



## **RURAL UTILITIES SERVICE (RUS)**

Listed Products

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

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

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

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





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## Fiber Identification

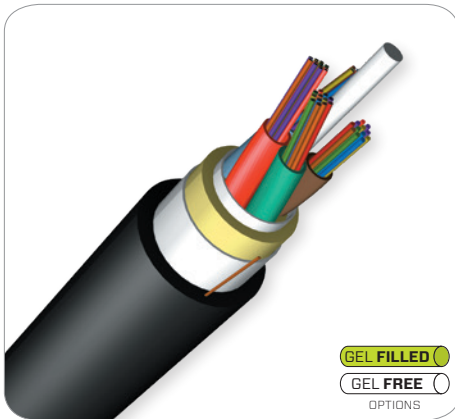
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## Flex-Span® ADSS Fiber Optic Cable

AFL Flex-Span All-Dielectric Self-Supporting (ADSS) cable is designed for aerial distribution power lines, as well as underground duct applications. As its name indicates, there are no metallic components and the cable does not require a support or messenger wire. Flex-Span ADSS cables are a single jacket design intended for the shorter pole-to-pole span lengths in a distribution environment. A broad combination of fiber counts and spans lengths in this product family provide network designers with flexibility in their cable selection.

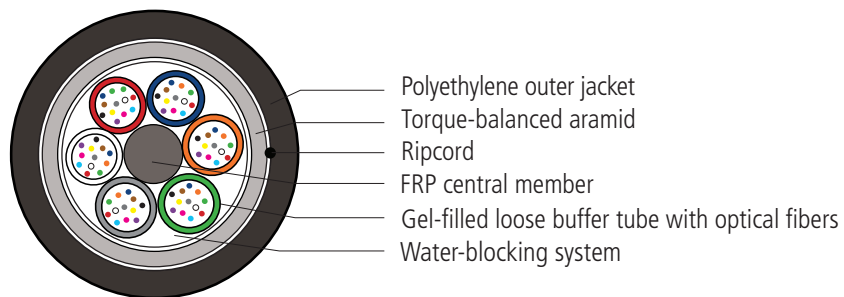
### Features

- Gel-Filled Tubes are reverse-oscillated to allow slack for mid-span access – up to 288 fibers in cable
  - Gel-Free Buffer Tube options available – up to 216 fibers
- Pole-to-pole span lengths up to 1100 feet
- Single jacket design decreases the diameter and weight when compared to double jacket ADSS cable; thus reducing pole loading
- No separation requirement of ADSS from conductors per National Electric Safety Code (NESC) section 235

### Applications

- Electric utility distribution power lines
  - Framed in supply or communications space
- Underground duct
- Enterprise OSP networks
- Fiber-to-the-X networks

### Cable Components (Representative)



### Optical Information

FIBER TYPE	MAXIMUM ATTENUATION (dB/km)				OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km)		GIGABIT ETHERNET MINIMUM LINK DISTANCE (meters)	
	850 nm	1300 nm	1310 nm	1550 nm	850 nm	1300 nm	850 nm	1300 nm
(9) Single-mode	N/A	N/A	0.35	0.25	N/A	N/A	N/A	5000
(6) 62.5/125 GIGA-Link™ 300	3.5	1.2	N/A	N/A	200	600	300	550
(5) 50/125 GIGA-Link™ 600	2.9	0.9	N/A	N/A	500	500	600	600
(L) 50 Laser-Link™ 300	2.9	0.9	N/A	N/A	1500	500	900	550

Gigabit Ethernet Minimum Link Distances are based on "bandwidth"/modal dispersion constraints. Actual link distances may be constrained by attenuation, depending on specific loss budget.

continued  
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## Flex-Span® ADSS Fiber Optic Cable

### Reel Information

ITEM	REEL A		REEL B		REEL C		REEL D		REEL E	
	inches	cm	inches	cm	inches	cm	inches	cm	inches	cm
Reel Height	42	106.7	58	147.3	66	167.6	72	167.6	84	213.4
Reel Width Outside	36	91.4	38	96.5	42	106.7	42	106.7	40	101.6
Reel Width Inside	32	81.6	32	81.3	36	91.4	36	91.4	34	86.4
Drum Diameter	23	58.7	28	71.1	36	91.4	36	91.4	35	88.9
Arbor Hole Diameter	3	7.9	3	7.9	3	7.9	3	7.9	3	7.9
Reel Weight with Lagging	180 lbs	82 kg	420 lbs	191 kg	685 lbs	311 kg	710 lbs	311 kg	950 lbs	431 kg

AFL provides ADSS cable on several standard sizes of non-returnable wooden reels. Non-standard reel sizes are available upon request.

### Typical Maximum Lengths

CABLE DIAMETER	REEL CAPACITY	
	feet	meters
< 0.85" (21.6 mm)	23,000	7,000

NOTE: Longer lengths may be available upon request.

### Recommended Products for ADSS Fiber Optic Cable

DESCRIPTION	AFL NO.
<b>Fiber Optic Cable Accessories</b>	
ADSS Formed Wire Deadends	Refer to the <a href="#">ADSS Formed Wire Deadends spec sheet</a> for specific AFL No.
ADSS Suspension Unit	Refer to the <a href="#">ADSS Suspension Unit spec sheet</a> for specific AFL No.
ADSS Trunnion Assemblies	Refer to the <a href="#">ADSS Trunnion Assemblies spec sheet</a> for specific AFL No.
ADSS Temporary Grip	Refer to the <a href="#">ADSS Temporary Grip spec sheet</a> for specific AFL No.
AGC Downlead Clamp for ADSS	Refer to the <a href="#">AGC Downlead Clamp for ADSS spec sheet</a> for specific AFL No.
AVD Series Spiral Vibration Dampers	Refer to the <a href="#">AVD Series Spiral Vibration Dampers spec sheet</a> for specific AFL No.
Coil Brackets	Refer to the <a href="#">Coil Brackets spec sheet</a> for specific AFL No.
For more ADSS Cable Accessories, go to the <a href="#">ADSS Fiber Optic Cable Hardware web page</a>	
<b>Fiber Optic Splice Closures</b>	
Apex® X-2 Sealed Splice Closure	Refer to the <a href="#">Apex X-2 spec sheet</a> for specific AFL No.
Apex® X-2S Sealed Splice Closure	Refer to the <a href="#">Apex X-2S spec sheet</a> for specific AFL No.

### Temperature Specifications

TEMPERATURE RANGE	
Operation	-40°C to +70°C
Storage	-50°C to +70°C
Installation	-30°C to +70°C

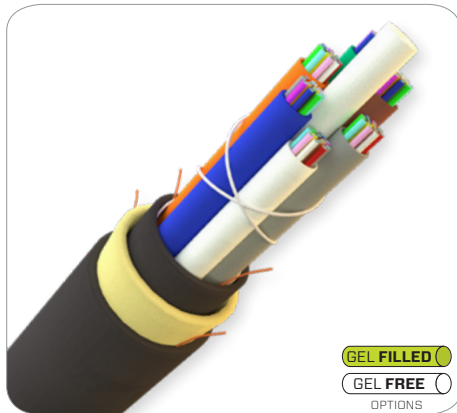
### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
IEEE	1222	Cable
TIA	598-D	Fiber

**Contact AFL for your customized ADSS solution.**

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## All-Dielectric Self-Supporting (AFL-ADSS®) Fiber Optic Cable

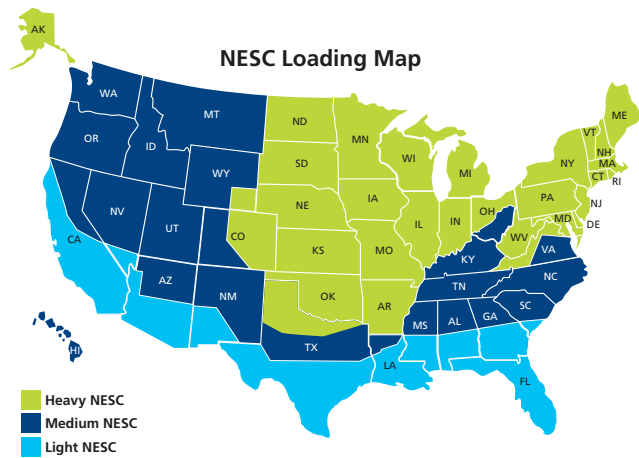
AFL-ADSS® (All-Dielectric Self-Supporting) fiber optic cable is designed for outside plant aerial transmission and distribution environments. As its name indicates, there are no metallic components and the cable does not require a support or messenger wire. These attributes allow the cable to be installed live-line and in the power space of distribution lines.

### Features

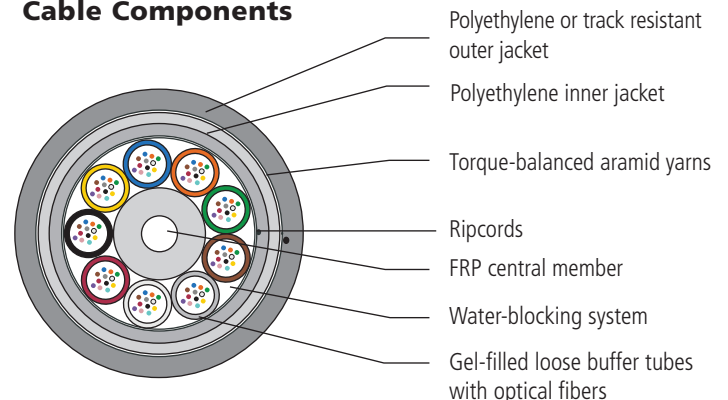
- Up to 432 fibers in cable
  - Gel-Free Buffer Tube options available – up to 216 fibers
- Designs capable of span lengths up to 3500 ft.
- Double jacket designs provide additional protection to the fibers for longer span lengths and higher strength requirements
- Track-resistant outer jacket available for high voltage transmission lines for space potential values up to 25 kV
- Gel-filled tubes are reverse-oscillated (SZ stranded) to allow slack for mid-span access

### Applications

- Electric utility transmission lines
  - Typically framed under conductors
- EHV environments
  - Tracking-resistant options available



### Cable Components



### Quote Request Information

**NOTE:** AFL-ADSS is a custom designed product. Depending on the application, use the key below to your project application or specification.

<b>A</b>	<b>XXX</b>	<b>XXX</b>	<b>XXXX</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
	<b>Fiber Count</b> <sup>1</sup>	<b>Buffer Tubes</b>	<b>Span Length</b> <sup>3</sup>	<b>Unit of Measure</b>	<b>NESC Loading Condition</b> <sup>4</sup>	<b>Fiber Code</b>	<b>Line Voltage</b>
	012 to 432	Gel-Filled Gel-Free <sup>2</sup>	0100 to 2500	F = Feet M = Meters	L = Light M = Medium H = Heavy	9 = Single-mode 6 = 62.5/125 GIGA-Link™ 300 8 = 62.5/125 GIGA-Link™ 1000 5 = 50/125 GIGA-Link™ 600 L = 50 Laser-Link™ 300 Q = Non-zero Dispersion-shifted Single-mode	A = Less than 69 kV B = ≥ 69 kV

#### NOTES:

1. Fiber counts available for 12-432 fibers.
2. Gel-Free Buffer tubes available with up to 216 fibers.
3. Span lengths available from 100-2500 feet (or meters). Please contact AFL for span lengths outside this range.
4. Refer to U.S. map above to ensure the correct NESC loading condition for your location.

*continued*

## All-Dielectric Self-Supporting (AFL-ADSS®) Fiber Optic Cable

### Optical Information

FIBER TYPE	MAXIMUM ATTENUATION (dB/km)				OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km)		GIGABIT ETHERNET MINIMUM LINK DISTANCE (meters)	
	850 nm	1300 nm	1310 nm	1550 nm	850 nm	1300 nm	850 nm	1300 nm
(9) Single-mode	N/A	N/A	0.35	0.25	N/A	N/A	N/A	5000
(6) 62.5/125 GIGA-Link™ 300	3.5	1.2	N/A	N/A	200	600	300	550
(8) 62.5/125 GIGA-Link™ 1000	3.5	1.2	N/A	N/A	350	600	500	1000
(5) 50/125 GIGA-Link™ 600	2.9	0.9	N/A	N/A	500	500	600	600
(L) 50 Laser-Link™ 300	3.5	1.2	N/A	N/A	1500	500	900	550
(Q) Non-zero Dispersion-shifted Single-mode	N/A	N/A	N/A	0.25	N/A	N/A	N/A	N/A

Gigabit Ethernet Minimum Link Distances are based on "bandwidth"/modal dispersion constraints.  
Actual link distances may be constrained by attenuation, depending on specific loss budget.

### Reel Information

ITEM	REEL A		REEL B		REEL C		REEL D		REEL E	
	inches	cm	inches	cm	inches	cm	inches	cm	inches	cm
Reel Height	42	106.7	58	147.3	66	167.6	72	167.6	84	213.4
Reel Width Outside	36	91.4	38	96.5	42	106.7	42	106.7	40	101.6
Reel Width Inside	32	81.6	32	81.3	36	91.4	36	91.4	34	86.4
Drum Diameter	23	58.7	28	71.1	36	91.4	36	91.4	35	88.9
Arbor Hole Diameter	3	7.9	3	7.9	3	7.9	3	7.9	3	7.9
Reel Weight with Lagging	180 lbs	82 kg	420 lbs	191 kg	685 lbs	311 kg	710 lbs	311 kg	950 lbs	431 kg

AFL provides ADSS cable on several standard sizes of non-returnable wooden reels. Non-standard reel sizes are available upon request.

### Recommended Products for ADSS Fiber Optic Cable

DESCRIPTION	AFL NO.
<b>Fiber Optic Cable Accessories</b>	
ADSS Wedge Dead End	Refer to the <a href="#">ADSS Wedge Dead End spec sheet</a> for specific AFL No.
ADSS Suspension Unit	Refer to the <a href="#">ADSS Suspension Unit spec sheet</a> for specific AFL No.
ADSS Trunnion Assemblies	Refer to the <a href="#">ADSS Trunnion Assemblies spec sheet</a> for specific AFL No.
ADSS Temporary Grip	Refer to the <a href="#">ADSS Temporary Grip spec sheet</a> for specific AFL No.
AGC Downlead Clamp for ADSS	Refer to the <a href="#">AGC Downlead Clamp for ADSS spec sheet</a> for specific AFL No.
AVD Series Spiral Vibration Dampers	Refer to the <a href="#">AVD Series Spiral Vibration Dampers spec sheet</a> for specific AFL No.
Coil Brackets	Refer to the <a href="#">Coil Brackets spec sheet</a> for specific AFL No.
Standoff Bracket for ADSS Hardware Clamps	Refer to the <a href="#">Standoff Bracket for ADSS Hardware Clamps spec sheet</a> for specific AFL No.
For more ADSS Cable Accessories, go to the <a href="#">ADSS Fiber Optic Cable Hardware web page</a>	
<b>Fiber Optic Splice Closures</b>	
Apex® X-2 Sealed Splice Closure	Refer to the <a href="#">Apex X-2 spec sheet</a> for specific AFL No.
Apex® X-2S Sealed Splice Closure	Refer to the <a href="#">Apex X-2S spec sheet</a> for specific AFL No.

### Temperature Specifications

TEMPERATURE RANGE	
Operation	-40°C to +70°C
Storage	-50°C to +70°C
Installation	-30°C to +70°C

### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
IEEE	1222	Cable
TIA	598-D	Fiber

Contact AFL for your customized ADSS solution.





ADESDFW2-256 and 307



ADELD2E-323T and 383T



ADELD2E-424005TE  
\* shown with optional thimble eye

## Mini-Dead Ends

The Mini-Dead Ends are designed for fast and easy installation of your ADSS Mini-Span® cable. The Mini-Dead End is ideal in crowded distribution environments where its shorter length allows for efficient installation. This unique low-cost product is used in typical spans with 1%-2% installation sag.

### Features

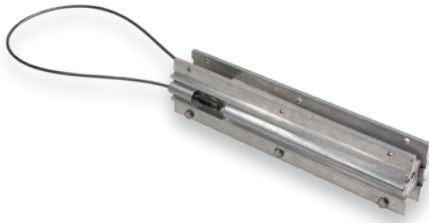
- Easy and quick installation
- No special tools or hardware required for installation
- Small, requiring less storage space

### Ordering Information

APPLICATION & DESCRIPTION	AFL NO.
Aerial Drop 256 150 ft NESC heavy, 275 ft NESC medium, 550 ft NESC light	ADESDFW2-256
Aerial Drop 307—Short Span (250 lb max. tension) 65 ft NESC heavy, 115 ft NESC medium, 210 ft NESC light	ADESDFW2-307
Aerial Drop 307—Long Span 220 ft NESC heavy, 400 ft NESC medium, 675 ft NESC light	ADELD2E-013TE
ADSS Mini-Span 323 175 ft NESC heavy, 300 ft NESC medium, 500 ft NESC light	ADELD2E-323T
<b>ADSS Mini-Span 383</b> 180 ft NESC heavy, 300 ft NESC medium, 450 ft NESC light	ADELD2E-383T
<b>ADSS Mini-Span 424</b> 275 ft NESC heavy, 450 ft NESC medium, 600 ft NESC light	ADELD2E-424005

**NOTE:** Part numbers ADEW10J1-AL535, and ADEW16J1-AL693 attach to structure via common pole hardware sold separately such as thimble eye, ram's head, guy hooks, etc.

For spans greater than the span lengths above, contact Customer Service.



ADEW10J1-AL535



ADEW16J1-AL693

## Wedge Dead End

(to be used only on Standard ADSS Cable up to 0.890" diameter, 144 fibers)

AFL offers wedge dead ends that ease and speed ADSS cable installation. The ADSS Wedge Dead End is ideal in crowded distribution environments because its shorter length allows for safer and efficient installation. The Wedge Dead End comes with all parts assembled. The side plates are properly aligned with spacers and self-locking hex bolts, as well as retainers. Lubricated wedges are pre-installed inside the body of the dead end.

**Caution:** The load ratings shown here are based on performance results of certain cable configurations and may not be representative of all manufacturers' ADSS cable designs. AFL strongly recommends that before using this product, you contact AFL to obtain the recommended load rating and to verify that the wedge dead end has been qualified for use with the proposed cable. AFL will perform a qualification test at no charge.

## Specifications

PARAMETER	VALUE
Wedge Length	10" or 16" depending on cable characteristics
Cable O.D.	0.512" to 0.890" (13 mm to 22.6 mm)
Hold Strength	100% of Maximum Rated Cable Load (MRCL)
Maximum Attenuation Change	0.05 dB at 100% MRCL

## Benefits

- Wedge-type design is safer than spiral wrap style dead ends
- Fewer parts, smaller and easier to store
- Attaches to structure via common pole hardware sold separately (thimble eye, ram's head, etc.)

## Features

- Easier and faster installation
- Lower total system costs
- No special tools or hardware required for installation

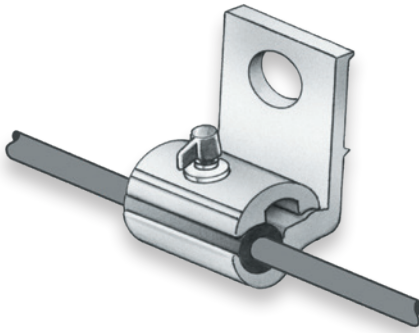
APPLICATION & DESCRIPTION	AFL NO.
<b>ADSS Mini-Span® 535</b> 500 ft NESC heavy, 700 ft NESC medium, 875 ft NESC light Maximum loading capability is 1500 lbs.	ADEW10J1-AL535
<b>ADSS Mini-Span 693</b> 500 ft NESC heavy, 600 ft NESC medium, 750 ft NESC light Maximum loading capability is 1500 lbs.	ADEW16J1-AL693

## Ordering Information for Double Jacket Cables

<b>ADE</b>	<b>W</b>	<b>16</b>	<b>J2</b>	—	<b>AL</b>	<b>YYY</b>
ADSS Dead End	Wedge Type Dead End	Length of wedge component 16 = 16 inch type Max. Load Rating = 3000 lbs.	ADSS Jacket Type J2 = Double Layer		Cable Manufacturer Code AL = AFL	Cable Diameter (in Inches)

## Application Notes:

1. For use with ADSS cables with polyethylene jackets in low voltage environments only. Not for use in high voltage environments where tracking resistant cables are required.
2. AFL fiber optic cable and related hardware are designed to work as a system. Dead ends may not be available for cable from other manufacturers.



Mini-Bracket

## Mini-Bracket

Mini Brackets are used for short and medium spans of ADSS fiber optic cable as well as Aerial Drop cables. Mini Brackets are sized to fit specific ADSS diameters. Standard Mini Brackets are employed with fitted bushings to provide a good support/groove fit and to prevent the support from damaging the cable. The bolted supports are supplied with aluminum captive bolts to simplify installation with no loose parts.

### Features

- Maximum one side angle: 8.5 degrees
- Estimated weight: 2.9 lbs. (1.3 Kg)
- Maximum rated strength: 3,000 lbs.
- Hand tighten bolt to 25 in. lbs. (2.8 N-m)
- Slip load at 4 to 6% of RBS

### Ordering Information

DESCRIPTION	AFL NO.
<b>Aerial Drop 256</b> maximum line angle = 17° (150 ft NESC heavy, 275 ft NESC medium, 550 ft NESC light)	AMBB256
<b>Aerial Drop 307</b> maximum line angle = 17° (220 ft NESC heavy, 400 ft NESC medium, 675 ft NESC light)	AMBB307
<b>ADSS Mini-Span 424</b> maximum line angle = 17° (275 ft NESC heavy, 450 ft NESC medium, 600 ft NESC light)	AMBB424
<b>ADSS Mini-Span 484</b> maximum line angle = 17° (275 ft NESC heavy, 400 ft NESC medium, 525 ft NESC light)	AMBB484-535
<b>ADSS Mini-Span 535</b> maximum line angle = 17° (350 ft NESC heavy, 550 ft NESC medium, 675 ft NESC light)	AMBB484-535



ATS 321/330  
ATS 371/383

## Mini Formed Wire Tangent Support (FTS)

Formed Wire Tangent Supports (FTS) are used with ADSS Mini-Span® 323 and Mini-Span® 383 for short span applications. Tangent supports provide a method of attaching AFL's smallest ADSS Mini-Span designs with excellent unbalanced load capability and bend relief support. This product is designed to connect directly to J-hooks on wood poles for an economical solution.

### Ordering Information

DESCRIPTION	AFL NO.
<b>ADSS Mini-Span 323</b> maximum line angle = 20°(175 ft NESC heavy, 300 ft NESC medium, 500 ft NESC light)	ATS321/330
<b>ADSS Mini-Span 383</b> maximum line angle = 20°(180 ft NESC heavy, 300 ft NESC medium, 450 ft NESC light)	ATS371/383



Download Clamp shown with Adapter B

## Download Clamp for ADSS (with or without Unequal Diameters)

AFL Download Clamps are used to guide ADSS wire from the top of the structure to the splice box. Our clamps install easily and provide proper spacing and hold strength without damage to the cable. From poles to towers, we offer a full line of ADSS Download Clamps to meet the needs of any application.

### Features

- Slip strength: >100 lbs.
- Lattice adapters provided with break-away bolts for precise torque during installation
- Steel tower guide clamps available with adapters to eliminate the need for drilling
- Banding adapters available

### Ordering Information – Download Clamp and Adapter

BUSHING DESIGNATION	DIAMETER (INCHES)	COLOR CODE
B4	0.350 - 0.500	red
B5	0.501 - 0.600	green
B6	0.601 - 0.700	yellow
B7	0.701 - 0.800	blue
B8	0.801 - 0.900	white
B9	0.901 - 1.000	black
B10	1.001 - 1.100	orange

FD	OA	XX	YY	Z	M
Fiber Download	OPGW and ADSS	Bushing Designation (Smaller Dia.)	Bushing Designation (Larger Dia.)	Indicates Adapters	M for Metric Hardware
				A = Banding Adapter	
				B = Lattice Adapter for web thickness 0.25" - 0.72"	
				C = Lattice Adapter for web thickness 0.72" - 1.25"	
				D = 3/8" diameter x 4" lag bolt	
				E = Lattice Adapter for web thickness 0.25" - 1.25"	
				Omit = No adapter desired	

### Ordering Example

For 0.528" dia. OPGW and 0.484 ADSS with pole banding (Type A), the part number is FDOA-B4B5A.

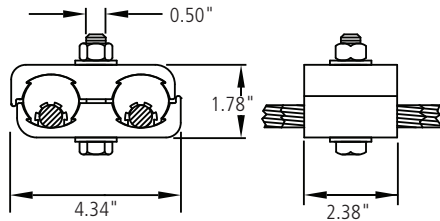
- NOTES:**
1. If metric hardware is desired, add a "M" suffix to the end.
  2. See next page for optional download clamp adapters.



## Download Clamp and Optional Download Clamp Adapters

### Dimensions

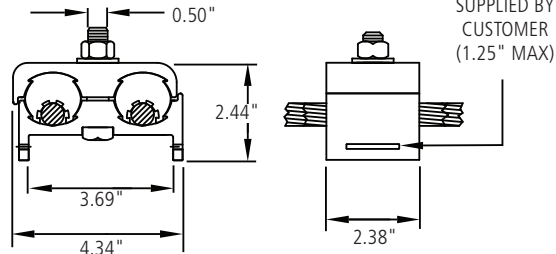
FIG. 1



**FDOA XXYY**

NO ADAPTER

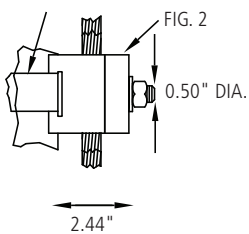
FIG. 2



BAND TO BE  
SUPPLIED BY  
CUSTOMER  
(1.25" MAX)

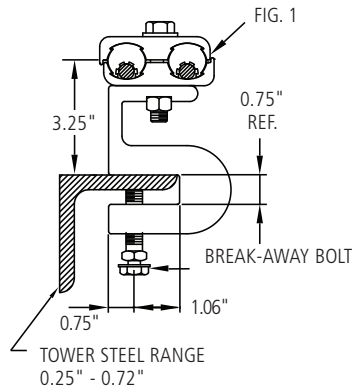
### Download Clamp Adapters

BAND TO BE SUPPLIED  
BY CUSTOMER  
(1.25" MAX)



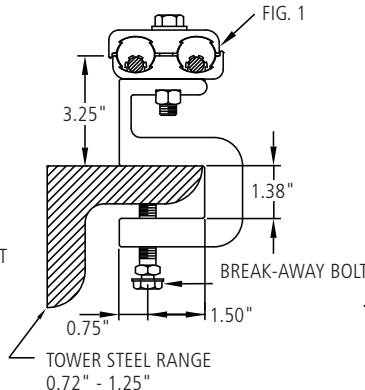
**FDOA XXYYA**

TYPE A ADAPTER WITH FIG. 2  
BANDING CONFIGURATION  
EST. WEIGHT: 0.96 LBS.



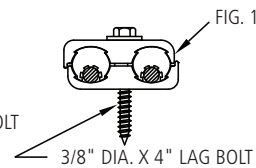
**FDOA XXYYB**

TYPE B ADAPTER WITH FIG. 1  
LATTICE CONFIGURATION  
EST. WEIGHT: 1.98 LBS.



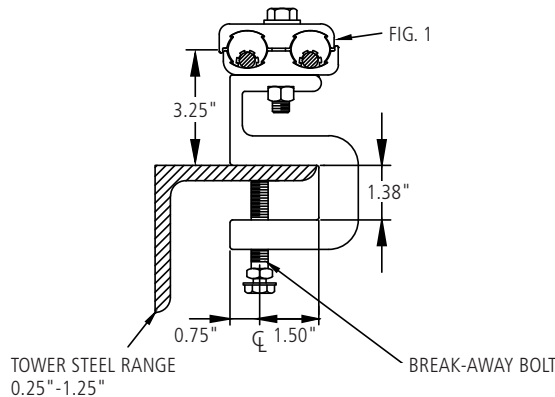
**FDOA XXYYC**

TYPE C ADAPTER WITH FIG. 1  
LATTICE CONFIGURATION  
EST. WEIGHT: 2.20 LBS.



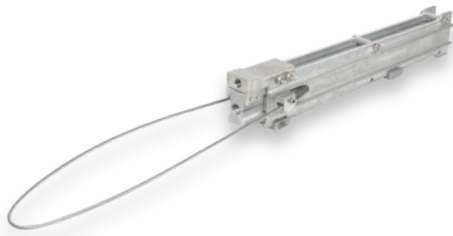
**FDOA XXYYD**

TYPE D ADAPTER WITH FIG. 1  
LATTICE CONFIGURATION  
EST. WEIGHT: 0.96 LBS.



**FDOA XXYYE**

TYPE E ADAPTER WITH FIG. 1  
LATTICE CONFIGURATION  
EST. WEIGHT: 2.20 LBS.



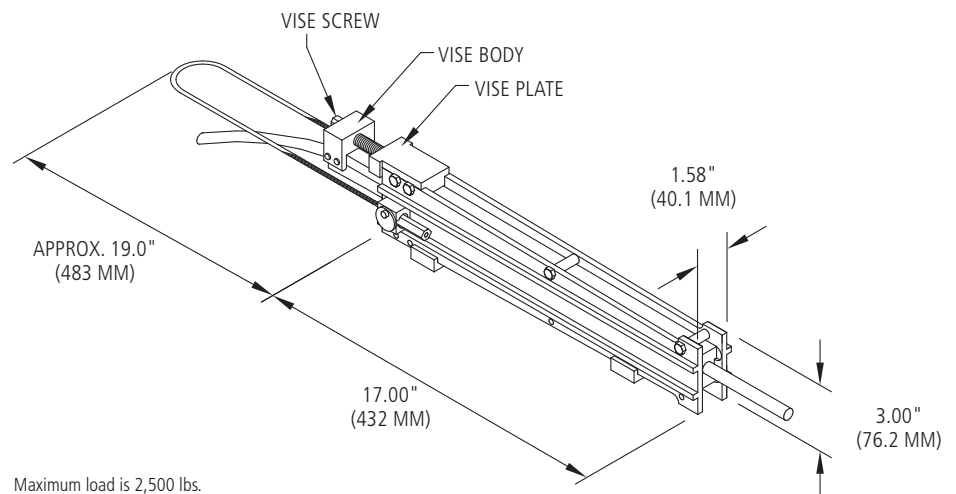
## Temporary Grip

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.

Application Notes:

1. Mechanical Grip for Use with Polyethylene Outer Jackets Only



## Ordering Information

<b>A</b>	<b>TG</b>	<b>MEM</b>	<b>XXX</b>	<b>A</b>
ADSS	Temporary Grip		ADSS Cable Diameter (in Decimal Inches)	

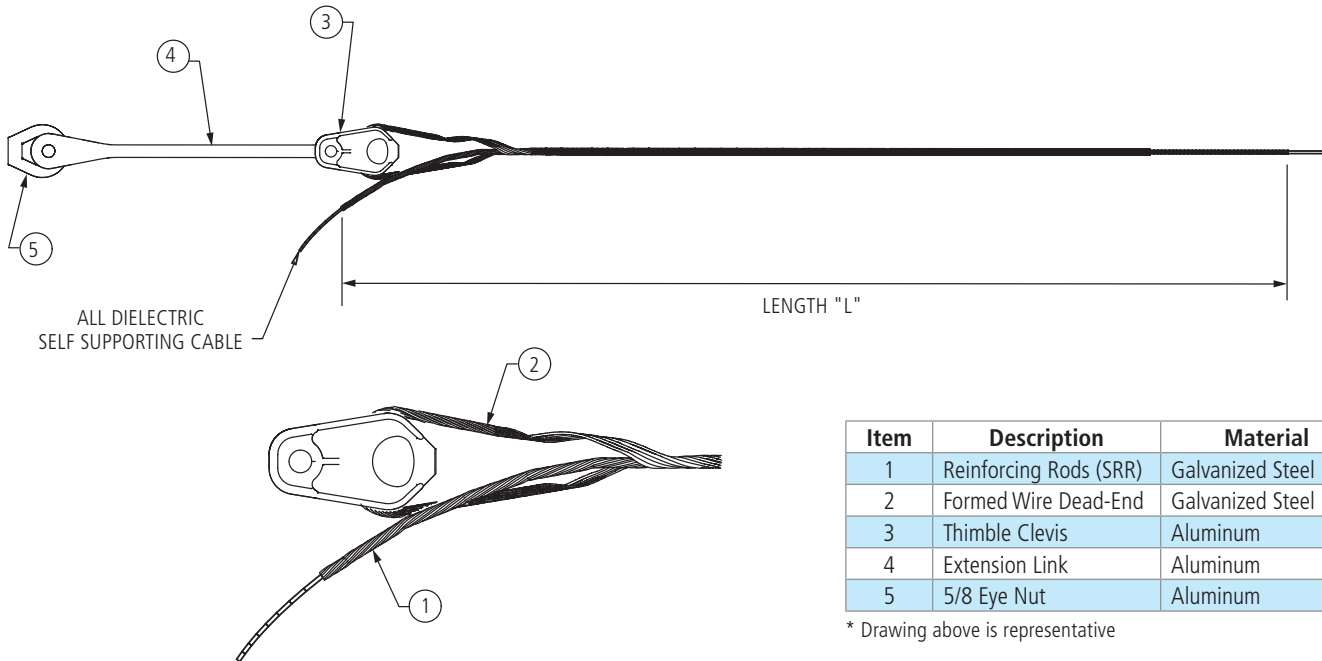
## Ordering Information for Additional Wedges

<b>A</b>	<b>TG</b>	<b>W</b>	<b>XXX</b>
ADSS	Temporary Grip	Wedge Set	Cable O.D. in Inches x 1000 (Cable Dia. = 0.420" - 0.890")

### CAUTION:

1. The Temporary Grip is only to be used for AFL's ADSS fiber optic cables with standard polyethylene jackets with the O.D. ranging from 0.420" - 0.890".
2. For cables with an O.D. outside of this range, please contact AFL.

