 | WME04AH-ADLSM-048000 |

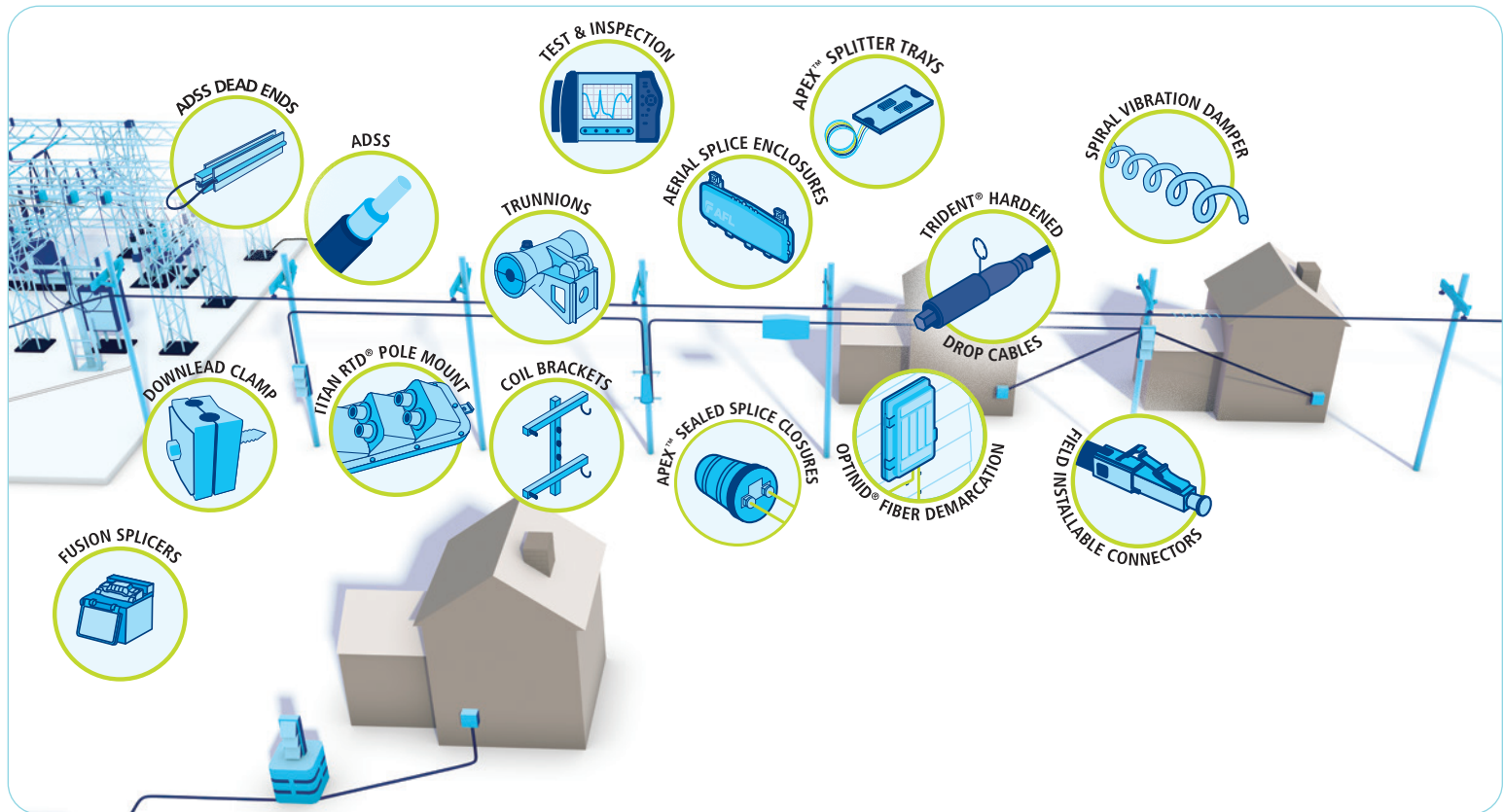
LOADED: WME WITH ADAPTER PLATES/ADAPTERS/SPLICE CHIP/PIGTAIL (900 µm TIGHT BUFFERED FIBERS 3 METERS IN LENGTH)

| CONN. TYPE | NO. OF FIBERS | AFL NO. UPC SM (BLUE) | APC SM (GREEN) |
|--------------|---------------|--------------------------|----------------------|
| WME01 | | | |
| SC | 6 | WME01FS-USCSM-0061C0 | WME01FS-ASCSM-0061C0 |
| | 12 | WME01FS-USCSM-0121C0 | WME01FS-ASCSM-0121C0 |
| LC | 6 | WME01FS-UDLSM-0061C0 | WME01FS-ADLSM-0061C0 |
| | 12 | WME01FS-UDLSM-0121C0 | WME01FS-ADLSM-0121C0 |
| | 24 | WME01FH-UDLSM-0241C0 | WME01FH-ADLSM-0241C0 |
| WME02 | | | |
| SC | 6 | WME02FS-USCSM-006110 | WME02FS-ASCSM-006110 |
| | 12 | WME02FS-USCSM-012110 | WME02FS-ASCSM-012110 |
| | 24 | WME02FH-USFSM-024120 | WME02FH-ASFSM-024120 |
| LC | 6 | WME02FS-UDLSM-006110 | WME02FS-ADLSM-006110 |
| | 12 | WME02FS-UDLSM-012110 | WME02FS-ADLSM-012110 |
| | 24 | WME02FH-UDLSM-024120 | WME02FH-ADLSM-024120 |
| WME04 | | | |
| SC | 24 | WME04FS-USCSM-024120 | WME04FS-ASCSM-024120 |
| | 48 | WME04FH-USFSM-048140 | WME04FH-ASFSM-048140 |
| LC | 24 | WME04FS-UDLSM-024120 | WME04FS-ADLSM-024120 |
| | 48 | WME04FH-UDLSM-048140 | WME04FH-ADLSM-048140 |

ACCESS

Beyond the central office, the bulk of a FTTx network is in the access. Whether aerial or underground, there are a variety of cable designs and technologies to choose from for your application. Splice enclosures are also capable of strand mount, pole mount, and underground placement. For FTTx PON designs, optical splitting is typically done at the central office, in exterior distribution cabinets, or in the splice enclosures.

Last mile deployment has been increasingly relying on multiport terminals and hardened drop cables for quick and easy subscriber connections.



ADSS Cable and Hardware Design Packages

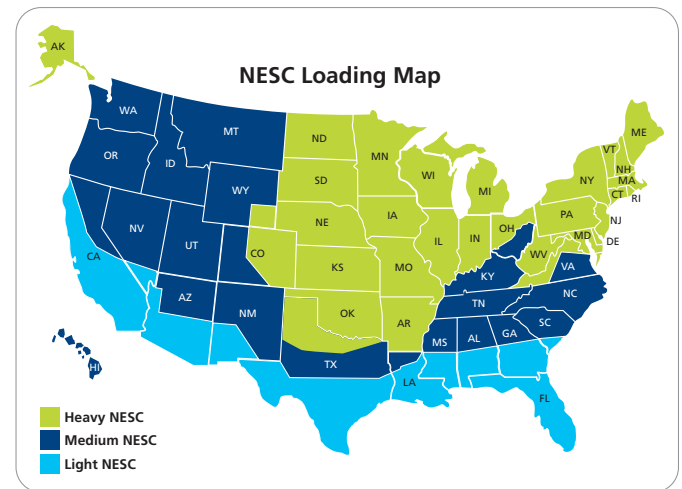
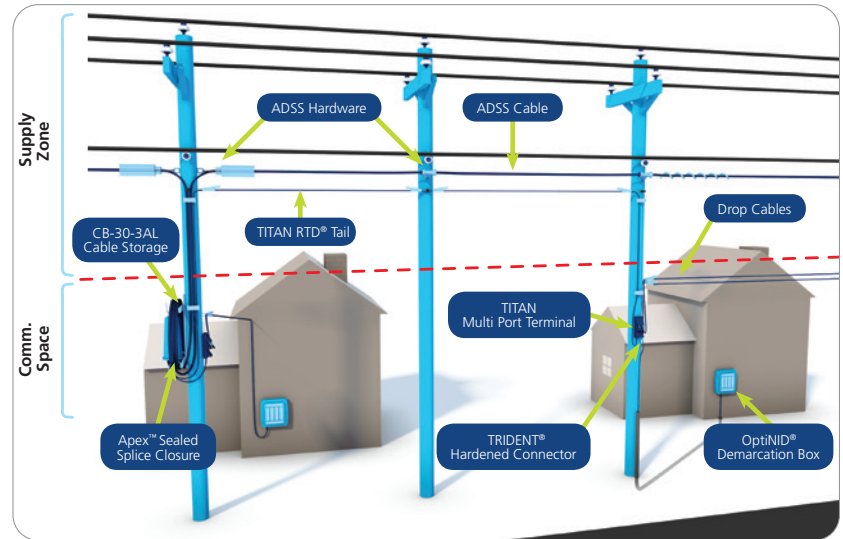
ADSS fiber cables can provide advantages over traditional strand and lash fiber networks in many cases. Some of these advantages to ADSS cables include:

- No metallic components – can install in supply space and grounding is not required
- Little to no “make ready” cost
- Lower hardware costs
- Speed and ease of installation
- Minimal long-term maintenance
- Longer expected design life

In many scenarios, these advantages lead to a lower total cost.

All-dielectric self-supporting (ADSS) cable design packages are listed below with common diameter range taking hardware components. These packages range in strength capability. ADSS cables can be used for span lengths greater than 6000', so strength capability in distribution environments typical for FTTx applications is of no concern. To find the most cost effective ADSS design for a FTTx network, the loading requirements should be reviewed. The loading requirements can be determined using the maximum pole-to-pole span length and the loading condition that is defined by the National Electric Safety Code (NESC) based on the location of the project.

Three general ADSS design packages are shown on [page 9](#). AFL can also design customized ADSS designs to meet your specific requirements.



ADSS Cable and Hardware Design Packages

Design Package 1 – Light Strength

| NESC SPAN MAXIMUM (@ 1.5% INITIAL SAG) FEET | | |
|---|--------|-------|
| LIGHT | MEDIUM | HEAVY |
| 700 | 500 | 300 |

| FIBER COUNT | PART NUMBER | DIAMETER (IN.) | DEAD END | TANGENT TRUNNION | DOWNLEAD CLAMP | SPIRAL VIBRATION DAMPER |
|-------------|---------------|----------------|---------------|------------------|----------------|-------------------------|
| 12 | AE0129W520AA4 | 0.382 | ADESE380/400C | ATGN376/419 | AGC468468D | AVD327/461 |
| 24 | AE0249W520AA4 | | | | | |
| 48 | AE0489W520AA4 | | | | | |
| 72 | AE0729O620A08 | 0.484 | ADESE482/510C | ATGN475/525 | AGC562562D | AVD462/563 |
| 96 | AE0969O620A08 | | | | | |
| 144 | AE1449O620A08 | | | | | |
| 288 | AE2889OC20EA0 | 0.732 | ADESE693/737C | ATGN726/775 | AGC750750D | AVD564/770 |

Design Package 2 – Medium Strength

| NESC SPAN MAXIMUM (@ 1.5% INITIAL SAG) FEET | | |
|---|--------|-------|
| LIGHT | MEDIUM | HEAVY |
| 1050* | 700 | 450 |

* 288F option is only capable of 800 ft max spans for NESC Light

| FIBER COUNT | PART NUMBER | DIAMETER (IN.) | DEAD END | TANGENT TRUNNION | DOWNLEAD CLAMP | SPIRAL VIBRATION DAMPER |
|-------------|---------------|----------------|---------------|------------------|----------------|-------------------------|
| 12 | AE0129W520EA3 | 0.390 | ADESE380/400C | ATGN376/419 | AGC468468D | AVD327/461 |
| 24 | AE0249W520EA3 | | | | | |
| 48 | AE0489W520EA3 | | | | | |
| 72 | AE0729O620EA1 | 0.492 | ADESE482/510C | ATGN475/525 | AGC562562D | AVD462/563 |
| 96 | AE0969O620EA1 | | | | | |
| 144 | AE1449O620EA1 | | | | | |
| 288* | AE2889OC20EA3 | 0.736 | ADESE693/737C | ATGN726/775 | AGC750750D | AVD564/770 |

Design Package 3 – High Strength

| NESC SPAN MAXIMUM (@ 1.0% INITIAL SAG) FEET | | |
|---|--------|-------|
| LIGHT | MEDIUM | HEAVY |
| 1050* | 900 | 600 |

* 288F option is only capable of 975 ft max spans for NESC Light

| FIBER COUNT | PART NUMBER | DIAMETER (IN.) | DEAD END | TANGENT TRUNNION** | DOWNLEAD CLAMP | SPIRAL VIBRATION DAMPER |
|-------------|---------------|----------------|---------------|--------------------|----------------|-------------------------|
| 12 | AE0129W521EB3 | 0.472 | ADESE452/481C | ATGN420/474 | AGC562562D | AVD462/563 |
| 24 | AE0249W521EB3 | | | | | |
| 48 | AE0489W521EB3 | | | | | |
| 72 | AE0729O621EB5 | 0.575 | ADESE543/577C | ATGN526/575 | AGC656656D | AVD564/770 |
| 96 | AE0969O621EB5 | | | | | |
| 144 | AE1449O621EB5 | | | | | |
| 288 | AE2889OC11BB2 | 0.835 | ADEME835/889C | ATGN826/875 | AGC849849D | AVD771/876 |

** Other tangent hardware may be required based on span length and loading conditions; refer to "Trunnion" and "ADSS Suspension" sections on [page 11](#).

Formed Wire Suspension

Used up to 30-degree line angle changes, the formed wire suspension is needed in applications where span lengths exceed the trunnion and the ADSS suspension unit. Based on the cable span length capabilities, this may be applicable for ADSS Design Package 3. Contact AFL for further information on the formed wire suspension unit.

Design Package 3 – High Strength

| FIBER COUNT | PART NUMBER | DIAMETER (IN.) | FORMED WIRE SUSPENSION |
|-------------|---------------|----------------|------------------------|
| 12 | AE0129W521EB3 | 0.472 | ASU462/476 |
| 24 | AE0249W521EB3 | | |
| 48 | AE0489W521EB3 | | |
| 72 | AE0729O621EB5 | | |
| 96 | AE0969O621EB5 | 0.575 | ASU574/598 |
| 144 | AE1449O621EB5 | | |
| 288 | AE2889OC11BB2 | 0.835 | ASU815/845 |

ADSS Suspensions

Design Package 1 – Light Strength

| FIBER COUNT | PART NUMBER | DIAMETER (IN.) | ADSS SUSPENSION UNIT |
|-------------|---------------|----------------|----------------------|
| 12 | AE0129W520AA4 | 0.382 | ASN376/419 |
| 24 | AE0249W520AA4 | | |
| 48 | AE0489W520AA4 | | |
| 72 | AE0729O620A08 | | |
| 96 | AE0969O620A08 | 0.484 | ASN475/525 |
| 144 | AE1449O620A08 | | |
| 288 | AE2889OC20EA0 | 0.732 | ASN726/775 |

Design Package 2 – Medium Strength

| FIBER COUNT | PART NUMBER | DIAMETER (IN.) | ADSS SUSPENSION UNIT |
|-------------|---------------|----------------|----------------------|
| 12 | AE0129W520EA3 | 0.390 | ASN376/419 |
| 24 | AE0249W520EA3 | | |
| 48 | AE0489W520EA3 | | |
| 72 | AE0729O620EA1 | | |
| 96 | AE0969O620EA1 | 0.492 | ASN475/525 |
| 144 | AE1449O620EA1 | | |
| 288 | AE2889OC20EA3 | 0.736 | ASN726/775 |

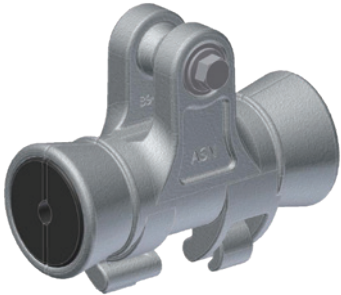
Design Package 3 – High Strength

| FIBER COUNT | PART NUMBER | DIAMETER (IN.) | ADSS SUSPENSION UNIT |
|-------------|---------------|----------------|----------------------|
| 12 | AE0129W521EB3 | 0.472 | ASN420/474 |
| 24 | AE0249W521EB3 | | |
| 48 | AE0489W521EB3 | | |
| 72 | AE0729O621EB5 | | |
| 96 | AE0969O621EB5 | 0.575 | ASN526/575 |
| 144 | AE1449O621EB5 | | |
| 288 | AE2889OC11BB2 | 0.835 | ASN826/875 |

ADSS Suspensions

The AFL ADSS suspension units can be used for line angle changes up to 30 degrees. This hardware can be useful when a line angle exceeds the maximum 22 degrees for the trunnion to avoid using a double dead end.

| NESC LOADING CONDITION | | |
|------------------------|--------|-------|
| HEAVY | MEDIUM | LIGHT |
| 600' | 900' | 1200' |



Trunnions

The AFL trunnion clamp can be used up to 22-degree line angle change. The trunnion can be used to string the ADSS cable during install, eliminating the need of a sheave at that point.

| NESC LOADING CONDITION | | | |
|------------------------|-------|--------|-------|
| DIAMETER | HEAVY | MEDIUM | LIGHT |
| <0.875" | 600' | 850' | 1200' |
| >0.875" | 500' | 750' | 950' |



Single Trunnion Cable Support



Double Trunnion Cable Support

Double trunnion suspensions are also available to allow for two cables at one pole penetration point.

Vibration Dampers

Vibration dampers are used to minimize cable vibration. They are typically recommended for span lengths greater than 350 feet but are dependent on the installed tension of the cable. Contact AFL for specific recommendations on vibration dampers.



Spiral Vibration Damper on ADSS Cable

Slack Storage

Storing slack cable at splice locations and throughout a FTTx network is critical. There are two primary methods for slack storage, on the pole (coil bracket) and in-line with the cable (fiber storage units).

Coil Bracket

The CB-30-3AL is 30 inches wide and stores up to 80 ft. total length of ADSS cable. It is used with AFL's Apex® Sealed Splice Closures ([see page 17](#)). The CB-30-3AL coil bracket can be bolted or banded to the structure.

Splice Enclosure Mounting Bracket

Used for quick and simple attachment of the Apex sealed splice enclosures to the CB-30-3AL coil bracket.

Ordering Information

| MODEL | AFL NO. |
|---|-----------|
| CB-30-3AL ADSS Coil Storage Bracket for Apex Sealed Splice Closures | CB-30-3AL |
| Mounting Bracket for Apex Sealed Splice Closure | AX-BR30 |



Coil Bracket holds excess ADSS cable

Standoff Bracket for ADSS Hardware Clamps

The Standoff Bracket positions the AFL ADSS trunnion or AFL ADSS suspension 14" off of structure.

Specifications

| PARAMETER | VERTICAL | HORIZONTAL |
|-------------|-----------|------------|
| Load Rating | 1,250 lbs | 1,250 lbs |

Ordering Information

| AFL NO. | DESCRIPTION |
|---------|--|
| DTSB12 | 14" Standoff Bracket, for use with AFL's ATGN Trunnion Clamp or ASN Suspension Clamp on ADSS Fiber Optic Cable |



Standoff Bracket with AFL ATGN Single Trunnion

Fiber Storage Units

Fiber Storage Units (FSU) are used to conveniently store an extra length of cable along the ADSS cable run for later use.



Specifications

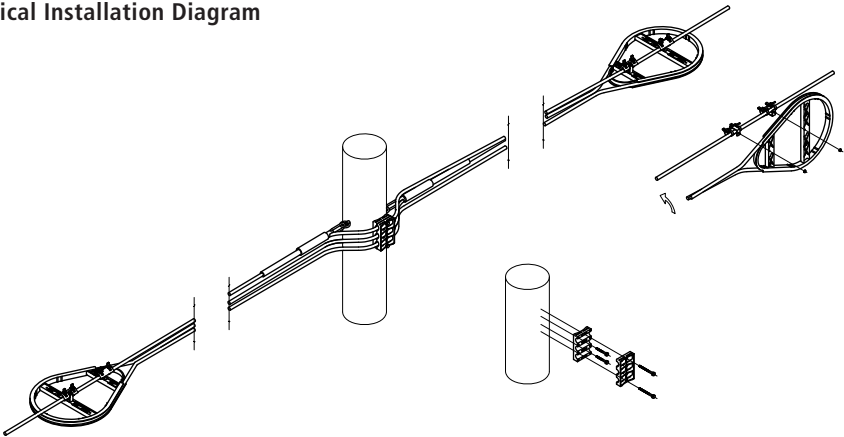
| PARAMETER | FOSP-ADSS-12 | FOSP-ADSS-17 |
|-----------------------|--------------|--------------|
| Nominal Channel Width | 0.625" | 1.00" |
| Minimum Bend Diameter | 12" | 17.5" |

Ordering Information

| DESCRIPTION | FOSP-ADSS-12 | FOSP-ADSS-17 |
|--------------|--------------|--------------|
| FOS ADSS Kit | FA000049 | FA000050 |

Kits contain one pair of FOSP and two sets of hanger brackets.

Typical Installation Diagram



Download Clamps

Download clamps are used to secure the cable to the pole. Typically, one clamp is used every 5-8 feet down the length of the pole.

[See page 9](#) for ordering information.

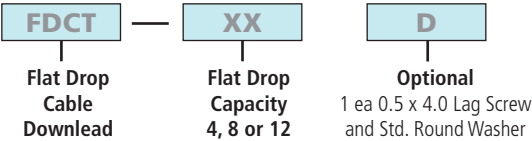


Flat Drop Download

The Flat Drop Cable Download accessory provides a means of suspending multiple flat drop cables to structures where termination is undesirable. The accessory can also be used in download applications to guide flat drop cables from the top of the structure to the splice box.

Ordering Information

| AFL NO. | FLAT DROP CAPACITY | HARDWARE INCLUDED |
|----------|--------------------|------------------------|
| FDCT-4 | up to 4 | — |
| FDCT-12 | up to 12 | — |
| FDCT-8 | up to 8 | — |
| FDCT-4D | up to 4 | Lag screw hardware kit |
| FDCT-12D | up to 12 | Lag screw hardware kit |



Temporary Grip

Temporary Grips are used in stringing the ADSS during sagging and where it is necessary to make short term catch on the ADSS. The Temporary grip for ADSS is a high strength aluminum body designed to hold 2,500 pounds or 50% of MRCL of the cable. Tapered wedges are machined specifically to the cable diameter.

Ordering Information



Underground Cable

For underground applications or aerial strand and lash applications, the following fiber cables can be used.

LMHD OSP MicroCore® Cable

Physical and Mechanical Data

| LMHD-SERIES AFL NO.* | FIBER COUNT | FIBERS/ NUMBER OF TUBES** | DIAMETER | MIN. MICRODUCT INNER DIAMETER | WEIGHT | MAXIMUM TENSILE LOAD LBS (N) | | MINIMUM BEND RADIUS INCHES (CM) | |
|-------------------------|----------------|---------------------------------|--------------|----------------------------------|-----------------------|---------------------------------|-----------|------------------------------------|-----------|
| | | | INCHES (MM) | INCHES (MM) | LBS/1000FT (KG/KM) | INSTALLATION | OPERATION | INSTALLATION | OPERATION |
| LM012xC6201#1 | 12 | 12/1 (5 fillers) | 0.359 (9.1) | 0.512 (13) | 42 (64) | 600 (2670) | 180 (801) | 7.5 (19) | 5.5 (14) |
| LM024xC6201#1 | 24 | 12/2 (4 fillers) | 0.359 (9.1) | 0.512 (13) | 43 (65) | 600 (2670) | 180 (801) | 7.5 (19) | 5.5 (14) |
| LM048xC6201#1 | 48 | 12/4 (2 fillers) | 0.359 (9.1) | 0.512 (13) | 44 (67) | 600 (2670) | 180 (801) | 7.5 (19) | 5.5 (14) |
| LM072xC6201#1 | 72 | 12/6 | 0.359 (9.1) | 0.512 (13) | 45 (69) | 600 (2670) | 180 (801) | 7.5 (19) | 5.5 (14) |
| LM096xO6201#1 | 96 | 24/4 (2 fillers) | 0.390 (9.9) | 0.512 (13) | 52 (79) | 600 (2670) | 180 (801) | 8 (20) | 6 (15) |
| LM144xO6201#1 | 144 | 24/6 | 0.390 (9.9) | 0.512 (13) | 57 (85) | 600 (2670) | 180 (801) | 8 (20) | 6 (15) |
| LM288xR6201#1 | 288 | 48/6 | 0.481 (12.2) | 0.630 (16) | 82 (125) | 600 (2670) | 180 (801) | 10 (25) | 7.5 (19) |
| LM432xOI201#1 | 432 | 24/18 | 0.567 (14.4) | 0.787 (20) | 112 (167) | 600 (2670) | 180 (801) | 11.5 (29) | 9 (22) |

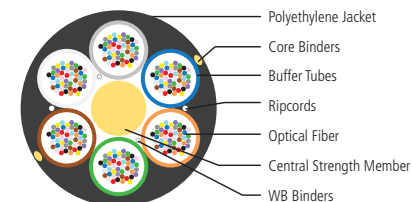
* Replace # with "N" for all-dielectric cable or "T" for toneable option.

"x" denotes fiber type. See Optical Fibers Options table below.

** Fibers are arranged in 12-fiber sets. Each set is identified by colored binder threads.

Optical Fiber Options

| FIBER TYPE | "X" | STANDARD | MODE FIELD DIAMETER | ATTENUATION | |
|----------------------|-----|-----------------------|---------------------|-------------|---------|
| | | | | 1300 nm | 1550 nm |
| Single-mode | 9 | ITU-T G.652D / 657.A1 | 9.2 µm nominal | 0.35 | 0.25 |
| Corning SMF-28 Ultra | AZ | ITU-T G.652D / 657.A1 | 9.2 µm nominal | 0.35 | 0.25 |



[Back to Table of Contents](#)

Wrapping Tube Cable with SpiderWeb Ribbon® (SWR®) Technology

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-144-9-C-144-1-00N1D | 144 | 1 X 144F | 0.41 (10.5) | 57 (85) | 607 (2700) | 9 (229) | 182 (810) | 6 (158) |
| LWSE-288-9-C-72-4-00N1D | 288 | 4 X 72F | 0.47 (12.0) | 71 (105) | 607 (2700) | 10 (254) | 182 (810) | 7 (180) |
| LWSE-432-9-C-72-6-00N1D | 432 | 6 X 72F | 0.53 (13.5) | 91 (135) | 607 (2700) | 11 (270) | 182 (810) | 8 (203) |
| LWSE-576-9-C-72-8-00N1D | 576 | 8 X 72F | 0.59 (15.0) | 111 (165) | 607 (2700) | 12 (300) | 182 (810) | 9 (225) |
| LWSE-864-9-C-72-12-00N1D | 864 | 12 X 72F | 0.69 (17.5) | 145 (215) | 607 (2700) | 14 (350) | 182 (810) | 11 (279) |
| LWSE-1152-K-C-144-8-00N1D | 1152 | 8 X 144F | 0.73 (18.5) | 161 (240) | 607 (2700) | 15 (370) | 182 (810) | 11 (279) |
| LWSE-1728-K-C-144-12-00N1D | 1728 | 12 X 144F | 0.91 (23.0) | 242 (360) | 607 (2700) | 18 (460) | 182 (810) | 14 (345) |
| LWSE-3456-K-C-144-24-00N1D | 3456 | 24 X 144F | 1.20 (30.5) | 403 (600) | 607 (2700) | 24 (610) | 182 (810) | 18 (458) |

Mechanical Data—OSP 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-144-9-C-144-1-10S1D | 144 | 1 X 144F | 0.63 (16.0) | 148 (220) | 607 (2700) | 13 (320) | 182 (810) | 10 (254) |
| LWSE-288-9-C-72-4-10S1D | 288 | 4 X 72F | 0.69 (17.5) | 172 (255) | 607 (2700) | 14 (350) | 182 (810) | 11 (279) |
| LWSE-432-9-C-72-6-10S1D | 432 | 6 X 72F | 0.75 (19.0) | 202 (300) | 607 (2700) | 15 (380) | 182 (810) | 11 (285) |
| LWSE-576-9-C-72-8-10S1D | 576 | 8 X 72F | 0.81 (20.5) | 235 (350) | 607 (2700) | 16 (410) | 182 (810) | 12 (308) |
| LWSE-864-9-C-72-12-10S1D | 864 | 12 X 72F | 0.91 (23.0) | 286 (425) | 607 (2700) | 18 (460) | 182 (810) | 14 (345) |
| LWSE-1728-K-C-144-12-10S1D | 1728* | 12 X 144F | 1.14 (29.0) | 410 (610) | 607 (2700) | 23 (580) | 182 (810) | 17 (435) |

* NOTE: Modified temperature performance

Optical Fiber

| FIBER COUNT | FIBER DESIGNATOR | MFD | MAXIMUM ATTENUATION (CABLED) dB/km | | |
|-------------------------|---------------------------|--------------|---------------------------------------|---------|---------|
| | | | 1310 NM | 1383 NM | 1550 NM |
| 144, 288, 432, 576, 864 | 9 (ITU-T G.652D/G.657.A1) | 9.2 ± 0.4 μm | ≤0.40 | ≤0.40 | ≤0.30 |
| 1152, 1728, 3456 | K (ITU-T G.652D/G.657.A1) | 8.6 ± 0.4 μm | ≤0.40 | ≤0.40 | ≤0.30 |

Sealed (Underground and Pole Mount)

AFL's new Apex® sealed splice closures are used for underground applications and in pole-mount applications typically using a coil bracket (CB-30-3AL).