## Limited Tension Formed Wire Dead End for ADSS Cable



Item	Description	Material
1	Reinforcing Rods (SRR)	Galvanized Steel
2	Formed Wire Dead-End	Galvanized Steel
3	Thimble Clevis	Aluminum
4	Extension Link	Aluminum
5	5/8 Eye Nut	Aluminum

\* Drawing above is representative

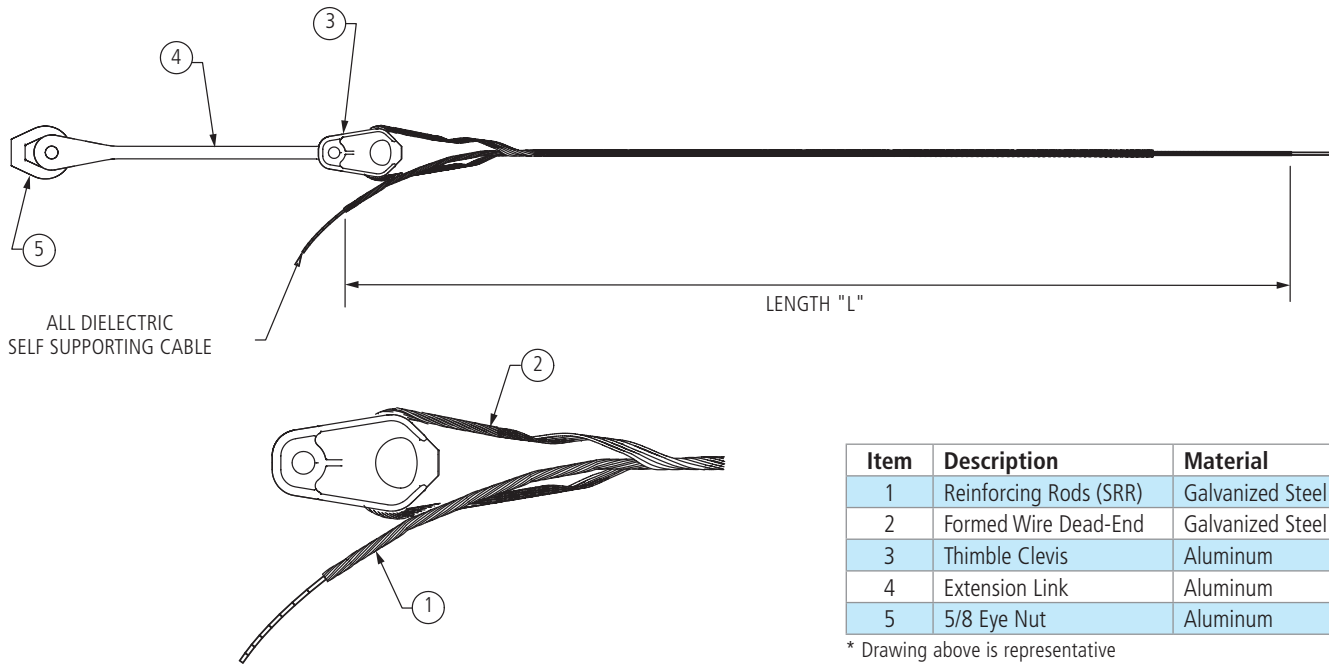
### Features

- Components strength—6,500 lbs.
- Maximum initial tension—up to 1,000 lbs.
- Maximum loaded tension—up to 2,500 lbs.
- Dead end component may be reused once during initial installation
- Contact AFL for track-resistant ADSS application

### Ordering Information

AFL NO.	CABLE OD (IN)	LENGTH "L" (IN)	COLOR CODE
ADESE380/400C	0.380 - 0.400	48	Red
ADESE400/424C	0.400 - 0.424	48	Black
ADESE425/451C	0.425 - 0.451	48	Yellow
ADESE452/481C	0.452 - 0.481	48	Green
ADESE482/510C	0.482 - 0.510	48	Orange
ADESE511/542C	0.511 - 0.542	48	Blue
ADESE543/577C	0.543 - 0.577	48	White
ADESE578/613C	0.578 - 0.613	48	Red
ADESE614/651C	0.614 - 0.651	48	Black
ADESE652/692C	0.652 - 0.692	48	Yellow
ADESE693/737C	0.693 - 0.737	48	Green
ADESE738/784C	0.738 - 0.784	48	Orange
ADESE785/834C	0.785 - 0.834	48	Blue
ADESE835/889C	0.835 - 0.889	48	White
ADESE890/945C	0.890 - 0.945	48	Red
ADESE946/1007C	0.946 - 1.007	48	Black
ADESE1008/1073C	1.008 - 1.073	60	Yellow
ADESE1074/1140C	1.074 - 1.140	60	Green
ADESE1141/1212C	1.141 - 1.212	60	Orange
ADESE1213/1288C	1.213 - 1.288	60	Blue

## Medium Tension Dead End for ADSS Cable



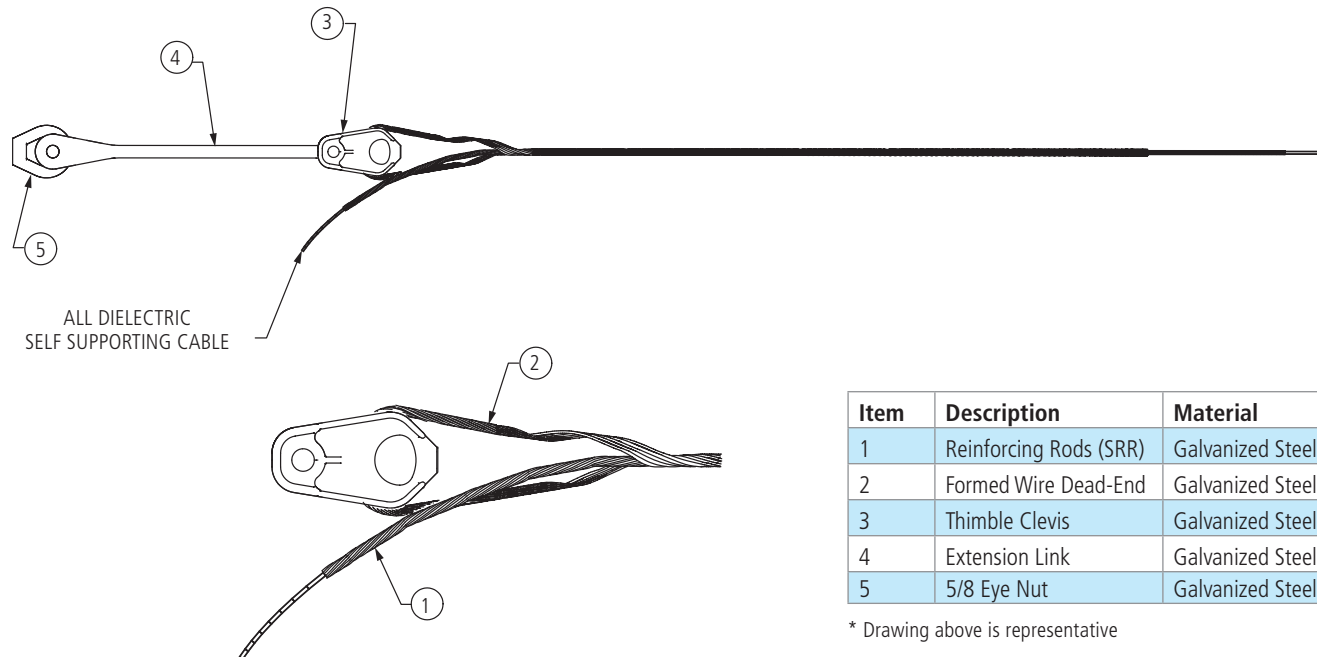
### Features

- Component strength—6,500 lbs.
- Maximum initial tension—up to 2,000 lbs.
- Maximum loaded tension—up to 4,000 lbs.
- Dead end component may be reused once during initial installation
- Contact AFL for track-resistant ADSS application

### Ordering Information

AFL NO.	CABLE OD (IN)	LENGTH "L" (IN)	COLOR CODE
ADEME482/510C	.482-.510	72	Orange
ADEME511/542C	.511-.542	73	Blue
ADEME543/577C	.543-.577	74	White
ADEME578/613C	.578-.613	78	Red
ADEME614/651C	.614-.651	80	Black
ADEME652/692C	.652-.692	80	Yellow
ADEME693/737C	.693-.737	82	Green
ADEME738/784C	.738-.784	88	Orange
ADEME785/834C	.785-.834	92	Blue
ADEME835/889C	.835-.889	94	White
ADEME890/945C	.890-.945	96	Red
ADEME946/1007C	.946-1.007	98	Black
ADEME1008/1073C	1.008-1.073	102	Purple
ADEME1074/1140C	1.074-1.140	102	Pink
ADEME1141/1212C	1.141-1.212	104	Brown
ADEME1213/1288C	1.213-1.288	107	Orange

## Semi-High Tension Dead End for ADSS Cable



Item	Description	Material
1	Reinforcing Rods (SRR)	Galvanized Steel
2	Formed Wire Dead-End	Galvanized Steel
3	Thimble Clevis	Galvanized Steel
4	Extension Link	Galvanized Steel
5	5/8 Eye Nut	Galvanized Steel

\* Drawing above is representative

### Features

- Components strength—15,000 lbs.
- Maximum initial tension—up to 4,000 lbs.
- Maximum loaded tension—up to 7,500 lbs.
- Dead end component may be reused once during initial installation
- Contact AFL for Length Information and track-resistant ADSS application
- Lengths range from 100" to 134"

### Ordering Information

AFL NO.	CABLE OD (in.)	LENGTH "L" (in.)	COLOR CODE
ADELE482/510C	.482-.510	98	Orange
ADELE511/542C	.511-.542	98	Blue
ADELE543/577C	.543-.577	100	White
ADELE578/613C	.578-.613	104	Red
ADELE614/651C	.614-.651	106	Black
ADELE652/692C	.652-.692	106	Yellow
ADELE693/737C	.693-.737	108	Green
ADELE738/784C	.738-.784	113	Orange
ADELE785/834C	.785-.834	118	Blue
ADELE835/889C	.835-.889	119	White
ADELE890/945C	.890-.945	121	Red
ADELE946/1007C	.946-1.007	123	Black
ADELE1008/1073C	1.008-1.073	126	Purple
ADELE1074/1140C	1.074-1.140	127	Pink
ADELE1141/1212C	1.141-1.212	129	Brown
ADELE1213/1288C	1.213-1.288	133	Orange



## Flat Drop Dead End

The Flat Drop Dead Ends are designed for use on flat drop cables.

Available with AFL's Multi-Drop Thimble Eye (second photo) which is used to anchor aerial round drop cables to the distribution structure. The Thimble Eye has uniform radial slots that can accommodate up to four formed wire dead ends per thimble eye and support tensioning up to 90 degrees from the installation hardware.



Multi-Drop Thimble Eye  
(ordered separately)

### Features

- Made of Aluminum Alloy material
- Installation tension is  $\leq$  maximum of rated cable load
- Easy and quick installation
- No special tools or hardware required for installation
- Small, requiring less storage space
- Five-rod construction
- Available with Multi-Drop Thimble Eye (ordered separately)

### Ordering Information

To order with Drop Dead End with Thimble Eye, add suffix "TE" to AFL No.

AFL NO.	CABLE OD (in.)	LENGTH (in.)	TENSILE STRENGTH (lbs)	WEIGHT (lbs)	COLOR CODE
ADELD4F309/341	0.309 - 0.341	41.3	<MRCL	0.33	Blue



Drop Dead End shown with  
Single-Drop Thimble Eye

For more information on the optional Multi-Drop Thimble Eye (ordered separately), see [specification sheet](#).





## Round Drop Dead End

The Round Drop Dead Ends are designed for use on round drop cables.

Available with AFL's Multi-Drop Thimble Eye (second photo) which is used to anchor aerial round drop cables to the distribution structure. The Thimble Eye has uniform radial slots that can accommodate up to four formed wire dead ends per thimble eye and support tensioning up to 90 degrees from the installation hardware.



Multi-Drop Thimble Eye  
(ordered separately)

### Features

- Made of Galvanized Steel material
- Easy and quick installation
- No special tools or hardware required for installation
- Small, requiring less storage space
- Three-rod construction
- Available with Multi-Drop Thimble Eye (ordered separately)

### Ordering Information

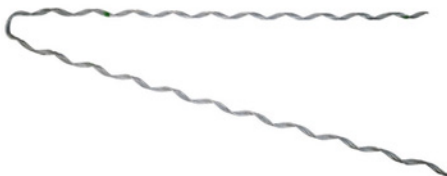
To order with Drop Dead End with Thimble Eye, add suffix "TE" to AFL No.

AFL NO.	CABLE OD (in.)	LENGTH (in.)	TENSILE STRENGTH (lbs)	WEIGHT (lbs)	COLOR CODE
ADED326/365	0.326 - 0.365	32.48	2, 248	1.76	Green



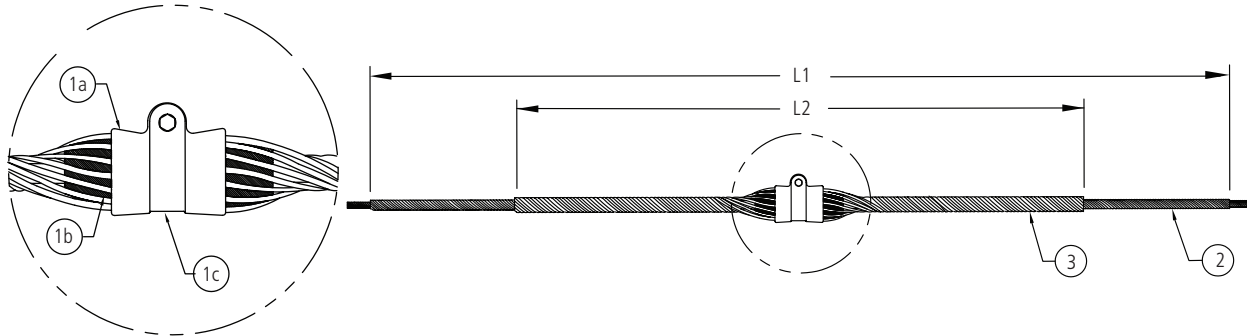
Drop Dead End shown with  
Single-Drop Thimble Eye

For more information on the optional Multi-Drop Thimble Eye (ordered separately), see [specification sheet](#).



Drop Dead End

## Formed Wire Suspension for ADSS Cable



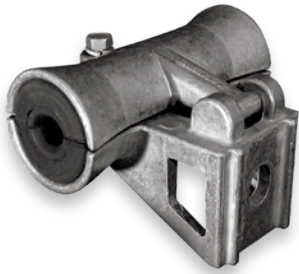
### Features

- For line or elevation angle changes less than 30°
- Max vertical load—20,000 lbs.

Item	Description	Material
1a,c	Suspension Housing	Aluminum Alloy
1b	Insert (2 Halves)	Elastomer
2	Reinforcing Rods (SRR)	Aluminum Alloy
3	Outer Support Rods	Aluminum Alloy

### Ordering Information

CABLE O.D. RANGE	STRUCTURAL REINFORCEMENT RODS				OUTER RODS				AFL NO.
	LENGTH "L1" (INCHES)	ROD DIA. (INCHES)	RODS PER SET	COLOR CODE	LENGTH "L2" (INCHES)	ROD DIA. (INCHES)	RODS PER SET	COLOR CODE	
0.399" - 0.418"	80	.146	10	Yellow	42	.204	11	Yellow	ASU399/418
0.419" - 0.439"	80	.146	10	Black	42	.204	11	Black	ASU419/439
0.440" - 0.458"	81	.146	11	White	43	.204	11	White	ASU440/458
0.459" - 0.461"	84	.167	10	Purple	46	.250	10	Orange	ASU459/461
0.462" - 0.476"	84	.167	10	Purple	46	.250	10	Purple	ASU462/476
0.477" - 0.503"	84	.146	12	Orange	46	.250	10	Orange	ASU477/503
0.504" - 0.511"	84	.146	12	Red	46	.250	10	Purple	ASU504/511
0.512" - 0.536"	87	.167	11	Blue	49	.250	11	Blue	ASU512/536
0.537" - 0.559"	87	.167	11	Green	49	.250	11	Green	ASU537/559
0.560" - 0.565"	87	.167	11	Green	49	.250	11	Green	ASU560/565
0.566" - 0.573"	92	.182	11	Black	54	.250	12	Black	ASU566/573
0.574" - 0.598"	92	.182	11	Black	54	.250	12	White	ASU574/598
0.599" - 0.625"	92	.182	12	Brown	54	.310	12	Brown	ASU599/625
0.626" - 0.632"	102	.204	11	Red	63	.310	11	Red	ASU626/632
0.633" - 0.666"	102	.204	11	Red	63	.310	11	Blue	ASU633/666
0.667" - 0.682"	102	.204	12	Yellow	63	.310	11	Green	ASU667/682
0.683" - 0.710"	102	.204	12	Yellow	63	.310	11	Yellow	ASU683/710
0.711" - 0.728"	102	.204	12	White	63	.310	12	Black	ASU711/728
0.729" - 0.744"	102	.204	12	White	63	.310	12	White	ASU729/744
0.745" - 0.750"	102	.204	12	White	63	.310	12	White	ASU745/750
0.751" - 0.786"	102	.204	13	White	63	.310	12	Brown	ASU751/786
0.787" - 0.814"	111	.250	11	Green	72	.365	11	Green	ASU787/814
0.815" - 0.845"	111	.250	12	Yellow	72	.365	11	Yellow	ASU815/845
0.846" - 0.855"	111	.250	12	Green	72	.365	12	Blue	ASU846/855
0.856" - 0.894"	119	.250	12	Black	80	.365	12	Black	ASU856/894
0.895" - 0.907"	119	.250	12	White	80	.365	12	White	ASU895/907
0.908" - 0.916"	119	.250	13	Purple	80	.365	12	Purple	ASU908/916
0.917" - 0.929"	119	.250	13	Brown	80	.365	12	Brown	ASU917/929
0.930" - 0.942"	119	.250	13	Red	80	.365	12	Red	ASU930/942
0.943" - 0.977"	119	.250	13	Orange	80	.365	13	Orange	ASU943/977



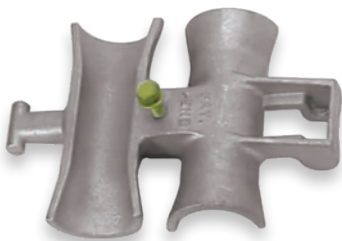
Single Trunnion Cable Support



Double Trunnion Cable Support (closed)



Double Trunnion Cable Support (open)



Conversion Kit

## Trunnion Assemblies— Single and Double Cables

AFL offers trunnions with various mounting capabilities: bolted, banded or standoff. Trunnions reduce installation costs by functioning as a pull-through during installation (maximum line angle for stringing is 15° total, 7.5° per side, number of structures not to exceed 30). No block or pulley is needed provided these conditions are met.

### Features

- May be used as a pull-through by removing the bushing inserts
- Double cable supports option
- High-strength aluminum
- Smaller and more compact design
- Facilitates faster installation
- Color-coded range taking inserts for easy identification
- Versatile mounting styles to fit different structure types: bolted, banded or standoff
- Banding and pole hardware supplied by customer
- Lowers the total cost of installation
- Span Length: 600 ft.—NESC Heavy  
1,200 ft.—NESC Light

### Ordering Information—Single Cable Support

AFL NO.	CABLE O.D. RANGE		ESTIMATED WEIGHT		BUSHING COLOR CODE
	INCHES	MILLIMETERS	LBS	KG	
ATGN325/375	0.325" - 0.375"	8.26 - 9.53	2.06	.934	Green + White
ATGN376/419	0.376" - 0.419"	9.55 - 10.64	2.06	.934	Orange + White
ATGN420/474	0.420" - 0.474"	10.67 - 12.05	2.05	.930	Purple + White
ATGN475/525	0.475" - 0.525"	12.07 - 13.34	2.05	.930	Blue
ATGN526/575	0.526" - 0.575"	13.36 - 14.61	2.05	.930	Orange
ATGN576/625	0.576" - 0.625"	14.63 - 15.88	2.04	.925	Brown
ATGN626/675	0.626" - 0.675"	15.90 - 17.15	2.04	.925	Green
ATGN676/725	0.676" - 0.725"	17.17 - 18.42	2.03	.921	White
ATGN726/775	0.726" - 0.775"	18.44 - 19.69	2.03	.921	Red
ATGN776/825	0.776" - 0.825"	19.71 - 20.96	2.02	.916	Purple
ATGN826/875	0.826" - 0.875"	20.98 - 22.23	2.02	.916	Yellow
ATGN876/925	0.876" - 0.925"	22.25 - 23.50	2.02	.916	Pink
ATGN926/959	0.926" - 0.959"	23.52 - 24.36	2.02	.916	Blue + White
ATGN960/1045	0.960" - 1.045"	24.38 - 26.54	2.02	.916	Gray

### Application Notes:

1. For use with ADSS cables with polyethylene jackets in low voltage environments only. Not for use in high voltage environments where tracking resistant cables are required.
2. As a stringing block:  
Maximum line angle = 15° (7.5° per side)  
Maximum number of structures = 30
3. For final installation:  
Maximum line angle = 22° (11° per side)

continued  
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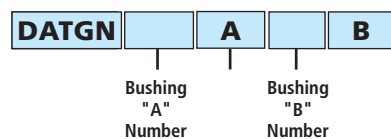
## Trunnion Assemblies (cont.)

### Ordering Information—Double Tangent Support

BUSHING NUMBER		CABLE O.D. RANGE		BUSHING COLOR CODE	MAXIMUM SPAN CAPABILITIES USING NESC LOADS IN FEET/METERS	ESTIMATED WEIGHT	
"A"	"B"	INCHES	MM		HEAVY	LBS	KG
325	325	.325-.375	8.26-9.53	Green + White	600/182.9	4.00	1.814
376	376	.376-.419	9.55-10.64	Orange + White	600/182.9	4.00	1.814
420	420	.420-.474	10.67-12.04	Purple + White	600/182.9	3.99	1.810
475	475	.475-.525	12.07-13.34	Blue	600/182.9	3.99	1.810
526	526	.526-.575	13.36-14.61	Orange	600/182.9	3.99	1.810
576	576	.576-.625	14.63-15.88	Brown	600/182.9	3.98	1.805
626	626	.626-.675	15.90-17.15	Green	600/182.9	3.98	1.805
676	676	.676-.725	17.17-18.42	White	600/182.9	3.97	1.801
726	726	.726-.775	18.44-19.69	Red	600/182.9	3.97	1.801
776	776	.776-.825	19.71-20.96	Purple	600/182.9	3.96	1.796
826	826	.826-.875	20.98-22.23	Yellow	600/182.9	3.96	1.796
876	876	.876-.925	22.25-23.50	Pink	500/152.4	3.96	1.796
926	926	.926-.959	23.52-24.36	Blue + White	CONTACT AFL	3.96	1.796
960	960	.960-1.045	24.38-26.54	Gray	CONTACT AFL	3.96	1.796

### How to Order

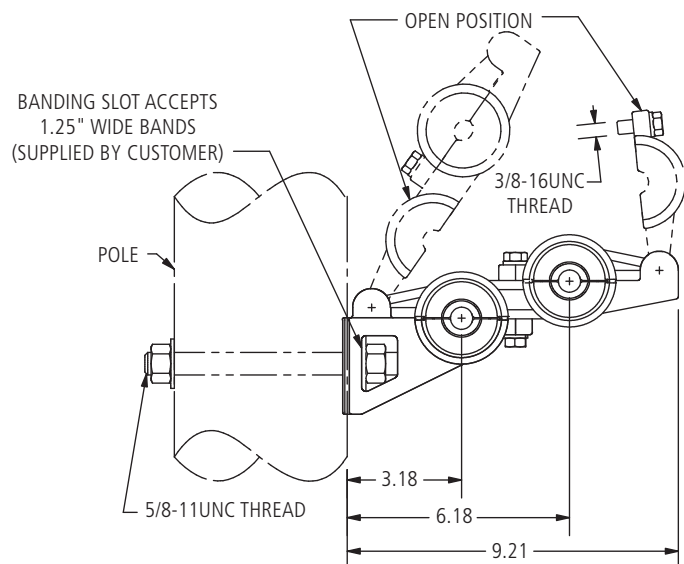
Order by assembling part number as shown:



- Reference table above. See Note 1 below.
- Example:
  - First cable 0.500" OD → Bushing "A" number = 475
  - Second cable 0.750" OD → Bushing "B" number = 726
  - Order by part number: DATGN**475A726B**

### Notes:

1. Bushing "A" and "B" may be the same or different.
2. Attachment hardware or stainless steel banding to be supplied by customer.
3. To order Conversion Kits, use part number DATGNDCBCWH.

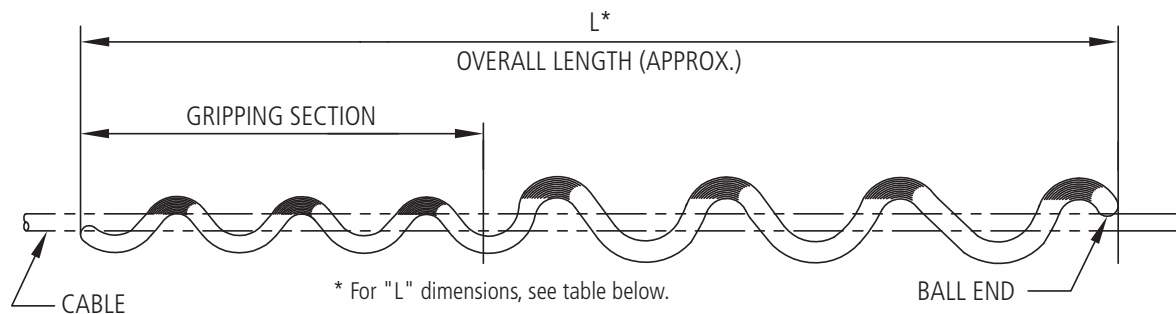
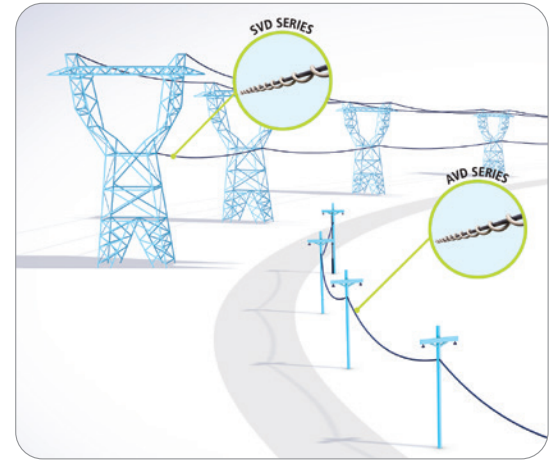


## SVD Series Spiral Vibration Dampers

AFL's SVD Series Spiral Vibration Dampers are designed to eliminate the damage caused by Aeolian vibration and reduce overall vibration on bare cables. Made of weather-resistant, non-corrosive plastic, these dampers have a large, helically-formed damping section sized for the cable. A smaller gripping section gently grips the cable. Each damper is marked with the conductor range and color coded to indicate the cable diameter size range.

Line design, temperature, tension, wind flow exposure and history of vibration on similar construction in the location are factors to consider when determining the amount of protection required. Installation can be on both sides of the support location—at least one hand-width from the ends of Armor Rods or cable hardware. Depending on the customer's specific conditions, AFL recommends the SVD Spiral Vibration Damper in accordance with the recommended application chart for the following:

- Conductors between 0.250 inches and 0.500 inches O.D. (used with tietop insulators and rural construction)
- Optical Ground Wires (OPGW) and Overhead Ground Wires (OHGW) in accordance with the recommended application chart



### Ordering Information

Select catalog number based on cable diameter. Example: for 0.512" diameter, order SVD462/563

### Conductor Diameter Cross Reference

AFL NO.	PLP NO.	CONDUCTOR DIAMETER RANGE INCHES (MM)	"L" ROD LENGTH INCHES (MM)	WEIGHT LBS (KG)	COLOR CODE	STANDARD PACK
SVD250/326	5050103	0.250-0.326 (6.35-8.29)	49 (1244)	29 (13.154)	Light Blue	50
SVD327/461	5050104	0.327-0.461 (8.30-11.72)	51 (1295)	31 (14.061)	Black	50
SVD462/563	5050105	0.462-0.563 (1.73-14.32)	53 (1346)	34 (15.422)	Yellow	50
SVD564/770	5050106	0.564-0.770 (14.33-19.30)	64 (1625)	50 (22.679)	Green	25

### High Mass Cross Reference

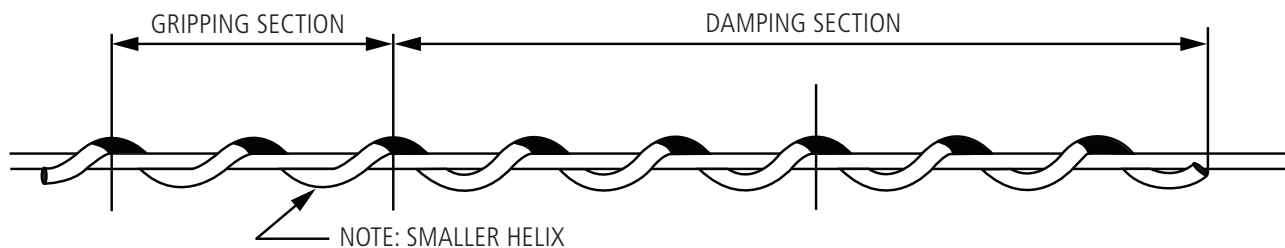
AFL NO.	PLP NO.	CONDUCTOR DIAMETER RANGE INCHES (MM)	"L" ROD LENGTH INCHES (MM)	WEIGHT LBS (KG)	COLOR CODE	STANDARD PACK
SVD250/326HM	5050200	0.250-0.326 (6.35-8.29)	87 (2209)	55 (24.948)	Light Blue	50
SVD327/461HM	5050201	0.327-0.461 (8.30-11.72)	91 (2311)	60 (27.216)	Black	50
SVD462/563HM	5050202	0.462-0.563 (1.73-14.32)	94 (2387)	65 (29.483)	Yellow	50
SVD564/770HM	5050203	0.564-0.770 (14.33-19.30)	96 (2438)	55 (24.948)	Green	25

continued  
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## SVD Series Spiral Vibration Dampers (cont.)

### Damper Recommendations for Placement

Damper Recommendation applies for specified AFL dampers only. If alternative type or different manufacturer dampers are applied instead, it is possible that damage will occur on the conductor and/or the accessories.