The Apex X-2 and X-2S are sealed splice closures designed for protecting optical fiber splices in both above- or below-grade applications in a butt configuration. Cables are sealed by a unique wedge system spaced evenly around the circumference of the closure's base. Each cable seal is opened by a press-to-release lever and sealing is completed by actuating a single screw for each cable. Each cable is sealed individually, ensuring original craftsmanship when cables may be added at a later date. Up to 6 splice trays are attached and hinge off a central organizer. A plastic slack storage basket resides underneath the trays with ample tie down points for managing tube and fiber slack.



Apex Sealed Splice Closure Summary Specifications

| DESCRIPTION | MODEL | |
|--|--|--|
| | X-2 | X-2S |
| Splice Capacity – Single, Mass (SWR®), Mass (Standard) | 432, 3456, 864 | 216, 1728, 432 |
| Splice Tray Capacity | 6 | 6 |
| Cable Diameter, Single Port, in. (mm) | 0.40" – 1.10" (10.0 – 28.0) | 0.40" – 1.10" (10.0 – 28.0) |
| Cable Diameter, Multi-Drop Kit, in. (mm) | 0.20" – 0.39" (5.0 - 9.9) or flat drop | 0.20" – 0.39" (5.0 - 9.9) or flat drop |
| Dimensions – (L x D) in. (cm) | 25.0" x 12.0" (64 x 30) | 20.0" x 12.0" (51 x 30) |
| Weight, No Trays – lbs (kg) | 25 (11.3) | 22 (10) |
| Application | Direct Bury, Handhole, Aerial, Pole/Wall | Direct Bury, Handhole, Aerial, Pole/Wall |



Apex® Sealed Splice Closures

The Apex X-2 is capable of up to 432 single fusion, 864 mass fusion with standard ribbon, or 3,456 using 200 µm mass fusion with rollable ribbon fiber types (such as AFL's SpiderWeb Ribbon® (SWR®)). If using 250 µm fiber, 1,728 fibers is the maximum fiber count.

The Apex X-2S is capable of up to 216 single fusion, 432 mass fusion with standard ribbon, or 1,728 using 200 µm mass fusion with rollable ribbon fiber types (SWR). If using 250 µm fiber, 864 fibers is the maximum fiber count.

Refer to the [Apex X-2](#) and [Apex X-2S](#) specification sheets for more information.

Ordering Information – X-2

| | | | | | | | | | | | | | | |
|----------------------|---|---------------------|---|----------------------|---|---|---|------------------------|---|--|---|------------------------------|---|---|
| AX | — | 2 | — | B | — | L | — | 0 | — | 2 | — | 6 | — | B |
| APEX CLOSURES | | CLOSURE SIZE | | BASKET TYPE | | TRAY TYPE | | NUMBER OF TRAYS | | CABLE STRAIN RELIEF HARDWARE KITS | | NUMBER OF GROUND LUGS | | INNER BASKET |
| | | 2 = X-2 Size | | B = X-2 Sized Basket | | X = No preinstalled tray L = X-2 Tray Loaded with splice modules E = X-2 Tray empty | | 0 1 6 | | 2 4 6 | | 0 2 6 | | X = No Inner Basket B = Include Inner Basket |

Ordering Information – X-2S

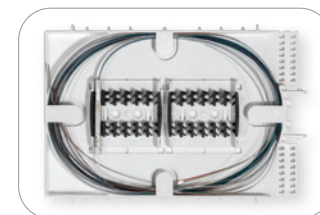
| | | | | | | | | | | | | | | |
|----------------------|---|---------------------|---|-----------------------|---|---|---|------------------------|---|--|---|------------------------------|---|---------------------|
| AX | — | 2 | — | B | — | L | — | 0 | — | 2 | — | 6 | — | X |
| APEX CLOSURES | | CLOSURE SIZE | | BASKET TYPE | | TRAY TYPE | | NUMBER OF TRAYS | | CABLE STRAIN RELIEF HARDWARE KITS | | NUMBER OF GROUND LUGS | | INNER BASKET |
| | | 2S = X-2S Size | | B = X-2S Sized Basket | | X = No preinstalled tray L = X-2S Tray Loaded with splice modules E = X-2S Tray empty | | 0 1 6 | | 2 4 6 | | 0 2 6 | | X = No Inner Basket |

Apex® Splitter Trays

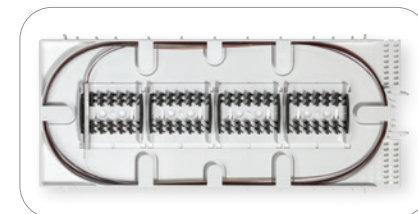
Passive optical splitters, or PLCs (Planar Lightwave Circuits), can be provided preinstalled into the Apex X-2S and Apex X-2 splice trays. PLCs can either be installed and splice within the same tray, or provided with a separate dedicated tray for splicing, with fibers routed between trays using protective tubing. A third option provides one additional tray to separate input and output fiber splicing.

Ordering Information

| DESCRIPTION | SPLIT RATIO | AFL NO. |
|---|-------------|------------------|
| APEX X-2S | | |
| X-2S Tray with Two Splice Modules, (1) 1x4 PLC Splitter | 1x4 | AX-TRAY-2S-14-1 |
| X-2S Tray with Two Splice Modules, (1) 1x8 PLC Splitter | 1x8 | AX-TRAY-2S-18-1 |
| X-2S Tray with Two Splice Modules, (1) 1x16 PLC Splitter | 1x16 | AX-TRAY-2S-116-1 |
| X-2S Tray with Two Splice Modules, (1) 1x32 PLC Splitter | 1x32 | AX-TRAY-2S-132-1 |
| X-2S Tray with (1) 1x4 PLC Splitter and Separate Splicing Tray with Two Splice Modules | 1x4 | AX-TRAY-2S-14-2 |
| X-2S Tray with (1) 1x8 PLC Splitter and Separate Splicing Tray with Two Splice Modules | 1x8 | AX-TRAY-2S-18-2 |
| X-2S Tray with (1) 1x16 PLC Splitter and Separate Splicing Tray with Two Splice Modules | 1x16 | AX-TRAY-2S-116-2 |
| X-2S Tray with (1) 1x32 PLC Splitter and Separate Splicing Tray with Two Splice Modules | 1x32 | AX-TRAY-2S-132-2 |
| X-2S Tray with (1) 1x4 PLC Splitter and 2 Separate Splicing Trays with Two Splice Modules each | 1x4 | AX-TRAY-2S-14-3 |
| X-2S Tray with (1) 1x8 PLC Splitter and 2 Separate Splicing Trays with Two Splice Modules each | 1x8 | AX-TRAY-2S-18-3 |
| X-2S Tray with (1) 1x16 PLC Splitter and 2 Separate Splicing Trays with Two Splice Modules each | 1x16 | AX-TRAY-2S-116-3 |
| X-2S Tray with (1) 1x32 PLC Splitter and 2 Separate Splicing Trays with Two Splice Modules each | 1x32 | AX-TRAY-2S-132-3 |
| APEX X-2 | | |
| X-2 Tray with Four Splice Modules, (1) 1x4 PLC Splitter | 1x4 | AX-TRAY-2-14-1 |
| X-2 Tray with Four Splice Modules, (1) 1x8 PLC Splitter | 1x8 | AX-TRAY-2-18-1 |
| X-2 Tray with Four Splice Modules, (1) 1x16 PLC Splitter | 1x16 | AX-TRAY-2-116-1 |
| X-2 Tray with Four Splice Modules, (1) 1x32 PLC Splitter | 1x32 | AX-TRAY-2-132-1 |
| X-2 Tray with (1) 1x4 PLC Splitter and Separate Splicing Tray with Four Splice Modules | 1x4 | AX-TRAY-2-14-2 |
| X-2 Tray with (1) 1x8 PLC Splitter and Separate Splicing Tray with Four Splice Modules | 1x8 | AX-TRAY-2-18-2 |
| X-2 Tray with (1) 1x16 PLC Splitter and Separate Splicing Tray with Four Splice Modules | 1x16 | AX-TRAY-2-116-2 |
| X-2 Tray with (1) 1x32 PLC Splitter and Separate Splicing Tray with Four Splice Modules | 1x32 | AX-TRAY-2-132-2 |
| X-2 Tray with (1) 1x4 PLC Splitter and 2 Separate Splicing Trays with Four Splice Modules each | 1x4 | AX-TRAY-2-14-3 |
| X-2 Tray with (1) 1x8 PLC Splitter and 2 Separate Splicing Trays with Four Splice Modules each | 1x8 | AX-TRAY-2-18-3 |
| X-2 Tray with (1) 1x16 PLC Splitter and 2 Separate Splicing Trays with Four Splice Modules each | 1x16 | AX-TRAY-2-116-3 |
| X-2 Tray with (1) 1x32 PLC Splitter and 2 Separate Splicing Trays with Four Splice Modules each | 1x32 | AX-TRAY-2-132-3 |



Apex X-2S Splitter Tray



Apex X-2 Splitter Tray

Ordering Information

| DESCRIPTION | TRAY CAPACITY | | AFL NO. |
|---|---------------|------|----------------|
| | SINGLE | MASS | |
| SPLICE TRAYS AND SPLICE MODULES | | | |
| X-2S Tray Loaded with One Splice Module | 18 | 72 | AX-TRAY-2S-1 |
| X-2S Tray Fully Loaded with Two Splice Modules (288 fibers per tray only recommended for rollable ribbon, e.g. AFL SWR) | 36 | 288 | AX-TRAY-2S-2 |
| Additional splice module (18 single fusion triple stacked, 12 mass fusion double stacked, 6 mechanical) – Pack of 20 | – | – | AX-TRAY-MOD-20 |
| X-2S Tray Empty | – | – | AX-TRAY-2S-E |

* 288 fibers per tray with mass fusion double-stacking 1728 total closure capacity) only recommended for 200 um type rollable ribbon. For 250 um, cut capacity in half with single-stacking.

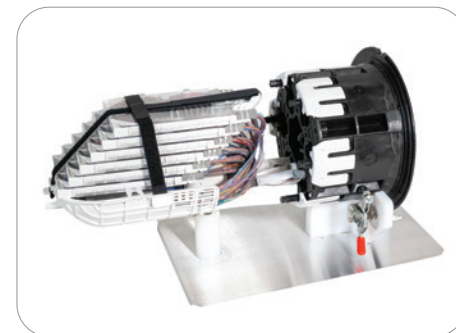
| DESCRIPTION | AFL NO. |
|--|----------------|
| SLACK STORAGE BASKET | |
| Replacement slack storage basket tabs – Pack of 25 | AX-KIT-BTAB-25 |

| DESCRIPTION | AFL NO. |
|---|---------------------|
| INSTALLATION ACCESSORIES AND KITS | |
| Aerial strand mount hanger kit | AX-KIT-AERIAL-1 |
| Pole/wall mount kit | AX-BR30 |
| 1/4" Colored Mesh Transition Tubing, 250' Spool | AX-KIT-TUBE-014-XX* |
| Single Cable Strain Relief/Attachment Kit | AX-KIT-CBLSTRN |
| Multi-Drop Cable Entry Kit | AX-KIT-DROP-4 |
| (fits up to 4 cables 0.20" to 0.39" in diameter or flat drop cable) | |
| X-2 and X-2S Dome to Base O-Ring Replacement Kit | AX-KIT-ORING-2 |
| X-2 and X-2S Dome to Base Locking Ring Clamp Replacement Kit | AX-KIT-CLAMP-2 |
| X-2 and X-2S Wedge Replacement Kit | AX-KIT-WEDGE-2 |
| X-2 and X-2S Installation Stand | FC104649 |
| Apex X-2 and X-2S Inner Base Gel Replacement Kit | AX-KIT-GEL-2 |
| Apex X-2S Dome Replacement Kit | AX-KIT-DOME-2S |
| WTC-SWR® Bundle Splice Tray Retention Kit - Includes 25 foam grommets for retaining SWR bundles to splice trays | HW000406 |
| Silicone Spiral Wrap, 5.5 Foot Length | FC001657 |
| Velcro, 75 Foot Length Roll – For securing SWR bundles in the slack basket | FC001759 |

* Replace "XX" with any of the following for colors per the TIA-598 color code – BL, OR, GR, BR, SL, WH, RD, BK, YL, VI, RS or AQ



Apex X-2S Splice Tray and Splice Module



Apex X-2S Mounted on Installation Stand

Ordering Information

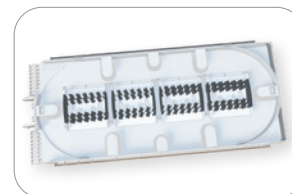
| DESCRIPTION | TRAY CAPACITY | | AFL NO. |
|---|---------------|------|----------------|
| | SINGLE | MASS | |
| SPLICE TRAYS AND SPLICE MODULES | | | |
| X-2 Tray Loaded with Two Splice Modules | 36 | 144 | AX-TRAY-2-2 |
| X-2 Tray Fully Loaded with Four Splice Modules (576 fibers per tray only recommended for rollable ribbon, e.g. AFL SWR) | 72 | 576 | AX-TRAY-2-4 |
| Additional splice module (18 single fusion triple stacked, 12 mass fusion double stacked, 6 mechanical) – Pack of 20 | - | - | AX-TRAY-MOD-20 |
| X-2 Tray Empty | - | - | AX-TRAY-2-E |

* 576 fibers per tray with mass fusion double-stacking (3456 total closure capacity) only recommended for 200 µm type rollable ribbon. For 250 µm, cut capacity in half with single-stacking

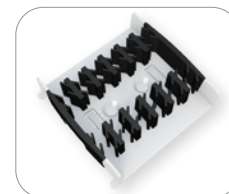
| DESCRIPTION | AFL NO. |
|--|------------------|
| SLACK STORAGE BASKET | |
| Clear segmented basket for X-2. Can be used in combination with the basket cover | AX-KIT-SBASKET-2 |
| Replacement slack storage basket tabs – Pack of 25 | AX-KIT-BTAB-25 |

| DESCRIPTION | AFL NO. |
|--|---------------------|
| INSTALLATION ACCESSORIES AND KITS | |
| Aerial strand mount hanger kit | AX-KIT-AERIAL-1 |
| Pole/wall mount kit | AX-BR30 |
| 1/4" Colored Mesh Transition Tubing, 250' Spool | AX-KIT-TUBE-014-XX* |
| Single Cable Strain Relief/Attachment Kit | AX-KIT-CBLSTRN |
| Multi-Drop Cable Entry Kit (fits up to 4 cables 0.20" to 0.39" in diameter or flat drop cable) | AX-KIT-DROP-4 |
| X-2 and X-2S Dome to Base O-Ring Replacement Kit | AX-KIT-ORING-2 |
| X-2 and X-2S Dome to Base Locking Ring Clamp Replacement Kit | AX-KIT-CLAMP-2 |
| X-2 and X-2S Wedge Replacement Kit | AX-KIT-WEDGE-2 |
| X-2 and X-2S Installation Stand | FC104649 |
| Apex X-2 and X-2S Inner Base Gel Replacement Kit | AX-KIT-GEL-2 |
| Apex X-2 Dome Replacement Kit | AX-KIT-DOME-2 |
| WTC-SWR Bundle Splice Tray Retention Kit - Includes 25 foam grommets for retaining SWR bundles to splice trays | HW000406 |
| Silicone Spiral Wrap, 5.5 Foot Length | FC001657 |
| Velcro, 75 Foot Length Roll – For securing SWR bundles in the slack basket | FC001759 |

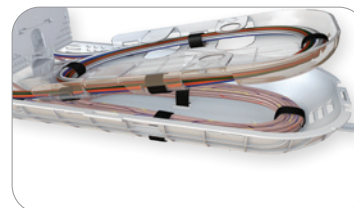
* Replace "XX" with any of the following for colors per the TIA-598 color code – BL, OR, GR, BR, SL, WH, RD, BK, YL, VI, RS or AQ



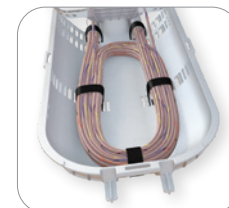
Apex X-2 Splice Tray



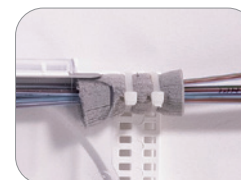
Apex X-2 Splice Module



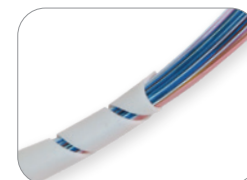
Clear Segmented Basket



Replacement Slack Storage Basket



Foam Grommets



Silicone Spiral Wrap

Aerial (On Strand)

AFL aerial weathertight closures are used in aerial, in-line applications. For ADSS, the closure is mounted onto the dead end. For strand and lash cables, the closure is mounted to the strand.

Aerial Closure Summary Specifications

| PARAMETER | LG-410-U-0 | LG-420-U-0 | LG-500-U-0 | LG-600-U-0 |
|---|--|--|--|---|
| Splice Capacity (Max.) - Single, Mass, Mechanical | 144, 432, 36 | 12, 48, 12 | 144, 432, 36 | 384, 1152, 96 |
| Splice Tray Capacity - Single, Mass | 4, 2 | n/a, n/a | 4, 2 | 12, 8, 8 |
| Cable Ports | 4-8 | 4-6 | 4-8 | 6 (3 per end) |
| Cable Entrance | In-line, Butt | In-line (taut sheath) | In-line, Butt | In-line, Butt |
| Cable Sizes (O.D.) | 4 @ 0.3-0.82" | 4 @ 0.3-0.82" | 4 @ 0.3-0.82" | 6 @ 0.44 - 1.0" |
| | Up to 8 with Dual Grommet Kits 4 @ 0.27-0.53" 4 @ 0.38-0.70" | Up to 6 with Dual Grommet Kits 2 @ 0.27-0.53" 2 @ 0.38-0.70" | Up to 8 with Dual Grommet Kits 4 @ 0.27-0.53" 4 @ 0.38-0.70" | Up to 12 with Dual Grommet Kits 6 @ 0.4-0.6" 6 @ 0.7-0.9" |
| CLOSURE TEST ^{1, 2} | | | | |
| Cable Retention (100 lbs.) | Passed | Passed | Passed | Passed |
| Impact Resistance (0-40 °C) | Passed | Passed | Passed | Passed |
| Chemical Resistance | Passed | Passed | Passed | Passed |
| Cable Flexing | Passed | Passed | Passed | Passed |
| Dust (Weather Tightness) | Passed | Passed | Passed | Passed |
| Driving Rain | Passed | Passed | Passed | Passed |
| Rodent Test | Passed | Passed | Passed | Passed |
| Dimensions | 36.00 x 8.00 x 4.00 | 36.00 x 8.00 x 4.00 | 27.00 x 8.25 x 4.00 | 27.00 x 11.25 x 7.50 |
| (L x W x D) in. (cm) | (91.44 x 20.32 x 10.16) | (91.44 x 20.32 x 10.16) | (68.58 x 20.96 x 10.16) | (68.58 x 28.58 x 19.05) |
| Weight lbs. (kg) | 8.5 (3.86) | 8.5 (3.86) | 6.4 (2.90) | 18 (8.16) |

Note 1: Tested to Telcordia GR-771-Core and Aerial Strand requirements

Note 2: Not all Telcordia tests are listed due to space constraints; All closures are designed and tested to appropriate aerial test requirements

ADSS Strand Mounting

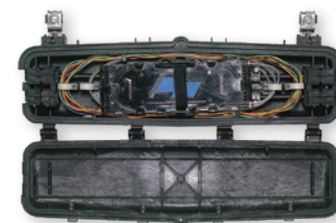
FA000108 is used to attach the weathertight closures to a formed wire dead end.



LG-500

Ordering Information

| DESCRIPTION | MODEL NO. | AFL NO. |
|--|-------------------------------|--------------|
| LG-500 Aerial Weathertight Fiber Optic Splice Closure—Stores 144 single fusion or 432 mass fusion, includes (4) cable kits for sealing/retention and (2) ground terminals with removable bond, and hanger brackets. Not included: Splice Trays or Cable Grounding Kits | LG-500-U-0 | FC000026 |
| LL-2400 Single Splice Tray—Stores (24) single fusion splices. Maximum of 4 trays in the LG-500. | LL-2400 | 91710-06 |
| LL-2448 Universal Splice Tray—Stores (24) single fusion or (4) mass fusion splices (48 F), *Mechanical. Maximum of 3 trays in the LG-500. | LL-2448 | 911289-00-02 |
| LL-4848 Mass Splice Tray—Stores (12) mass fusion splices (144 F). Maximum of 3 trays in the LG-500. | LL-4848 | 911437-00-02 |
| LL-2448-48S Single Splice Tray—Stores (48) single fusion splices. Maximum of 3 trays in the LG-500. | LL-2448-48S | FA000045 |
| Small Single Grommet Kit (10 pc grommet only) (Min 0.38" - Max 0.82") | Small Single Grommet Kit (10) | 911496-00-00 |
| Small Dual Grommet Kit—Includes: (2) small dual grommets and hardware (Min 0.27" - Max 0.53" and Min 0.38" - Max 0.70") | Small Dual Grommet Kit | 911386-00-01 |
| Small Dual Grommet Kit (10 pc grommet only) (Min 0.27" - Max 0.53" and Min 0.38" - Max 0.70") | Small Dual Grommet Kit (10) | 911495-00-00 |



* See [Aerial Accessories specification sheet](#).
See [Splice Tray specification sheet](#).

LG-500-FTTx

The LightGuard® (LG) 500 FTTx Aerial Weathertight Fiber Optic Splice Closure is designed for small count fiber splicing (up to 32 single or 48 mass) in a butt or in-line configuration. Utilized in aerial applications, the LG-500-FTTx is ideal for FTTx access networks by providing cable entry and connectivity for up to 12 drop cables and 16 connections, requiring only a common can wrench for installation.

Ordering Information

| DESCRIPTION | MODEL NO. | AFL NO. |
|---|-------------------------------------|--------------|
| LG-500-FTTx Aerial Weathertight Fiber Optic Splice Closure—Stores 32 single fusion or 48 mass fusion, includes (4) cable kits for sealing/retention and (2) ground terminals with removable bond, (1) splice tray, and hanger brackets. Not included: Cable Grounding Kits, SC/APC Adapters | LG-500-FTTx | FC000899 |
| LL-2425 Single Splice Tray—Stores (32) single fusion splices. Maximum of 1 tray in the LG-500-FTTx. | LL-2425 | FC000053 |
| Small Single Grommet Kit of (10 pc grommet only) (Min 0.38" - Max 0.82") | Small Single Grommet Kit (10) | 911496-00-00 |
| Small Dual Grommet Kit—Includes: (2) small dual grommets and hardware (Min 0.27" - Max 0.53" and Min 0.38" - Max 0.70") | Small Dual Grommet Kit | 911386-00-01 |
| Small Dual Grommet Kit (10 pc grommet only) (Min 0.27" - Max 0.53" and Min 0.38" - Max 0.70") | Small Dual Grommet Kit (10) | 911495-00-00 |
| Small 6-Port Drop Cable Kit—2 grommets with tie wrap and foam tape. Allows six cable entries (Min 0.20" - Max 0.37" and flat drop) | Small 6 Port Drop Kit | FC000573 |
| Adjustable Aerial Hanger Kit Bracket Kit (included with closure) | Adjustable Hanger LG-400/500/600 | 911497-00-00 |
| Extended Offset Aerial Hanger Kit LG-400/500/600 | Offset Hanger LG-400/500/600 | 91990-00 |

LG-600

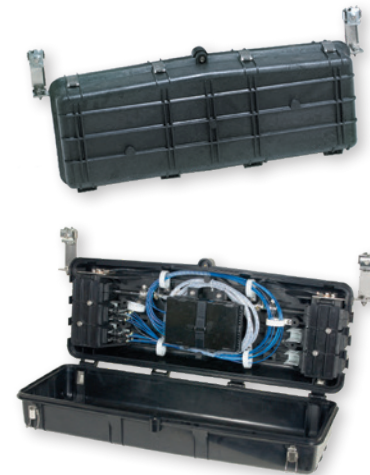
Ordering Information

| DESCRIPTION | MODEL NO. | AFL NO. |
|--|-------------------------------------|--------------|
| LG-600 Aerial Weathertight Fiber Optic Splice Closure—Stores 384 single fusion or 1152 mass fusion, includes (4) cable kits for sealing/retention and (2) ground terminals with removable bond and hanger brackets. Not included: Splice Trays or Cable Grounding Kits | LG-600-U-0 | FC000029 |
| LL-2400 Single Splice Tray—Stores (24) single fusion splices. Maximum of 12 trays in the LG-600. | LL-2400 | 91710-06 |
| LL-2448 Universal Splice Tray—Stores (24) single fusion or (4) mass fusion splices (48 F). Maximum of 8 trays in the LG-600, *Mechanical | LL-2448 | 911289-00-02 |
| LL-4848 Mass Splice Tray—Stores (12) mass fusion splices (144 F). Maximum of 8 trays in the LG-600 | LL-4848 | 911437-00-02 |
| LL-2448-48S Single Splice Tray—Stores (48) single fusion splices. Maximum of 8 trays in the LG-600 | LL-2448-48S | FA000045 |
| Large Single Grommet Kit with retention hardware (Min 0.44" - Max 1.00") | Large Single Grommet Kit | FC000623 |
| Large Single Grommet Kit (10 pc grommet only) (Min 0.44" - Max 1.00") | Large Single Grommet Kit (10) | 91918-00 |
| Large Dual Grommet Expansion Kit—Includes: (2) Dual grommets and hardware (Min 0.40" - Max 0.70" and Min 0.60" - Max 0.90") | Large Dual Grommet Kit | 911406-00-00 |
| Large 6 Port Drop Cable Kit—2 Grommets with retention bracket. Allows six cable entries (Min 0.23" - Max 0.48" and flat drop) | Large 6 Port Drop Kit | FC000352 |
| Adjustable Aerial Hanger Kit Bracket Kit (included with closure) | Adjustable Hanger LG-400/500/600 | 911497-00-00 |

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LG-600-FTTx

The LightGuard (LG) 600 FTTx/32 Aerial Weathertight Fiber Optic Splice Closure is designed for small count fiber splicing (up to 96 single or 288 mass) in a butt or in-line configuration. Utilized in aerial applications, the LG-600-FTTx/32 is ideal for accommodating up to 24 drop cables and 32 connections with AFL's slim LGX® 118 adapter plate by placing 16 simplex adapters at each end of the inner security enclosure. Additionally, the closure can house 1x4, 1x8, 1x16, or 1x32 PLC splitter combinations and requires only a common can wrench for installation.