SPAN LENGTH	INITIAL TENSION PERCENTAGE OF CABLE RATED BREAKING STRENGTH AT NOMINAL TEMPERATURE 60°F							
	0-10%		11-15%		16-20%		>20%	
	STANDARD	HIGH MASS	STANDARD	HIGH MASS	STANDARD	HIGH MASS	STANDARD	HIGH MASS
< 800 ft.	2/s	1/s	2/s	1/s	4/s	2/s	4/s	2/s
801-1400 ft.	4/s	2/s	4/s	2/s	6/s	4/s	6/s	4/s
1401-2400 ft.	6/s	4/s	6/s	4/s	8/s	4/s	8/s	4/s
2401-3000 ft.	8/s	4/s	8/s	4/s	10/s	6/s	10/s	6/s
3001-3500 ft.	10/s	6/s	10/s	6/s	12/s	6/s	12/s	6/s
3501-4000 ft.	12/s	6/s	12/s	6/s	16/s	8/s	16/s	8/s
4001-4500 ft.	16/s	8/s	16/s	8/s	18/s	10/s	18/s	10/s
4501-5000 ft.	18/s	10/s	18/s	10/s	20/s	10/s	20/s	10/s

### Symbol Designation

- 2/s = 2 dampers per span, 1 on each end of the span
- 4/s = 2 dampers in tandem on each end of the span
- 6/s = 3 dampers in tandem on each end of the span
- 8/s = 3 dampers in tandem + 1 damper on each end of the span
- 10/s = 3 dampers in tandem + 2 dampers in tandem on each end of the span
- 12/s = 3 dampers in tandem + 3 dampers in tandem on each end of the span
- 16/s = 3 dampers in tandem + 3 dampers in tandem + 2 dampers in tandem on each end of the span
- 18/s = 3 dampers in tandem + 3 dampers in tandem + 3 dampers in tandem on each end of the span
- 20/s = 3 dampers in tandem + 3 dampers in tandem + 3 dampers in tandem + 1 damper on each end of the span

### Placement and Spacing

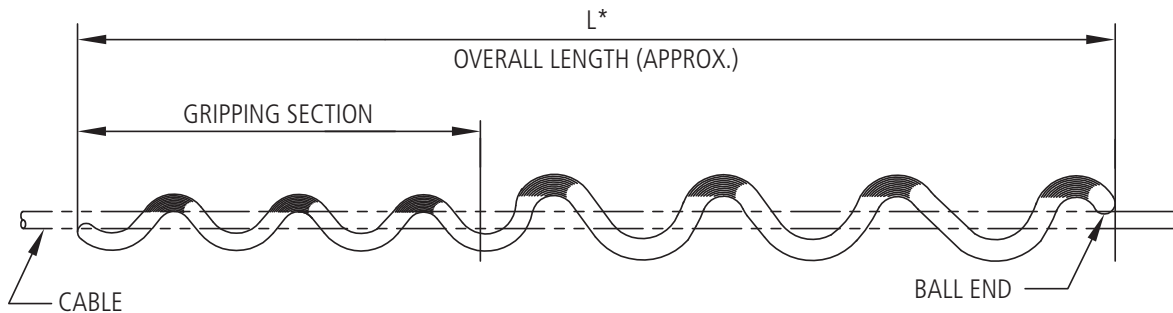
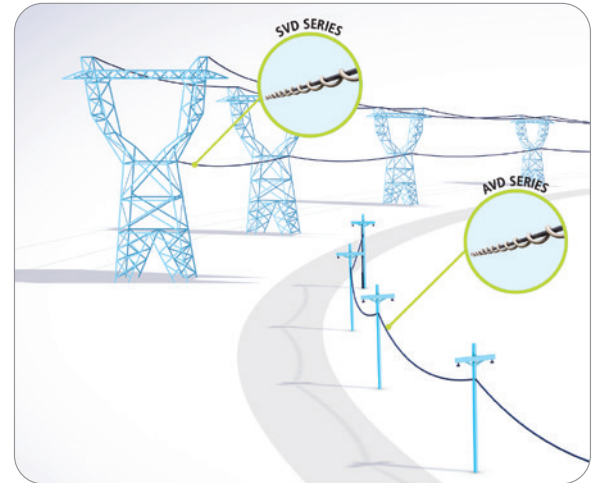
- SVD shall be placed approximately 5 inches away from any line hardware (suspension, deadend, armor rods, other SVDs, etc.).
- SVDs can be nestled in tandem for up to three units to prevent the units from interfering with each other.
- SVDs shall be applied to bare cable only to ensure proper performance.



## AVD Series Spiral Vibration Dampers

AFL's AVD Series Spiral Vibration Dampers are designed to eliminate the damage caused by Aeolian vibration and reduce overall vibration on bare All-Dielectric Self-Supporting (ADSS) cables. Made of weather-resistant, non-corrosive plastic, these dampers have a large, helically-formed damping section sized for the ADSS cable. A smaller gripping section gently grips the ADSS cable. Each damper is marked with the conductor range and color coded to indicate the cable diameter size range.

Line design, temperature, tension, wind flow exposure and history of vibration on similar construction in the location are factors to consider when determining the amount of protection required. Installation can be on both sides of the support location—at least one hand-width from the ends of Armor Rods or cable hardware. Depending on the customer's specific conditions, AFL recommends the AVD Spiral Vibration Damper for ADSS cable in accordance with the recommended application chart.



\* For "L" dimensions, see table below.

### Ordering Information

Select catalog number based on cable diameter. Example: for 0.512" diameter, order AVD462/563

### Conductor Diameter Cross Reference

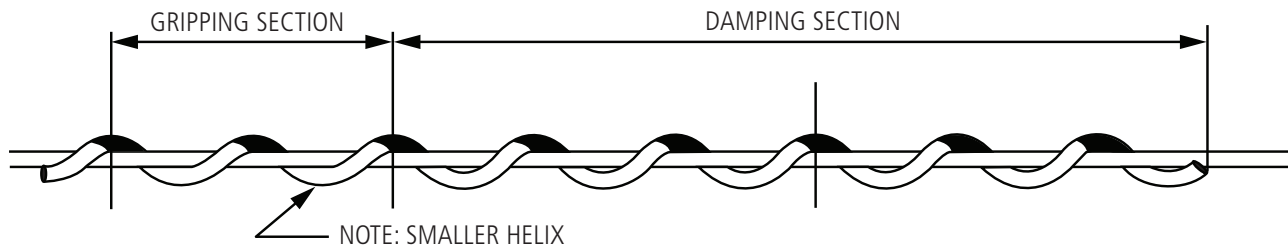
AFL NO.	PLP NO.	CONDUCTOR DIAMETER RANGE inches (mm)	"L" ROD LENGTH inches (mm)	WEIGHT lbs (KG)	STANDARD PACK
AVD250/326	50502393	0.250-0.326 (6.35-8.29)	49 (1244)	27 (12.247)	50
AVD327/461	50502272	0.327-0.461 (8.30-11.72)	51 (1295)	30 (12.701)	50
AVD462/563	50502274	0.462-0.563 (1.73-14.32)	53 (1346)	30 (13.608)	50
AVD564/770	50509862	0.564-0.770 (14.33-19.30)	64 (1625)	47 (21.319)	25
AVD771/876	50503057	0.771-0.876 (19.58-22.25)	71 (1803)	29 (13.154)	25
AVD877/1000	50503576	0.877-1.000 (22.26-25.40)	75 (1905)	36 (16.329)	25
AVD1001/1250	50503909	1.001-1.250 (25.41-31.75)	90 (2286)	41 (18.597)	25

*continued*  
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## AVD Series Spiral Vibration Dampers (cont.)

### Damper Recommendations for Placement

Damper Recommendation applies for specified AFL dampers only. If alternative type or different manufacturer dampers are applied instead, it is possible that damage will occur on the conductor and/or the accessories.



	INITIAL TENSION PERCENTAGE OF CABLE RATED BREAKING STRENGTH (RBS) AT NOMINAL TEMPERATURE 60°F				
SPAN LENGTH	0-10%	11-15%	16-20%	21-25%	>25%
< 250 ft.	0	2/s	2/s	2/s	2/s
251-500	2/s	2/s	2/s	2/s	4/s
501-800	2/s	2/s	2/s	4/s	4/s
801-1600	4/s	4/s	4/s	6/s	6/s
1601-2400	6/s	6/s	6/s	8/s	8/s
2401-3000	8/s	8/s	8/s	10/s	10/s
3001-3500	10/s	10/s	10/s	12/s	12/s
3501-4000	12/s	12/s	12/s	16/s	16/s
4001-4500	16/s	16/s	16/s	16/s	18/s
4501-5000	18/s	18/s	18/s	18/s	20/s

### Symbol Designation

- 2/s = 2 dampers per span, 1 on each end of the span
- 4/s = 2 dampers in tandem on each end of the span
- 6/s = 3 dampers in tandem on each end of the span
- 8/s = 3 dampers in tandem + 1 damper on each end of the span
- 10/s = 3 dampers in tandem + 2 dampers in tandem on each end of the span
- 12/s = 3 dampers in tandem + 3 dampers in tandem on each end of the span
- 16/s = 3 dampers in tandem + 3 dampers in tandem + 2 dampers in tandem on each end of the span
- 18/s = 3 dampers in tandem + 3 dampers in tandem + 3 dampers in tandem on each end of the span
- 20/s = 4 dampers in tandem + 3 dampers in tandem + 3 dampers in tandem on each end of the span

### Placement and Spacing

1. AVD shall be placed approximately 5 inches away from any line hardware (suspension, deadend, armor rods, other SVDs, etc.).
2. AVDs can be nestled in tandem for up to three units to prevent the units from interfering with each other.
3. AVDs shall be applied to bare cable only to ensure proper performance.



## Fiber Storage Units for ADSS Fiber Optic Cable

AFL Fiber Storage Units (FSU) are used to conveniently store an extra length of cable along the ADSS cable run for later use. Furnished as pairs (kit contains two Fiber Storage Units and two sets of hanger brackets), these FSUs are constructed from UV stabilized PPE thermoplastic. All basic hardware for attachment to the ADSS cable is provided. ADSS cable mount support brackets meet Telcordia® specifications. Epoxy coated clamping devices meet ASTM specifications A153 and B695.

### Features

- Small profile and side facing channel minimizes ice and leaf loading
- Constructed from UV stabilized PPE thermoplastic
- Basic hanging hardware (bolts, nuts, washers) and strand clamps all included
- Tie-wrap slots for securing cable
- Epoxy-coated strand clamps

The mounting bracket features an angled, tent-profile, epoxy-coated bracket for standard ADSS cable mounting.

### Specifications

PARAMETER	FOSP-ADSS-12	FOSP-ADSS-17
Nominal Channel Width - in. (cm)	0.625	1.00
Minimum Bend Diameter - in. (cm)	12	17.5

### Ordering Information

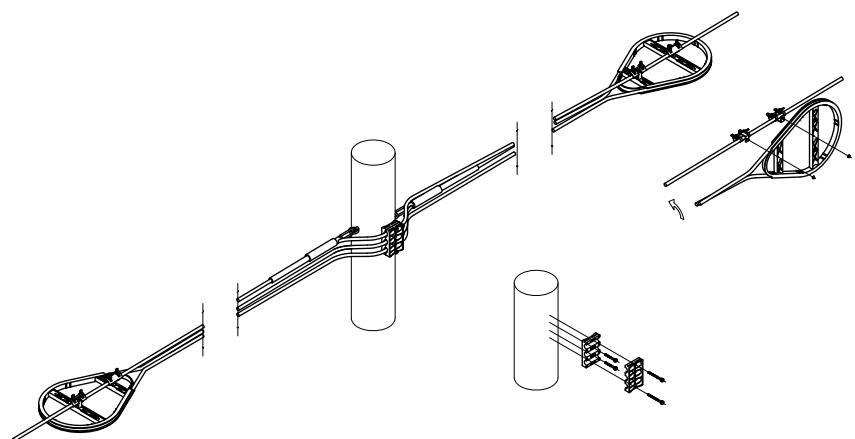
DESCRIPTION	FOSP-ADSS-12	FOSP-ADSS-17
FOS ADSS Kit	FA000049	FA000050

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

### Qualifications

GOVERNING BODY	STANDARD CODE
ASTM	ASTM A153, ASTM B695

### Typical Installation Diagram



# Alumoweld® Wire and Strand

Alumoweld wire consists of a thick cladding of pure aluminum over a high-strength steel core. Alumoweld wire offers the advantages of each metal. It is ideal for overhead ground wire, neutral messengers, line wire and guy strand. Alumoweld wire and strand is used by power utilities, as well as formed wire and optical ground wire manufacturers. Alumoweld outlasts other options by as much as 200% in corrosive environments, significantly lowering maintenance and replacement costs. When compared to solid aluminum wire, Alumoweld offers tremendous savings.

## How is Alumoweld made?

The Alumoweld process consists of a continuous application of a pure atomized aluminum powder to a high strength steel rod. Proper control of heat and pressure refines the cladding and develops a controlled atomic weld. The resulting bimetallic rod is then cold drawn into finished wire sizes without changing original proportions of aluminum and steel.

## Features

### Thick Aluminum Covering

Alumoweld wire is produced with the concentric aluminum covering comprising 25% of the cross-sectional area, with the aluminum thickness 10% minimum of the wire radius. The high proportion of aluminum offers an excellent degree of electrical conductivity and permanently protects the high strength steel core.

### High Conductivity

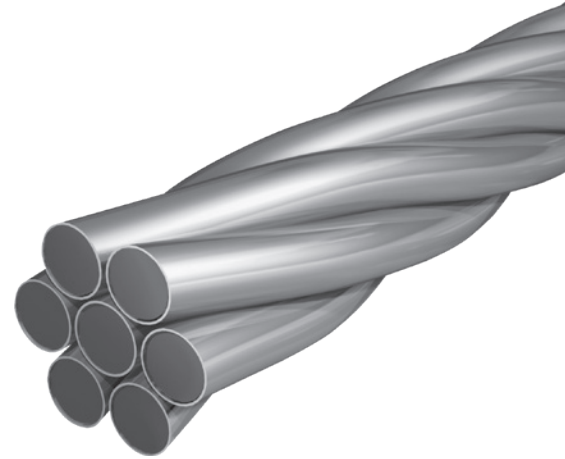
Compared to solid aluminum wire of the same diameter, Alumoweld wire has a direct current conductance of 33%. It has about three times the conductivity of galvanized steel wire. For high frequency currents where "skin effect" is a factor, the conductivity of Alumoweld wire approaches 100% of solid aluminum. When Alumoweld wires are combined with aluminum wires in composite conductors, a wide range of strength and conductivity characteristics is possible.

### Corrosion Resistance

The thick aluminum cladding of Alumoweld wire provides a high degree of corrosion resistance, resulting in longer service life and reduced maintenance. Accelerated laboratory tests exposing Alumoweld wire to various types of corrosive conditions have proven that Alumoweld wires have corrosion resistance comparable to EC grade aluminum. The conditions simulated in the test included industrial, marine and tropical.

### Combines High Strength with Low Weight

Alumoweld wire has a higher strength-to-weight ratio than any other wire commonly used on overhead lines. Size for size, it has about the same tensile strength as extra high strength steel wire, but weighs less. It has eight times the strength of solid aluminum wire of the same diameter and only a little more than twice the weight. This high strength-to-weight ratio provides a maximum margin of safety for long-span construction. The strength of Alumoweld's steel core is protected by the thick aluminum covering.



## Applications

- Utility Market
- Telecommunications Market
- Military
- General Industry Applications



# Alumoweld® Overhead Ground Wire

Alumoweld wire and strand are used by power utilities, as well as formed wire and optical ground wire manufacturers. Alumoweld is suitable in corrosive environments, lowering maintenance and replacement costs.

## Features

### Corrosion Resistance

Alumoweld overhead ground wire has excellent corrosion resistance. Its strength and conductivity remain unchanged in any atmosphere where aluminum is satisfactory, especially those known to be corrosive from industrial or atmospheric conditions.

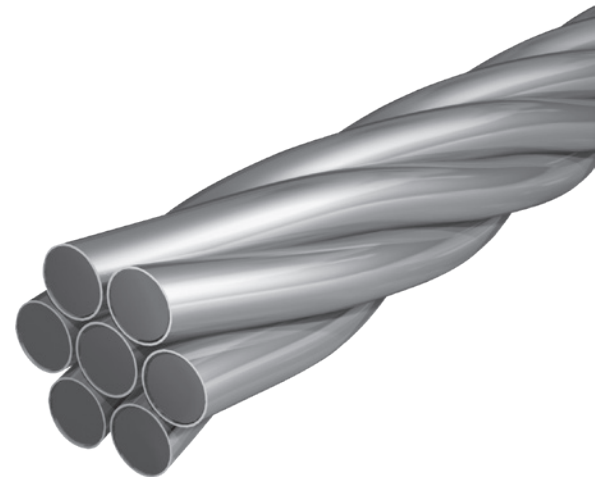
This assurance against corrosion is obtained through the application of a thick covering of pure aluminum, which provides a substantial barrier of protective metal. The minimum cladding thickness of Alumoweld is 10% of the radius of the wire. The cladding has a continuous, strong metallic bond to the steel core that will not crack or flake.

### Strength Comparable to Steel

Alumoweld also provides strength greater than or comparable to other overhead ground wires. For commonly used wire sizes, the tensile strength of the individual wire can approach 200,000 pounds per square inch. When used in a strand for overhead ground wire, this high strength permits greater span lengths, less sag, and heavier loads under storm loading conditions.

### Lightweight

Directly related to strength and sag performance is the lighter weight of Alumoweld. This lighter weight, combined with high strength, permits Alumoweld to be installed to the same sags as steel with correspondingly lower tensions and lower stresses on the towers or supporting structures.



## Applications

- Overhead ground wire
- Shield wire protecting transmission lines against lightning damage

## Alumoweld Strand ASTM B-416

NUMBER & SIZE OF WIRES	NOMINAL WIRE DIAMETER		NOMINAL STRAND DIAMETER		BREAKING LOAD		WEIGHT		RESISTANCE		CROSS SECTION	
	AWG	in.	mm	in.	mm	lbs	kg	lbs/1000 ft	kg/km	ohms/1000 ft @68°F	ohms/km @20°C	sq in.
37 No. 6	0.1620	4.115	1.130	28.80	120,200	54,500	2222.00	3307.0	0.05356	0.1757	0.76264	492.20
37 No. 7	0.1443	3.665	1.010	25.70	100,700	45,690	1762.00	2623.0	0.06754	0.2216	0.60509	390.30
37 No. 8	0.1285	3.264	0.899	22.90	84,200	38,190	1398.00	2080.0	0.08516	0.2794	0.47984	309.50
37 No. 9	0.1144	2.906	0.801	20.30	66,770	30,290	1108.00	1649.0	0.10740	0.3523	0.38032	245.50
37 No.10	0.1019	2.588	0.713	17.90	52,950	24,020	879.00	1308.0	0.13540	0.4443	0.30174	194.70
19 No. 5	0.1819	4.620	0.910	23.10	73,350	33,270	1430.00	2129.0	0.08224	0.2698	0.49438	318.70
19 No. 6	0.1620	4.115	0.810	20.60	61,700	27,990	1134.00	1688.0	0.10370	0.3402	0.39163	252.70
19 No. 7	0.1443	3.665	0.721	18.30	51,730	23,460	899.50	1339.0	0.13080	0.4290	0.31073	200.40

continued



# Alumoweld® Overhead Ground Wire

## Alumoweld Strand ASTM B-416 (cont.)

NUMBER & SIZE OF WIRES	NOMINAL WIRE DIAMETER		NOMINAL STRAND DIAMETER		BREAKING LOAD		WEIGHT		RESISTANCE		CROSS SECTION	
awg	in	mm	in	mm	lb	kg	lb/1000 ft	kg/km	ohms/1000 ft@68°F	ohms/km@20°C	sq in	mm²
19 No. 8	0.1285	3.264	0.642	16.30	43,240	19,610	713.50	1062.0	0.16490	0.5409	0.24641	158.90
19 No. 9	0.1144	2.906	0.572	14.50	34,290	15,550	565.80	842.0	0.20790	0.6821	0.19530	126.10
19 No.10	0.1019	2.588	0.509	12.90	27,190	12,330	448.70	667.7	0.26220	0.8601	0.15495	99.96
7 No. 5	0.1819	4.620	0.546	13.90	27,030	12,260	524.90	781.1	0.22640	0.7426	0.18193	117.40
7 No. 6	0.1620	4.115	0.486	12.40	22,730	10,310	416.30	619.5	0.28030	0.9198	0.14435	93.10
7 No. 7	0.1443	3.665	0.433	11.00	19,060	8,645	330.00	491.1	0.35350	1.1600	0.11448	73.87
7 No. 8	0.1285	3.264	0.385	9.78	15,930	7,226	261.80	389.6	0.44580	1.4630	0.09077	58.56
7 No. 9	0.1144	2.906	0.343	8.71	12,630	5,729	207.60	308.9	0.56210	1.8440	0.07198	46.44
7 No.10	0.1019	2.588	0.306	7.76	10,020	4,545	164.70	245.1	0.70880	2.3250	0.05708	36.83
7 No.11	0.0907	2.304	0.272	6.91	7,945	3,604	130.60	194.4	0.89380	2.9320	0.04527	29.21
7 No.12	0.0808	2.052	0.242	6.16	6,301	2,858	103.60	154.2	1.12700	3.6970	0.03590	23.16
3 No. 5	0.1819	4.620	0.392	9.96	12,230	5,547	224.50	334.1	0.51770	1.6990	0.07796	50.32
3 No. 6	0.1620	4.115	0.349	8.87	10,280	4,663	178.10	265.0	0.65280	2.1420	0.06185	39.90
3 No. 7	0.1443	3.665	0.311	7.90	8,621	3,910	141.20	210.1	0.82320	2.7010	0.04905	31.65
3 No. 8	0.1285	3.264	0.277	7.03	7,206	3,269	112.00	166.7	1.03800	3.4060	0.03890	25.10
3 No. 9	0.1144	2.906	0.247	6.26	5,715	2,592	88.81	132.2	1.30900	4.2940	0.03085	19.90
3 No.10	0.1019	2.588	0.220	5.58	4,532	2,056	70.43	104.8	1.65100	5.4150	0.02446	15.78

## Alumoweld Strand ASTM B-415

NUMBER & SIZE OF WIRES	NOMINAL WIRE DIAMETER		NOMINAL STRAND DIAMETER		BREAKING LOAD		WEIGHT		RESISTANCE		CROSS SECTION	
awg	in	mm	in	mm	lb	kg	lb/1000 ft	kg/km	ohms/1000 ft@68°F	ohms/km@20°C	sq in	mm²
No. 4	0.2043	5.189	115	109.0	5,081	2,305	93.63	139.3	1.222	4.009	0.03278	21.15
No. 5	0.1819	4.620	165	116.0	4,290	1,946	74.25	110.5	1.541	5.056	0.02599	16.77
No. 6	0.1620	4.115	175	123.0	3,608	1,637	58.88	87.6	1.943	6.375	0.02062	13.30
No. 7	0.1443	3.665	185	130.1	3,025	1,372	46.69	69.5	2.450	8.038	0.01635	10.55
No. 8	0.1285	3.264	195	137.1	2,529	1,147	37.03	55.1	3.089	10.130	0.01297	8.37
No. 9	0.1144	2.906	195	137.1	2,005	909	29.37	43.7	3.896	12.780	0.01028	6.63
No.10	0.1019	2.588	195	137.1	1,590	721	23.29	34.7	4.912	16.120	0.00816	5.26
No.11	0.0907	2.304	195	137.1	1,261	572	18.47	27.5	6.194	20.320	0.00647	4.17
No.12	0.0808	2.052	195	137.1	1,000	454	14.65	21.8	7.811	25.630	0.00513	3.31

Modulus of Elasticity: Strand 23,000,000; Solid Wire 23,500,000. Coefficient of Linear Expansion: 0.000,007,2 per degree F.  
 Modulus of Elasticity: Strand 16,200 kg/mm<sup>2</sup>; Solid Wire 16,500 kg/mm<sup>2</sup>. Coefficient of Linear Expansion: 0.000,013 per degree C.

## Qualifications

Governing Body	Standard Code	Component
ASTM	B415	Alumium Clad Steel Wire (ACS wire)

Contact AFL for your Alumoweld solution.



# Alumoweld® Type M Guy Strand

Alumoweld Type M Guy Strand is an economical, corrosion resistant guying material for use on overhead line structures. The thick cladding of aluminum on each wire protects the high-strength steel core from rusting and subsequent loss of strength. Costly maintenance is eliminated, and the original safety factor of the guy is maintained throughout the life of the line.

## Features

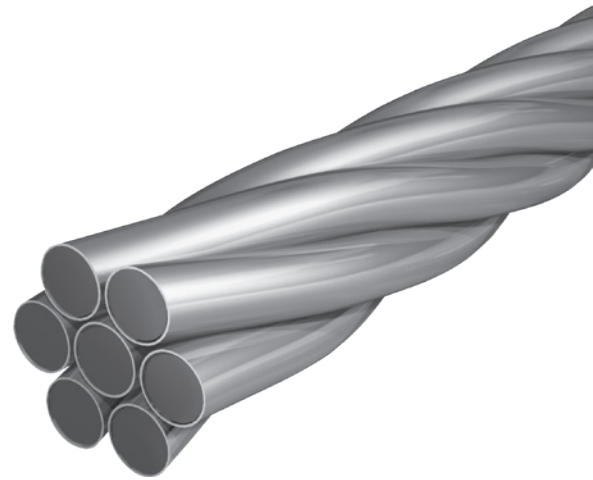
### Thick Aluminum Cladding

The Alumoweld wire used to make Type M guy strand is unique in that the aluminum cladding thickness is guaranteed to be no less than 10% minimum of the wire radius. This, a thick corrosion barrier, that is pure aluminum not zinc or an iron-aluminum alloy, protects the steel core.

Another important feature of any coated or clad wire is the bond between the coating material and the base metal. In the case of Alumoweld wire, and aluminum cladding and steel core are joined by a continuous ductile weld. This assures against cracking or separation of the protective aluminum from the steel core.

### Lightweight and Convenient

Directly related to strength and sag performance is the lighter weight of Alumoweld Type M Guy Strand. This lighter weight, combined with high strength, permits Alumoweld to be installed to the same sags as steel with correspondingly lower tensions and lower stresses on the towers or supporting structures.



## Applications

- Power lines
- Telephone lines
- Railway signals
- Communication lines
- Towers Masts

*continued*  
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# Alumoweld® Type M Guy Strand (cont.)

## Physical Characteristics

STRAND DESIGNATION	NOMINAL DIAMETER OF STRAND		NUMBER OF INDIVIDUAL WIRES	DIAMETER OF INDIVIDUAL WIRES		BREAKING LOAD		WEIGHT		APPROXIMATE RESISTANCE <sup>2</sup>	
	in.	mm		in.	mm	lbs	kg	lbs/1000 ft	kg/km	Ohms/1000 ft	Ohms/km
2.8M3	0.174	4.42	3	0.081	2.06	2,800	1,270	44	65.47	2.62	8.60
4M3	0.220	5.59	3	0.102	2.59	4,000	1,814	70	104	1.65	5.41
5M3	0.247	6.27	3	0.114	2.90	5,700	2,585	89	132	1.31	4.30
6M	0.242	6.15	7	0.081	2.06	6,000	2,721	104	155	1.13	3.71
7M3	0.277	7.04	3	0.128	3.25	7,200	3,265	112	167	1.04	3.41
8M	0.272	6.91	7	0.091	2.31	8,000	3,629	131	195	0.89	2.92
10M	0.306	7.77	7	0.102	2.59	10,000	4,536	165	246	0.71	2.33
12.5M	0.343	8.71	7	0.114	2.90	12,500	5,670	208	310	0.56	1.84
14M	0.363	9.22	7	0.121	3.07	14,000	6,350	232	345	0.50	1.64
16M	0.386	9.80	7	0.128	3.25	16,000	7,257	262	390	0.45	1.48
18M	0.417	10.60	7	0.139	3.53	18,000	8,164	306	455	0.38	1.25
19M <sup>3</sup>	0.433	11.00	7	0.144	3.67	19,000	8,618	330	491.10	0.35	1.16
20M	0.444	11.30	7	0.148	3.76	20,000	9,072	347	517	0.34	1.12
25M	0.519	13.20	7	0.173	4.39	25,000	11,340	475	707	0.25	0.82

1. Unless otherwise noted, the above guy strands are manufactured per Alumoweld Specification ER-3008.

2. For information only, not for calculation purposes.

3. Per ASTM B-416.

## Qualifications

STANDARD CODE	COMPONENT
ER-3008	Alumium Clad Steel Wire (ACS wire)

Contact AFL for your Alumoweld solution.

# Armor Rods

Armor rods are designed to protect the conductor by reducing bending, compression, and abrasion at the support point. Protection against flashover damage is also provided. Armor rods are recommended as protection for spans greater than 300 ft. (91 m).

Manufactured from either aluminum alloy, Alumoweld®, or galvanized steel, they are designed for use with ACSR, AAC, AAAC, ACSS, SSAC, TW Types and ACAR conductors as well as Alumoweld® and steel ground wire. All rod sets are manufactured with right-hand lay as standard for aluminum-based material and left hand lay for Alumoweld and steel ground wire.



## Features

### Color Coded and Center Marked

For ease of identification to conductor size, the armor rods are color coded in the center of the rod. This feature also assists in alignment of the rods during installation.

### Repair Damage

When no more than 50% of the outside strands on an ACSR or aluminum conductor have been damaged outside the support point, armor rods may be used to restore 100% of the rated conductance and strength of the line.

### Vibration Protection

Installing armor rods improves the conductor's ability to withstand the fatigue forces associated with aeolian type vibration. They do not function as vibration control devices. For assistance in determining the proper vibration protection, contact the AFL Technical Support Team or visit our website at [www.Vibrec.com](http://www.Vibrec.com).

### Tap Over

Armor rods may be tapped over on ACSR and aluminum conductor, but not on Alumoweld, or steel ground wire. Where tapping is used, it is strongly recommended that the conductor is thoroughly wire brushed and an oxide inhibitor be applied.

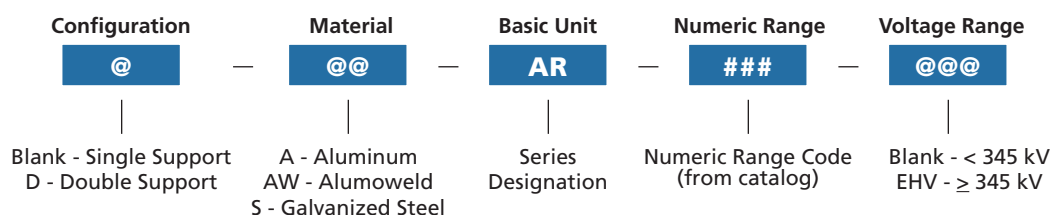
### Extra High Voltage Applications

For 345 kV and above, the armor rod ends are modified to eliminate Corona effects and include a suffix of 'EHV' at the end of the AFL part number.

### Customized Armor Rods

For armor rods with special requirements, such as longer lengths or non-standard lay direction contact the AFL Technical Support Team at 1-800-866-7385.

## Ordering Information



**Example:** For single 795 26/7, Aluminum conductor diameter of 1.099 to 1.139 inches and Extra High Voltage, the complete catalog number is: **AAR279EHV**

*continued*  
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## Ordering Information - Armor Rods

AFL NO.	Conductor Diameter Range		Nominal Cable Size	Rod Dia. (inches)	Quantity in Set	Color Code	Rod Length (inches)	Packaging per box	
	Min. (inches)	Max. (inches)						Units	Weight (lbs)
Aluminum (right hand lay)									
AAR062	0.244	0.259	#4, 6/1, 7/1	0.146	7	Orange	40 (S) 52 (D)	50	25 (S) 32 (D)
AAR066	0.260	0.273	#3, 7W All Aluminum	0.146	7	Green	42 (S) 54 (D)	50	26 (S) 34 (D)
AAR069	0.274	0.289	#3, 7W Aluminum Alloy	0.146	8	Yellow	42 (S) 54 (D)	50	30 (S) 38 (D)
AAR073	0.290	0.308	#2, 7W All Aluminum	0.146	8	Purple	42 (S) 54 (D)	50	30 (S) 38 (D)
AAR078	0.309	0.326	#2, 6/1, 7/1	0.136	9	Red	44 (S) 56 (D)	50	32 (S) 40 (D)
AAR083	0.327	0.346	#1, 7W All Aluminum	0.146	9	Blue	46 (S) 58 (D)	50	38 (S) 46 (D)
AAR088	0.347	0.366	#1, 6/1	0.146	9	Green	48 (S) 60 (D)	50	40 (S) 49 (D)
AAR093	0.367	0.389	1/0, 7W All Aluminum	0.146	10	Black	50 (S) 62 (D)	50	45 (S) 55 (D)
AAR099	0.390	0.413	1/0, 6/1	0.167	9	Yellow	52 (S) 64 (D)	50	55 (S) 67 (D)
AAR105	0.414	0.436	3/0, 7W Comp.	0.146	10	Brown	52 (S) 64 (D)	50	48 (S) 58 (D)
AAR111	0.437	0.463	2/0, 6/1	0.167	10	Blue	54 (S) 66 (D)	50	64 (S) 76 (D)
AAR118	0.464	0.490	3/0, 7W-19W All Aluminum	0.167	10	Green	54 (S) 66 (D)	50	64 (S) 76 (D)
AAR124	0.491	0.521	3/0, 6/1	0.167	11	Orange	56 (S) 68 (D)	25	37 (S) 46 (D)
AAR132	0.522	0.551	4/0, 7W-19W All Aluminum	0.167	11	Black	58 (S) 70 (D)	25	38 (S) 46 (D)
AAR140	0.552	0.585	4/0, 6/1	0.182	11	Red	60 (S) 72 (D)	25	46 (S) 55 (D)
AAR149	0.586	0.606	266.8, 19W	0.182	12	Black	62 (S) 74 (D)	25	52 (S) 61 (D)
AAR154	0.607	0.630	266.8, 18/1	0.182	12	Purple	64 (S) 76 (D)	25	54 (S) 63 (D)
AAR160	0.631	0.655	266.8, 26/7	0.182	12	Yellow	64 (S) 76 (D)	25	54 (S) 63 (D)
AAR166	0.656	0.679	336.4, 19W	0.182	13	Brown	66 (S) 78 (D)	18	43 (S) 51 (D)
AAR172	0.680	0.703	300, 26/7	0.204	12	Blue	68 (S) 80 (D)	18	52 (S) 60 (D)
AAR179	0.704	0.740	336.4, 26/7	0.204	12	Green	72 (S) 84 (D)	18	54 (S) 64 (D)
AAR188	0.741	0.782	397.5 18/1	0.204	13	Orange	72	18	50
AAR199	0.783	0.814	397.5 26/7	0.250	11	Purple	76	15	66
AAR207	0.815	0.845	636 19W	0.250	11	Red	76	15	66
AAR215	0.846	0.907	477 26/7	0.250	12	Blue	78	15	74
AAR230	0.908	0.929	636 37W	0.250	13	Green	80	12	55
AAR236	0.930	0.976	605 26/7	0.250	13	White	88	12	60
AAR248	0.977	1.016	636 26/7	0.310	11	Yellow	92	6	55
AAR258	1.017	1.035	795 37W-61W	0.310	12	Brown	94	6	45
AAR263	1.036	1.064	715.5 26/7	0.310	12	Blue	96	6	46
AAR270	1.065	1.098	795 24/7	0.310	12	Green	96	6	46
AAR279	1.099	1.139	795 26/7	0.310	12	Orange	100	6	51
AAR289	1.140	1.161	954 36/1	0.310	13	Purple	100	6	52
AAR295	1.162	1.208	1003.5 37W-61W	0.310	13	Red	100	6	57
AAR307	1.209	1.269	1113 45/7	0.365	12	Black	100	6	67

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## Ordering Information - Armor Rods (cont.)