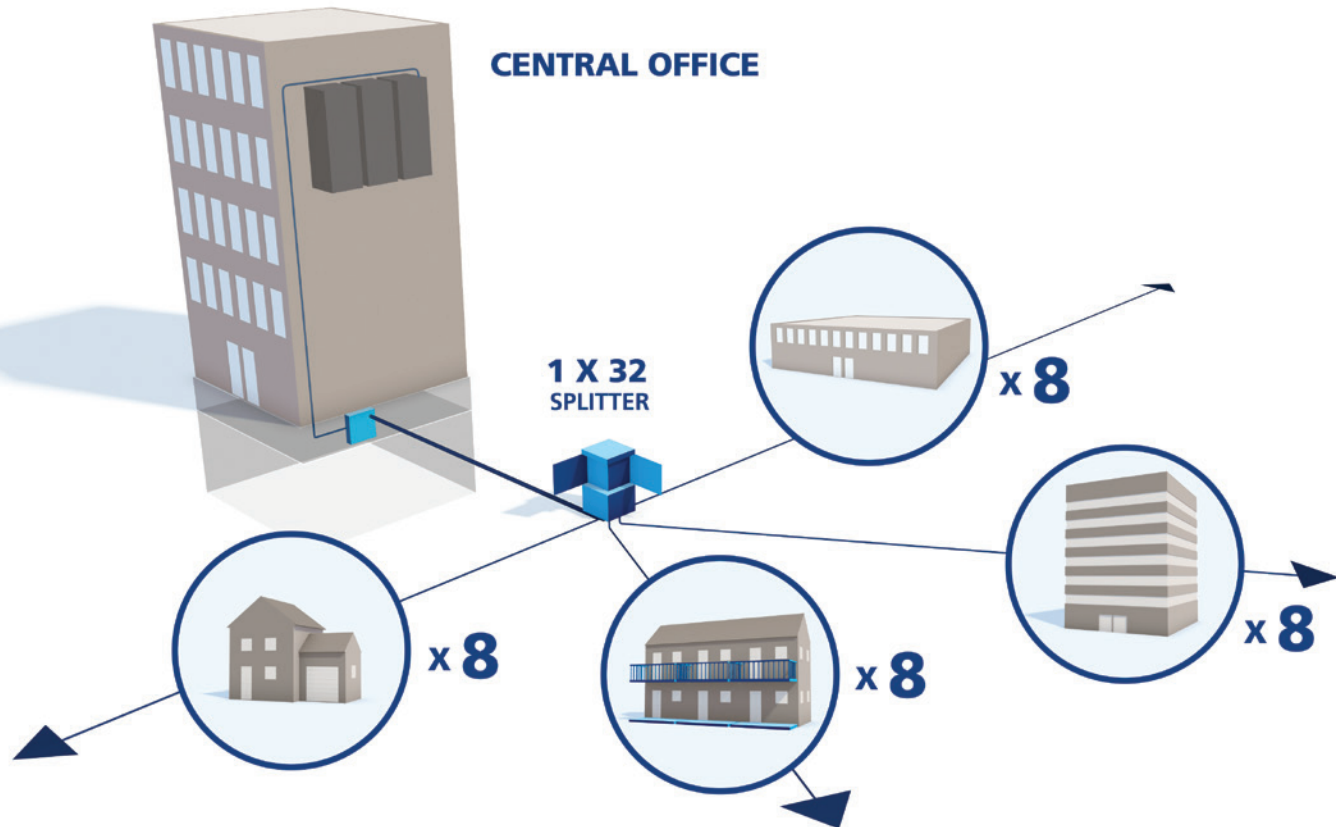
Ordering Information

| DESCRIPTION | MODEL NO. | AFL NO. |
|---|-------------------------------------|--------------|
| LG-600-FTTx/32 Aerial Weathertight Fiber Optic Splice Closure—Stores 96 single fusion or 288 mass fusion, includes (6) cable kits for sealing/retention and (2) ground terminals with removable bond, splice tray and hanger brackets. Not included: Cable Grounding Kits | LG-600-FTTx/32 | FC000806 |
| LL-2450 Single Splice Tray—Stores (12) single fusion splices. Maximum of 2 trays in the LG-600-FTTx/32. | LL-2450 | 91957-00 |
| LL-4850 Mass Splice Tray—Stores (8) mass fusion splices (96 F). Maximum of 2 trays in the LG-600-FTTx/32. | LL-4850 | 91958-00 |
| LL-1248 Universal Splice Tray—Stores (12) single fusion splices or (8) mass fusion splices (96 F), *Mechanical. Maximum of 2 trays in the LG-600-FTTx/32. | LL-1248 | 91121-00-00 |
| Large Single Grommet Kit with retention hardware (Min 0.44" - Max 1.00") | Large Single Grommet Kit | FC000623 |
| Large Single Grommet Kit of (10 pc grommet only) (Min 0.44" - Max 1.00") | Large Single Grommet Kit (10) | 91918-00 |
| Large Dual Grommet Expansion Kit—Includes: (2) Dual grommets and hardware (Min 0.40" - Max 0.70" and Min 0.60" - Max 0.90") | Large Dual Grommet Kit | 911406-00-00 |
| Large 6 Port Drop Cable Kit 2 Grommets with retention bracket—Allows six cable entries (Min 0.23" - Max 0.48" and flat drop) | Large 6 Port Drop Kit | FC000352 |
| Adjustable Aerial Hanger Kit Bracket Kit (included with closure) | Adjustable Hanger LG-400/500/600 | 911497-00-00 |

* [See Aerial Accessories specification sheet.](#)
[See Splice Tray specification sheet.](#)

SPLITTING

Centralized Split



Exterior Distribution Cabinets

IDEAA® Cabinets

Specifications

| THROUGH PORTS | HEIGHT | WIDTH | DEPTH | SPLITTER CAPACITY | INPUT/PASS |
|-----------------|--------|-------|-------|-------------------|-------------------|
| Up to 288 Fiber | 38" | 20" | 20" | 9 | 24 |
| 432 Fiber | 46" | 20" | 20" | 14-15 | 24 (48 available) |
| 576 and 864 | 48" | 42.5" | 20" | 28 | 144 |

Ordering Information

| DESCRIPTION | AFL NO. |
|---|----------|
| PAD MOUNT WITH SKIRT AND 100 FOOT TAILS | |
| IDEAA Exterior Distribution Cabinet - 72 Pad, 1 x 72 Fiber Distribution Cable (Loose Tube), 1 x 24 Fiber Input Cable (Loose Tube) | EA000307 |
| IDEAA Exterior Distribution Cabinet - 144 Pad, 1 x 144 Fiber Distribution Cable (Loose Tube), 1 x 24 Fiber Input Cable (Loose Tube) | EA000304 |
| IDEAA Exterior Distribution Cabinet - 216 Pad, 1 x 216 Fiber Distribution Cable (Loose Tube), 1 x 24 Fiber Input Cable (Loose Tube) | EA000305 |
| IDEAA Exterior Distribution Cabinet - 288 Pad, 1 x 288 Fiber Distribution Cable (Loose Tube), 1 x 24 Fiber Input Cable (Loose Tube) | EA000301 |
| IDEAA Exterior Distribution Cabinet - 432 Pad, 2 x 216 Fiber Distribution Cable (Loose Tube), 1 x 24 Fiber Input Cable (Loose Tube) | EA000321 |
| IDEAA Exterior Distribution Cabinet - 864 Pad, 2 x 432 Fiber Distribution Cable (Wrapping Tube Cable (WTC), with SpiderWeb Ribbon®), 1 x 144 Fiber Input Cable (Wrapping Tube Cable (WTC), with SpiderWeb Ribbon) | EA000590 |
| PAD MOUNT WITH SKIRT AND 100 FOOT TAILS | |
| IDEAA Exterior Distribution Cabinet - 144 Pole, 1 x 144 Fiber Distribution Cable (Loose Tube), 1 x 24 Fiber Input Cable (Loose Tube) | EA000314 |
| IDEAA Exterior Distribution Cabinet - 288 Pole, 1 x 288 Fiber Distribution Cable (Loose Tube), 1 x 24 Fiber Input Cable (Loose Tube) | EA000302 |
| IDEAA Exterior Distribution Cabinet - 432 Pole, 2 x 216 Fiber Distribution Cable (Loose Tube), 1 x 24 Fiber Input Cable (Loose Tube) | EA000322 |



IDEAA® Splitter Modules

Specifications

| PARAMETER | VALUE | | | | |
|-----------------------------|-------------|------|------|------|------|
| | 1X4 | 1X8 | 1X16 | 1X32 | 1X64 |
| Wavelength Range (nm) | 1280 - 1650 | | | | |
| Typical Insertion Loss (dB) | 6.7 | 9.8 | 12.9 | 16.6 | 19.8 |
| Max Insertion Loss (dB) | 7.4 | 10.5 | 14 | 17.5 | 21 |
| Max IL Uniformity (dB) | 1 | 1 | 1.5 | 2 | 2.2 |
| Return Loss (dB) | ≥55 | | | | |
| Directivity (dB) | ≥55 | | | | |
| Max PDL (dB) | 0.3 | | | | |

IDEAA Exterior Distribution Enclosures

Specifications

| PARAMETER | VALUE |
|----------------------------|--|
| Material - Housing | 16 Gauge Aluminum |
| Dimensions (H x W x D) in. | 20.5 x 11.25 x 8.75 |
| Weight | 15 lbs. |
| Coating | Electrostatically applied powder paint |
| Covers | Standard - molded-in snap finger and 3/8 in. hex head fastener |

Ordering Information

| DESCRIPTION | AFL NO. |
|---|----------|
| Exterior Distribution Enclosure – Splice Version – Includes 96 distribution pigtails, 12 feeder pigtails and 5 LL-4808 splice trays | EA000378 |
| Exterior Distribution Enclosure – Stub Version – Includes 50 ft. 96-fiber loose tube distribution cable stub and 50 ft. 12-fiber loose tube feeder cable stub | EA000379 |
| Channell Pedestal Mounting Kit | EA000384 |
| Emerson Pedestal Mounting Kit | EA000385 |

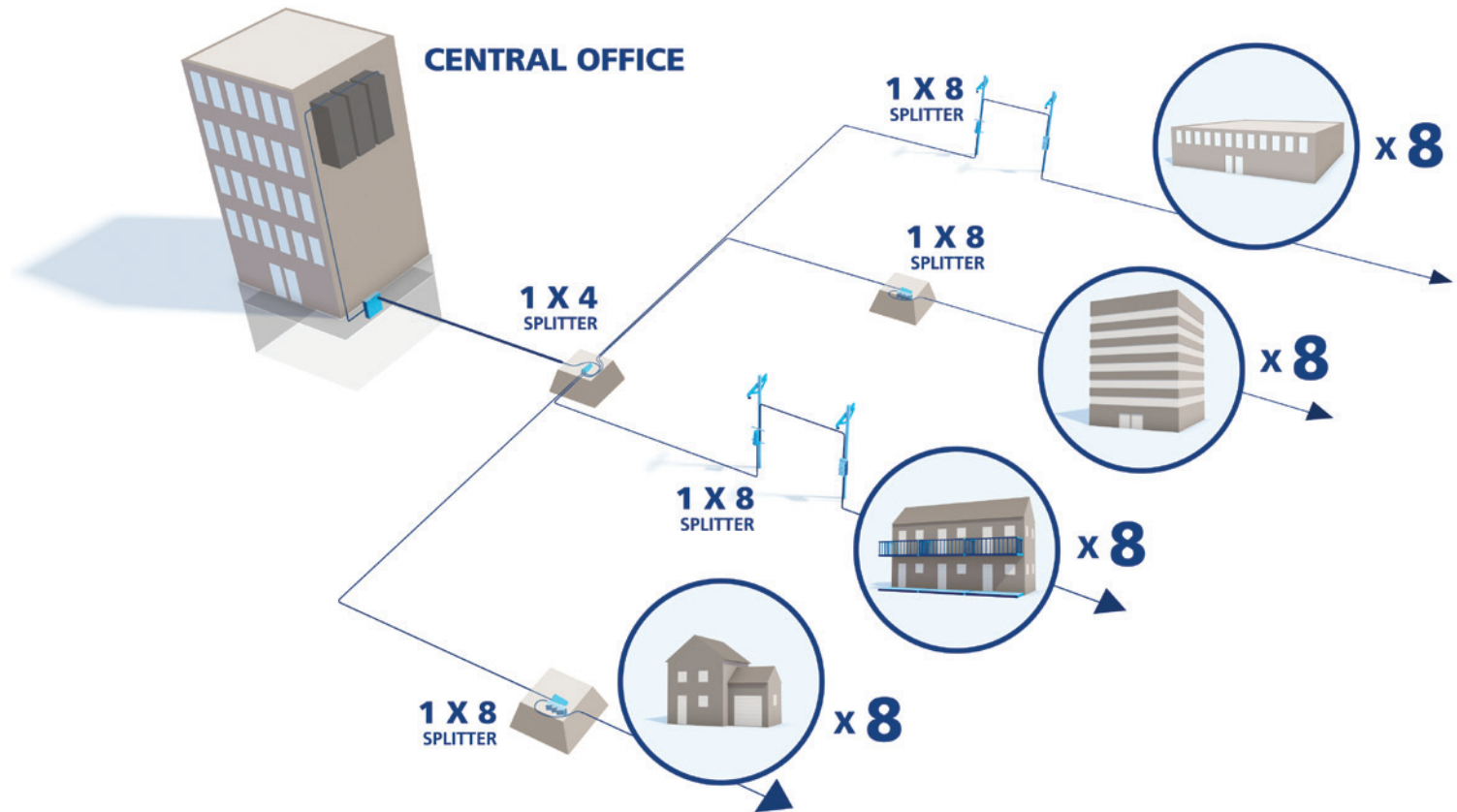
Ordering Information

| DESCRIPTION | AFL NO. |
|--|----------|
| IDEAA Module, SC, 1X32 | EA000102 |
| IDEAA Module, SC OUTPUT, LC INPUT, DUAL 1x16 | EA000583 |
| IDEAA Module, SC, 1X16 | EA000103 |
| IDEAA Module, SC, 1X8 | EA000104 |
| IDEAA Module, SC, 1X4 | EA000105 |
| IDEAA Module, LC, 2X32 | EA000547 |
| IDEAA Module, MTP, 3X96 | EA000101 |



IDEAA Splitter Module and Exterior Distribution Enclosure in Pedestal

Distributed Split



NETWORK ACCESS POINT

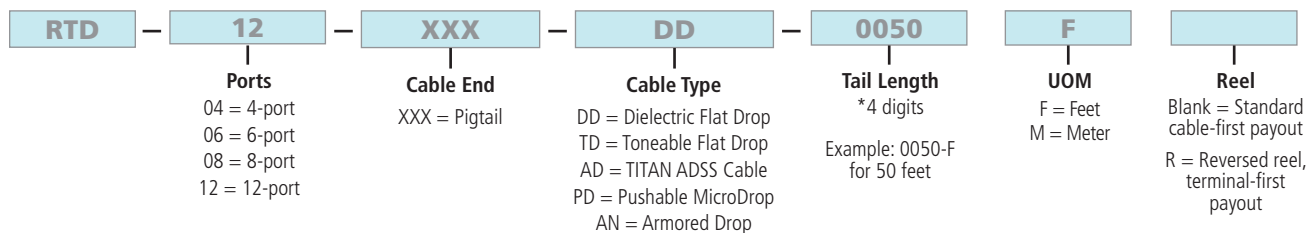
Multiport Terminals

Specifications

| PARAMETER | NO. OF PORTS | VALUE |
|------------------------|----------------|--|
| Dimensions (L x W x H) | 4- and 6-port | 12.4" x 4.9" x 3.0" (315 mm x 125 mm x 76 mm) |
| | 8- and 12-port | 15.5" x 6.1" x 3.8" (394 mm x 195 mm x 96 mm) |
| Weight | 4- and 6-port | 1.5 lb (0.7 kg) |
| | 8- and 12-port | 2.5 lb (1.1 kg) |

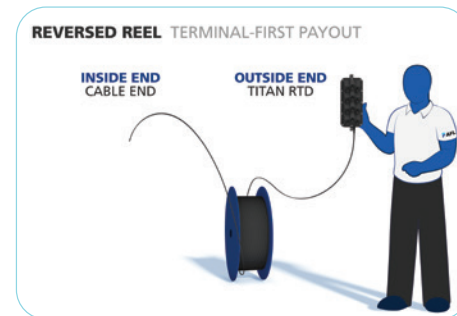
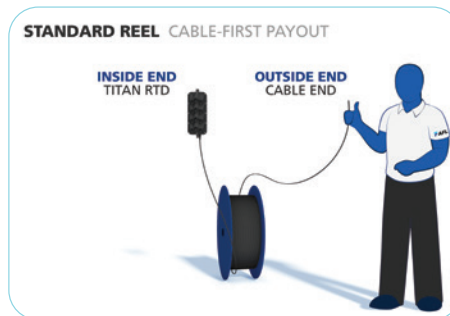


Ordering Information



Common Multiport Tail Length Distribution:

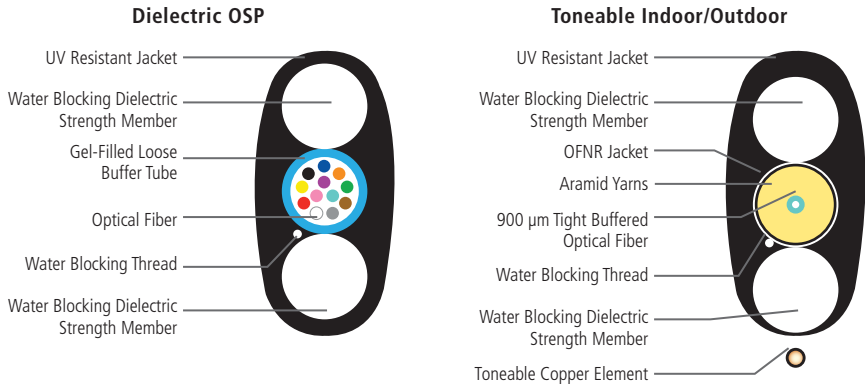
100 ft, 200 ft, 500 ft, 750 ft, 1000 ft, 1500 ft, 2000 ft, 2500 ft



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Hardened Drops

Cable Components



Specifications

| PARAMETER | VALUE |
|------------------------------|------------------|
| Insertion Loss, Maximum | 0.50 dB |
| Insertion Loss, Typical | 0.15 dB |
| Reflection | ≤ -65 dB |
| Operating Temperature | -40°C to +75°C |
| Retention Force | 25 lbs (111 N) |
| Dust Cap Pulling Eye Tension | 100 lbs (444 N)* |

*One fiber only. Two or four fiber drops should not be pulled by the dust cap pulling eye.

Ordering Information

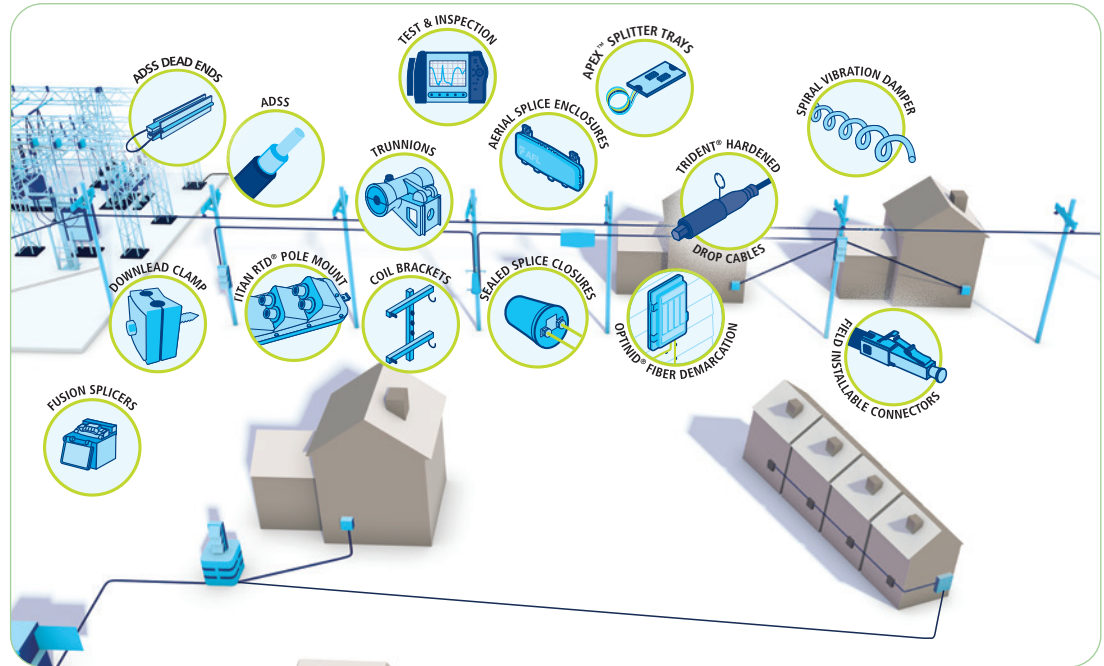
| TASC | XXX | TD | 001 | Q | 0100 | F |
|--|--|--|--------------------|--|---|-----------------------|
| Outside End Connector | Inside End Connector | Cable Type | Fiber Count | Fiber Type | Cable Length | UOM |
| XXX = No connector TASC = Trident ASC = Angle SC | XXX = No connector TASC = Trident ASC = Angle SC | DD = Dielectric Flat Drop TD = Toneable Flat Drop KTD = Toneable Indoor/Outdoor Flat Drop KDD = Dielectric Indoor/Outdoor Flat Drop AN = Armored Drop PD = Pushable MicroDrop | 001 002 004 | Q = Single-mode ITU-T G.652.D Z = Single-mode ITU-T G.657.A2 BIF (for I/O flat drop) | *4 digits Example: 0100F for 100 feet | F = Feet M = Meter |

Common Drop Length Distribution:

100 ft, 250 ft, 350 ft, 500 ft, 750 ft, 1000 ft, 1200 ft, 1500 ft

PREMISE AND MULTI-DWELLING UNITS (MDU)

For FTTH deployments, fiber may be deployed to a single-family residence or some type of multi-dwelling unit. AFL offers a wide variety of demarcation boxes to meet these varying application requirements. Connectors and pre-terminated cables are often used here to connect fiber to the end-point.



Demarcation

OptiNID® Duo Enclosure

Houses up to 4 SC connections.



Ordering Information

| | | | | | | | | | | | | | | | | | | | |
|--------------------|---|--|---|--|---|---|--|----------|---|--|---|----------|---|---|----------|---|--|---|-------------------------|
| O | - | A | - | A | X | - | A | 1 | - | X | - | P | - | S | S | - | P | - | P |
| OptiNID Duo | | | | Base | | | Adapter | | | 900 µm Pigtail Kit | | | | Splice Holder | | | Left Entry Port | | Right Entry Port |
| O = OptiNID Duo | | | | A = Base with two U-Shaped drop-in grommets B = Base with two holes for various entry options | | | X = No Adapter A = SC/APC Simplex B = SC/UPC Simplex L = LC/UPC Duplex N = LC/APC Duplex | | | X = No Pigtail A = SC/APC B = SC/UPC L = LC/UPC N = LC/APC | | | | X = No Splice Holder S = Splice Holder | | | A = Heyco compression fitting for 0.095" to 0.29" round cable B = Heyco compression fitting for 0.170" to 0.45" round cable D = PVC conduit fitting for 3/4" conduit G = Rubber grommet K = Heyco compression fitting for 0.26" to 0.545" round cable L = Heyco compression fitting for 2 round cables up to 0.15" M = Heyco compression fitting for flat drop cable N = PVC conduit fitting for 1/2" conduit U = U-shaped grommet for U-shaped grommet base | | |
| | | Cover Logo | | | Lockscrew | | Adapter Quantity | | | Grounding Plate | | | | Security/Splice Cover | | | | | |
| | | A = Standard AFL logo Contact AFL for custom logo options | | | X = No lockscrew (standard) 1 = 3/8" Hex lockscrew | | 1-4 | | | X = No Grounding P = 2-Lug Grounding Plate | | | | X = No Cover S = Security/Splice Cover K = Security/Splice Cover with pin-in-hex security screw | | | | | |

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

Field-Installable Connectors

Choosing between a mechanical connector and a fusion spliced connector throughout the network can be a big decision. AFL has both capabilities; below is a summary comparison. Each project is different, and both are proven solutions for connectorization.

The FASTConnect® connector uses a mechanical splice and the FUSEConnect® connector uses a fusion splice.

Comparison at-a-Glance

| | FASTConnect | FUSEConnect |
|---------------------------------|-------------------------|-------------------------|
| Installation time | Fastest | Fast |
| Optical performance | Good | Best |
| Skill level | Novice | Moderate |
| Re-enterable/re-usable | Re-enterable | No |
| Power required for installation | No | Yes |
| Costs | Least expensive | Low cost |
| Special tools required | No | Requires fusion splicer |
| All tools required | Fiber stripper | Fiber stripper |
| | Kevlar scissors | Kevlar scissors |
| | Fiber cleaning fluid | Fiber cleaning fluid |
| | Lint-free wipes | Lint-free wipes |
| | Permanent marker | Permanent marker |
| | Precision fiber cleaver | Precision fiber cleaver |
| | | Fusion splicer |
| | | Cord splitter tool* |

*Required only for certain connectors

| | FASTConnect | FUSEConnect |
|---------------------|--------------------------------------|--|
| Optical performance | IL max: < 0.5 dB RL max: ≥ 50 dB | IL max: < 0.3 dB RL max: ≥ 65 dB |
| Installation time | 1-2 minutes | 2-3 minutes |
| Skill level | Novice | Moderate |
| Tools required | Common fiber tools and fiber cleaver | Common fiber tools, fiber cleaver and fusion splicer |

| | FASTConnect | FUSEConnect |
|---------------------|-------------|-------------|
| Optical performance | | ✓ |
| Installation time | ✓ | |
| Skill level | ✓ | |
| Tool cost | ✓ | |
| Connector cost | ✓ | |
| Re-enterable | ✓ | |
| Reliability | | ✓ |

FASTConnect® Field-Installable Connectors

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

Ordering Information

| FIBER TYPE | HOUSING COLOR | CABLE SIZE | AFL NO. | |
|------------------|------------------|---------------|------------------|--------------------|
| | | | PACKAGE OF 6 | PACKAGE OF 100 |
| FASTCONNECT SC | | | | |
| Single-mode, UPC | Blue | 900 μm | FAST-SC-SM-6 | FAST-SC-SM-100 |
| Single-mode, APC | Green | 900 μm | FAST-SC-SMAU-6 | FAST-SC-SMAU-100 |
| Single-mode, APC | Green | 4.8 mm | FAST-SC48-SMAU-6 | FAST-SC48-SMAU-100 |
| FASTCONNECT LC | | | | |
| Single-mode, UPC | Blue | 900 μm | FAST-LC-SM-6 | FAST-LC-SM-100 |

FASTConnect® Universal Tool Kit

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 CT08 Cleaver | CS010975 |

Tool Kits include:

Cleaver, FAST SC Assembly Tool, FAST LC 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.



CT08 Cleaver



CT50 Cleaver



FASTConnect SC Connector

FUSEConnect® Splice-on Connectors

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), 0.3 dB (maximum) MM: 0.10 dB (average), 0.3 dB (maximum) |
| Return Loss | SM: ≤ -65 dB (APC), ≤ -55 dB (UPC) MM: ≤ -35 dB (PC) |
| Operating Temperature | -40°C to +75°C |

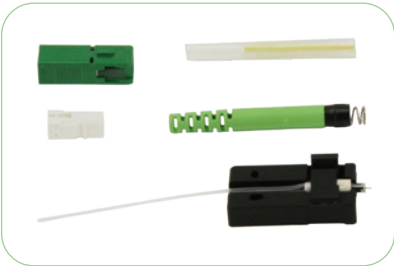


Splicing a FUSEConnect ST Connector

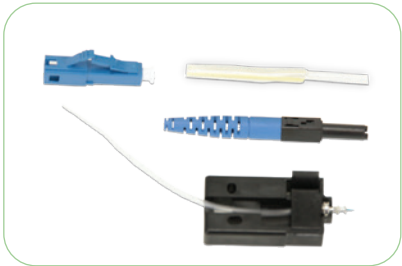
Ordering Information

| CONNECTOR TYPE | BOOT TYPE | AFL NO.* |
|----------------|-----------|----------------|
| | | UPC SM (BLUE) |
| SC | 900 μm | FUSE-SC9SMU-6 |
| | 3 mm | FUSE-SC3SMU-6 |
| | 4.8 mm | FUSE-SC48SMU-6 |
| LC | 900 μm | FUSE-LC9SMU-6 |
| | 2 mm | FUSE-LC2SMU-6 |

* AFL NO. is for one pack of 6 pieces



FUSEConnect SC Kit



FUSEConnect LC Kit

FUSEConnect® Universal Tool Kit

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-S31S 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 |



FUSEConnect Tool Kit Contents



FUSEConnect Accessory Kit

Cable Assemblies

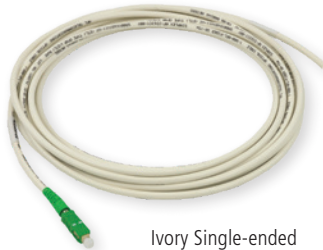
Pigtail Assemblies

When splicing connectors at the demarcation box (NID) and more space is available to maintain a splice sleeve, a pigtail can be used.