AFL NO.	Conductor Diameter Range		Nominal Cable Size	Rod Dia. (inches)	Quantity in Set	Color Code	Rod Length (inches)	Packaging per box	
	Min. (inches)	Max. (inches)						Units	Weight (lbs)
Aluminum (right hand Lay)									
AAR322	1.270	1.327	1192.5 45/7	0.365	12	White	100	6	67
AAR337	1.328	1.390	1272 45/7	0.365	13	Yellow	100	3	45
AAR353	1.391	1.440	1431 45/7	0.436	11	Brown	100	3	54
AAR366	1.441	1.508	1590 45/7	0.436	12	Blue	100	3	58
AAR383	1.509	1.578	1590 54/19	0.436	12	Green	100	3	58
AAR401	1.579	1.651	1780 84/19	0.436	13	Orange	100	3	60
AAR419	1.652	1.728	—	0.436	13	Purple	100	3	60
AAR439	1.729	1.809	2156 84/19	0.436	14	Red	100	3	64
AAR459	1.810	1.898	2500 91W	0.436	14	Black	100	3	64
AAR482	1.899	1.991	—	0.436	15	White	100	3	74
AAR506	1.992	2.090	—	0.436	15	Yellow	100	3	74
AAR531	2.091	2.193	—	0.436	15	Brown	100	3	82
Galvanized Steel (left hand Lay)									
SAR058	0.229	0.243	1/4, 7 WIRE	0.086	10	Black	40	50	38
SAR062	0.244	0.259	1/4, 3 WIRE	0.086	10	Yellow	40	50	38
SAR078	0.309	0.326	5/16, 3 OR 7 WIRE	0.100	11	Black	44	50	60
SAR088	0.347	0.373	3/8, 3 OR 7 WIRE	0.100	12	Orange	48	50	70
SAR105	0.414	0.436	7/16, 3 OR 7 WIRE	0.119	12	Green	52	20	54
SAR124	0.491	0.521	1/2, 7 OR 19 WIRE	0.138	12	Blue	56	20	64
Alumoweld® (Left Hand Lay)									
AWAR043	0.169	0.178	3 #12 AW	0.102	7	Orange	40 (S) 52 (D)	50	31 (S) 40 (D)
AWAR050	0.196	0.207	3 # 11 AW	0.102	7	Black	40 (S) 52 (D)	50	31 (S) 40 (D)
AWAR055	0.218	0.225	3 # 10 AW, 4M AW	0.102	8	Green	40 (S) 52 (D)	50	35 (S) 46 (D)
AWAR060	0.237	0.249	7 # 12 AW, 1/4", 6M AW, 3 # 9 AW	0.102	9	Yellow	40 (S) 52 (D)	50	39 (S) 51 (D)
AWAR067	0.264	0.277	7 # 11 AW, 9/32", 8M AW, 3 # 8 AW	0.114	9	Blue	42 (S) 54 (D)	25	27 (S) 35 (D)
AWAR075	0.296	0.314	7 # 10 AW, 5/16", 10M AW, 3 # 7 AW	0.114	9	Black	46 (S) 58 (D)	25	29 (S) 37 (D)
AWAR085	0.334	0.352	7 # 9 AW, 11/31", 12.5M AW, 3 # 6 AW	0.114	10	Yellow	50 (S) 62 (D)	25	33 (S) 44 (D)
AWAR095	0.373	0.392	7 # 8 AW, 3/8", 3 # 5 AW	0.128	10	Orange	50 (S) 62 (D)	25	44 (S) 54 (D)
AWAR104	0.409	0.425	18M AW	0.128	11	Black	54 (S) 66 (D)	25	52 (S) 62 (D)
AWAR108	0.426	0.450	7 # 7 AW, 7/16", 20M AW	0.128	12	Green	56 (S) 68 (D)	25	59 (S) 70 (D)
AWAR121	0.477	0.504	7 # 6 AW, 1/2"	0.144	11	Blue	56 (S) 68 (D)	20	52 (S) 65 (D)
AWAR136	0.535	0.565	7 # 5 AW, 9/16"	0.162	12	Yellow	60 (S) 72 (D)	10	39 (S) 48 (D)
AWAR150	0.593	0.625	7 # 4 AW, 5/8"	0.183	11	Black	60 (S) 72 (D)	10	59 (S) 56 (D)

## End Finish of Rods:

1. Chamfered ends - standard on diameters up to 0.250"
2. Ball ends - standard on diameters greater than 0.250"
3. Tapered ends for EHV - designated by suffix 'EHV'
4. For double armor rods, contact the AFL Technical Support Team

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## Armor Rods Cross Reference

Single Aluminum		
AFL NO.	Dulmison®	PLP®*
AAR062	AAR 0620	AR-0110
AAR066	AAR 0660	AR-0111
AAR069	AAR 0695	AR-0112
AAR073	AAR 0735	AR-0113
AAR078	AAR 0785	AR-0114
AAR083	AAR 0830	AR-0115
AAR088	AAR 0880	AR-0116
AAR093	AAR 0930	AR-0117
AAR099	AAR 0990	AR-0118
AAR105	AAR 1050	AR-0119
AAR111	AAR 1110	AR-0120
AAR118	AAR 1180	AR-0121
AAR124	AAR 1245	AR-0122
AAR132	AAR 1325	AR-0123
AAR140	AAR 1400	AR-0124
AAR149	AAR 1490	AR-0125
AAR154	AAR 1540	AR-0126
AAR160	AAR 1605	AR-0127
AAR166	AAR 1665	AR-0128
AAR172	AAR 1725	AR-0129
AAR179	AAR 1790	AR-0130
AAR188	AAR 1880	AR-0131
AAR199	AAR 1990	AR-0132
AAR207	AAR 2070	AR-0133
AAR215	AAR 2150	AR-0134
AAR230	AAR 2305	AR-0135
AAR236	AAR 2360	AR-0136
AAR248	AAR 2480	AR-0137
AAR258	AAR 2585	AR-0138
AAR263	AAR 2630	AR-0139
AAR270	AAR 2705	AR-0140
AAR279	AAR 2790	AR-0141
AAR289	AAR 2895	AR-0142
AAR295	AAR 2950	AR-0143
AAR307	AAR 3070	AR-0144
AAR322	AAR 3225	AR-0145
AAR337	AAR 3375	AR-0146
AAR353	AAR 3535	AR-0147
AAR366	AAR 3660	AR-0163
AAR383	AAR 3835	AR-0164
AAR401	AAR 4010	AR-0165
AAR419	AAR 4195	AR-0166
AAR439	AAR 4390	AR-0167
AAR459	AAR 4595	AR-0168
AAR482	AAR 4825	AR-0169
AAR506	AAR 5060	AR-0170
AAR531	AAR 5310	AR-0171

Single Aluminum (cont.)		
AFL NO.	Dulmison®	PLP®*
AAR248EHV	—	AR-0500
AAR258EHV	—	AR-0501
AAR263EHV	—	AR-0502
AAR270EHV	—	AR-0503
AAR279EHV	—	AR-0504
AAR289EHV	—	AR-0505
AAR295EHV	—	AR-0506
AAR307EHV	—	AR-0507
AAR322EHV	—	AR-0508
AAR337EHV	—	AR-0509
AAR353EHV	—	AR-0510
AAR366EHV	—	AR-0511
AAR383EHV	—	AR-0512
AAR401EHV	—	AR-0513
AAR419EHV	—	AR-0514
AAR439EHV	—	AR-0516
AAR459EHV	—	AR-0517
AAR482EHV	—	AR-0518
AAR506EHV	—	AR-0519
AAR531EHV	—	AR-0520
Galvanized Steel		
SAR058	SAR 0580	AR-1123
SAR062	SAR 0620	AR-1124
SAR078	SAR 0785	AR-1128
SAR088	SAR 0880	AR-1130
SAR105	SAR 1050	AR-1133
SAR124	SAR 1245	AR-1136
Alumoweld®		
AWAR043	AWAR 0430	AR-2113
AWAR050	AWAR 0500	AR-2116
AWAR055	AWAR 0555	AR-2118
AWAR060	AWAR 0600	AR-2120
AWAR067	AWAR 0670	AR-2122
AWAR075	AWAR 0750	AR-2124
AWAR085	AWAR 0850	AR-2126
AWAR095	AWAR 0950	AR-2128
AWAR104	AWAR 1040	AR-2130
AWAR108	AWAR 1080	AR-2131
AWAR121	AWAR 1210	AR-2133
AWAR136	AWAR 1360	AR-2135
AWAR150	AWAR 1505	AR-2137

Double Aluminum		
AFL NO.	Dulmison®	PLP®*
DAAR062	DAAR 0620	AR-0310
DAAR066	DAAR 0660	AR-0311
DAAR069	DAAR 0695	AR-0312
DAAR073	DAAR 0735	AR-0313
DAAR078	DAAR 0785	AR-0314
DAAR083	DAAR 0830	AR-0315
DAAR088	DAAR 0880	AR-0316
DAAR093	DAAR 0930	AR-0317
DAAR099	DAAR 0990	AR-0318
DAAR105	DAAR 1050	AR-0319
DAAR111	DAAR 1110	AR-0320
DAAR118	DAAR 1180	AR-0321
DAAR124	DAAR 1245	AR-0322
DAAR132	DAAR 1325	AR-0323
DAAR140	DAAR 1400	AR-0324
DAAR149	DAAR 1490	AR-0325
DAAR154	DAAR 1540	AR-0326
DAAR160	DAAR 1605	AR-0327
DAAR166	DAAR 1665	AR-0328
DAAR172	DAAR 1725	AR-0329
DAAR179	DAAR 1790	AR-0342
Alumoweld®		
DAWAR043D	DAWAR 0430	AR-2313
DAWAR050D	DAWAR 0500	AR-2316
DAWAR055D	DAWAR 0555	AR-2318
DAWAR060D	DAWAR 0600	AR-2320
DAWAR067D	DAWAR 0670	AR-2322
DAWAR075D	DAWAR 0750	AR-2324
DAWAR085D	DAWAR 0850	AR-2326
DAWAR095D	DAWAR 0950	AR-2328
DAWAR104D	DAWAR 1040	AR-2330
DAWAR108D	DAWAR 1080	AR-2331
DAWAR121D	DAWAR 1210	AR-2333
DAWAR136D	DAWAR 1360	AR-2335
DAWAR150D	DAWAR 1505	AR-2337

\*PLP is a trademark of Preformed Line Products.



# Line Guards

Line guards are designed to protect the conductor by reducing bending, compression, and abrasion at the support point, particularly where hand-ties are used. Line guards are recommended as protection for spans of less than 300 ft. (91 m). Manufactured from aluminum alloy, they are designed for use with ACSR, AAC, AAAC, ACSS, SSAC, TW Types and ACAR conductors. All guard sets are manufactured with right-hand lay as standard.

## Features

### Color Coded and Center Marked

For ease of identification to conductor size, the line guards are color coded in the center of the rod. This feature also assists in alignment of the rods during installation.

### Repair Damage

When no more than 25% of the outside strands on an ACSR or aluminum conductor have been damaged outside the support area, line guards may be used to restore 100% of the rated conductance and strength of the line. Do not use line guards for repair at the support point.

### Tap Over

Line guards may be tapped over on ACSR and aluminum conductor. Where tapping is used, it is strongly recommended that the conductor be thoroughly wire brushed and an oxide inhibitor be applied.

### Extra High Voltage Applications

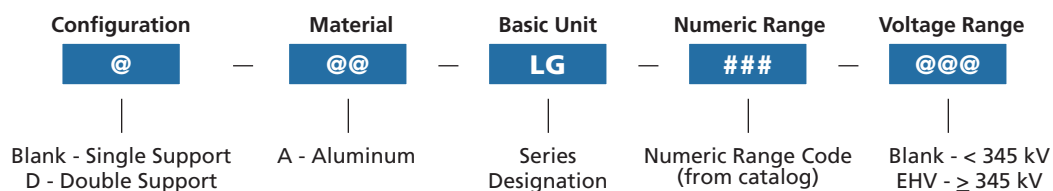
For 345 kV and above, the line guards ends are modified to eliminate Corona effects and include a suffix of 'EHV' at the end of the product number.

### Customized Line Guards

For line guards with special requirements, such as longer lengths or non-standard lay direction contact the AFL Technical Support Team at 1.800.866.7385.



## Ordering Information



**Example:** For single 795 26/7, Aluminum conductor diameter of 1.099 to 1.139 inches and Extra High Voltage, the complete catalog number is: **ALG279EHV**

## Ordering Information—Line Guards

AFL NO.	Conductor Diameter Range		Nominal Cable Size	Rod Diameter (inches)	Qty of Set	Color Code	Rod length (inches)	Packaging per box	
	Min. (inches)	Max. (inches)						Units	Weight (lbs)
ALG046	0.182	0.193	#6, 7W All Aluminum	0.102	7	Purple	17 (S) 29 (D)	100	12 (S) 19 (D)
ALG049	0.194	0.207	#6, 7W Aluminum Alloy	0.102	7	Blue	17 (S) 29 (D)	100	12 (S) 19 (D)
ALG056	0.220	0.228	#5, 6/1	0.121	7	White	17 (S) 29 (D)	100	16 (S) 26 (D)
ALG058	0.229	0.243	#4, 7W All Aluminum	0.121	8	Brown	19 (S) 31 (D)	100	20 (S) 32 (D)
ALG062	0.244	0.259	#4, 6/1, 7/1	0.121	8	Orange	19 (S) 31 (D)	100	20 (S) 32 (D)
ALG066	0.260	0.273	#3, 7W All Aluminum	0.121	8	Green	19 (S) 31 (D)	100	20 (S) 32 (D)
ALG069	0.274	0.289	#3, 7W Aluminum Alloy	0.121	9	Yellow	21 (S) 33 (D)	100	25 (S) 38 (D)
ALG073	0.290	0.308	#2, 7W All Aluminum	0.121	9	Purple	21 (S) 33 (D)	100	25 (S) 38 (D)
ALG078	0.309	0.326	#2, 6/1, 7/1	0.121	9	Red	21 (S) 33 (D)	100	25 (S) 38 (D)
ALG083	0.327	0.346	#1, 7W All Aluminum	0.121	10	Blue	21 (S) 33 (D)	100	28 (S) 42 (D)
ALG088	0.347	0.366	#1, 6/1	0.121	10	Green	23 (S) 35 (D)	100	30 (S) 44 (D)
ALG093	0.367	0.389	1/0, 7W All Aluminum	0.121	11	Black	23 (S) 35 (D)	100	32 (S) 46 (D)
ALG099	0.390	0.413	1/0, 6/1	0.121	11	Yellow	25 (S) 37 (D)	100	35 (S) 50 (D)
ALG105	0.414	0.436	3/0, 7W-19W Comp.	0.121	12	Brown	25 (S) 37 (D)	50	20 (S) 29 (D)
ALG111	0.437	0.463	2/0, 6/1, 7/1	0.121	13	Blue	27 (S) 39 (D)	50	23 (S) 32 (D)
ALG118	0.464	0.490	3/0, 7W-19W	0.121	13	Green	27 (S) 39 (D)	50	24 (S) 32 (D)
ALG124	0.491	0.521	3/0, 6/1	0.121	14	Orange	29 (S) 41 (D)	50	26 (S) 36 (D)
ALG132	0.522	0.551	4/0, 7W-19W	0.121	14	Black	29 (S) 41 (D)	50	26 (S) 36 (D)
ALG140	0.552	0.585	4/0 6/1	0.121	15	Red	31 (S) 43 (D)	50	30 (S) 40 (D)
ALG149	0.586	0.606	266.8 19W	0.146	14	Black	31 (S) 43 (D)	50	40 (S) 54 (D)
ALG154	0.607	0.630	266.8 18/1	0.146	14	White	33 (S) 45 (D)	50	42 (S) 57 (D)
ALG160	0.631	0.655	266.8 26/7	0.146	14	Yellow	33 (S) 45 (D)	50	42 (S) 57 (D)

## Ordering Information—Line Guards (cont.)

AFL NO.	Conductor Diameter Range		Nominal Cable Size	Rod Diameter (inches)	Qty of Set	Color Code	Rod length (inches)	Packaging per box	
	Min. (inches)	Max. (inches)						Units	Weight (lbs)
ALG166	0.656	0.679	336.4 19W	0.146	15	Brown	35 (S) 47 (D)	50	48 (S) 62 (D)
ALG172	0.680	0.703	303.714	0.146	15	Blue	35 (S) 47 (D)	50	48 (S) 62 (D)
ALG179	0.704	0.740	336.4 26/7	0.146	16	Green	37 (S) 49 (D)	25	54 (S) 70 (D)
ALG188	0.741	0.792	397.5 18/1, 26/7, 24/7	0.146	17	Orange	39 (S) 51 (D)	25	60 (S) 77 (D)
ALG201	0.793	0.840	477 18/1, 19W, 37W	0.146	18	Purple	39 (S) 51 (D)	25	64 (S) 82 (D)
ALG213	0.841	0.898	477 24/7, 26/7, 30/7	0.146	19	Blue	41 (S) 53 (D)	25	36 (S) 45 (D)
ALG228	0.899	0.954	556.5 24/7, 26/7, 30/7, 19W, 37W	0.167	18	Green	43 (S) 55 (D)	25	46 (S) 58 (D)
ALG242	0.955	0.986	605 26/7, 636	0.182	17	White	45 (S) 57 (D)	25	54 (S) 68 (D)
ALG250	0.987	1.016	636 26/7, 666.6 24/7	0.182	18	Yellow	45 (S) 57 (D)	25	58 (S) 72 (D)
ALG258	1.017	1.064	715.5 26/7, 24/7, 795 37W, 61W	0.182	18	Brown	47 (S) 59 (D)	25	60 (S) 74 (D)
ALG270	1.065	1.098	874.5 37W, 61W	0.204	17	Green	49 (S) 61 (D)	15	44 (S) 25 (D)
ALG279	1.099	1.153	795 26/7, 30/19	0.250	15	Orange	49 (S) 61 (D)	15	58 (S) 72 (D)
ALG293	1.154	1.208	954 45/7, 54/7	0.250	15	Purple	51 (S) 63 (D)	15	62 (S) 75 (D)
ALG307	1.209	1.268	1192.5 61W	0.250	16	Black	53 (S) 65 (D)	15	68 (S) 82 (D)
ALG322	1.269	1.327	1192.5 45/7	0.250	17	White	53 (S) 65 (D)	10	48 (S) 58 (D)
ALG337	1.328	1.390	1351.5 61W, 1272 45/7, 54/19	0.250	17	Yellow	55 (S) 67 (D)	10	50 (S) 60 (D)
ALG353	1.391	1.440	1431 45/7	0.310	15	Brown	57 (S) 69 (D)	5	36 (S) 44 (D)
ALG366	1.441	1.508	1431 54/19	0.310	16	Blue	59 (S) 71 (D)	5	40 (S) 48 (D)
ALG383	1.509	1.578	1590 54/19, 1750 61W	0.310	16	Green	61 (S) 73 (D)	5	42 (S) 49 (D)
ALG401	1.579	1.651	1780 84/19	0.310	17	Orange	63 (S) 75 (D)	5	43 (S) 53 (D)
ALG419	1.652	1.728	2034 72/7	0.365	15	Purple	65 (S) 77 (D)	5	54 (S) 66 (D)
ALG439	1.729	1.890	2156 84/19	0.365	16	Red	67 (S) 79 (D)	5 (S) 3 (D)	55 (S) 45 (D)

## End Finish of Rods:

1. Chamfered ends - standard on diameters up to 0.250". 2. Ball ends - standard on diameters greater than 0.250". 3. Tapered ends for EHV - designated by suffix 'EHV'.

## Line Guards Cross Reference

Single Aluminum		
AFL NO.	Dulmison®	PLP®*
ALG046	ALG0460	MG-0122
ALG049	ALG0490	MG-0123
ALG056	ALG0560	MG-0125
ALG058	ALG0580	MG-00126
ALG062	ALG0620	MG-0127
ALG066	ALG0660	MG-0128
ALG069	ALG0690	MG-0129
ALG073	ALG0730	MG-0130
ALG078	ALG0780	MG-0131
ALG083	ALG0830	MG-0132
ALG088	ALG0880	MG-0133
ALG093	ALG0930	MG-0134
ALG099	ALG0990	MG-0135
ALG105	ALG1050	MG-0136
ALG111	ALG1110	MG-0137
ALG118	ALG1180	MG-0138
ALG124	ALG1240	MG-0139
ALG132	ALG1320	MG-0143
ALG140	ALG 1400	MG-0141
ALG149	ALG 1490	MG-0142
ALG154	ALG 1540	MG-0143
ALG160	ALG 1605	MG-0144
ALG166	ALG 1665	MG-0145
ALG172	ALG 1725	MG-0146
ALG179	ALG 1790	MG-0147
ALG188	ALG 1880	MG-0148
ALG201	ALG 2015	MG-0149
ALG213	ALG 2135	MG-0150
ALG228	ALG 2285	MG-0151
ALG242	ALG 2425	MG-0152
ALG250	ALG 2505	MG-0153
ALG258	ALG 2585	MG-0154
ALG270	ALG 2705	MG-0155
ALG279	ALG 2790	MG-0156
ALG293	ALG 2930	MG-0157

Single Aluminum		
AFL NO.	Dulmison®	PLP®*
ALG307	ALG 3070	MG-0158
ALG322	ALG 3225	MG-0159
ALG337	ALG 3375	MG-0160
ALG353	ALG 3535	MG-0161
ALG366	ALG 3660	MG-0162
ALG383	ALG 3835	—
ALG401	ALG 4010	—
ALG419	ALG4195	—
ALG439	ALG 4390	—

Double Aluminum		
AFL NO.	Dulmison®	PLP®*
DALG046	DALG0460	MG-0305
DALG049	DALG0490	MG-0306
DALG056	DALG0560	MG-0308
DALG058	DALG0580	MG-0309
DALG062	DALG0620	MG-0310
DALG066	DALG0660	MG-0311
DALG069	DALG0690	MG-0312
DALG073	DALG0730	MG-0313
DALG078	DALG0780	MG-0314
DALG083	DALG0830	MG-0315
DALG088	DALG0880	MG-0316
DALG093	DALG0930	MG-0317
DALG099	DALG0990	MG-0318
DALG105	DALG1050	MG-0319
DALG111	DALG1110	MG-0320
DALG118	DALG1180	MG-0321
DALG124	DALG1240	MG-0322
DALG132	DALG1320	MG-0324
DALG140	DALG 1400	MG-0324
DALG149	DALG 1490	MG-0325
DALG154	DALG1540	MG-0326
DALG160	DALG 1605	MG-0327
DALG166	DALG 1665	MG-0328
DALG172	DALG 1725	MG-0329

Double Aluminum		
AFL NO.	Dulmison®	PLP®*
DALG179	DALG 1790	MG-0330
DALG188	DALG 1880	MG-0331
DALG201	DALG 2015	MG-0332
DALG213	DALG 2135	MG-0333
DALG228	DALG 2285	MG-0334
DALG242	DALG 2425	MG-0335
DALG250	DALG 2505	MG-0336
DALG258	DALG 2585	MG-0337
DALG270	DALG 2705	MG-0338
DALG279	DALG 2790	MG-0339
DALG293	DALG 2930	MG-0340
DALG307	DALG 3070	MG-0341
DALG322	DALG 3225	MG-0342
DALG337	DALG 3375	MG-0343
DALG353	DALG 3535	MG-0344
DALG366	DALG 3660	MG-0345
DALG383	DALG 3835	—
DALG401	DALG 4010	—
DALG419	DALG4195	—
DALG439	DALG 4390	—

\*PLP is a trademark of Preformed Line Products.

## Distribution Dead End

Aluminum Covered Steel Materials

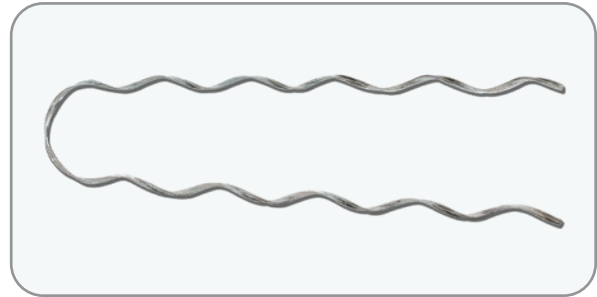
### MATERIALS

**Dead End** - Aluminum covered steel and galvanized steel.

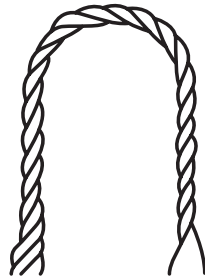
**Color code and crossover marks** - Identifies proper conductor size and indicates application starting point.

**Identification tag** - Shows catalog number, conductor diameter range (when applicable) and nominal conductor size.

**Loop type** - Open helix for smaller sizes and cabled for larger sizes.



**Open Helix Loop**



**Cabled Loop**

### General Recommendations

Distribution Grip Dead Ends are recommended as a replacement for Bare Looped Dead Ends because of their stronger loops and higher holding strengths on ACSR cable. Aluminum covered steel Grips are used on bare aluminum based conductors and galvanized steel Grips are used for plastic jacketed conductors. Coated Dead Ends are also recommended for jacketed conductors. Distribution Grip Dead Ends are specifically designed for single pole distribution construction.

### Rated Holding Strength

The mechanical strengths of Distribution Grip Dead Ends meet the requirements of primaries, secondaries, and substation feeders.

### Tapping

Tapping onto the applied legs of the Distribution Grip Dead Ends is not recommended. Taps should be located either six inches from the gritted legs on the conductor or on the other end of the conductor passing through the Dead End.

*continued*



## Distribution Dead End

Aluminum Covered Steel Materials

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted ACSR

### Open Helix Loop Standard/Right Hand Lay Standard Ordering Information

AFL NO.	ACSR	ALL ALUMINUM	ALUMINUM ALLOY	COMPACTED ACSR	AWAC 6/1	UNITS PER CARTON	WT. PER CARTON POUNDS	LENGTH INCHES	COLOR CODE
AWDG 050	#6, 6/1	#6, 7W	#6, 7W	#6, 6/1		100	14	16	Blue
AWDG 063	#4, 6/1 #4, 7/1	#4, 7W	#4, 7W	#4, 6/1	#4	100	20	17	Orange
AWDG 080	#2, 6/1 #2, 7/1	#2, 7W	#2, 7W	#2, 6/1	#2	100	33	24	Red
AWDG 090	#1, 6/1	#1, 7W	#1, 7W	#1, 6/1	#1	100	44	26	Green
AWDG 099	1/0, 6/1	1/0, 7W	1/0, 7W	1/0, 6/1	1/0	50	31	26	Yellow
AWDG 113	2/0, 6/1	2/0, 7W	2/0, 7W	2/0, 6/1	2/0	50	31	28	Blue
AWDG 127	3/0, 6/1	3/0, 7W	3/0, 7W	3/0, 6/1	3/0	50	43	32	Orange
AWDG 143	4/0, 6/1	4/0, 7W	4/0, 7W	4/0, 6/1	4/0	25	30	34	Red

Note: The following Dead Ends are designed only for the specific conductors listed.

### Cabled Loop Standard/Right Hand Lay Standard Ordering Information

AFL NO.	ACSR	ALL ALUMINUM	ALUMINUM ALLOY	COMPACTED ACSR	UNITS PER CARTON	WT. PER CARTON POUNDS	LENGTH INCHES	COLOR CODE
AWDG 147	266.8, 18/1	266.8, 19W	266.8, 19W	336.4, 18/1	25	3935		Black
AWDG 166	336.4, 18/1	336.4, 19W	336.4, 19W	397.5, 18/1	25	5339		Green
AWDG 188	397.5, 18/1 477, 36/1 477, 18/1	450, 19W 477, 19W 500, 37W	397.5, 19W	477, 18/1 556, 19W	10	35	50	Orange
AWDG 213	556.5, 36/1 605, 36/1 636, 18/1	556.5, 7W 636, 37W 650, 61W	477, 19W 556.5, 19W	636, 18/1 795, 19W	10	45	55	Blue
AWDG 241	666.6, 36/1 715.5, 36/1 795, 36/1	715.5, 37W 750, 61W 795, 61W	636, 37W	874.5, 37W 954, 37W	5	64	62	Brown
AWDG 273	874.5, 36/1 954, 36/1 1033.5, 36/1	874.5, 61W 954, 61W 1033.5, 61W	795, 37W		5	46	70	Orange

Notes: 1. The rated holding strengths of the above Distribution End Grip Dead Ends are between 60% and 100% of the conductors RBS depending on the conductor used.

2. Consult AFL for sizes and stranding or holding strengths not listed.

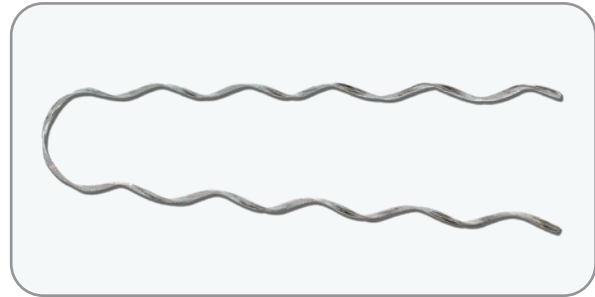
## Service Dead End

### MATERIALS

**Dead End** - Manufactured of aluminum covered steel.

**Color code and crossover marks** - Identifies conductor size and indicates application starting point.

**Identification tag** - Shows catalog number, conductor diameter range, and nominal conductor size



### General Recommendations

Service Dead Ends are used to make service drops on bare neutral messengers of self supporting cable. They are designed for minimum length, maximum economy and neatness of appearance. Service Dead Ends should not be reused after original installation. They are designed to be applied to spool insulators or wire holders having a smooth contour with diameters no less than 1 inch and no greater than 3 inches.

### Rated Holding Strength

The mechanical strength of Service Dead Ends meets or exceeds NESC Grade "N", rule 263-E, Supply Services, for spans not exceeding 150 feet. For service drops exceeding 150 feet. Distribution Dead Ends are recommended. For direct application onto plastic jacketed conductors Coated Dead Ends are recommended.

The published Rated Holding Strengths listed on page 5 are actual test results on unweathered conductor and are conservative when compared to typical values.

### Tapping

Tapping over the applied legs of the Service Dead End is not recommended. Taps should be located either six inches from the gritted legs or on the neutral tail continued past the crossover point.

### Vibration

When vibration is suspected or encountered, Distribution Dead Ends should be used since the design of Service Dead Ends are not intended for use under vibration conditions.

*continued*  
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## Service Dead End Aluminized Steel

### Selection Information

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
SG 043	.169 - .198	#6, 6/1 #6, 7W All Aluminum #6, 7W Aluminum Alloy	300	24	11	Blue
SG 050	.199-.224	#5, 6/1 #4, Solid #5, 7W Aluminum Alloy	300	27	12	White
SG 057	.225 - .257	#4, 6/1, 7/1 #4, 7W All Aluminum #4, 7W Aluminum Alloy	300	29	13	Orange
SG 065	.258-.289	#3, 6/1 #3, 7W All Aluminum #2, Solid #3, 7W Aluminum Alloy	200	27	14	Black
SG 073	.290-.325	#2, 6/1, 7/1 #2, 7W All Aluminum #2, 7W Aluminum Alloy	200	28	15	Red
SG 083	.326-.360	#1, 6/1 #1.7W All Aluminum #1.7W Aluminum Alloy	200	31	17	Green
SG 091	.361 - .400	1/0, 6/1 1/0, 7W All Aluminum 1/0, 7W Aluminum Alloy	100	28	19	Yellow
SG 102	.401 - .450	2/0, 6/1 2/0, 7W All Aluminum 2/0, 7W Aluminum Alloy	100	31	21	Blue
SG 114	.451 - .510	3/0, 6/1 3/0, 7W All Aluminum 3/0, 7W Aluminum Alloy	100	33	23	Orange
SG 130	.511-.580	4/0, 6/1, 18/1 4/0, 7W All Aluminum 4/0, 7W Aluminum Alloy	100	37	26	Red

### Right-Hand Lay Standard

*continued*  
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## Service Dead End Aluminized Steel

### Rated Holding Strength for Aluminum Based Conductor

AFL NO.	ACSR	ALL ALUMINUM	ALUMINUM ALLOY
SG 043	#6, 6/1 585 lbs. (50%)	#6, 7W 488 lbs. (88%) #5, Solid 549 lbs. (88%)	#6, 7W 840 lbs. (80%)
SG 050	#5, 6/1 730 lbs. (50%)	#4, Solid 772 lbs. (88%)	#5, 7W 1,080 lbs. (50%)
SG 057	#4, 6/1 915 lbs. (50%) #4, 7/1 1,144 lbs. (50%)	#4, 7W 770 lbs. (88%) #3 Solid 854 lbs. (88%)	#4, 7W 1,336 lbs. (80%)
SG 065	#3, 6/1 1,125 lbs. (50%)	#3, 7W 900 lbs. (88%) #2 Solid 1,078 lbs. (88%)	#3, 7W 1,720 lbs. (80%)
SG 073	#2, 6/1 1,395 lbs. (50%)	#2, 7W 1,175 lbs. (88%)	#2, 7W 2,124 lbs. (80%)
SG 083	#1, 6/1 1,740 lbs. (50%)	#1, 6/1 1,430 lbs. (88%)	#1, 7W 2,736 lbs. (80%)
SG 091	1/0, 6/1 2,140 lbs. (50%) 1/0, 5/1 1,698 lbs. (50%)	1/0, 7 W 1,734 lbs. (88%)	1/0, 7W 3,384 lbs. (80%)
SG 102	2/0, 6/1 2,673 lbs. (50%)	2/0, 7W 2,182 lbs. (88%)	2/0, 7W 4,044 lbs. (80%)
SG 114	3/0, 6/1 3,338 lbs. (50%)	3/0, 7W 2,644 lbs. (88%)	3/0, 7W 5,092 lbs. (80%)
SG 130	4/0, 6/1 4,210 lbs. (50%) 4/0, 18/1 2,523 lbs. (50%)	4/0, 7W 3,335 lbs. (88%)	4/0, 7W 6,420 lbs. (80%)

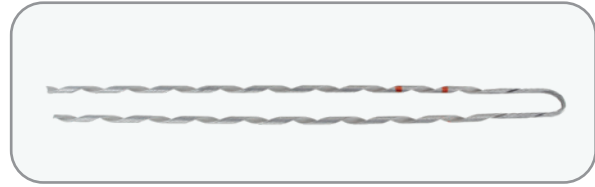
## Guy Dead End

### MATERIALS

**Dead End** - Manufactured of aluminum covered steel.

**Color code and crossover marks** - Identifies conductor size and indicates application starting point.

**Identification tag** - Shows catalog number, conductor diameter range, and nominal conductor size



### General Recommendations

Guy Dead Ends are designed for guying of poles in the construction of power and communication lines. Guy dead ends are designed for use with standard guy strands of 1" diameter or less. Manufactured from similar wire, the dead ends can be applied to galvanized steel or Alumoweld® guy wire. Unless otherwise specified, all dead ends and guy strand are left hand lay. Once in place, under normal conditions, guy dead ends hold their grip regardless of the condition of the conductor to which they are attached, relaxed or in tension.

### Offset Tips

To simplify installation, AFL Conductor Accessories' guy dead ends are designed with offset ends. This feature is important in that toward the end of the installation of the dead end, the tips are easier to handle and wrap around the cable. No additional modification is required.

### Reusable after Initial Installation

Guy dead ends may be removed and reapplied twice after initial installation to retension guy strands. Should it become necessary to remove a guy dead end after it has been installed for a period of three months, it should be replaced with a new dead end.

### Color Coded

For ease of identification to guy strand size, the dead ends are color coded on both legs of the product.

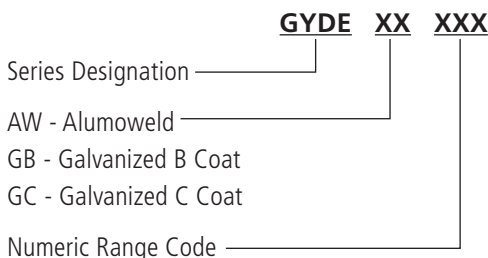
### Cabled Loop

Guy dead ends are manufactured with a cabled loop for all strand sizes.

### Customized Guy Dead Ends

For guy dead ends with special requirements, such as longer lengths or non-standard lay direction contact AFL at (800) 866-7385.

### Selection Information



*continued*  
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### Guy Dead Ends

AFL NO.	DIA. RANGE INCHES	NOMINAL GUY SIZE	UNITS/CARTON	WT./CARTON POUNDS	APPLIED LENGTH (INCHES)	COLOR CODE
<b>Alumoweld®</b>						
GYDEAW044	.174-.181	3/16, 3#12	100	21	18	Orange
GYDEAW055	.219-.230	4M, 3#10	50	20	21	Green
GYDEAW060	.237-.247	1/4, 6M, 3#9	50	20	24	Yellow
GYDEAW068	.270-.280	8M, 3#8	50	22	24	Blue
GYDEAW077	.303-.313	5/16, 10M, 3#7, 3#9	50	29	26	Black
GYDEAW082	.325-.336	11.5M	50	30	26	Green
GYDEAW087	.343-.355	12.5M, 3#6, 7#9	50	41	29	Yellow
GYDEAW090	.356-.364	14M	50	53	31	Blue
GYDEAW096	.380-.394	3/8, 16M, 3#5, 7#8	50	55	32	Orange
GYDEAW104	.410-.426	18M	25	37	34	Black
GYDEAW108	.427-.442	7/16, 7#7	25	50	36	Green
GYDEAW112	.443-.459	20M	25	55	37	Yellow
GYDEAW120	.475-.494	1/2, 7#6	25	60	42	Blue
GYDEAW125	.495-.515	19#10	25	62	44	Green
GYDEAW131	.516-.536	25M	20	66	47	Red
GYDEAW136	.537-.555	7#5	20	67	48	Yellow
GYDEAW141	.556-.570	9/16	15	68	49	Blue
GYDEAW145	.571-.591	19#9	20	68	50	Orange
GYDEAW150	.592-.612	—	15	50	50	Green
GYDEAW155	.613-.635	5/8	10	49	54	Yellow
GYDEAW161	.636-.661	19#8	10	50	56	Black
GYDEAW168	.662-.686	19 X .1363	10	66	59	Blue
GYDEAW174	.687-.712	—	10	68	61	Red
GYDEAW181	.713-.741	19#7, 37#10	10	70	63	Black
GYDEAW188	.742-.772	3/4, 19 X .1499	5	41	71	Yellow
GYDEAW201	.773-.800	—	5	50	80	Blue
GYDEAW203	.801-.827	37#9, 19#6, 19 X .1660	5	69	84	Green
GYDEAW215	.849-.866	19 X .1730, 37 X .121	5	70	87	Black
GYDEAW228	.880-.898	7/8, 37#8	5	76	91	Yellow
GYDEAW231	.910-.934	19#5, 19 X .1868	5	78	93	Blue
GYDEAW249	.970-.990	37 X .1401	4	52	95	Red
GYDEAW256	.991-1.010	1, 37#7	4	85	108	Green
GYDEAW279	1.050-1.120	37 X .1571	3	83	117	Black
GYDEAW288	1.130-1.170	37#6	3	86	120	Yellow
<b>Galvanized 'B' Coat</b>						
GYDEGB047	—	3/16"	100	20	20	Red
GYDEGB055	—	7/32"	100	25	22	Green
GYDEGB061	—	1/4"	50	17	25	Yellow
GYDEGB071	—	9/32"	50	27	28	Blue
GYDEGB079	—	5/16"	50	35	30	Black
GYDEGB091	—	3/8"	50	52	35	Orange
GYDEGB110	—	7/16"	50	40	38	Green
<b>Galvanized 'C' Coat</b>						
GYDEGC047	—	3/16"	100	20	20	Red
GYDEGC055	—	7/32"	100	25	22	Green
GYDEGC061	—	1/4"	50	17	25	Yellow
GYDEGC071	—	9/32"	50	27	28	Blue
GYDEGC079	—	5/16"	50	35	30	Black
GYDEGC091	—	3/8"	50	52	35	Orange
GYDEGC110	—	7/16"	50	40	38	Green

## Longspan Tie

### MATERIALS

**Tie** - Aluminum alloy for aluminum based conductor.

**Center section** - Specially formulated elastomer.

**Identification tag** - Identifies catalog number, neck size, nominal conductor size and conductor range.

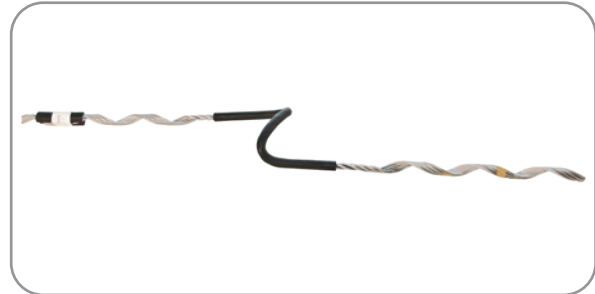
**Color code** - Identifies proper conductor range.

**Insulator identification mark (identifies insulator head size)**

Black -C Neck

Yellow -F Neck

Green -J Neck



### General Recommendations

To insure proper fit and service life, it is recommended that only insulators corresponding to C Neck, F Neck, or J Neck be used as specified by ANSI C29.5 The top groove radius, neck size, and groove height relationship corresponding to each neck size are shown at the beginning of each listing.

Longspan Ties are recommended as an improvement over Armor Rods secured with hand tie wire. For areas subject to both wind sway and vibration, Longspan Ties provide superior abrasion protection and are superior to a well made hand tie - Armor Rod combination in regard to conductor fatigue.

### Longspan Tie Pad

The pad component is recommended for bare conductor because it prevents contact with the insulator and compensates for insulator misalignment. With the pad, Longspan Ties not only replace armoring products, but provide superior protection by eliminating abrasion rather than sacrificing outside surfaces to abrasion.

### Maximum Size

Longspan Ties are available for conductors up to 1.240" O. D. depending on the insulators top groove radius.

### Line Angle

On vertically mounted insulators, Longspan Ties are recommended for running line angles of up to 10 degrees. Larger angles can be turned when Longspan Ties are used with Side Ties or with pins and brackets having various degrees of cant.

### Unbalanced Loading

Under unbalanced load conditions, the Longspan Tie has the resiliency to permit some longitudinal displacement of the conductor over the insulator without loosening the tie or damaging the conductor.

### Radio Interference

The RIV characteristics of Longspan Ties are superior to those of well made hand ties when originally installed. During service-life, the pre-contoured helix assures consistent fit which has better RIV characteristics than loosened tie-wire.

### Tapping

Tapping over applied legs of the Longspan Tie is not recommended. Taps should be located at least 6 inches from the end of the legs.

### Double Supports

At double crossarms, double Support Ties can be used to cross major highways and railroads, or turn angles where it is practical to hold the conductor in the top groove during installation.

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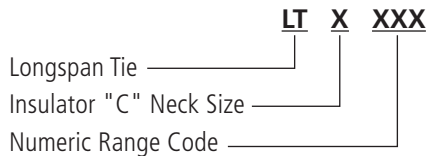


## Longspan Tie

### C Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum, Compacted ACSR

### Selection Information



2-1/4" Neck Diameter ANSI Class 55-2 and 55-3 / Groove Height Relationship 9/16" Min. 7/8" Max.

Insulator Identification Mark: Black

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
LTC 063	.248-.259	#4, 6/1-7/1 #4, 7W, Aluminum Alloy	100	21	19	Orange
LTC 066	.260-.269	#4, AWAC, 5/2 #3, 7W, All-Aluminum #2, 7W Compacted	100	21	19	Green
LTC 068	.270-.280	#3, 7W, Aluminum Alloy #3, AWAC, 6/1	100	21	19	Yellow
LTC 071	.281-.291	#4, AWAC, 4/3 #3, 6/1 #2, 6/1, Compacted	100	24	20.5	White
LTC 074	.292-.303	#3, AWAC, 5/2 #2, 7W, All Aluminum #2, 7/1 Compacted	100	24	20.5	Purple
LTC 077	.304-.314	#4, AWAC, 3/4 #2, AWAC, 6/1	100	24	21.5	Brown
LTC 080	.315-.327	#2, 6/1-7/1 #2, 7W, Aluminum Alloy	100	24	21.5	Red
LTC 083	.328-.340	#2, AWAC, 5/2 #1, 7W, All Aluminum 1/0, 7W COMP	100	25	22.5	Blue
LTC 086	.341-.353	#3, AWAC, 3/4 #1, 7W, Aluminum Alloy	100	25	22.5	Orange
LTC 090	.354-.367	#2, AWAC, 4/3 #1, 6/1 1/0, 6/1, COMP	100	26	23.5	Green
LTC 093	.368-.381	1/0, 7W, All Aluminum 2/0, 7W, Compacted	100	26	20	Black
LTC 097	.382-.394	#2, AWAC, 3/4 1/0, AWAC, 6/1	100	27	21	White
LTC 100	.395-.411	1/0, 6/1 1/0, 7W, Aluminum Alloy	100	27	21	Yellow
LTC 104	.412-.437	2/0, 7W-19W, All Aluminum 3/0, 7W-19W, COMP	100	27	22	Brown
LTC 111	.438-.463	2/0, 6/1-7/1 2/0, 7W, Aluminum Alloy	100	28	23	Blue
LTC 118	.464-.492	3/0, 7W-19W, All Aluminum 4/0, 7W-19W, COMP	50	18	24.5	Green

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### Longspan Tie C Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum, Compacted ACSR

#### Selection Information

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
LTC 125	.493-.522	3/0, 6/1 3/0, 7W, Aluminum Alloy 4/0, 7W, All Aluminum	50	18	24.5	Orange
LTC 133	.523-.554	3/0, AWAC, 5/2 4/0, 19W, All Aluminum 266.8, 7W-19W, COMP	50	18	26.5	Black
LTC 141	.555-.594	4/0, 6/1 4/0, 7W, Aluminum Alloy 266.8, 7W-19W, All Alum	50	19	27.5	Red
LTC 151	.595-.630	266.8, 18/1 300, 19W-37W, All Aluminum	50	21	28.5	Purple
LTC 160	.631-.664	266.8, 26/7 266.8, 19W, Aluminum Alloy	50	21	28.5	Yellow
LTC 169	.665-.705	336.4, 18/1-36/1 336.4, 19W, All Aluminum 350, 19W-37W, All Aluminum	50	21	29.5	Brown
LTC 179	.706-.747	336.4, 26/7-30/7 397.5, 19W, All Aluminum	50	22	30.5	Green
LTC 190	.748-.795	397.5, 24/7-26/7 397.5, 19W, Aluminum Alloy 477, 19W-37W, All Aluminum	50	18	33	Orange
LTC 202	.796-.846	477, 18/1, 36/1 500, 19W, All Aluminum	50	20	37	Purple
LTC 215	.847-.900	556.5, 18/1, 36/1 556.5, 19W, 37W, All Aluminum	50	21	39	Blue
LTC 229	.901-.958	636, 18/1, 36/1 636, 37W, All Aluminum 556.5M, 19W, Aluminum Alloy	50	21	41	Green
LTC 243	.959-1.018	666.6, 24/7, 54/7 750, 37W, All Aluminum 636, 37W, Aluminum Alloy	50	22	43	White
LTC 259	1.019-1.083	795, 36/1, 45/7 795, 37W, All Aluminum	50	23	45	Brown
LTC 275	1.084-1.151	954, 36/1 954, 37W, All Aluminum 795, 37W, Aluminum Alloy	50	24	47	Orange
LTC 292	1.152-1.223	954, 45/7, 54/7 1033.5, 37W, All Aluminum 954, 37W, Aluminum Alloy	50	25	49	Purple
LTC 311	1.224-1.240		50	27	59	Black

Right-Hand Lay Standard

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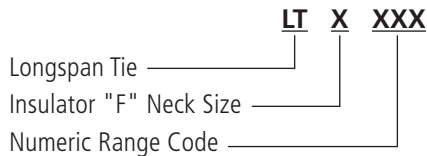


## Longspan Tie

### F Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum, Compacted ACSR

### Selection Information



2-7/8" Neck Diameter ANSI Class 55-4 and 55-5 Pin Type/57-1. 57-2 and 57-3 Post Type  
Groove Height Relationship 9/16" Min. 7/8" Max.

Insulator Identification Mark: Yellow

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
LTF 063	.248-.259	#4, 6/1-7/1 #4, 7W Aluminum Alloy	100	24	20.75	Orange
LTF 066	.260-.269	#4, AWAC, 5/2 #3, 7W, All- Aluminum #2, 7W Compacted	100	24	20.75	Green
LTF 068	.270-.280	#3, 7W, Aluminum Alloy #3, AWAC, 6/1	100	24	20.75	Yellow
LTF 071	.281-.291	#4, AWAC, 4/3 #3, 6/1 #2, 6/1, Compacted	100	26	21.75	White
LTF 074	.292-.303	#3, AWAC, 5/2 #3, 7W, All Aluminum #2, 7/1 Compacted	100	26	21.75	Purple
LTF 077	.304-.314	#4, AWAC, 3/4 #2, AWAC, 6/1	100	27	22.75	Brown
LTF 080	.315-.327	#2, 6/1-7/1 #2, 7W, Aluminum Alloy	100	27	22.75	Red
LTF 083	.328-.340	#2, AWAC, 5/2 #1, 7W, All Aluminum 1/0, 7W COMP	100	27	23.75	Blue
LTF 086	.341-.353	#3, AWAC, 3/4 #1, 7W, Aluminum Alloy	100	27	23.75	Orange
LTF 090	.354-.367	#2, AWAC, 4/3 #1, 6/1 1/0, 6/1, COMP,	100	28	24.75	Green
LTF 093	.368-.381	1/0, 7W, All Aluminum 2/0, 7W, Compacted	100	29	21.5	Black
LTF 097	.382-.394	#2, AWAC, 3/4 1/0, AWAC, 6/1	100	29	22.5	White
LTF 100	.395-.411	1/0, 6/1 1/0, 7W, Aluminum Alloy	100	29	22.5	Yellow
LTF 104	.412-.437	2/0, 7W-19W, All Aluminum 3/0, 7W-19W, COMP	100	30	23.5	Brown
LTF 111	.438-.463	2/0, 6/1-7/1 2/0, 7W, Aluminum Alloy	100	31	24.5	Blue
LTF 118	.464-.492	3/0, 7W-19W, All Aluminum 4/0, 7W-19W, COMP	50	20	25.5	Green

continued

## Longspan Tie

### F Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum, Compacted ACSR

### Selection Information

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
LTF 125	.493-.522	3/0, 6/1 3/0, 7W, Aluminum Alloy 4/0, 7W, All Aluminum	50	20	25.5	Orange
LTF 133	.523-.554	3/0, AWAC, 5/2 4/0, 19W, All Aluminum 4/0, 18/1 266.8, 7W-19W, COMP	50	20	25.5	Black
LTF 141	.555-.594	4/0, 6/1 4/0, 7W, Aluminum Alloy 266.8, 7W- 19W, All Alum	50	20	26.5	Red
LTF 151	.595-.630	266.8, 18/1 300, 19W-37W, All Aluminum	50	22	28	Purple
LTF 160	.631-.664	266.8, 26/7 266.8, 19W, Aluminum Alloy	50	22	29	Yellow
LTF 169	.665-.705	336.4, 18/1-36/1 336.4, 19W, All Aluminum 350, 19W-37W, All Aluminum	50	22	29	Brown
LTF 179	.706-.747	336.4, 26/7-30/7 397.5, 19W, All Aluminum	50	23	30	Green
LTF 190	.748-.795	397.5, 24/7-26/7 397.5, 19W, Aluminum Alloy 477, 19W-37W, All Aluminum	50	24	32.5	Orange
LTF 202	.796-.846	477, 18/1, 36/1 500, 19W, All Aluminum	50	20	37	Purple
LTF 215	.847-.900	556.5, 18/1, 36/1 556.5, 19W, 37W, All Aluminum	50	21	39	Blue
LTF 229	.901 -.958	636, 18/1, 36/1 636, 37W, All Aluminum 556.5M, 19W, Aluminum Alloy	50	22	41	Green
LTF 243	.959-1.018	666.6, 24/7, 54/7 750, 37W, All Aluminum 636, 37W, Aluminum Alloy	50	22	43	White
LTF 259	1.019-1.083	795, 36/1, 45/7 795, 37W, All Aluminum	50	23	45	Brown
LTF 275	1.084-1.151	954, 36/1 954, 37W, All Aluminum 795, 37W, Aluminum Alloy	50	24	47	Orange
LTF 292	1.152-1.223	954, 45/7, 54/7 1033.5, 37W, All Aluminum 954, 37W, Aluminum Alloy	50	25	49	Purple
LTF 311	1.224- 1.240		50	29	59	Black

### Right-Hand Lay Standard

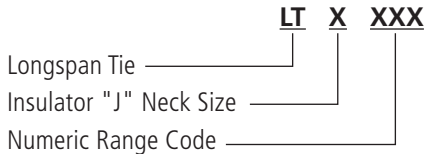
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## Longspan Tie

J Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum, Compacted ACSR

### Selection Information



3-1/2" Neck Diameter ANSI Class 55-6 and 65-7 Single Skirt Pin / 56-1 Double Skirt Pin Type Groove Height Relationship 1/4" Min. 5/8" Max.

Insulator Identification Mark: Green

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
LTJ 063	.248-.259	#4, 6/1-7/1 #4, 7W Aluminum Alloy	100	29	21	Orange
LTJ 066	.260-.269	#4, AWAC, 5/2 #3, 7W, All- Aluminum #2, 7W Compacted	100	29	21	Green
LTJ 068	.270-.280	#3, 7W, Aluminum Alloy #3, AWAC, 6/1	100	29	21	Yellow
LTJ 071	.281-.291	#4, AWAC, 4/3 #3, 6/1 #2, 6/1, Compacted	100	32	21	White
LTJ 074	.292-.303	#3, AWAC, 5/2 #2, 7W, All Aluminum #2, 7/1 Compacted	100	32	22	Purple
LTJ 077	.304-.314	#4, AWAC, 3/4 #2, AWAC, 6/1	100	33	22	Brown
LTJ 080	.315-.327	#2, 6/1-7/1 #2, 7W, Aluminum Alloy	100	33	23	Red
LTJ 083	.328-.340	#2, AWAC, 5/2 #1, 7W, All Aluminum 1/0, 7W COMP	100	33	23	Blue
LTJ 086	.341-.353	#3, AWAC, 3/4 #1, 7W, Aluminum Alloy	100	33	24	Orange
LTJ 090	.354-.367	#2, AWAC, 4/3 #1, 6/1 1/0, 6/1, COMP,	100	33	24	Green
LTJ 093	.368-.381	1/0, 7W, All Aluminum 2/0, 7W, Compacted	100	33	25	Black
LTJ 097	.382-.394	#2, AWAC, 3/4 1/0, AWAC, 6/1	100	34	23	White
LTJ 100	.395-.411	1/0, 6/1 1/0, 7W, Aluminum Alloy	100	34	24	Yellow
LTJ 104	.412-.437	2/0, 7W-19W, All Aluminum 3/0, 7W-19W, COMP	100	35	25	Brown
LTJ 111	.438-.463	2/0, 6/1-7/1 2/0, 7W, Aluminum Alloy	100	35	26	Blue
LTJ 118	.464-.492	3/0, 7W-19W, All Aluminum 4/0, 7W-19W, COMP	50	21	28	Green

continued

## Longspan Tie

J Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum, Compacted ACSR

### Selection Information

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
L TJ 125	.493-.522	3/0, 6/1 3/0, 7W, Aluminum Alloy 4/0, 7W, All Aluminum	50	21	28	Orange
L TJ 133	.523-.554	3/0, AWAC, 5/2 4/0, 19W, All Aluminum 4/0, 18/1 266.8, 7W-19W, COMP	50	21	28	Black
L TJ 141	.555-.594	4/0, 6/1 4/0, 7W, Aluminum Alloy 266.8, 7W- 19W, All Alum	50	22	29	Red
L TJ 151	.595-.630	266.8, 18/1 300, 19W-37W, All Aluminum	50	24	30	Purple
L TJ 160	.631-.664	266.8, 26/7 266.8, 19W, Aluminum Alloy	50	24	31	Yellow
L TJ 169	.665-.705	336.4, 18/1-36/1 336.4, 19W, All Aluminum 350, 19W-37W, All Aluminum	50	24	31	Brown
L TJ 179	.706-.747	336.4, 26/7-30/7 397.5, 19W, All Aluminum	50	25	32	Green
L TJ 190	.748-.795	397.5, 24/7-26/7 397.5, 19W, Aluminum Alloy 477, 19W-37W, All Aluminum	50	26	34	Orange
L TJ 202	.796-.846	477, 18/1, 36/1 500, 19W, All Aluminum	50	21	39.5	Purple
L TJ 215	.847-.900	556.5, 18/1, 36/1 556.5, 19W, 37W, All Aluminum	50	22	41	Blue
L TJ 229	.901-.958	636, 18/1, 36/1 636, 37W, All Aluminum 556.5M, 19W, Aluminum Alloy	50	23	43	Green
L TJ 243	.959-1.018	666.6, 24/7, 54/7 750, 37W, All Aluminum 636, 37W, Aluminum Alloy	50	24	45	White
L TJ 259	1.019-1.083	795, 36/1.45/7 795, 37W, All Aluminum	50	24	47	Brown
L TJ 275	1.084-1.151	954, 36/1 954, 37W, All Aluminum 795, 37W, Aluminum Alloy	50	25	49	Orange
L TJ 292	1.152-1.223	954, 45/7, 54/7 1033.5, 37W, All Aluminum 954, 37W, Aluminum Alloy	50	26	51	Purple
L TJ 311	1.224-1.240		50	30	59.5	Black

Right-Hand Lay Standard

## Distribution Tie

### MATERIALS

**Tie** - Aluminum covered steel.

**Pad** - An elastomer tube is supplied with each Distribution Tie used on bare conductor, and they are identified by catalog number suffix P.

Distribution Ties are supplied without pads for plastic jacketed conductor identified by catalog number suffix T.

**Identification tag** - Identifies catalog number, neck size, nominal conductor range, and conductor diameter range.

**Color code** - There are two color codes on Distribution Ties. The inside color code identifies the proper conductor size and the outside color code identifies the insulator neck size as shown below:

### Insulator identification mark (identifies insulator head size)

Black - C Neck

Yellow - F Neck

### General Recommendations

To insure proper fit and service life, it is recommended that only insulators corresponding to C Neck, F Neck, or J Neck be used. The neck diameters and groove height dimensions appear in ANSI Standard for low and medium voltage pin type insulators and also at the beginning of each listing.

Distribution Ties are recommended as an improvement over Armor Rods secured with hand tie wire and clamp top insulators. When installed with a pad on bare conductor, they provide superior protection against abrasion and all types of conductor motion. The pad is a resilient cushion at the point of contact between conductor and insulator.

Distribution Ties without pads are intended for plastic jacketed conductor but may be used to replace hand tie wire in areas where abrasion damage has not been experienced.

### Maximum Size

Conductor sizes up to 1.240" O.D. can be accommodated depending on the insulator top groove radius.

### Line Angle

On vertically mounted insulators, Distribution Ties are recommended for running line angles of up to 10 degrees. Larger angles can be turned when Distribution Ties are used with Side Ties or with pins and brackets having various degrees of cant.

### Unbalanced Loading

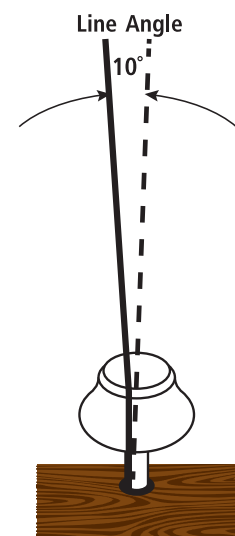
Under unbalanced load conditions, the Distribution Tie has the resiliency to permit some longitudinal displacement of the conductor over the insulator without loosening the tie or damaging the conductor.

### Radio Interference

The RIV characteristics of Distribution Ties are superior to those of well made hand ties when originally installed. During service life, the pre-contoured helix assures consistent fit which has better RIV characteristics than loosened tie wire.

### Tapping

Tapping over applied legs of the Distribution Tie is not recommended. Taps should be located at least 6 inches from the end of the legs.



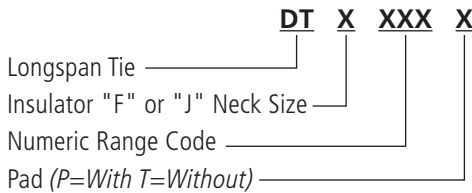
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### Distribution Tie

#### C Neck with Pad

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum, Compacted ACSR

#### Selection Information



#### 2-1/4" Neck Diameter ANSI Class 55-2 and 55-3 / Groove Height Relationship 9/16" Min. 7/8" Max.

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
DTC 048P	.190-.215	#6, 6/1 #4, 7W, Compacted	100	17	24	Blue
DTC 055P	.216-.244	#4, 7W, All Aluminum #4, 6/1, 7/1 Compacted	100	18	25	Brown
DTC 062P	.245-.277	#4, 6/1, 7/1 #4, 7W, Aluminum Alloy	100	18	26	Orange
DTC 070P	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	100	18	26	Purple
DTC 080P	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	100	19	28	Red
DTC 091P	.358-.405	1/0, 7W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	100	20	30	Yellow
DTC 103P	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	50	17	25	Blue
DTC 117P	.460-.520	3/0, 7W, All Aluminum 3/0, 6/1 3/0, 7W, Aluminum Alloy	50	17	25	Orange
DTC 132P	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	50	18	28	Red
DTC 149P	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	50	18	30	Purple
DTC 169P	.666-.755	336.4, 19W, All Aluminum 336.4, 18/1 397.5, 19W, All Aluminum 400, 19W, 37W, All Aluminum	50	19	31	Brown
DTC 192P	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	50	19	32	Red
DTC 217P	.856-.968	556.5, 24/7 636, 18/1 700, 37W, 61W, All Aluminum	50	20	34	Blue
DTC 246P	.969-1.096	795, 37W, All Aluminum 795, 61W, All Aluminum 715.5, 24/7 795, 54/7	50	21	37	Green
DTC 278P	1.097-1.240	954, 36/1, 54/7 1033.5, 37W 61W, All Aluminum	50	22	40	Yellow

#### Right-Hand Lay Standard

Note: For further information on how to order, see the Selection Information above.

continued

### Distribution Tie

F Neck with Pad

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum, Compacted ACSR

2-7/8" Neck Diameter ANSI Class 55-4 and 55-5 Pin Type/57-1, 57-2 and 57-3 Post Type  
Groove Height Relationship 9/16" Min. 7/8" Max.