Ordering Information

| POLISH | FIBER TYPE | CONNECTOR INTERFACE AFL NO. | | |
|---|------------|-----------------------------|---------------|---------------|
| | | SC | ST | LC |
| 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 | CS001373-0003 | CS002136-0003 | CS002081-0003 |
| PC | 50 μm LO | CS003056-0003 | CS003980-0003 | CS003058-0003 |

Drop Cable Assemblies



Ivory Single-ended



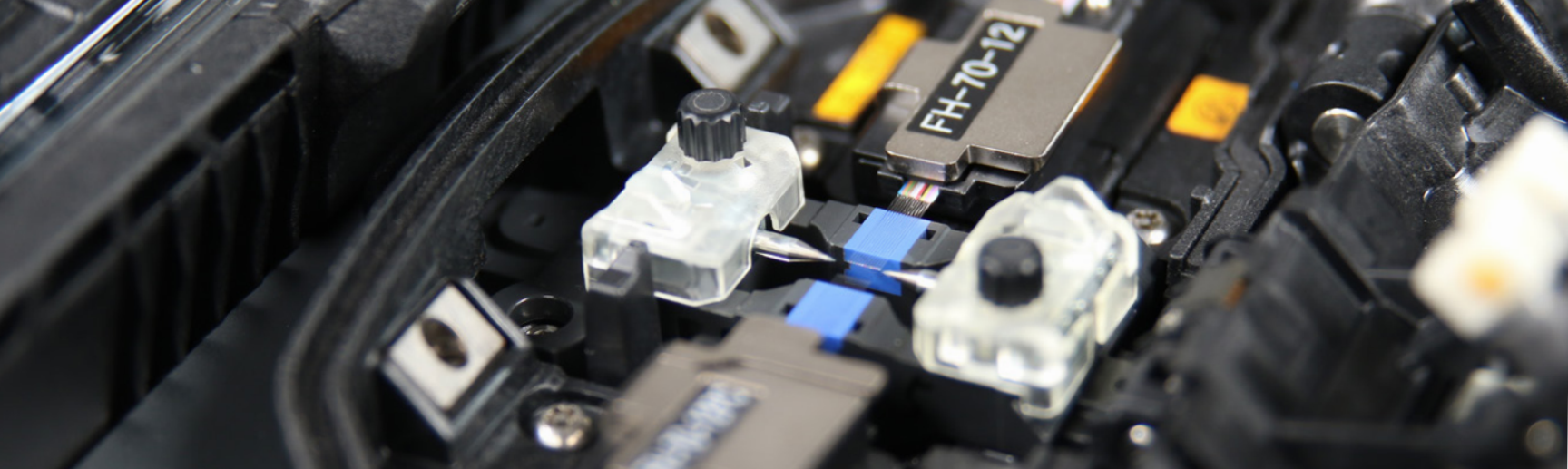
Black Double-ended

Specifications

| INSERTION LOSS | | RETURN LOSS | | FIBER TYPE | MAX. ATTENUATION | | NOMINAL DIAMETER INCHES (MM) | | TENSION LBS (N) | | BENDING RADIUS INCHES (MM) | |
|----------------|---------|-------------|--------|---------------------------|------------------|-----------|------------------------------|-------------------|------------------|-----------------|----------------------------|----------------|
| MAX. | TYP. | MAX. | TYP. | | 1310 NM | 1550 NM | | | INSTALLATION | LONG TERM | INSTALLATION | LONG TERM |
| 0.25 dB | 0.15 dB | -65 dB | -68 dB | Bend Insensitive G.657.B3 | 0.5 dB/km | 0.5 dB/km | 0.11 in. (3.0 mm) | 0.19 in. (4.8 mm) | 100 lbs. (450 N) | 30 lbs. (150 N) | 0.2 in. (5 mm) | 0.2 in. (5 mm) |

Ordering Information

| ASC | | KR | 001 | X | 0010 | FT | BLACK |
|----------------------------------|--|--|-------------|-------------------------------|--------------|-----------------------------|----------------|
| Connector End A | Connector End B | Cable Type | Fiber Count | Fiber Type | Cable Length | Unit of Measure | Color |
| ASC = Angle SC USC = Ultra SC | ASC = Angle SC USC = Ultra SC Blank = Single Ended | K48R = Indoor/Outdoor 4.8 mm KR = Indoor/Outdoor 3.0 mm | 001 = 1 | X = Bend Insensitive G.657.B3 | | Blank = Meters FT = Feet | Ivory Black |



FUSION SPLICERS

AFL proudly supplies and services the premier fusion splicing product line offered in North America through our parent company, Fujikura's fusion splicing solutions. Fujikura's pioneering spirit and keen focus on exceptional quality over the past three decades have established Fujikura as the leader in fusion splicing technology and product value.

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.

90S+ Fusion Splicers

Specifications

| PARAMETER | | VALUE |
|------------------------------|---------------|--|
| Fiber Alignment Method | | Active core alignment |
| Fiber Count Can Be Spliced | | Single fiber |
| Applicable Fiber | Fiber Type | Single-mode optical fiber |
| | Cladding Dia. | Multimode optical fiber 80 to 150 µm |
| Applicable Coating | Sheath Clamp | Coating dia.: Max. 3,000 µm Cleave length: 5 to 16 mm |
| Fiber Splice Performance | 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 |
| | Splice Time | SM FAST mode: Avg. 8 to 10 sec. |
| | | SM AUTO mode: Avg. 11 to 13 sec. |
| | | AUTO mode: Avg. 14 to 16 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 | 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 |

| PARAMETER | | VALUE |
|-----------------------|--------------------------|---|
| 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 |
| | Recharge Time | Approx. 5-8 hours from empty |
| Display | LCD Monitor | TFT 5 inches with touch screen |
| | Magnification | 200 to 320x |
| 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 | 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 |
| | Heater clamp: open/close | |
| | Reference Guide | Video and PDF file stored in splicer |
| | Sheath Clamp | Easy sleeve positioning clamp |
| | Electrode | Replaceable without tool |

90S+ Fusion Splicers

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 |



* See [page 43](#) for Recommended Products for the 90S+ Fusion Splicer



In Work Tray

90R Fusion Splicers

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 Multimode optical fiber |
| | Cladding Dia. | Approx. 125 µm |
| Applicable Coating | Sheath Clamp | Coating shape.: Refer to options Cleave length: 10mm |
| 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. |
| Fiber Tensile Test Force | | Single 60 mm mode: Avg. 13 to 15 sec. |
| Electrode Life | | Approx. 2.0 N |
| Physical Description | Dimensions W | Approx. 1,500 splices |
| | Dimensions D | Approx. 170 mm without projection |
| | Dimensions H | Approx. 173 mm without projection |
| | Weight | Approx. 150 mm without projection |
| Environmental Condition | Temperature | Approx. 2.6 kg including battery |
| | | Operate: -10 to 50°C |
| | Humidity | Storage: -40 to 80°C |
| | | Operate: 0 to 95% RH non-condensing |
| AC Adaptor | Altitude | Storage: 0 to 95% RH non-condensing |
| | Input | Max. 3,700 m AC100 to 240 V, 50/60 Hz, Max. 1.5 A |

| PARAMETER | | VALUE |
|-----------------------|---------------------|---|
| 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 | USB 2.0 Mini B type |
| | External Led Lamp | USB 2.0 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 |
| | | Heater clamp: open/close |
| | Reference Guide | Video and PDF file stored in splicer |
| | Electrode | Replaceable without tool |

90R Fusion Splicers

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 Holder, USB Cable, Alcohol Dispenser, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Video Instruction Manual, Work Tray and CC-39 Transit Case with Carrying Strap | 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 Holder, USB Cable, Alcohol Dispenser, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Video Instruction Manual and CC-39 Transit Case with Carrying Strap | 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 Holder, USB Cable, Alcohol Dispenser, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Video Instruction Manual and CC-39 Transit Case with Carrying Strap | 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 Holder, USB Cable, Alcohol Dispenser, Splicer Carrying Strap, Quick Reference Guide, TS-03 Tripod Screw, Video Instruction Manual and CC-39 Transit Case with Carrying Strap | S017510 |
| One Year Extended Warranty | S012996 |
| Two Year Extended Warranty | S013000 |

* See [page 43](#) for Recommended Products for the 90R Fusion Splicer



Wind Protector Open

41S Fusion Splicers

Specifications

| PARAMETER | VALUE |
|---------------------------------|---|
| Model | 41S |
| Applicable Fibers | Single-mode (G.652 & G.657), Multimode (G.651), DSF (G.653), NZDS (G.655) |
| Cladding Diameter | 125 µm |
| Coating Diameter | 250 µm up to 3 mm |
| Fiber Cleave Length | 5 mm to 16 mm |
| Typical Average Splice Loss | 0.03 dB (SM), 0.01 dB (MM), 0.05 dB (DS) and 0.05 dB (NZDS) |
| Splicing Time | Typical 6 sec with SM |
| Arc Calibration Method | Automatic, real-time and by using results of previous splice when in AUTO mode, manual arc calibration function available |
| Splicing Modes | Total 100 splice modes |
| Splice Loss Estimate | Determined with cladding or core alignment based on method selected by the user |
| Storage of Splice Result | 10,000 splice results |
| Fiber Display | 5 inch TFT color LCD with X or Y view or both X and Y view simultaneously |
| Magnification | 200X for single-camera view and 132X magnification for dual-camera view |
| Viewing Method | 2 axis CMOS camera |
| Operating Condition | Altitude: 0 to 5,000 m above sea level, -10° to +50° C, Humidity: 0 to 95% RH, non-dew |
| Mechanical Proof Test | 1.96 N |
| Tube Heater | 30 heating modes |
| Tube Heating Time | Typical 25 sec with FP-60 (60 mm) sleeve |
| Protection Sleeve Length | 60 mm, 40 mm, micro |
| Splice/Heat Cycles with Battery | Typical 200 cycles with BTR-11A |
| Electrode Life | 5,000 splices |
| Power Supply | Auto select from 100 V to 240 V with AC adapter, 14.8 V DC with installed battery |
| Terminals | USB 2.0 |
| Wind Protection | Maximum wind velocity of 15 m/s. (34 mph) |
| Dimensions | 131 x 201 x 79 (mm) |
| Weight | 1,300 g (2.85 lbs) with battery |



Ordering Information

| DESCRIPTION | AFL NO. |
|--|---------|
| Fujikura 41S Fusion Splicer – includes: Fujikura 41S Fusion Splicer, S31A Sheath clamps (installed), FH-70-250 Fiber Holders (pair), FH-70-900 Fiber Holders (pair), SP-31 Set Plates, ADC-19A AC Adapter, BTR-11A Battery Pack (installed), ACC-09 Power Cord, ELCT2-16B Spare Electrodes (pair), Screwdriver, Operation Manual on CD, Quick Reference Guide, SS-03 Single Fiber Stripper and CC-36 Transit Case | S017090 |
| Fujikura 41S Fusion Splicer Kit with CT50 Cleaver – includes: Fujikura 41S Fusion Splicer, CT50 Cleaver, S31A Sheath clamps (installed), FH-70-250 Fiber Holders (pair), FH-70-900 Fiber Holders (pair), SP-31 Set Plates, ADC-19A AC Adapter, BTR-11A Battery Pack (installed), ACC-09 Power Cord, ELCT2-16B Spare Electrodes (pair), Screwdriver, Operation Manual on CD, Quick Reference Guide, SS-03 Single Fiber Stripper and CC-36 Transit Case | S017091 |
| One Year Extended Warranty | S012996 |
| Two Year Extended Warranty | S013000 |

* [See page 43](#) for Recommended Products for the 41S Fusion Splicer

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Accessories for the 90S, 90S+, 90R and 41S Fusion Splicers

| DESCRIPTION | FOR USE WITH SPLICER MODEL | AFL NO. |
|---|-------------------------------|---------|
| Cleavers and Strippers | | |
| CT08 Cleaver | 90S, 90S+, 41S | S017004 |
| CT50 Cleaver | 90S, 90S+, 90R, 41S | S017030 |
| RS01 Thermal Stripper | 90R | S016815 |
| RS02 Thermal Stripper | 90R | S016816 |
| RS03 Thermal Stripper | 90R | S016817 |
| Fiber Holders (pair) | | |
| FH-70-250 (250 µm coated fiber) | 90S, 90S+, 90R, 41S | S017111 |
| FH-70-900 (900 µm jacketed fiber) | 90S, 90S+, 90R, 41S | S017113 |
| FH-60-LT900 (Loose buffer 900 µm fiber) | 90S, 90S+, 90R, 41S | S015181 |
| FH-70-160 (160 µm coated fiber) | 90S, 90S+ | S017095 |
| FH-70-2 | 90R | S017114 |
| FH-70-4 | 90R | S017115 |
| FH-70-6 | 90R | S017116 |
| FH-70-8 | 90R | S017117 |
| FH-70-10 | 90R | S017118 |
| FH-70-12 | 90R | S017119 |
| FH-70-12PC | 90R | S017464 |
| (pitch conversion holder for 200 µm loose fibers) | | |
| FH-70-12-200 (200 µm pitch ribbons) | 90R | S017681 |
| FH-70-16 | 90R | S017533 |
| FUSEConnect® Accessories | | |
| FH-FC-20 (900 µm within 2.0 mm sheathing) (each) | 90S, 90S+, 90R, 41S | S014696 |
| FH-FC-30 (900 µm within 3.0 mm sheathing) (pair) | 90S, 90S+, 90R, 41S | S014695 |
| FH-FC-900 (900 µm cable) (each) | 90S, 90S+, 90R, 41S | S014697 |
| CLAMP-FC-2000 (pair) | 90S, 90S+, 90R, 41S | S014705 |
| CLAMP-FC-3000 (pair) | 90S, 90S+, 41S | S014704 |
| Power Supply Options and Equipment | | |
| BTR-11A Battery Pack | 41S | S017354 |
| ADC-19A AC Adapter | 41S | S017104 |
| ACC-09 Power Cord | 41S | S014390 |
| ADC-20 AC Adapter | 90S, 90S+, 90R | S017513 |
| ACC-14 AC Power Cord | 90S, 90S+, 90R | S014536 |
| BTR-15 Battery | 90S, 90S+, 90R | S017512 |
| DCC-20 Power Cord | 90S, 90S+, 90R | S017527 |
| (connects AC Adapter to cigarette lighter socket) | | |