Insulator Identification Mark: Yellow

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
DTF 048P	.190-.215	#6, 6/1 #4, 7W, Compacted	100	18	25	Blue
DTF 055P	.216-.244	#4, 7W, All Aluminum #4, 6/1, 7/1 Compacted	100	19	26	Brown
DTF 062P	.245-.277	#4, 6/1, 7/1 #4, 7W, Aluminum Alloy	100	19	27	Orange
DTF 070 P	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	100	20	29	Purple
DTF 080P	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	100	20	31	Red
DTF 091P	.358-.405	1/0, 7W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	100	21	32	Yellow
DTF 103P	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	50	18	26	Blue
DTF 117P	.460-.520	3/0, 7W, All Aluminum 3/0, 6/1 3/0, 7W, Aluminum Alloy	50	18	27	Orange
DTF 132P	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	50	19	29	Red
DTF 149P	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	50	19	32	Purple
DTF 169P	.666-.755	336.4, 19W, All Aluminum 336.4, 18/1 397.5, 19W, All Aluminum 400, 19W, 37W, All Aluminum	50	20	32	Brown
DTF 192P	.756-.955	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	50	20	33	Red
DTF 217P	.856-.968	556.5, 24/7 636, 18/1 700, 37W, 61W, All Aluminum	50	21	35	Blue
DTF 246P	.969-1.096	795, 37W, All Aluminum 795, 61W, All Aluminum 715.5, 24/7 795, 54/7	50	22	38	Green
DTF 278P	1.097-1.240	954, 36/1, 54/7 1033.5, 37W 61W, All Aluminum	50	23	41	Yellow

### Right-Hand Lay Standard

Note: For further information on how to order, see the Selection Information on page 15.

continued  
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### Distribution Tie

J Neck with Pad

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum, Compacted ACSR

3-1/2" Diameter ANSI Class 55-6 and 55-7 Single Skirt Pin Type/56-1 Double Skirt Pin Type  
Groove Height Relationship 9/16" Min. 7/8" Max.

Insulator Identification Mark: Green

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
DTJ 048P	.190-.215	#6, 6/1 #4, 7W, Compacted	100	19	26	Blue
DTJ 055P	.216-.244	#4, 7W, All Aluminum #4, 6/1, 7/1 Compacted	100	20	27	Brown
DTJ 062P	.245-.277	#4, 6/1, 7/1 #4, 7W, Aluminum Alloy	100	20	28	Orange
DTJ 070P	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	100	21	30	Purple
DTJ 080P	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	100	21	32	Red
DTJ 091P	.358-.405	1/0, 7W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	100	22	33	Yellow
DTJ 103P	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	50	19	27	Blue
DTJ 117P	.460-.520	3/0, 7W, All Aluminum 3/0, 6/1 3/0, 7W, Aluminum Alloy	50	19	28	Orange
DTJ 132P	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	50	20	30	Red
DTJ 149P	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	50	20	33	Purple
DTJ 169P	.666-.755	336.4, 19W, All Aluminum 336.4, 18/1 397.5, 19W, All Aluminum 400, 19W, 37W, All Aluminum	50	21	33	Brown
DTJ 192P	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	50	21	34	Red
DTJ 217P	.856-.968	556.5, 24/7 636, 18/1 700, 37W, 61W, All Aluminum	50	22	36	Blue
DTJ 246P	.969-1.096	795, 37W, All Aluminum 795, 61W, All Aluminum 715.5, 24/7 795, 54/7	50	23	39	Green
DTJ 278P	1.097 -1.240	954, 36/1, 54/7 1033.5, 37W 61W, All Aluminum	50	24	42	Yellow

### Right-Hand Lay Standard

Note: For further information on how to order, see the Selection Information on page 15.

## Double Support Tie

### MATERIALS

**Ties** - (2 each) Aluminum alloy.

**Pads** - (2 each) Specially formulated elastomer

**Identification tags** - (2 each) Identifies catalog number, neck size, nominal conductor size and conductor diameter range.

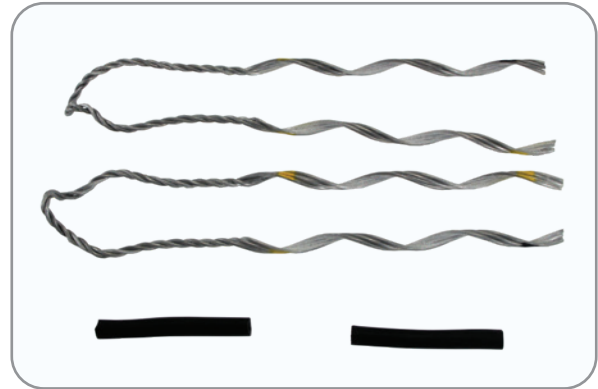
**Color code** - Each Double Support Tie has two color codes. The inside code identifies the proper conductor size and the leg color code identifies the insulator neck size:

**Insulator identification mark (identifies insulator head size)**

Black - C Neck

Yellow - F Neck

Green - J Neck



### General Recommendations

To insure proper fit and service life, it is recommended that only insulators corresponding to C Neck, F Neck, or J Neck be used.

These neck diameter and groove height dimensions appear in ANSI Standard for low and medium voltage pin type insulators.

Double Support Ties are recommended as an improvement over Armor Rods secured with hand tie wire. For areas subject to both wind sway and vibration. Double Support Ties provide superior abrasion protection, to a well made hand tie - Armor Rod combination in regard to conductor fatigue.

### Pad

The pad component is provided for bare conductor because it prevents contact with the insulator and compensates for insulator misalignment. With the pad. Double Support Ties not only replace armoring products but provide superior protection by eliminating rather than sacrificing outside surfaces to abrasion.

### Maximum Size

Double Support Ties are available for conductors up to 1.240" O.D. depending on the insulators top groove radius.

### Line Angle

On vertically mounted insulators. Double Support Ties are recommended for running line angles of up to 10 degrees.

### Unbalanced Loading

Under unbalanced load conditions, the Double Support Tie has the resiliency to permit some longitudinal displacement of the conductor over the insulator without loosening the tie or damaging the conductor.

### Radio Interference

The RIV characteristics of Double Support Ties are superior to those of well made hand ties when originally installed. During service-life, the pre-contoured helix assures consistent fit which has better RIV characteristics than loosened tie wire.

### Tapping

Tapping over applied legs of the Double Support Tie is not recommended. Taps should be located at least 6 inches from the end of the legs.

*continued*  
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### Double Support Tie

C Neck and F Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum and Compacted ACSR

#### Selection Information

Double Support Tie — **DST**  
 Insulator "C" and "F" Neck Size — **XX**  
 Numeric Range Code — **XXX**

**C Neck 2-1/4" Neck Diameter ANSI Class 55-2 and 55-3 / F Neck 2-7/8" Neck Diameter ANSI Class 55-4 and 55-5 Pin Type 57-1. 57-2 and 57-3 Post Type**

**Insulator Identification Mark: Black/Yellow**

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
DSTCF 062	.245-.277	#4, 6/1-7/1 #4, 7W, Aluminum Alloy	50	11	13	Orange
DSTCF 070	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	50	11	13	Purple
DSTCF 080	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	50	15	14	Red
DSTCF 091	.358-.405	1/0, 7W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	50	16	14	Yellow
DSTCF 103	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	50	16	15	Blue
DSTCF 117	.460-.520	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	50	23	16	Orange
DSTCF 132	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	50	23	17	Red
DSTCF 149	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	50	26	17	Purple
DSTCF 169	.666-.755	336.4, 19W, All Aluminum 336.4, 18/1 336.4, 37W, All Aluminum 397.5, 19W, All Aluminum 400, 19W, 37W, All Aluminum	50	28	18	Brown
DSTCF 192	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	50	30	20	Red
DSTCF 217	.856-.968	556.5, 19W, All Aluminum 636, 18/1 700, 37W, 61W, All Aluminum	50	30	21	Blue
DSTCF 246	.969-1.096	795, 37W, 61W, All Aluminum 715.5, 24/7 795, 54/7	50	30	22	Green
DSTCF 278	1.097-1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Aluminum	50	30	23	Yellow

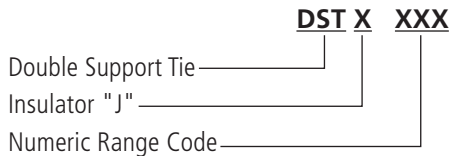
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### Double Support Tie

J Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum and Compacted ACSR

#### Selection Information



3-1/2" Diameter ANSI Class 55-6 and 55-7 Single Skirt Pin Type /56-1 Double Skirt Pin Type  
 Groove Height Relationship 1/4" Mill. 5/8" Max.

Insulator Identification Mark: Green

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
DSTJ 0620	.245-.277	#4, 6/1-7/1 #4, 7W, Aluminum Alloy	50	12	14	Orange
DSTJ 0705	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	50	12	14	Purple
DSTJ 0800	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	50	16	15	Red
DSTJ 0910	.358-.405	1/0, 7W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	50	17	15	Yellow
DSTJ 1030	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	50	17	16	Blue
DSTJ 1170	.460-.520	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	50	25	16	Orange
DSTJ 1325	.521-.598	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	50	25	18	Red
DSTJ 1495	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	50	30	18	Purple
DSTJ 1695	.666-.755	336.4, 19W, All Aluminum 336.4, 18/1 336.4, 37W, All Aluminum 397.5, 19W, All Aluminum 400, 19W, 37W, All Aluminum	50	30	19	Brown
DSTJ 1920	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	50	33	21	Red
DSTJ 2175	.856-.968	556.5, 19W, All Aluminum 636, 18/1 700, 37W, 61W, All Aluminum	50	34	22	Blue
DSTJ 2460	.969-1.096	795, 37W, 6 1 W, All Aluminum 715.5, 24/7 795, 54/7	50	37	23	Green
DSTJ 2785	1.097-1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Aluminum	50	40	24	Yellow

## Side Tie

### MATERIALS

**Tie** - Manufactured from aluminized steel for use on aluminum based conductors.

**Pad** - An elastomer tube is supplied with each Side Tie used on bare conductor. They are identified by catalog number suffix P. Side Ties without pads are used for plastic jacketed conductors. They are identified by catalog number suffix T.

**Identification tag** - Identifies catalog number, neck size, nominal conductor size, and conductor diameter range.

**Color code** - Each Side Tie has two color codes; the center code identifies the proper conductor size and the leg color code identifies the insulator neck sizes:

### Insulator identification mark (identifies insulator head size)

Black - C Neck  
Yellow - F Neck  
Green - J Neck

### General Recommendations

To insure proper fit and service life, it is recommended that only insulators corresponding to C Neck, F Neck, or J Neck be used. The neck diameters and groove height dimensions appear in ANSI Standard for low and medium voltage pin type insulators and also at the beginning of each listing.

Side Ties are recommended as an improvement over Armor Rods secured with hand tie wire, and clamp top insulators. When installed with a pad on bare conductor, they provide superior protection against abrasion and all types of conductor motion. The pad is a resilient cushion at the point of contact between conductor and insulator.

Side Ties without pads are intended for plastic jacketed conductor but may be used to replace hand tie wire in areas where abrasion damage has not been experienced.

In the case of the smaller sizes, the completed installation should show the applied leg tucked under the corner of the Tie Pad as shown (figure 1).

On the larger size conductor, it is optional whether the legs go under or over the corner of the Tie Pad (figure 2).

Side Ties exactly match the conductor ranges of the Distribution Ties which means identical color codes.

### Maximum Size

Conductor sizes up to 1.240" O.D. can be accommodated depending on the insulator side groove radius.

### Line Angle

On horizontally mounted insulators. Side Ties are recommended for running line angles of up to 10 degrees. Larger angles can be turned when Distribution Ties are used with side ties or with pins and brackets having various degrees of cant.

### Unbalanced Loading

Under unbalanced load conditions, the Side Tie has the resiliency to permit some longitudinal displacement of the conductor over the insulator without loosening the tie or damaging the conductor.

### Radio Interference

The RIV characteristics of Side Ties are superior to those of a well made hand tie when originally installed. During service-life, the pre-contoured helix assures consistent fit which has better RIV characteristics than loosened tie wire.

### Tapping

Tapping over applied legs of the Side Tie is not recommended. Taps should be located at least 6 inches from the end of the legs.

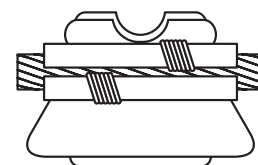
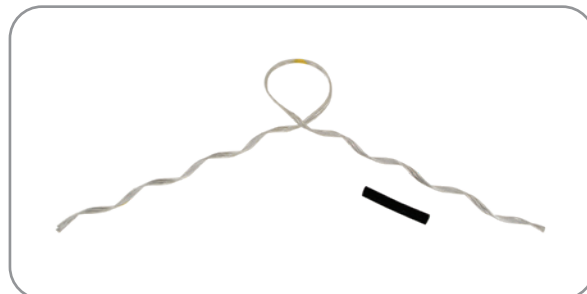


Figure 1

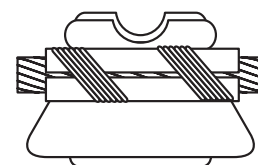


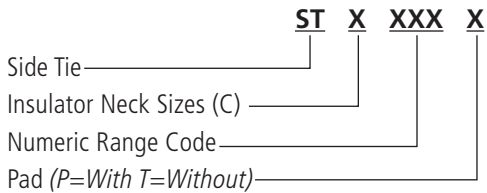
Figure 2

### Side Tie

#### C Neck with Pad

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum and Compacted ACSR

#### Selection Information



2-7/4" Neck Diameter ANSI Class 55-2 and 55-3 / Groove Height Relationship 9/16" Min. 7/8" Max.

Insulator Identification Mark: Black

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
STC 048P	.190-.215	#6, 6/1 #4, 7W, Compacted	75	10	16	Blue
STC 055P	.216-.244	#4, 7W, All Aluminum #4, 6/1, 7/1 Compacted	75	10	17	Brown
STC 062P	.245-.277	#4, 6/1, 7/1 #4, 7W, Aluminum Alloy	75	13	19	Orange
STC 070P	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	75	13	21	Purple
STC 080P	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	75	18	24	Red
STC 091P	.358-.405	1/0, 7W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	75	18	26	Yellow
STC 103P	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	75	24	28	Blue
STC 117P	.460-.520	3/0, 7W, All Aluminum 3/0, 6/1 3/0, 7W, Aluminum Alloy	75	23	31	Orange
STC 132P	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	35	13	32	Red
STC 149P	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	35	13	23	Purple
STC 169P	.666-.755	336.4, 18/1 336.4, 37W, All Aluminum 397.5, 19W, All Aluminum 336.4, 19W, All Aluminum	35	14	25	Brown
STC 192P	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	35	15	26	Red
STC 217P	.856-.968	556.5, 19W, All Aluminum 636, 18/1 700, 37W, 61W, All Aluminum	35	14	28	Blue
STC 246P	.969-1.096	795, 37W, 61W, All Aluminum 715.5, 24/7 795, 54/7			29	Green
STC 278P	1.097-1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Aluminum			33	Yellow

Right-Hand Lay Standard

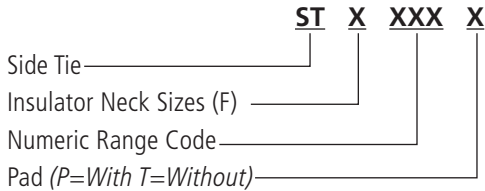
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## Side Tie

### F Neck with Pad

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum and Compacted ACSR

### Selection Information



2-7/8" Neck Diameter ANSI Class 55-4 and 55-5 Pin Type/57-1, 57-2 and 57-3 Post Type Groove Height Relationship 9/16" Min. 7/8" Max.

Insulator Identification Mark: Yellow

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
STF 048P	.190-.215	#6, 6/1 #4, 7W, Compacted	75	11	16	Blue
STF 055P	.216-.244	#4, 7W, All Aluminum #4, 6/1, 7/1 Compacted	75	12	17	Brown
STF 062P	.245-.277	#4, 6/1, 7/1 #4, 7W, Aluminum Alloy	75	14	19	Orange
STF 070P	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	75	14	21	Purple
STF 080P	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	75	18	24	Red
STF 091P	.358-.405	1/0, 7W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	75	18	26	Yellow
STF 103P	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	75	26	28	Blue
STF 117P	.460-.520	3/0, 7W, All Aluminum 3/0, 6/1 3/0, 7W, Aluminum Alloy	75	26	30	Orange
STF 132P	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	35	13	32	Red
STF 149P	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	35	15	23	Purple
STF 169P	.666-.755	336.4, 18/1 336.4, 37W, All Aluminum 397.5, 19W, All Aluminum 336.4, 19W, All Aluminum	35	16	25	Brown
STF 192P	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	35	17	26	Red
STF 217P	.856-.968	556.5, 19W, All Aluminum 636, 18/1 700, 37W, 61W, All Aluminum	35	19	28	Blue
STF 246P	.969-1.096	795, 37W, 61W, All Aluminum 715.5, 24/7 795, 54/7			29	Green
STF 278P	1.097-1.240	954, 6/1, 54/7 1033.5, 37W, 61W, All Aluminum			33	Yellow

Right-Hand Lay Standard

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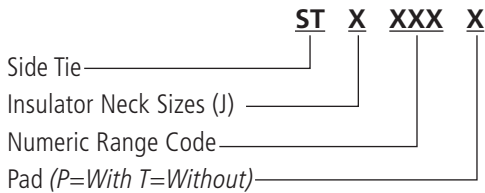


### Side Tie

J Neck with Pad

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum and Compacted ACSR

#### Selection Information



3-1/2" Neck Diameter ANSI Class 55-6 and 55- 7 Single Skirt Pin Type / 56-1 Double Skirt Pint Type Groove Height Relationship 1/4" Min. 5/8" Max.

Insulator Identification Mark: Green

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
STJ 048P	.190-.215	#6, 6/1 #4, 7W, Compacted	75	11	16	Blue
STJ 055P	.216-.244	#4, 7W, All Aluminum #4, 6/1, 7/1 Compacted	75	11	17	Brown
STJ 062P	.245-.277	#4, 6/1, 7/1 #4, 7W, Aluminum Alloy	75	14	19	Orange
STJ 070P	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	75	15	21	Purple
STJ 080P	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	75	19	24	Red
STJ 091P	.358-.405	1/0, 7W-19W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	75	20	26	Yellow
STJ 103P	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	75	29	31	Blue
STJ 117P	.460-.520	3/0, 7W, All Aluminum 3/0, 6/1 3/0, 7W, Aluminum Alloy	75	29	32	Orange
STJ 132P	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	35	16	34	Red
STJ 149P	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1, 26/7	35	11	23	Purple
STJ 169P	.666-.755	336.4, 18/1 336.4, 37W, All Aluminum 397.5, 19W, All Aluminum 336.4, 19W, All Aluminum	35	15	25	Brown
STJ 192P	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	35	15	26	Red
STJ 217P	.856-.968	556.5, 19W, All Aluminum 636, 18/1 700, 37W, 61W, All Aluminum	35	16	28	Blue
STJ 246P	.969-1.096	795, 37W, 61W, All Aluminum 715.5, 24/7 795, 54/7			29	Green
STJ 278P	1.097-1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Aluminum			33	Yellow

Right-Hand Lay Standard

## Double Side Tie

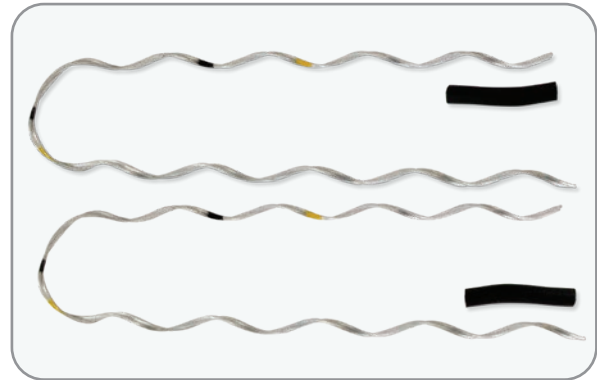
### MATERIALS

**Ties** - (2 each) Aluminum covered steel.

**Identification tag** - Identifies catalog number, neck size, nominal conductor size, and conductor diameter range.

**Color code** - Indicates the proper conductor diameter range. The C Neck and F Neck Double Side Ties have two color codes. The inner color code indicates the crossover mark for C Neck insulators and the outer color code indicates the F Neck crossover mark. J Neck Double Side Ties have only one color code.

**Pads** - (2 each) Specially formulated elastomer.



### General Recommendations

To insure proper fit and service life, it is recommended that only insulators corresponding to C Neck, F Neck, or J Neck be used. The neck diameters and groove height dimensions appear in ANSI Standard for low and medium voltage pin type insulators.

### Non-Standard Insulators

Double Side Ties are recommended as an improvement over Armor Rods secured with hand tie wire and clamp top insulators. When installed with a pad on bare conductor, they provide superior protection against abrasion and all types of conductor motion. The pad is a resilient cushion at the point of contact between conductor and insulator.

Double Side Ties are designed for double cross arm conductor support.

### Maximum Size

Conductor sizes up to 1.20" O.D. can be accommodated depending on the insulator side groove radius.

### Line Angle

At double cross arms, Double Side Ties are recommended for running line angles of up to 30 degrees with no more than 15 degrees at each insulator.

### Unbalanced Loading

Under unbalanced load conditions, the Double Side Tie has the resiliency to permit some longitudinal displacement of the conductor over the insulator without loosening the tie or damaging the conductor.

### Radio Interference

The RIV characteristics of Double Side Ties are superior to those of a well made hand tie when originally installed. During service-life, the pre-contoured helix assures consistent fit which has better RIV characteristics than loosened tie wire.

### Tapping

Tapping over applied legs of the Double Side Tie is not recommended. Taps should be located at least 6 inches from the end of the legs.

*continued*  
→

## Double Side Tie

C Neck and F Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum and Compacted ACSR

C Neck 2-1/4" Neck Diameter ANSI Class 55-2 and 55-3

F Neck 2-7/8" Neck Diameter ANSI Class 55-4 and 55-5 Pin Type

57-1, 57-2 and 57-3 Post Type

Insulator Identification Mark: Black and Yellow

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
DBST 062	.245-.277	#4, 6/1, 7/1 #4, 7W, Aluminum Alloy	50	21	16	Orange
DBST 070	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	50	21	16	Purple
DBST 080	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #11, 6/1	50	21	17	Red
DBST 091	.358-.405	1/0, 7W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	50	21	16	Yellow
DBST 103	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	50	21	18	Blue
DBST 117	.460-.520	3/0, 7W, All Aluminum 3/0, 6/1 3/0, 7W, Aluminum Alloy	50	36	19	Orange
DBST 132	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	50	36	19	Red
DBST 149	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	50	38	20	Purple
DBST 169	.666-.755	336.4, 19W, All Aluminum 336.4, 18/1 397.6, 19W, All Aluminum 400, 19W, 37W, All Aluminum	50	39	20	Brown
DBST 192	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	50	39	20	Red
DBST 217	.856-.968	556.5, 19W, All Aluminum 636, 18/1 700, 37W, 61W, All Aluminum	50	42	22	Blue
DBST 246	.969-1.096	795, 37W, All Aluminum 795, 61W, All Aluminum 715.5, 24/7 795, 54/7	50	44	24	Green
DBST 278	1.097-1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Aluminum	50	44	24	Yellow

Right-Hand Lay Standard

continued  
→

### Double Side Tie

J Neck

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum and Compacted ACSR

3-1/2" Neck Diameter ANSI Class 55-6 and 55-7 Single Skirt Pin Type

56-1 Double Skirt Pin Type

Insulator Identification Mark: Green

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
DBSTJ 062	.245-.277	#4, 6/1, 7/1 #4, 7W, Aluminum Alloy	50	24	19	Orange
DBSTJ 070	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	50	21	17	Purple
DBSTJ 080	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	50	27	22	Red
DBSTJ 091	.358-.405	1/0, 7W-19W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	50	26	21	Yellow
DBSTJ 103	.406-.459	2/0, 7W-19W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	50	36	19	Blue
DBSTJ 117	.460-.520	3/0, 7W, All Aluminum 3/0, 6/1 3/0, 7W, Aluminum Alloy	50	37	20	Orange
DBSTJ 132	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	50	39	21	Red
DBSTJ 149	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	50	45	24	Purple
DBSTJ 169	.666-.755	336.4, 19W, All Aluminum 336.4, 18/1 397.6, 19W, All Aluminum 4W, 19W, 37W, All Aluminum	50	46	25	Brown
DBSTJ 192	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	50	44	24	Red
DBSTJ 217	.856-.968	556.5, 24/7 636, 18/1 700, 37W, 61W, All Aluminum	50	43	23	Blue
DBSTJ 246	.969-1.096	795, 37W, All Aluminum 795, 61W, All Aluminum 715.5, 34/7 795, 54/7	50	43	23	Green
DBSTJ 278	1.097-1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Aluminum	50	48	25	Yellow

Right-Hand Lay Standard

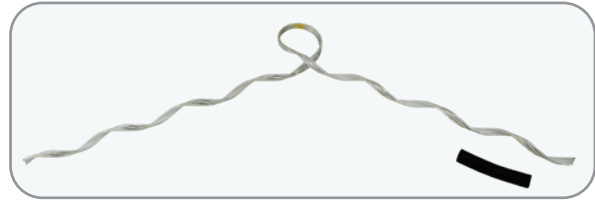
## Spool Tie

### MATERIALS

**Ties** - Manufactured of aluminum covered steel.

**Pads** - A specially formulated elastomer pad is supplied with each Spool Tie used for bare conductor, identified by catalog number suffix P. To specify the Spool Tie without the pad use the suffix T (for use on jacketed conductor).

**Identification tag** - Identifies catalog number, neck size, nominal conductor size, and conductor size.



### General Recommendations

To ensure proper fit and service life, it is recommended that only spool insulators of 1-3/4" neck diameter be used of ANSI class 53-1, 53-2 and 53-3.

Spool Ties not only replace hand ties over armor rods, but Spool Ties with pads provide superior protection against abrasion and all types of conductor motion from high frequency aeolian vibration to low frequency galloping.

The pad, which surrounds the conductor is a resilient cushion where the conductor is in contact with the insulator.

Spool Ties without pads are used for jacketed conductor.

### Maximum Size

Spool Ties are available for conductor sizes up to 0.968".

### Line Angle

The following are the maximum permissible angles:

	HORIZONTALLY MOUNTED SPOOL	VERTICALLY MOUNTED SPOOL
LINE ANGLE	20°	15°
SAG ANGLE	15°	20°

### Unbalanced Loading

Under unbalanced load conditions, the Spool Tie has the resiliency to permit some longitudinal displacement of the conductor over the insulator without loosening the tie or damaging the conductor.

### Radio Interference

The RIV characteristics of Spool Ties are superior to those of a well made hand tie when originally installed. During service-life, the pre-contoured helix assures consistent fit which has better RIV characteristics than loosened tie-wire.

### Tapping

Tapping over applied legs of the Spool Tie is not recommended. Taps should be located at least 6 inches from the end of the legs.

*continued*

## Spool Tie

1-3/4 Neck With Pad

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum and Compacted ACSR

### Selection Information

SPL    XXX    X  
 Spool Tie \_\_\_\_\_  
 Numeric Range Code \_\_\_\_\_  
 Pad (P=With T=Without) \_\_\_\_\_

### ANSI Class 53-1, 53-2, and 53-3 1 3/4" Neck Diameter

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
SPL 048P	.190-.215	#6, 6/1 #4, 7W, Compacted	100	12	16	Blue
SPL 055P	.216-.244	#4, 7W, All Aluminum #4, 6/1, 7/1 Compacted	100	13	17	Brown
SPL 062P	.245-.277	#4, 6/1, 7/1 #4, 7W, Aluminum Alloy	100	16	19	Orange
SPL 070IP	.278-.315	#3, 7W, Aluminum Alloy #2, 7W, All Aluminum	100	17	21	Purple
SPL 080P	.316-.357	#2, 6/1, 7/1 #2, 7W, Aluminum Alloy #1, 6/1	100	23	24	Red
SPL 091P	.358-.405	1/0, 7W, All Aluminum 1/0, 6/1 1/0, 7W, Aluminum Alloy	100	24	26	Yellow
SPL 103P	.406-.459	2/0, 7W, All Aluminum 2/0, 6/1 2/0, 7W, Aluminum Alloy	100	28	28	Blue
SPL 117P	.460-.520	3/0, 7W, All Aluminum 3/0, 6/1 3/0, 7W, Aluminum Alloy	100	32	31	Orange
SPL 132P	.521-.588	4/0, 7W, All Aluminum 4/0, 6/1 4/0, 7W, Aluminum Alloy	50	18	32	Red
SPL 149P	.589-.665	266.8, 37W, All Aluminum 266.8, 18/1	50	19	23	Purple
SPL 169P	.666-.755	336.4, 19W, All Aluminum 336.4, 18/1 336.4, 37W, All Aluminum 397.5, 19W, All Aluminum 400, 19W, 37W, All Aluminum	50	24	25	Brown
SPL 192P	.756-.855	477, 19W, 37W, All Aluminum 477, 18/1, 24/7	50	25	26	Red
SPL 217P	.856-.968	556.5, 19W, All Aluminum 636, 18/1 700, 37W, 61W, All Aluminum	50	26	28	Blue

## Quick Spool Tie

### MATERIALS

**Ties** - Manufactured of aluminum covered steel.

**Pads** - A specially formulated elastomer pad is supplied with each Quick Spool Tie used for bare conductor, identified by catalog number suffix P. To specify the Quick Spool Tie without the pad use the suffix T (for use on jacketed conductor).

**Identification tag** - Identifies catalog number, neck size, nominal conductor size, and conductor size.

### General Recommendations

To insure proper fit and service life, it is recommended that only spool insulators of 1-3/4" neck diameter be used of ANSI class 53-1, 53-2 and 53-3.

Spool Ties not only replace hand ties over armor rods, but Spool Ties with pads provide superior protection against abrasion and all types of conductor motion from high frequency aeolian vibration to low frequency galloping.

The pad, which surrounds the conductor is a resilient cushion where the conductor is in contact with the insulator.

### Maximum Size

Spool Ties are available for conductor sizes up to 0.968".

### Line Angle

The following are the maximum permissible angles:

	HORIZONTALLY MOUNTED SPOOL	VERTICALLY MOUNTED SPOOL
LINE ANGLE	40°	10°

### Unbalanced Loading

Under unbalanced load conditions, the Spool Tie has the resiliency to permit some longitudinal displacement of the conductor over the insulator without loosening the tie or damaging the conductor.

### Radio Interference

The RIV characteristics of Spool Ties are superior to those of a well made hand tie when originally installed. During service-life, the pre-contoured helix assures consistent fit which has better RIV characteristics than loosened tie-wire.

### Tapping

Tapping over applied legs of the Spool Tie is not recommended. Taps should be located at least 6 inches from the end of the legs.



## Quick Spool Tie

1-3/4 Neck With Pad

ACSR, All-Aluminum, Aluminum Alloy, AWAC, Compacted All-Aluminum and Compacted ACSR

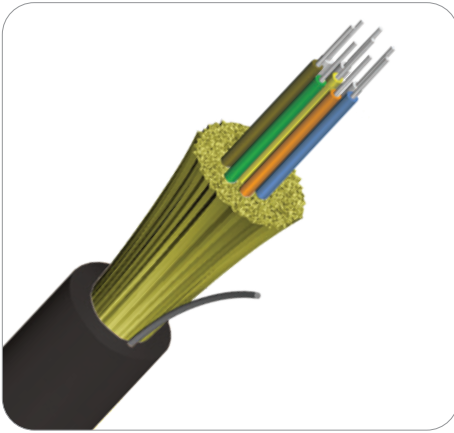
### Selection Information

Quick Spool Tie SPL XXX X  
 Numeric Range Code                       
 Pad (P=With T=Without)                     

### Spool Insulators ANSI Class 53-1, 53-2, and 53-3 1 3/4" Neck Diameter

AFL NO.	DIA. RANGE INCHES	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT. PER CARTON POUNDS	APPLIED LENGTH INCHES	COLOR CODE
QSPL 062 P	.245 - .277	#4, 6/1, 7/1 #4, 7W, Alum. Alloy	100	16	15	Orange
QSPL 070 P						
QSPL 080 P	.316 - .357	#2, 6/1, 7/1 #2, 7W, Alum. Alloy #1, 6/1	100	23	18	Red
QSPL 091 P	.358 - .405	1/0, 7W, All Alum. 1/0, 6/1 1/0, 7W, Alum Alloy	100	24	20	Yellow
QSPL 103 P	.406 - .459	2/0, 7W, All Alum. 2/0, 6/1 2/0, 7W, Alum. Alloy	100	28	22	Blue
QSPL 117 P	.460 - .520	3/0, 7W, All Alum. 3/0, 6/1 3/0, 7W, Alum. Alloy	100	32	24	Orange
QSPL 132 P	.521 - .588	4/0, 7W, All Alum. 4/0, 6/1 4/0, 7W, Alum. Alloy	50	18	25	Red
QSPL 149 P	.589 - .665	266.8, 37W, All Alum. 266.8, 18/1	50	19	28	Purple
QSPL 169 P	.666 - .755	336.4, 19W, All Alum. 336.4, 18/1 336.4, 37W, All Alum. 397.5, 19W, All Alum. 400, 19W, 37W, All Alum.	50	24	31	Brown
QSPL 192 P	.756 - .855	477, 19W, 37W, All Alum. 477, 18/1, 24/7	50	25	32	Red
QSPL 217 P	.856 - .968	556.5, 19W, All Alum. 636, 18/1 700, 37W, All Alum.	50	26	33	Blue





## Indoor/Outdoor Riser Tight Buffered Cable

Indoor/Outdoor Tight Buffered cables are specified for campus network cabling between buildings where interbuilding lengths are short enough that the installer can recognize savings from the lower costs of terminating tight buffered cables.

For indoor applications the cable is OFNR listed. For outdoor applications the cable is manufactured with an outer jacket that incorporates a UV stabilizer for protection against exposure to the sun plus an anti-fungus protection for use in underground applications.

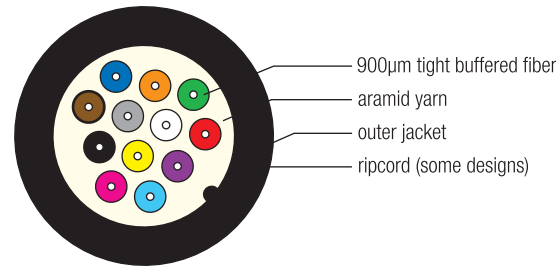
### Features

- Available with 2 to 24 fibers
- 12-fiber water-blocked sub-units
- Moisture-resistant, fungus-resistant and UV-resistant outer jacket

### Applications

- ONFR inside plant and outside plant environments
- Campus LAN
- Building Interconnections
- Mining

### Cable Components



### Fiber Specifications

CORE SIZE/FIBER TYPE	ISO/IEC	MAXIMUM ATTENUATION (dB/km)			OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km)		EMB <sub>c</sub> (MHz•km)	GIGABIT ETHERNET MAX. LINK DISTANCE (meters)		10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters)	
		850 nm	1300 nm	1550 nm	850 nm	1300 nm		850 nm	1300 nm	850 nm	1300 nm
(6) 62.5 Giga-Link™ 300	OM1	3.5	1.2	N/A	200	600	N/A	300	550	32	—
(5) 50 Giga-Link™ 600	OM2	3.5	1.5	N/A	500	500	N/A	600	600	82	—
(L) 50 Laser-Link 300	OM3	3.0	1.2	N/A	1,500	500	2,000	1,000	550	300	—
(C) 50 Laser-Link 550	OM4	3.0	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(W) AFL Wideband Multimode	OM5	3.0	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(9) Single-mode (ITU G.652.D/G.657.A1)	OS2	N/A	0.5	0.5	N/A	N/A	N/A	N/A	5,000	N/A	10,000



STOCK ITEM

## Indoor/Outdoor Riser Tight Buffered Cable

### Mechanical Data

CABLE TYPE	AFL NO.	FIBER COUNT	NOMINAL DIAMETER	WEIGHT	TENSION		BENDING RADIUS	
	RISER		inches (mm)	lbs/1000 ft (kg/km)	lbs (N)		inches (cm)	
					INSTALLATION	LONG TERM	INSTALLATION	LONG TERM
Indoor/Outdoor Tight Buffered Cable	KR002★481#01	2	0.19 (4.8)	14 (21)	150 (660)	45 (198)	2.8 (7.2)	1.9 (4.8)
	KR004★481#01	4	0.19 (4.8)	15 (23)	150 (660)	45 (198)	2.8 (7.2)	1.9 (4.8)
	KR006★531#01	6	0.21 (5.3)	19 (28)	150 (660)	45 (198)	3.1 (8.0)	2.1 (5.3)
	KR008★561#01	8	0.22 (5.6)	23 (33)	150 (660)	45 (198)	3.3 (8.4)	2.2 (5.6)
	KR012★651#01	12	0.26 (6.5)	26 (38)	150 (660)	45 (198)	3.5 (9.0)	2.6 (6.5)
	KR018★801#01	18	0.31 (8.0)	40 (59)	300 (1320)	90 (396)	4.7 (12.0)	3.1 (8.0)
	KR024★871#01	24	0.33 (8.7)	46 (69)	300 (1320)	90 (396)	5.2 (13.1)	3.4 (8.7)

★ Fiber Types – Replace asterisk (★) in AFL number with number in the Fiber Specifications table on previous page.

# Outer Jacket Color – Replace hashtag (#) in AFL number with number in the Cable Jacket Color table below.

### Cable Jacket Color\* Options

1 - Blue	8 - Black
2 - Orange	9 - Yellow
3 - Green	A - Violet
4 - Brown	B - Rose
5 - Slate	C - Aqua
6 - White	K - Erika Violet (RAL 4003)
7 - Red	

\* All jacket colors are UV stable and contain anti-fungal additive.  
For best performance, AFL recommends Black Outer Jacket.

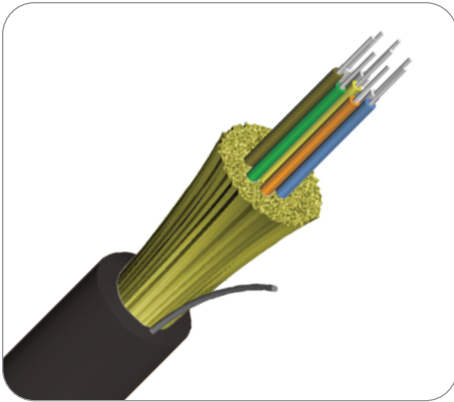
### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
Telcordia	GR-20-CORE GR-409-CORE	Water-Blocked Cabled Buffer Tube Core Sub-units
EIA/TIA	598-A	Sub-units
ICEA	S-104-696	Sub-units
MSHA		
RoHS	2002/95/EC	Cable

### Temperature Specifications

TEMPERATURE RANGE	
INSTALLATION	-20°C to +75°C
OPERATION	-40°C to +75°C
STORAGE	-40°C to +75°C

Contact AFL for further details.



## Indoor/Outdoor Plenum Distribution Cable

Indoor/Outdoor Plenum Distribution cables are specified for campus network cabling between buildings where interbuilding lengths are short enough that the installer can recognize savings from the lower costs of terminating tight buffered cables.

For indoor applications the cable is ONFP listed. For outdoor applications the cable is manufactured with an outer jacket that incorporates a UV stabilizer for protection against exposure to the sun plus an anti-fungus protection for use in underground applications.

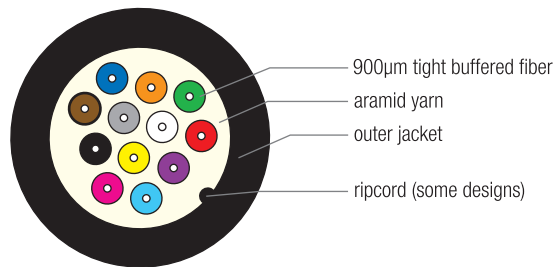
### Features

- Available with 2 to 24 fibers
- Water-blocked jacket protects fibers
- Moisture-resistant, fungus-resistant and UV-resistant outer jacket

### Applications

- ONFP inside plant and outside plant environments
- Underground applications
- Building Interconnections (Campus LAN)

### Cable Components



## Fiber Specifications

CORE SIZE/FIBER TYPE	ISO/IEC	MAXIMUM ATTENUATION (dB/km)			OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km)		EMB <sub>c</sub> (MHz•km)	GIGABIT ETHERNET MAX. LINK DISTANCE (meters)		10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters)	
		850 nm	1300 nm	1550 nm	850 nm	1300 nm		850 nm	1300 nm	850 nm	1300 nm
(6) 62.5 Giga-Link™ 300	OM1	3.5	1.2	N/A	200	600	N/A	300	550	32	—
(5) 50 Giga-Link™ 600	OM2	3.5	1.5	N/A	500	500	N/A	600	600	82	—
(L) 50 Laser-Link 300	OM3	3	1.2	N/A	1,500	500	2,000	1,000	550	300	—
(C) 50 Laser-Link 550	OM4	3	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(W) AFL Wideband Multimode	OM5	3	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(9) Single-mode (ITU G.652.D/G.657.A1)	OS2	N/A	0.5	0.5	N/A	N/A	N/A	N/A	5,000	N/A	10,000



STOCK ITEM

## Indoor/Outdoor Plenum Distribution Cable

### Mechanical Data

AFL NO.	FIBER COUNT	DIAMETER inches (mm)	WEIGHT	TENSILE STRENGTH lbs (N)		BEND RADIUS inches (cm)	
			lbs/1000ft (kg/km)	INSTALLATION	LONG TERM	INSTALLATION	LONG TERM
KQ002★461#01	2	0.18 (4.6)	15 (22)	150 (667)	45 (200)	2.7 (6.9)	1.8 (4.6)
KQ004★501#01	4	0.20 (5.0)	17 (26)	150 (667)	45 (200)	3.0 (7.5)	2.0 (5.0)
KQ006★541#01	6	0.21 (5.4)	20 (30)	150 (667)	45 (200)	3.2 (8.1)	2.1 (5.4)
KQ012★611#01	12	0.24 (6.1)	27 (40)	150 (667)	45 (200)	3.6 (9.1)	2.4 (6.1)
KQ024★791#01	24	0.31 (7.9)	46 (69)	150 (667)	45 (200)	4.7 (11.9)	3.1 (7.9)

★ Fiber Types – Replace asterisk (★) in AFL number with number in the Fiber Specifications table on previous page.

# Outer Jacket Color – Replace hashtag (#) in AFL number with number in the Cable Jacket Color table below.

### Cable Jacket Color Options

1 - Blue	8 - Black
2 - Orange	9 - Yellow
3 - Green	A - Violet
4 - Brown	B - Rose
5 - Slate	C - Aqua
6 - White	K - Erika Violet (RAL 4003)
7 - Red	

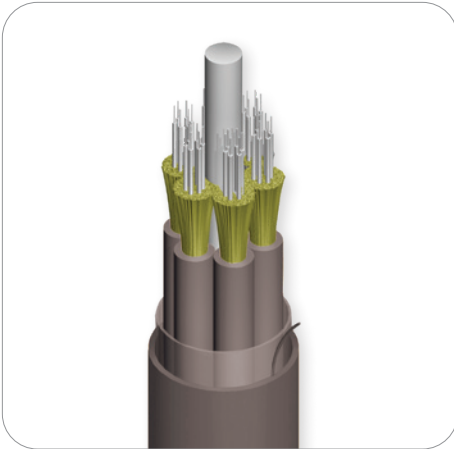
### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
Telcordia	GR-20-CORE GR-409-CORE	Water-Blocked Cabled Buffer Tube Core Weatherized Cable
EIA/TIA	568	Cable
ICEA	S-104-696	Cable
RoHS	REACH	Cable

### Temperature Specifications

TEMPERATURE RANGE	
INSTALLATION	0°C to +70°C
OPERATION	-40°C to +70°C
STORAGE	-40°C to +70°C

**Contact AFL for further details.**



## Indoor/Outdoor Multi-unit Riser Tight Buffered Cable

AFL now offers high fiber count Indoor/Outdoor Riser Cables. Waterblocked 12-fiber sub-units are helically stranded to provide sub-unitized cables ranging from 24 to 72 fiber counts. These cables are OFNR listed for indoor applications. Both the sub-unit jackets and outer sheath contain a UV stabilizer and anti-fungus protection for use in outdoor applications. Sub-units contain a water-swellable aramid and 12 tight buffered fibers.

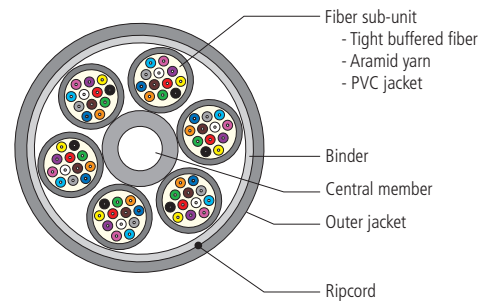
### Features

- Available with 24 to 72 fibers
- 12-fiber water-blocked sub-units
- Moisture-resistant, fungus-resistant and UV-resistant sub-unit jackets and outer sheath

### Applications

- ONFR inside plant and outside plant environments

### Cable Components



### Fiber Specifications

CORE SIZE/FIBER TYPE	ISO/IEC	MAXIMUM ATTENUATION (dB/km)			OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km)		EMB <sub>c</sub> (MHz•km)	GIGABIT ETHERNET MAX. LINK DISTANCE (meters)		10 GIGABIT ETHERNET MAX. LINK DISTANCE (meters)	
		850 nm	1300 nm	1550 nm	850 nm	1300 nm		850 nm	1300 nm	850 nm	1300 nm
(6) 62.5 Giga-Link™ 300	OM1	3.5	1.2	N/A	200	600	N/A	300	550	32	—
(5) 50 Giga-Link™ 600	OM2	3.5	1.5	N/A	500	500	N/A	600	600	82	—
(L) 50 Laser-Link 300	OM3	3	1.2	N/A	1,500	500	2,000	1,000	550	300	—
(C) 50 Laser-Link 550	OM4	3	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(W) AFL Wideband Multimode	OM5	3	1.2	N/A	3,500	500	4,700	1,040	550	550	—
(9) Single-mode (ITU G.652.D/G.657.A1)	OS2	N/A	0.5	0.5	N/A	N/A	N/A	N/A	5,000	N/A	10,000

## Indoor/Outdoor Multi-unit Riser Tight Buffered Cable

### Mechanical Data

CABLE TYPE	AFL NO.	FIBER COUNT	NOMINAL DIAMETER	WEIGHT	TENSION		BENDING RADIUS	
	RISER				lbs (N)		inches (cm)	
			inches (mm)	lbs/1000 ft (kg/km)	INSTALLATION	LONG TERM	INSTALLATION	LONG TERM
Indoor/Outdoor Tight Buffered Cable	KR024★611##1	24	0.67 (16.9)	169 (252)	300 (1320)	90 (396)	10.0 (25.3)	6.7 (16.9)
	KR036★611##1	36	0.67 (16.9)	178 (265)	300 (1320)	90 (396)	10.0 (25.3)	6.7 (16.9)
	KR048★611##1	48	0.67 (16.9)	187 (278)	300 (1320)	90 (396)	10.0 (25.3)	6.7 (16.9)
	KR060★611##1	60	0.76 (19.2)	197 (293)	300 (1320)	90 (396)	11.3 (28.8)	7.6 (19.2)
	KR072★611##1	72	0.81 (20.7)	233 (346)	300 (1320)	90 (396)	12.2 (31.0)	8.1 (20.7)

★ Fiber Types – Replace asterisk (★) in AFL number with number in the Fiber Specifications table on previous page.

# Outer Jacket Color – Replace hashtag (#) in AFL number with number in the Cable Jacket Color table below.

### Cable Jacket Color Options

1 - Blue	8 - Black
2 - Orange	9 - Yellow
3 - Green	A - Violet
4 - Brown	B - Rose
5 - Slate	C - Aqua
6 - White	K - Erika Violet (RAL 4003)
7 - Red	

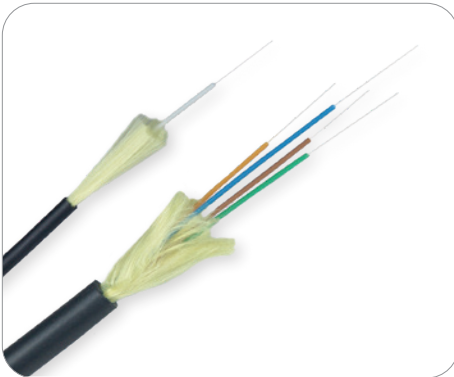
### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
Telcordia	GR-20-CORE GR-409-CORE	Water-Blocked Cabled Buffer Tube Core Sub-units
EIA/TIA	598-A	Sub-units
ICEA	S-104-696	Sub-units
RoHS	2002/95/EC	Cable

### Temperature Specifications

TEMPERATURE RANGE	
INSTALLATION	-20°C to +75°C
OPERATION	-40°C to +75°C
STORAGE	-40°C to +75°C

Contact AFL for further details.



## Tactical Tight Buffered Cable

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

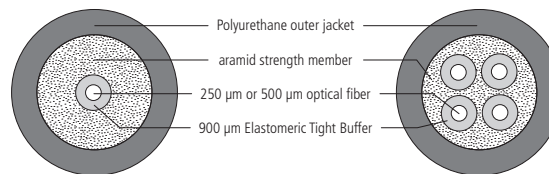
### Features

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

### Applications

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

### Cable Components



### Specifications

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

## Tactical Tight Buffered Cable

### Mechanical Data

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

Note: Diameter and weight subject to change without notice

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

G = 500 µm Coated Optical Fiber

H = 250 µm Coated Optical Fiber

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

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

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

9 = Bend Insensitive G.657A1 single-mode

L = 50/125 µm OM3

C = 50/125 µm OM4

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

**Customer specified print available.**

**See Tactical Cable Ordering Guide AFL No. designations.**

### Qualifications

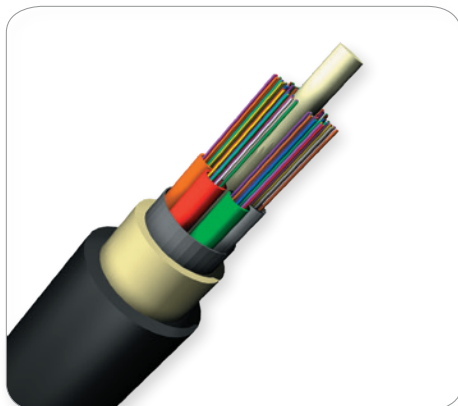
GOVERNING BODY	STANDARD CODE	COMPONENT
EIA/TIA	EIA/TIA-455-33, EIA/TIA-455-37, EIA/TIA-455-104, EIA/TIA-455-41, EIA/TIA-455-25, EIA/TIA-455-3, EIA/TIA-455-5 Method B, EIA/TIA-455-4, EIA/TIA-455-98	Fiber Optic Cable
U.S. Department of Defense	MIL-PRF-49291 MIL-PRF-85045	Optical Fiber Fiber Optic Cable

### Temperature Specifications

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

**Contact AFL for further details.**





## LV-Series Indoor/Outdoor Riser Loose Tube – Single Jacket

Indoor/outdoor stranded loose tube combines the robust mechanical and environmental characteristics of an outside plant cable with the flexibility of an inside plant riser cable. By installing an indoor/outdoor stranded loose tube, splice locations entering into a building are avoided, being routed directly from the outside plant to telecommunications closets, or main distribution frames (MDF) through the riser of a building and eliminating the “50-foot rule.” Indoor/Outdoor Stranded Design loose tube cable is moisture and U.V. resistant and is SZ stranded to allow slack for mid-span access.

### Features

- Fiber counts up to 144
- Compact design
- Gel-filled or gel-free tubes are reverse-oscillated (SZ stranded) to allow slack for mid-span access

### Applications

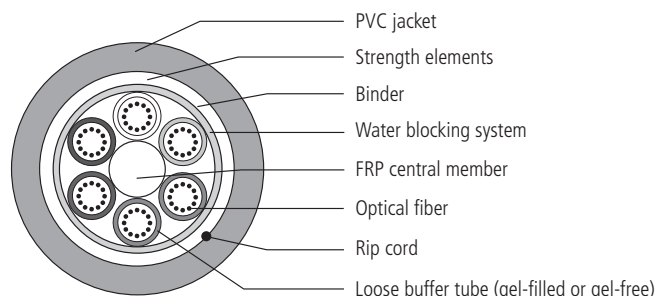
- Underground Duct
- Long Haul Networking
- Building Interconnections (Campus LAN)
- Trunking Lines Direct to Telecommunications Closet
- Local Loop
- Intrabuilding Backbones
- Distance Learning

### Typical Lengths

FIBER COUNT	MAXIMUM LENGTHS*			
	SINGLE-MODE		MULTIMODE	
	feet	meters	feet	meters
6-144	22,900	7,000	22,900	7,000

\* Longer lengths may be available.

### Cable Components



### Fiber Specifications

CORE SIZE/FIBER TYPE	AFL FIBER IDENTIFIER	ISO/IEC	MAXIMUM ATTENUATION (dB/km)				OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km)		GIGABIT ETHERNET MAX. LINK DISTANCE (meters)	
			850 nm	1300 nm	1310 nm	1550 nm	850 nm	1300 nm	850 nm	1300 nm
62.5/125 GIGA-Link™ 300	6	OM1	3.5	1.2	N/A	N/A	200	600	300	550
50/125 GIGA-Link™ 600	5	OM2	3.5	1.5	N/A	N/A	500	500	600	600
50/125 Laser-Link™ 300	L	OM3	3.0	1.2	N/A	N/A	1500	500	1000	550
50/125 Laser-Link™ 300	C	OM4	3.0	1.2	N/A	N/A	3500	500	1040	550
Single-mode (ITU G.652.D/G.657.A1)	9	OS2	N/A	N/A	0.35	0.25	N/A	N/A	N/A	N/A
Corning Single-mode (ITU G.652.D/G.657.A1)	AZ	OS2	N/A	N/A	0.35	0.25	N/A	N/A	N/A	N/A

Gigabit Ethernet Minimum Link Distances are based on “bandwidth”/modal dispersion constraints. Actual link distances may be constrained by attenuation, depending on specific loss budget.

continued  
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## LV-Series Indoor/Outdoor Riser Loose Tube – Single Jacket

### Ordering Information

AFL NO.	FIBER COUNT	NUMBER OF TUBES/FIBERS	NOMINAL DIAMETER	NOMINAL WEIGHT	MAXIMUM TENSILE LOAD		MINIMUM BEND RADIUS	
			inches (mm)	lbs/1,000 ft (kg/km)	lbs (N)		inches (cm)	
					SHORT TERM	LONG TERM	SHORT TERM	LONG TERM
<b>GEL-FILLED</b>								
LV012★C5101N1	12	1w/12 (4 fillers)	0.51 (12.9)	108 (160)	600 (2700)	200 (890)	10.2 (26)	7.7 (20)
LV024★C5101N1	24	2w/12 (3 fillers)	0.51 (12.9)	108 (161)	600 (2700)	200 (890)	10.2 (26)	7.7 (20)
LV036★C5101N1	36	3w/12 (2 fillers)	0.51 (12.9)	109 (162)	600 (2700)	200 (890)	10.2 (26)	7.7 (20)
LV048★C5101N1	48	4w/12 (1 filler)	0.51 (12.9)	110 (164)	600 (2700)	200 (890)	10.2 (26)	7.7 (20)
LV060★C5101N1	60	5w/12 (No fillers)	0.51 (12.9)	111 (165)	600 (2700)	200 (890)	10.2 (26)	7.7 (20)
LV072★C6101N1	72	6w/12 (No fillers)	0.54 (13.7)	128 (190)	600 (2700)	200 (890)	10.8 (28)	8.1 (21)
LV096★C8101N1	96	8w/12 (No fillers)	0.61 (15.5)	159 (237)	600 (2700)	200 (890)	12.2 (31)	9.2 (24)
LV144★CC101N1	144	12w/12 (No fillers)	0.76 (19.3)	243 (361)	600 (2700)	200 (890)	15.2 (39)	11.4 (29)
<b>GEL-FREE</b>								
LV012★C5101N1D	12	1/12 (4 fillers)	0.48 (12.3)	100 (148)	600 (2670)	180 (800)	9.7 (25)	7.2 (19)
LV024★C5101N1D	24	2/12 (3 fillers)	0.48 (12.3)	99 (146)	600 (2670)	180 (800)	9.7 (25)	7.2 (19)
LV036★C5101N1D	36	3/12 (2 fillers)	0.48 (12.3)	99 (147)	600 (2670)	180 (800)	9.7 (25)	7.2 (19)
LV048★C5101N1D	48	4/12 (1 filler)	0.48 (12.3)	99 (147)	600 (2670)	180 (800)	9.7 (25)	7.2 (19)
LV060★C5101N1D	60	5/12 (no fillers)	0.48 (12.3)	98 (146)	600 (2670)	180 (800)	9.7 (25)	7.2 (19)
LV072★C6101N1D	72	6/12 (no fillers)	0.52 (13.1)	103 (154)	600 (2670)	180 (800)	10.3 (26)	7.8 (20)
LV096★C8101N1D	96	8/12 (no fillers)	0.58 (14.7)	138 (205)	600 (2670)	180 (800)	11.6 (29)	8.7 (23)
LV144★CC101N1D	144	12/12 (no fillers)	0.72 (18.2)	198 (295)	600 (2670)	180 (800)	14.3 (37)	10.8 (28)

Note: Diameter and weight subject to change without notice

★ Fiber Types – Replace asterisk (★) in AFL number with AFL Fiber Identifier in the Fiber Specifications table on previous page.

### Reel Information

ITEM	REEL A		REEL B		REEL C		REEL D		REEL E	
	inches	cm	inches	cm	inches	cm	inches	cm	inches	cm
Reel Height	42	106.7	58	147.3	66	167.6	72	182.8	84	213.4
Reel Width Outside	36	91.4	38	96.5	42	106.7	42	106.7	40	101.6
Reel Width Inside	32	81.6	32	81.3	36	91.4	36	91.4	34	86.4
Drum Diameter	23	58.7	28	71.1	36	91.4	36	91.4	35	88.9
Arbor Hole Diameter	3	7.9	3	7.9	3	7.9	3	7.9	3	7.9
Reel Weight With Lagging	180 lbs	82 kg	420 lbs	191 kg	685 lbs	311 kg	710 lbs	320 kg	950 lbs	431 kg

AFL typically provides Loose Tube cable on several standard sizes of non-returnable wooden reels. Non-standard reel sizes are available upon request.

Larger reel sizes may be required to accommodate long cable lengths.

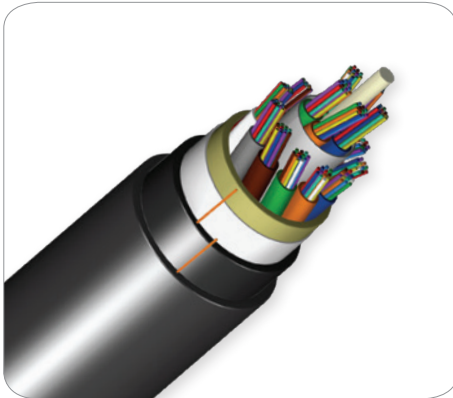
### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
Telcordia	GR-20-CORE	Cable
UL	1666 (OFNR)	Cable
ICEA	S-104-696	Cable
CSA	22.2 (FT4)	Cable
TIA	598-D	Fiber

### Temperature Specifications

TEMPERATURE RANGE	
OPERATION	-40°C to +70°C
STORAGE	-40°C to +70°C
INSTALLATION	-30°C to +70°C

**Contact AFL for your customized cable solution.**



## All-Dielectric Armored Rodent-Resistant OSP Loose Tube (LN Series)

AFL's All-dielectric Rodent-Resistant cable is designed for environments that have an increased risk of rodent infestation and disturbance. The LN-series product line covers the range of fiber counts of up to 432 fibers. The ultra-hard, non-metallic outer polymer shell reduces the risk of transmission interruptions in vital OSP network interconnections.

### Features

- Fiber counts up to 432
- All-dielectric Armor
- Double jacket design provides additional protection to the fibers
- Gel-filled tubes are reverse-oscillated (SZ stranded) to allow slack for mid-span access

### Applications

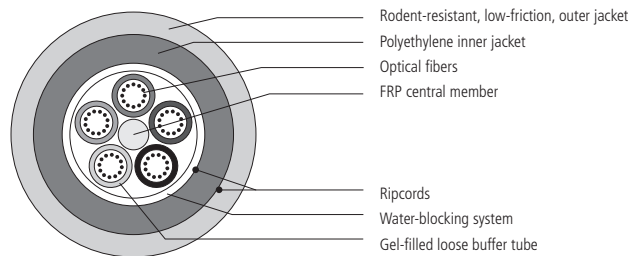
- Direct Buried
- Long Haul Networking
- Building Interconnections (Campus LAN)
- Steam-tunnel Substreet Drainage Networks
- Airport (FAA-E-2761c, Type B)

### Typical Lengths

FIBER COUNT	MAXIMUM LENGTHS*			
	SINGLE-MODE		MULTIMODE	
	FEET	METERS	FEET	METERS
6 - 60	22,900	7,000	22,900	8,000
72 - 96	22,900	7,000	22,900	7,000
108 - 120	22,900	7,000	22,900	7,000
132 - 144	22,600	6,900	22,600	6,900
146 - 216	17,000	5,200	17,000	5,200
218 - 288	15,000	4,600	15,000	4,600
290 - 432	10,800	3,300	10,800	3,300

\* Longer lengths may be available upon request.

### Cable Components



### Fiber Specifications

FIBER TYPE	MAXIMUM ATTENUATION (DB/KM)				OVERFILL LAUNCH MIN. BANDWIDTH (MHZ•KM)		GIGABIT ETHERNET MIN. LINK DISTANCE (METERS)	
	850 NM	1300 NM	1310 NM	1550 NM	850 NM	1300 NM	850 NM	1300 NM
(6) 62.5/125 GIGA-Link™ 300	3.5	1.2	N/A	N/A	200	600	300	550
(5) 50/125 GIGA-Link™ 600	2.9	0.9	N/A	N/A	500	500	600	600
(L) 50/125 Laser-Link™ 300	2.9	0.9	N/A	N/A	1500	500	900	550
(9) Single-mode	N/A	N/A	0.35	0.25	N/A	N/A	N/A	5000
(Q) Non-zero Dispersion-shifted Single-mode	N/A	N/A	N/A	0.25	N/A	N/A	N/A	N/A

Gigabit Ethernet Minimum Link Distances are based on "bandwidth"/modal dispersion constraints. Actual link distances may be constrained by attenuation, depending on specific loss budget.

continued  
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## All-Dielectric Armored Rodent-Resistant OSP Loose Tube (LN Series)

### Ordering Information

AFL NO.	FIBER COUNT	NUMBER OF TUBES/FIBERS	NOMINAL DIAMETER		NOMINAL WEIGHT		MAXIMUM TENSILE LOAD		MINIMUM BEND RADIUS	
			INCHES	MM	LBS/1,000FT	KG/KM	LBS (N)		INCHES (CM)	
							SHORT TERM	LONG TERM	SHORT TERM	LONG TERM
LN006★C5101N1	6	1w/6 (4 fillers)	0.49	12.5	56	84	600 (2670)	200 (890)	9.8 (25)	7.4 (19)
LN012★C5101N1	12	1w/12 (4 fillers)	0.49	12.5	56	84	600 (2670)	200 (890)	9.8 (25)	7.4 (19)
LN018★C5101N1	18	1w/12, 1w/6 (3 fillers)	0.49	12.5	56	84	600 (2670)	200 (890)	9.8 (25)	7.4 (19)
LN024★C5101N1	24	2w/12 (3 fillers)	0.49	12.5	56	84	600 (2670)	200 (890)	9.8 (25)	7.4 (19)
LN030★C5101N1	30	2w/12, 1w/6 (2 fillers)	0.49	12.5	56	84	600 (2670)	200 (890)	9.8 (25)	7.4 (19)
LN036★C5101N1	36	3w/12 (2 fillers)	0.49	12.5	56	84	600 (2670)	200 (890)	9.8 (25)	7.4 (19)
LN048★C5101N1	48	4w/12 (1 filler)	0.49	12.5	56	84	600 (2670)	200 (890)	9.8 (25)	7.4 (19)
LN060★C5101N1	60	5w/12 (no fillers)	0.49	12.5	56	84	600 (2670)	200 (890)	9.8 (25)	7.4 (19)
LN072★C6101N1	72	6w/12 (no fillers)	0.53	13.4	65	97	600 (2670)	200 (890)	10.6 (27)	8.0 (21)
LN084★C8101N1	84	7w/12 (1 filler)	0.60	15.2	81	121	600 (2670)	200 (890)	12.0 (31)	9.0 (23)
LN096★C8101N1	96	8w/12 (no fillers)	0.60	15.2	81	121	600 (2670)	200 (890)	12.0 (31)	9.0 (23)
LN108★CA101N1	108	9w/12 (1 filler)	0.67	17.1	101	151	600 (2670)	200 (890)	13.4 (35)	10.1 (26)
LN120★CA101N1	120	10w/12 (no fillers)	0.67	17.1	101	151	600 (2670)	200 (890)	13.4 (35)	10.1 (26)
LN132★CC101N1	132	11w/12 (1 filler)	0.75	19.0	123	184	600 (2670)	200 (890)	15.0 (39)	11.3 (29)
LN144★CC101N1	144	12w/12 (no fillers)	0.75	19.0	123	184	600 (2670)	200 (890)	15.0 (39)	11.3 (29)
LN216★CI301N1	216	18w/12 (no fillers)	0.76	19.3	125	187	600 (2670)	200 (890)	15.2 (39)	11.4 (29)
LN288★OC101N1	288	12w/24 (no fillers)	0.73	18.6	183	272	600 (2670)	200 (890)	14.6 (38)	11.0 (28)
LN432★OI301N1	432	18w/24 (no fillers)	0.72	18.4	181	269	600 (2670)	200 (890)	14.4 (37)	10.8 (28)

Note: Diameter and weight subject to change without notice

★ Fiber Types – Replace asterisk (★) in AFL number with number in the Fiber Specifications table on previous page.