| Power Supply Options and Equipment (cont.) | | |
|--|---------------------|---------|
| DCC-21 Power Cord (connects AC Adapter to power source via alligator clips) | 90S, 90S+, 90R | S017528 |
| DCA-03 DC Adapter (Connect AC Adaptor without battery) | 90S, 90S+ | S017526 |
| Miscellaneous | | |
| SS03 Single fiber stripper (3 hole) | 90S, 90S+, 90R, 41S | S017098 |
| SS01 Single fiber stripper (1 hole) | 90S, 90S+, 90R, 41S | S017099 |
| ELCT2-16B Electrodes | 90S, 90S+, 90R, 41S | S017103 |
| USB-01 Cable | 90S, 90S+, 41S | S014777 |
| Splicer V-Groove Cleaning Kit | 90S, 90S+, 41S | S014397 |
| SP-31 Set Plate (pair) | 41S | S017106 |
| CC-36 Transit Case | 41S | S017105 |
| CLAMP-S31A Sheath Clamps | 41S | S017100 |
| CLAMP-S31B Sheath Clamps for loose buffer 900 µm | 41S | S017101 |
| CC-36 Transit Case | 41S | S017105 |
| SP-03 Fiber Holder Set Plates | 90S | S017518 |
| Portable Tripod Workstation (see specification sheet) | 90S, 90S+, 90R | S014773 |
| ASW-02 Splicing Workstation (see specification sheet) | 90S, 90S+, 90R | S010532 |
| WT-09R Work Tray Right | 90S, 90S+, 90R | S017515 |
| WT-09L Work Tray Left | 90S, 90S+, 90R | S017516 |
| JP-09 Work Tray J-Plate | 90S, 90S+, 90R | S017517 |
| JP-10 J-Plate (Cooling tray attaches to splicer) | 90S, 90S+, 90R | S017522 |
| JP-10-FC J-Plate with Fiber Clamps | 90S, 90S+, 90R | S017523 |
| TS-03 Tripod Screw (90 Series) | 90S, 90S+, 90R | S017524 |
| ST-02 Fusion Splicer Strap | 90S, 90S+, 90R | S017525 |
| CLAMP-DC-12 (Drop cable clamp for work tray) | 90S, 90S+, 90R | S017550 |
| CC-39 Transit Case | 90S, 90S+, 90R | S017514 |
| FST-12 Fiber Separation Tool | 90R | S014012 |
| FAT-04 Fiber Arrangement Tool | 90R | S010212 |
| RT-02 Fiber Arrangement Tool | 90R | S017465 |
| VG12-01 12 fiber V-groove | 90R | S017548 |
| VG12-01-200 12 fiber V-groove (200 µm pitch ribbons) | 90R | S017680 |
| VG04-01 4 fiber V-groove | 90R | S017551 |
| VG08-01 Spare 8 fiber V-grooves | 90R | S017508 |
| VG16-01 16 fiber V-groove | 90R | S017552 |
| FAA-03A Ribbon Forming Adhesive (4 oz. bottle) | 90R | S008720 |
| FAA-03A Ribbon Forming Adhesive (0.5 liter bottle) | | S008622 |

NETWORK TEST AND INSPECTION

All fiber networks require optical testing and inspection for network verification and troubleshooting. AFL designs test and inspection tools that are easy to use and provide quick results, without complicated training requirements.

AFL has a complete range of fast, easy-to-use tools that inspect and clean fiber end-faces. Using these tools consistently eliminates the #1 cause of network outages – dirty connectors.

FlexScan® FS200 Optical Time Domain Reflectometers (OTDRs)

FlexScan OTDRs are pocket-sized and performance packed. They enable both novice and expert technicians to quickly and reliably troubleshoot optical networks or fully characterize newly installed or repaired networks. FlexScan's SmartAuto® mode uses multi-pulse OTDR scans to quickly and accurately detect, locate, identify and measure network components and faults with just the push of a button. Results may be viewed as traditional OTDR traces or with LinkMap® color-coded icons which clearly identify detected events and their pass/fail status. FlexScan OTDRs weigh less than a pound and feature integrated OLS, OPM, VFL, Bluetooth® and PC-based TRM® 3.0 Test Results Manager reporting software.

Users can significantly reduce multi-fiber test times using FS200-300/304 Flexpress® fast tests plus FlexScan MPO switch control.



FlexScan FS200 SM OTDR

Recommended FlexScan Configuration:
FS200-304-BIPM-P1-W1-A-SC-ENG-US-ACS/ASC-ASC



FlexScan FS200 PRO OTDR Kit

FlexScan® FS200 Optical Time Domain Reflectometers (OTDRs)

Ordering Information

FS200-[MOD]-[KIT]-[PW]-[C]-[LNG]-[AC]-[FR]-[TIP]ª where:

| [MOD] | FS200 FLEXSCAN OTDR CONFIGURATION |
|-------|---|
| 50 | 1550 nm only Troubleshooting OTDR |
| 60 | 1650 nm filtered Live PON Troubleshooting OTDR |
| 100 | 1310/1550 nm Verification & Troubleshooting OTDR |
| 300 | 1310/1550 Pt-to-Pt & PON Verification & Troubleshooting OTDR |
| 304 | 1310/1550/1650 Pt-to-Pt & PON Verification & Troubleshooting OTDR |

| [KIT] | FS200 FLEXSCAN KIT CONFIGURATION |
|-------|--|
| BAS | Basic kit with soft case, TRM 2.0 Basic, USB cable |
| PLUS | Adds 150 m Fiber Ring, One-Click cleaner, TRM 2.0 Advanced |
| PRO | Adds Fiber Ring, One-Click cleaner, TRM 2.0 Advanced, FOCIS Flex |
| BIPM | BIPM Complete kit adds OFI-BIPM to PRO kit |
| MPO | Multi-fiber kit includes FlexScan plus MPO Switch, MPO launch cable, OTDR-to-Switch patch cord, OTDR-to-Switch USB cable |

| [PW] | POWER METER / WIRELESS OPTION |
|--------|---|
| P0-W0 | No Source, Power Meter, or Bluetooth/WiFi (FS200-50/60/100 only) |
| P0-W1 | No Source or Power Meter; Includes Bluetooth/WiFi (FS200-300/304 only) |
| P1-W0 | No Bluetooth/WiFi (-304 only); Includes Source, Power Meter |
| P1-W1 | Includes Source, Power Meter, Bluetooth/WiFi (all models except -50) |
| P1-W1H | Includes Source, Power Meter, Bluetooth/WiFi, hard carry case (all models except -50) |

| [C] | OTDR / SOURCE CONNECTOR TYPE |
|-----|------------------------------|
| A | APC (recommended) |
| U | UPC |

| [LNG] | LANGUAGE | DNK | Danish | NOR | Norwegian |
|-------|---------------|-----|----------|-----|------------|
| ENG | English | FIN | Finnish | POL | Polish |
| CHS | Chinese Simp. | FRA | French | POR | Portuguese |
| CHT | Chinese Trad. | ITA | Italian | SPA | Spanish |
| CZE | Czech | JPN | Japanese | TUR | Turkish |
| DEU | German | KOR | Korean | | |

| [AC] | DESTINATION COUNTRY | AC PLUGS |
|------|---------------------|------------|
| US | USA | 2-pin, US |
| EU | European Union | 2-pin, EU |
| UK | United Kingdom | 2-pin, UK |
| CN | China, Australia | 2-pin, SAA |

| [FR] | 150 M SMF FIBER RING | [FR] | 150 M SMF FIBER RING |
|--------|----------------------|------------|-----------------------|
| Blank | N/A in Basic kits | ASC/ST | FR1-SM-150-ASC-ST |
| SC/SC | FR1-SM-150-SC-SC | ASC/ASC | FR1-SM-150-ASC-ASC |
| SC/FC | FR1-SM-150-SC-FC | ASC/AFC | FR1-SM-150-ASC-AFC |
| SC/LC | FR1-SM-150-SC-LC | ASC/ALC | FR1-SM-150-ASC-ALC |
| SC/ST | FR1-SM-150-SC-ST | ALC/ALC | FR1-SM-150-ALC-ALC |
| SC/ASC | FR1-SM-150-SC-ASC | FC/FC | FR1-SM-150-FC-FC |
| SC/AFC | FR1-SM-150-SC-AFC | FC/ST | FR1-SM-150-FC-ST |
| SC/ALC | FR1-SM-150-SC-ALC | FC/LC | FR1-SM-150-FC-LC |
| LC/LC | FR1-SM-150-LC-LC | FC/AFC | FR1-SM-150-FC-AFC |
| LC/ASC | FR1-SM-150-LC-ASC | AFC/AFC | FR1-SM-150-AFC-AFC |
| LC/ALC | FR1-SM-150-LC-ALC | ASC-AE2000 | FR1-SM-150-ASC-AE2000 |
| ASC/FC | FR1-SM-150-ASC-FC | SC-E2000 | FR1-SM-150-SC-E2000 |

| [TIP]ª | FOCIS FLEX TIPS & 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 |

ª For additional FOCIS Flex adapter tips, see [FOCIS Flex spec sheet](#).

FOCIS Flex

End-face inspection scope

Ordering Information

| DESCRIPTION | AFL NO. |
|---|----------------|
| FOCIS Flex Kit, soft carry case / holster, USB cable, AC charger, TRM 2.0 reporting software, reference guide, no tips | FOCIS-FLX-P4XN |
| FOCIS Flex Kit, soft carry case / holster, USB cable, AC charger, TRM 2.0 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 2.0 reporting software, reference guide, 2 user-selected APC adapter tips (ferrule and bulkhead), user-selected One-Click cleaner | FOCIS-FLX-P4XA |



FOCIS Flex Adapter Tips

| 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 |



SC/UPC bulkhead



LC/UPC bulkhead



Universal 2.5 mm,
UPC ferrule



Universal 12.5 mm,
APC ferrule



SC/APC bulkhead,
quad-slotted



LC/APC bulkhead,
quad-slotted, with internal prism

Ordering Information

Ordering Information



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Test Results Manager TRM® 2.0/3.0 Software

TRM 2.0/3.0 Basic Software Features

- Generate professional acceptance reports including:
 - OTDR traces
 - Certification loss results/OPM loss results
 - Connector end-face images from FOCIS Flex, FOCIS WiFi PRO and DFS1
 - Connector pass/fail results from FOCIS Flex
- Create certification results and apply Pass/Fail criteria
- Organize test results and document networks to reduce maintenance cost
- Powerful OTDR Batch editing to increase productivity
- Supports Telcordia (GR-196 v1.1, SR-4731 issue 1 & 2) .SOR file formats
- Languages Supported
 - English, Chinese, French, German, Italian, Japanese, Polish, Portuguese, Russian, Spanish & Turkish

Ordering Information

TRM 2.0 Basic software is included with M-Series, C-Series, OFL-Series, FlexTester and FlexScan OTDRs and OPM5 (may be installed in up to 5 PCs). Users may download a full working version of TRM 2.0 (Basic plus Advanced features) and try it for 30 days. Once the evaluation period ends, users must purchase and install a TRM 2.0 Basic or Advanced software license to continue to use TRM. To order the TRM 2.0 software, contact your AFL Sales representative or AFL Customer Support. The TRM 2.0 Basic and Advanced software part numbers are listed below.

| DESCRIPTION | AFL NO. |
|---|---------------|
| TRM 2.0 Basic Software (OTDR Trace/OLTS Viewer, Batch Editor and Reports) | TRM-00-0900PR |
| TRM 2.0 Advanced Software (Basic TRM plus Advanced Features and Reports) | TRM-00-0910PR |
| TRM 2.0 Upgrade from Basic to Advanced Software | TRM-00-0920PR |

TRM 2.0/3.0 Advanced Software Features

- Macro/Microbend detection capabilities
 - Identify excess insertion loss due to poor installation and fiber handling
 - Detect insertion loss difference between wavelengths (≥ 0.2 dB)
- Bi-directional trace analysis
 - Averages end-to-end and event loss measurements using results from both directions
 - Bi-directional trace information in the Event table
 - Reverse direction test data for each event
- Comprehensive Reports for Macrobend/Microbend and Bi-directional Trace Analysis
- Export .SOR file contents to .CSV format



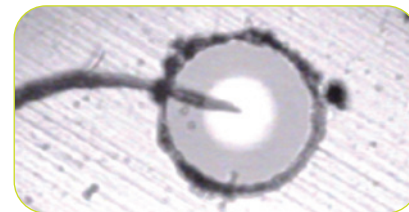


Don't Scrub Your Data

The connectors entrusted to carry the critical information that passes through your network deserve far more than a wipe on a t-shirt. Don't risk losing the critical information that passes through your network every day by inspecting and cleaning fiber incorrectly. A one micron diameter speck of dust obscures 1% of a 10 micron fiber core, resulting in about 0.06 dB of additional optical return loss. AFL's industry-leading cleaning and inspection solutions enable optimal data center performance levels and minimal service disruptions.

Visit our [Resource Hub](#) to read the "[New Does Not Equal Clean](#)" blog for more reasons why cleaning is important to keep your networks running in optimal condition.

85% OF ALL **NETWORK FAILURES**
ARE DUE TO
DIRTY CONNECTORS



Cleaning

One-Click® Cleaners

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 Cleaner 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 |



Mini-100 SC, ST, FC



Mini-100 MU/LC



Mini-500 SC, ST, FC



Mini-500 MU/LC



MU/LC



SC/ST/FC



D-LC



Ultra 2.5



MPO

FCP3 Easy-Access Cleaning Kits

Ordering Information

| DESCRIPTION | AFL NO. |
|--|--------------|
| Basic Easy-Access Cleaning Kit. Includes: FCC2 Fiber Connector Cleaner and Preparation Fluid (can), FCC3 Debris Destroyer Fiber Optic Cleaning Pen, CCTS-12 (for 1.25 mm ferrule) and CCTS-25 (for 2.5 mm ferrule) Connector Cleaning Tips, Cletop-S Type B with White Tape, One-Click Cleaners (SC, LC/MU, Ultra 2.5, MPO/MTP), Soft Carry Case | FCP3-00-0900 |
| Enterprise Easy-Access Cleaning Kit Includes: FCC2 Fiber Connector Cleaner and Preparation Fluid (can), FCC3 Debris Destroyer Fiber Optic Cleaning Pen, CCTS-12 (for 1.25 mm ferrule) and CCTS-25 (for 2.5 mm ferrule) Connector Cleaning Tips, Cletop-S Type B with White Tape, One-Click Cleaners (Duplex LC, LC/MU, Ultra 2.5, MPO/MTP), Soft Carry Case | FCP3-00-0901 |



FCP3-00-0900



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PEOPLE**

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