### Reel Information

ITEM	REEL A		REEL B		REEL C		REEL D		REEL E	
	INCHES	CM	INCHES	CM	INCHES	CM	INCHES	CM	INCHES	CM
Reel Height	42	106.7	58	147.3	66	167.6	72	182.8	84	213.4
Reel Width Outside	36	91.4	38	96.5	42	106.7	42	106.7	40	101.6
Reel Width Inside	32	81.6	32	81.3	36	91.4	36	91.4	34	86.4
Drum Diameter	23	58.7	28	71.1	36	91.4	36	91.4	35	88.9
Arbor Hole Diameter	3	7.9	3	7.9	3	7.9	3	7.9	3	7.9
Reel Weight With Lagging	180 lbs	82 kg	420 lbs	191 kg	685 lbs	311 kg	710 lbs	320 kg	950 lbs	431 kg

AFL typically provides Loose Tube cable on several standard sizes of non-returnable wooden reels. Non-standard reel sizes are available upon request. Larger reel sizes may be required to accommodate long cable lengths.

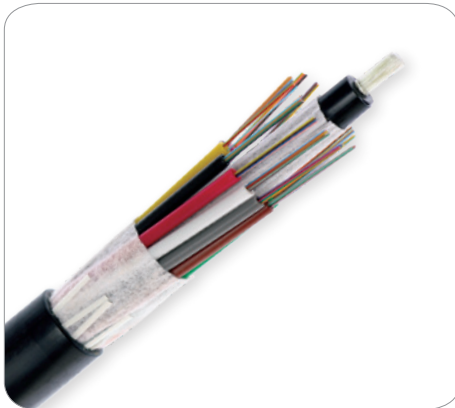
### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
Telcordia	GR-20-CORE	Cable
ICEA	640	Cable
TIA	598-D	Fiber

### Temperature Specifications

TEMPERATURE RANGE	
OPERATION	-40°C to +70°C
STORAGE	-40°C to +75°C
INSTALLATION	-30°C to +70°C

Contact AFL for your customized cable solution.



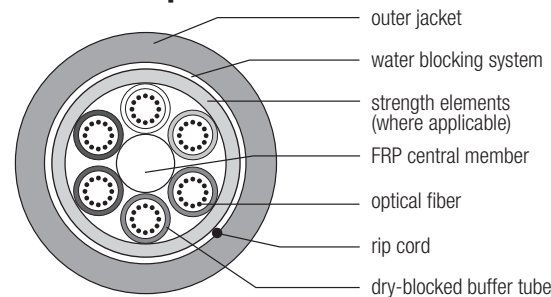
## Non-Armored Single Jacket Dry Loose Tube Cable

Acting as the backbone for most of today's fiber based systems, stranded fiber optic cables play a critical role in the high speed network. AFL's Non-Armored Dry Loose Tube fiber optic cables are designed to provide high fiber counts with the flexibility and versatility required for today's most demanding installations. Our dry buffer tube cables feature fiber counts up to 288, compliance with EIA/TIA and REA/RUS PE-90, and are S-Z stranded for easy mid-span access. The dry buffer tube and core permit rapid cable preparation and termination. Water blocking materials are easily removed. Industry standard designs combined with innovative technologies, such as a dry core and dry tube product, yield a world class cable that will support today's and tomorrow's technological needs.

### Applications

- Building Interconnections (Campus LAN)
- Trunking Lines Direct to Telecommunications Closet
- Local Loop
- Distance Learning
- Distribution
- Intrabuilding Backbones

### Cable Components



### Typical Lengths

FIBER COUNT	MAXIMUM LENGTHS*			
	SINGLE-MODE		MULTIMODE	
	FEET	METERS	FEET	METERS
6 - 60	39,370	12,000	26,200	8,000
72 - 96	32,800	10,000	26,200	8,000
108 - 120	31,100	9,500	26,200	8,000
132 - 144	22,900	7,000	22,900	7,000
146 - 288	22,900	7,000	—	—

\* Longer lengths may be available upon request.

### Optical Information

FIBER TYPE	MAXIMUM ATTENUATION (dB/km)				OVERFILL LAUNCH MIN. BANDWIDTH (MHz•km)		GIGABIT ETHERNET MIN. LINK DISTANCE (meters)	
	850 nm	1300 nm	1310 nm	1550 nm	850 nm	1300 nm	850 nm	1300 nm
(6) 62.5/125 GIGA-Link™ 300	3.5	1.2	N/A	N/A	200	600	300	550
(8) 62.5/125 GIGA-Link™ 1000	3.5	1.2	N/A	N/A	350	600	500	1000
(5) 50/125 GIGA-Link™ 600	2.9	0.9	N/A	N/A	500	500	600	600
(7) 50/125 GIGA-Link™ 2000	2.9	0.9	N/A	N/A	500	800	750	2000
(L) 50/125 Laser-Link™ 300	2.9	0.9	N/A	N/A	1500	500	900	550
(9) Single-mode	N/A	N/A	0.35	0.25	N/A	N/A	N/A	5000
(Q) Non-zero Dispersion-shifted Single-mode	N/A	N/A	N/A	0.25	N/A	N/A	N/A	N/A
(K) SM Futureguide SR-15e Bend Insensitive	N/A	N/A	0.35	0.25	N/A	N/A	N/A	5000

Gigabit Ethernet Minimum Link Distances are based on "bandwidth"/modal dispersion constraints. Actual link distances may be constrained by attenuation, depending on specific loss budget.

continued  
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## Non-Armored Single Jacket Dry Loose Tube Cable

### Ordering Information

AFL NO.	FIBER COUNT	NUMBER OF TUBES/FIBERS	NOMINAL DIAMETER	NOMINAL WEIGHT	MAXIMUM TENSILE LOAD		MINIMUM BEND RADIUS	
			INCHES (MM)	LBS/1,000FT (KG/KM)	LBS. (N)		INCHES (CM)	
					SHORT TERM	LONG TERM	SHORT TERM	LONG TERM
LE006★C5101N1D	6	1w/6 (4 fillers)	0.45 (11.4)	53.8 (80.2)	600 (2700)	200 (890)	9.0 (22.8)	4.5 (11.4)
LE012★C5101N1D	12	1w/12 (4 fillers)	0.45 (11.4)	53.8 (80.2)	600 (2700)	200 (890)	9.0 (22.8)	4.5 (11.4)
LE018★C5101N1D	18	1w/12, 1w/6 (3 fillers)	0.45 (11.4)	53.8 (80.2)	600 (2700)	200 (890)	9.0 (22.8)	4.5 (11.4)
LE024★C5101N1D	24	2w/12 (3 fillers)	0.45 (11.4)	53.8 (80.2)	600 (2700)	200 (890)	9.0 (22.8)	4.5 (11.4)
LE030★C5101N1D	30	2w/12, 1w/6 (2 fillers)	0.45 (11.4)	53.8 (80.2)	600 (2700)	200 (890)	9.0 (22.8)	4.5 (11.4)
LE036★C5101N1D	36	3w/12 (2 fillers)	0.45 (11.4)	53.8 (80.2)	600 (2700)	200 (890)	9.0 (22.8)	4.5 (11.4)
LE048★C5101N1D	48	4w/12 (1 filler)	0.45 (11.4)	53.8 (80.2)	600 (2700)	200 (890)	9.0 (22.8)	4.5 (11.4)
LE060★C5101N1D	60	5w/12 (No fillers)	0.45 (11.4)	53.8 (80.2)	600 (2700)	200 (890)	9.0 (22.8)	4.5 (11.4)
LE072★C6101N1D	72	6w/12 (No fillers)	0.49 (12.4)	62.6 (93.4)	600 (2700)	200 (890)	9.8 (24.8)	4.9 (12.4)
LE084★C8101N1D	84	7w/12 (1 filler)	0.56 (14.2)	80.9 (120.7)	600 (2700)	200 (890)	11.2 (28.4)	5.6 (14.2)
LE096★C8101N1D	96	8w/12 (No fillers)	0.56 (14.2)	80.9 (120.7)	600 (2700)	200 (890)	11.2 (28.4)	5.6 (14.2)
LE108★CA101N1D	108	9w/12 (1 filler)	0.63 (15.9)	101.5 (151.4)	600 (2700)	200 (890)	12.6 (31.8)	6.3 (15.9)
LE120★CA101N1D	120	10w/12 (No fillers)	0.63 (15.9)	101.5 (151.4)	600 (2700)	200 (890)	12.6 (31.8)	6.3 (15.9)
LE132★CC101N1D	132	11w/12 (1 filler)	0.70 (17.8)	127.5 (190.1)	600 (2700)	200 (890)	14.0 (35.6)	7.0 (17.8)
LE144★CC101N1D	144	12w/12 (No fillers)	0.70 (17.8)	127.5 (190.1)	600 (2700)	200 (890)	14.0 (35.6)	7.0 (17.8)
LE216★C1301N1D	216	18w/12 (No fillers)	0.71 (18.0)	116.1 (173.1)	600 (2700)	200 (890)	14.2 (36.0)	7.1 (18.0)

Note: Diameter and weight subject to change without notice

★ Fiber Types – Replace asterisk (★) in part number with number corresponding to desired fiber type below.

5 = 50/125µm multimode GIGA-Link™ 600  
 7 = 50/125µm multimode GIGA-Link™ 2000  
 6 = 62.5/125µm multimode GIGA-Link™ 300  
 8 = 62.5/125µm multimode GIGA-Link™ 1000  
 9 = Single-mode  
 L = 50/125µm multimode Laser-Link™ 300  
 K = SM Futureguide SR-15e Bend Insensitive  
 Q = Non-zero dispersion-shifted single-mode

### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
EIA/TIA		Fiber
REA/RUS	PE-90	Cable

### Temperature Specifications

TEMPERATURE RANGE	
Operation	-40°C to +70°C
Storage	-40°C to +75°C
Installation	-30°C to +70°C

Contact AFL for cable designs.



## LM-Series OSP MicroCore® Cable

AFL OSP MicroCore® cable series (LM-Series) is designed for outside plant installation in microduct conduit systems. The foundation of the design is the multi-fiber-set, gel-filled buffer tube construction. The kink-resistant buffer tube contains multiple 12-fiber sets of color-coded fibers. Each set within the buffer tube is grouped using dual color-coded binder threads. The dry-blocked core is made up of SZ-stranded buffer tubes around a central strength member. The low-friction, high-strength overall jacketing system protects the cable-core while providing an optimized cable package supporting high-speed, long-distance jetting performance. The unique, high-fiber density geometry yields a cable construction that can accommodate up to 432 fibers and can be blown into microducts ranging in inside diameters from 10 mm to 16 mm.

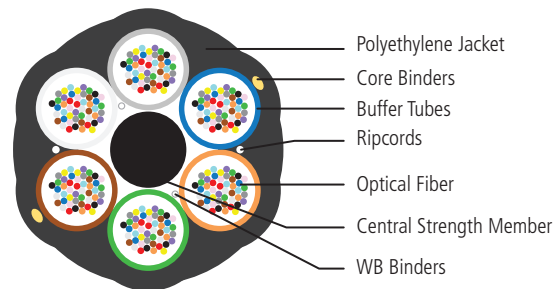
### Features

- 12 up to 432 250  $\mu$ m fibers
- Low-friction outer jacket designed for air-blown installations
- Robust, kink-resistant buffer tubes reduce time and handling issues associated with enclosure build-outs
- 300lb installation tensile load rating
- OD compatible with 10 mm to 16 mm inside diameter microducts

### Applications

- Long-haul, middle-mile and metro-loop
- Campus inter-building backbone distribution
- Low-cost fiber upgrade migration strategies

### Cable Components



*continued*  
→



## LM-Series OSP MicroCore® Cable

### Physical and Mechanical Data

LM-SERIES AFL NO.*	FIBER COUNT	FIBERS/ NUMBER OF TUBES**	DIAMETER  INCHES (MM)	MIN. MICRODUCT INNER DIAMETER  INCHES (MM)	WEIGHT  LBS/1000FT (KG/KM)	MAXIMUM TENSILE LOAD LBS (N)		MINIMUM BEND RADIUS INCHES (CM)	
						INSTALLATION	OPERATION	INSTALLATION	OPERATION
LM012xC6101NS	12	12/1 (5 fillers)	0.31 (7.9)	0.39 (10.0)	31 (46)	300 (1334)	90 (400)	6.5 (16)	5 (12)
LM024xC6101NS	24	12/2 (4 fillers)	0.31 (7.9)	0.39 (10.0)	32 (48)	300 (1334)	90 (400)	6.5 (16)	5 (12)
LM048xC6101NS	48	12/4 (2 fillers)	0.31 (7.9)	0.39 (10.0)	33 (49)	300 (1334)	90 (400)	6.5 (16)	5 (12)
LM072xC6101NS	72	12/6	0.31 (7.9)	0.39 (10.0)	34 (51)	300 (1334)	90 (400)	6.5 (16)	5 (12)
LM096xO6101NS	96	24/4 (2 fillers)	0.31 (7.9)	0.39 (10.0)	34 (51)	300 (1334)	90 (400)	6.5 (16)	5 (12)
LM144xO6101NS	144	24/6	0.31 (7.9)	0.39 (10.0)	36 (53)	300 (1334)	90 (400)	6.5 (16)	5 (12)
LM288xR6101NS	288	48/6	0.41 (10.4)	0.51 (13.0)	63 (93)	300 (1334)	90 (400)	8.5 (21)	6.5 (16)
LM432xOI301NS	432	24/18	0.50 (12.6)	0.63 (16.0)	87 (130)	300 (1334)	90 (400)	10 (26)	7.5 (19)

\* Replace "x" in AFL number with Fiber Identifier in the Fiber Specifications table below.

\*\* Fibers are arranged in 12-fiber sets identified by colored binder threads. For fiber identification details [click here](#).

### Optical Fiber Options

FIBER TYPE	"X"	STANDARD	MODE FIELD DIAMETER	ATTENUATION	
				1300 nm	1550 nm
250 µm Single-mode	9	ITU-T G.652D / 657.A1	9.2 µm nominal	0.35	0.25
Corning 250 µm Single-mode	AZ	ITU-T G.652D / 657.A1	9.2 µm nominal	0.35	0.25

### Standard Packaging Details

FIBER COUNT	REEL DIMENSIONS (FLANGE X WIDTH)	STANDARD REEL LENGTH	TYPICAL TOTAL WEIGHT
12-144	48 x 36 in.	20,000 ft (6,096 m)	950 lbs (430 kg)
288	58 x 38 in.	20,000 ft (6,096 m)	1,800 lbs (816 kg)
432	66 x 42 in.	20,000 ft (6,096 m)	2,450 lbs (1,111 kg)

### Recommended Products

DESCRIPTION	AFL NO.
Apex® X-2 Sealed Splice Closure	Refer to <a href="#">spec sheet</a> for AFL No.
Apex® X-2S Sealed Splice Closure	Refer to <a href="#">spec sheet</a> for AFL No.
FUSEConnect® MPO Splice-on Connectors	Refer to <a href="#">spec sheet</a> for AFL No.
FUSEConnect® Field-installable Splice-on Connectors	Refer to <a href="#">spec sheet</a> for AFL No.
LMHD-Series OSP MicroCore® Cable	Refer to <a href="#">spec sheet</a> for AFL No.
Poli-MOD® Patch and Splice Module	Refer to <a href="#">spec sheet</a> for AFL No.

### Temperature Specifications

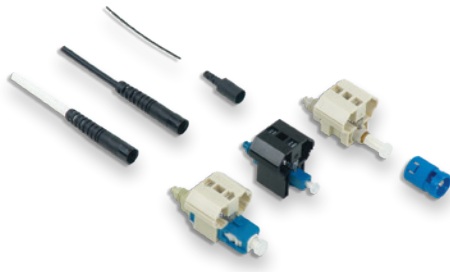
TEMPERATURE RANGE	
OPERATION	-30°C to +70°C
STORAGE	-30°C to +70°C
INSTALLATION	-10°C to +60°C

### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
ANSI/ICEA	S-122-744	Cable
TIA	598-D	Fiber

Contact AFL for further details.





## Features

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

## Applications

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

## FASTConnect® Field-Installable Connectors

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

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

## Specifications

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

## Ordering Information

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

*continued*  
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## FASTConnect® Field-Installable Connectors

### Accessories

DESCRIPTION			AFL NO.	AFL NO.
BOOT KITS FOR 2 MM AND 3 MM CORDAGE	COLOR	CABLE SIZE	PACK OF 6	PACK OF 100
2 mm Boot Kit, SC/LC/ST	Black	2 mm	FAST-BOOT-2MM-6	FAST-BOOT-2MM-100
3 mm Boot Kit, SC/LC/ST	Black	3 mm	FAST-BOOT-3MM-6	FAST-BOOT-3MM-100
DUPLEX CLIPS				
LC Duplex Clip (LC only)	Transparent		CS010437-06	CS010437-100
TOOL KITS				AFL NO.
FASTConnect High Precision Tool Kit with CT50 Cleaver				CS001201
FASTConnect High Precision Tool Kit with CT16 Cleaver				CS010975
VISUAL FAULT IDENTIFIERS				AFL NO.
VFI4 visual fault identifier with 2.5 mm and 1.25 mm adapters				VFI4-01-0900PR
2.5 mm Universal for VFI port				2900-50-0013MR
1.25 mm Universal for VFI port				2900-50-0012MR

### Qualifications

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

### Temperature Specifications

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

### Patents

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

Contact AFL for further details.

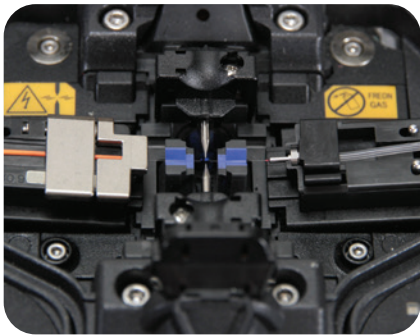


FUSEConnect Connectors (SC, FC, LC, ST)

## FUSEConnect® Fusion-Spliced, Field-Installable Connectors

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

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



FUSEConnect in Fusion Splicer

### Features

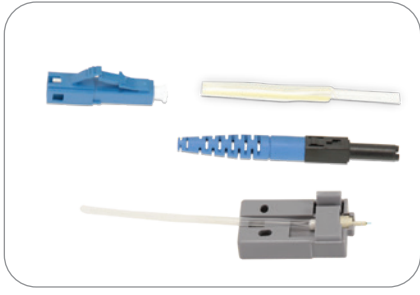
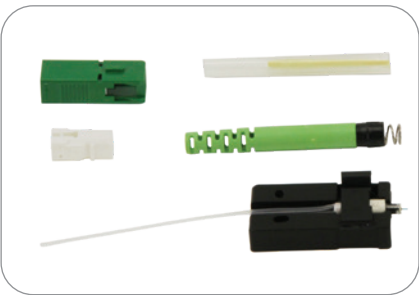
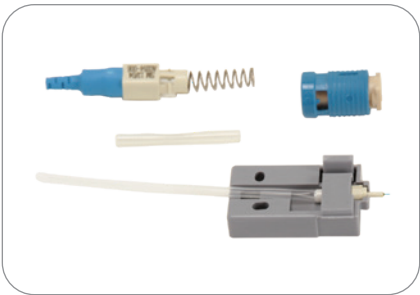
- Field installable
- No adhesives, crimping or polishing
- True APC performance
- Compatible with most fusion splicers

### Applications

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

### Specifications

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



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

*continued*  
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## FUSEConnect® Fusion-Spliced, Field-Installable Connectors

### Ordering Information

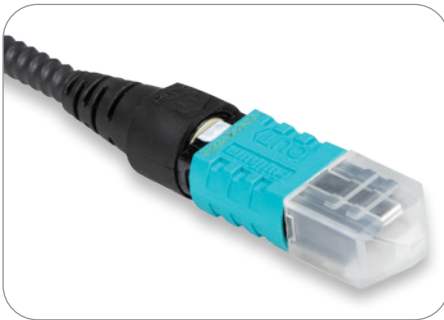
CONNECTOR TYPE	BOOT TYPE	AFL NO.*				
		UPC SM (Blue)	APC SM (Green)	PC 62.5 µm MM (Beige)	PC 50 µm MM (Black)	PC 50 µm LOMMF (AQUA) **
SC	900 µm	FUSE-SC9SMU-6	FUSE-SC9SMA-6	FUSE-SC9M62-6	FUSE-SC9M50-6	FUSE-SC9M50L-6
	3 mm	FUSE-SC3SMU-6	FUSE-SC3SMA-6	FUSE-SC3M62-6	FUSE-SC3M50-6	FUSE-SC3M50L-6
	4.8 mm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

\* AFL NO. is for one pack of 6 pieces

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

### Temperature Specifications

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



FUSEConnect MPO Connectors, Cable



FUSEConnect MPO Connectors, Ribbon

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

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

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

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

### Features

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

### Applications

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

### Specifications

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

*continued*  
→

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

### Ordering Information

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

\*Pack of 6 pieces

### Ordering Information – Accessories

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

### Temperature Specifications

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

### Qualifications

GOVERNING BODY	STANDARD CODE
TIA	604-5-C
IEC	61754-7
GR	1435-CORE Issue 2
FOCIS	FOCIS-5

Contact AFL for further details.



FUSEConnect Tool Kit Contents



FUSEConnect Accessory Kit



Cord Splitter Tool

## FUSEConnect® Tool Kit and Accessories

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

### Features

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

### Applications

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

### Ordering Information

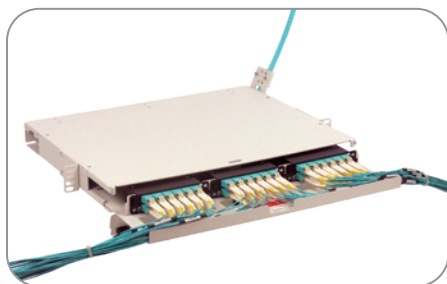
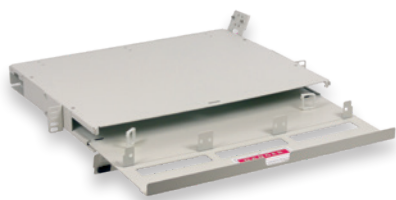
DESCRIPTION	AFL NO.
<b>FUSECONNECT TOOL KIT (INCLUDES ITEMS BELOW)</b>	<b>FUSE-TL-KT</b>
Tool Case	CS001202
Fiber Stripper	CS001205
Kevlar Scissors	C095257
Lint-Free Wipes	FM000413
Fiber Preparation Fluid	FPF1-00-0900
Permanent Marker	C015830
Cord Splitter Tool	FUSE-ST-TL
FUSEConnect Accessory Kit	FUSE-AC-KT

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

<b>Cord Splitter Tool</b>	<b>FUSE-ST-TL</b>
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<b>Legacy Splicer Accessories (Required for Fanout Splicing)</b>	
CLAMP-S21B Sheath Clamp	S016853
CLAMP-S60D Sheath Clamp	S014750





## Specifications

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

## LightLink LANSys™ 1RU Fiber Termination Patch/Splice Panel

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

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

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

## Features

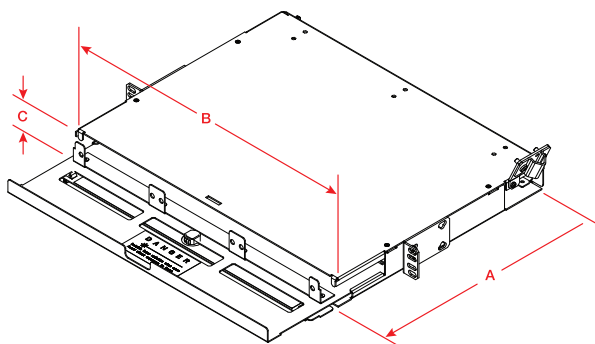
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- Modular design
- Slide-out tray with relief cut-outs for simplified connector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

## Applications

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

## Dimensions

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



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



## LightLink LANSys™ 1RU Fiber Termination Patch/Splice Panel

### Ordering Information

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

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

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

AFL NO.	Color	Loading Character	Cable Stub Length (M)
FM001344	B	S	0010
	W = White B = Black	E = Empty H = Half-loaded with adapters L = Loaded with adapters and pigtails (Patch and Splice only) S = Preterminated with tight buffered CPC cable stub (Riser) (Patch only) R = Preterminated with OSP loose tube cable stub (Patch only)	0002 = 2 meters 0004 = 4 meters etc.

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

### Ordering Information

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

<b>CNS012P—1RU PATCH AND SPLICE PANELS—12 FIBERS—LGX118</b>	
EMPTY	FM001328
12 PSC adapters (2 Six Packs), Splice Tray	FM001323
12 UST adapters (2 Six Packs), Splice Tray	FM001329
12 PST adapters (2 Six Packs), Splice Tray	FM001325
6 UDL (dup) adapters (2 Three Packs), Splice Tray	FM001334
6 PDL (dup) adapters (2 Three Packs), Splice Tray	FM001335
12 ASC adapters (2 Six Packs), Splice Tray	FM001333
12 UFC adapters (2 Six Packs), Splice Tray	FM001330
12 USC adapters (2 Six Packs), Splice Tray	FM001332
12 AFC adapters (2 Six Packs), Splice Tray	FM001331
<b>CNS024HD—1 RU HIGH-DENSITY PATCH &amp; SPLICE PANELS—24 FIBERS—LGX118</b>	
24 UST adapters (2 Twelve Packs), Splice Tray	FM001336
24 PST adapters (2 Twelve Packs), Splice Tray	FM001337
12 USF (dup) adapters (2 Six Packs), Splice Tray	FM001338
12 ASF (dup) adapters (2 Six Packs), Splice Tray	FM001339

### Qualifications

GOVERNING BODY	STANDARD CODE
ASTM	ASTMB209
Telcordia	GR-63NEBS

### Accessories

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

### Connector/Adapter Key

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

#### Notes:

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

## LightLink LANSys™ 2RU Fiber Termination Patch/Splice Panel

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

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

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

### Specifications

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

### Features

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

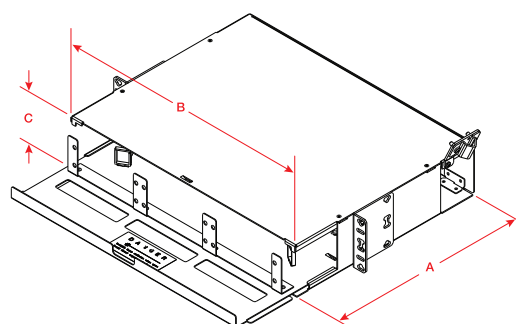
### Applications

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

### Dimensions

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

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



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Telcordia is a registered trademark of Telcordia Technologies, Inc.

## LightLink LANSys™ 2RU Fiber Termination Patch/Splice Panel

### Ordering Information

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

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

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

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

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

### Ordering Information

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

<b>CNS024P—2U PATCH AND SPLICE PANELS—24 FIBERS—LGX118</b>	
EMPTY	FM001414
24 PSC adapters (4 Six Packs) 118 LGX, Splice tray	FM001411
24 UST adapters (4 Six Packs) 118 LGX, Splice tray	FM001412
24 PST adapters (4 Six Packs) 118 LGX, Splice tray	FM001413
12 UDL (dup) adapters (4 three Packs) 118 LGX , Splice tray	FM001419
12 PDL (dup) adapters (4 three Packs) 118 LGX , Splice tray	FM001420
24 ASC adapters (4 Six Packs) 118 LGX, Splice tray	FM001418
24 UFC adapters (4 Six Packs) 118 LGX, Splice tray	FM001415
24 USC adapters (4 Six Packs) 118 LGX, Splice tray	FM001417
24 AFC adapters (4 Six Packs) 118 LGX, Splice tray	FM001416

#### Notes:

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

### Qualifications

GOVERNING BODY	STANDARD CODE
ASTM	ASTMB209
Telcordia	GR-63NEBS

### Accessories

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

### Connector/Adapter Key

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



## LightLink LANSys™ 3RU Fiber Termination Patch Panel

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

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

### Specifications

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

### Features

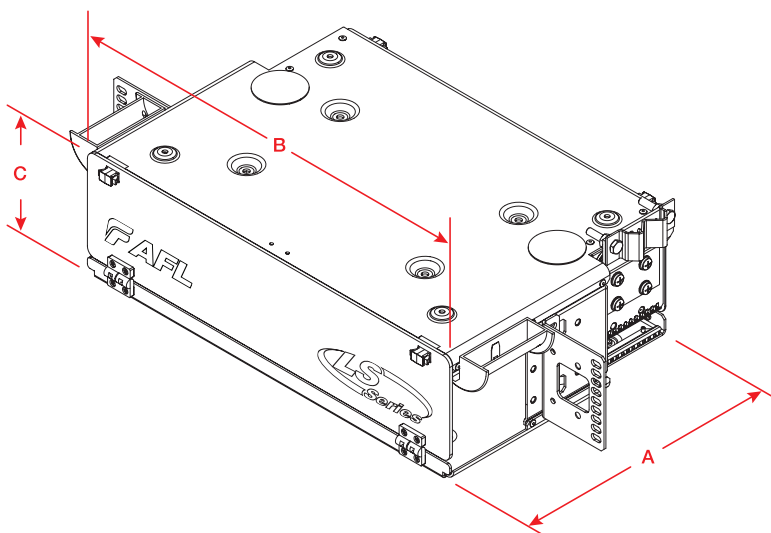
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX compatible master plate (118 mm)
- Modular design
- Provides maximum protection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

### Applications

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

### Dimensions

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



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

Telcordia is a registered trademark of Telcordia Technologies, Inc.

## LightLink LANSys™ 3RU Fiber Termination Patch Panel

### Ordering Information

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

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

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

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

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

### Configuration Part Numbers

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

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

#### Notes:

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

### Qualifications

GOVERNING BODY	STANDARD CODE
ASTM	ASTMB209
Telcordia	GR-63NEBS

### Connector/Adapter Key

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



## LightLink LANSys™ 4RU Fiber Termination Patch Panel

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

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

### Specifications

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

### Features

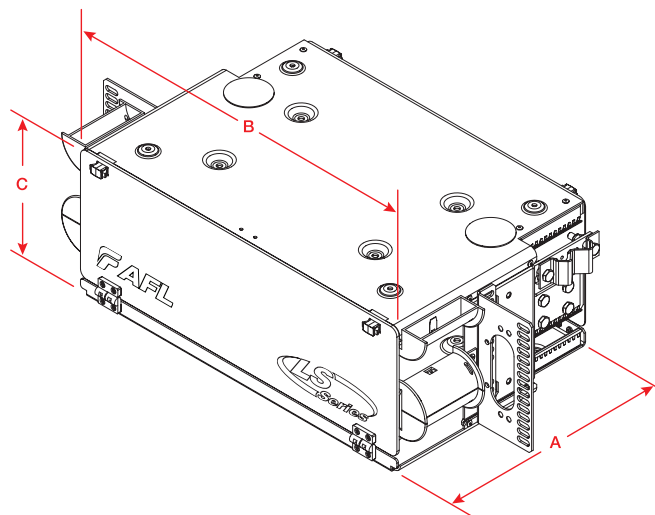
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX compatible master plate and footprint (118 mm)
- Modular design
- Provides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

### Applications

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

### Dimensions

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



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Telcordia is a registered trademark of Telcordia Technologies, Inc.





## LightLink LANSys™ 4RU Fiber Termination Patch Panel

### Ordering Information

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

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

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

AFL NO.	Color	Loading Character	Cable Stub Length (M)
C211390	B	S	0005
	W = White B = Black	E = Empty H = Half-loaded with adapters S = Preterminated with tight buffered CPC cable stub (Riser) (Patch only) R = Preterminated with OSP loose tube cable stub (Patch only)	0002 = 2 meters 0004 = 4 meters etc.

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

### Ordering Information

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

<b>CON096P—4 RU PATCH PANELS—96 FIBERS—LGX118</b>	
EMPTY	FM000344
96 PSC adapters (12 Eight Packs)	FM000203
96 UST adapters (12 Eight Packs)	C213964
96 PST adapters (12 Eight Packs)	FM000204
96 ASC adapters (12 Eight Packs)	C213982
96 UFC adapters (12 Eight Packs)	C213970
96 USC adapters (12 Eight Packs)	C213977
96 AFC adapters (12 Eight Packs)	C213973

#### Notes:

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

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

### Qualifications

GOVERNING BODY	STANDARD CODE
ASTM	ASTMB209
Telcordia	GR-63NEBS

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

### Connector/Adapter Key

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



## LightLink LANSys™ 6RU Fiber Patch and Splice Panel

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

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

### Specifications

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

### Features

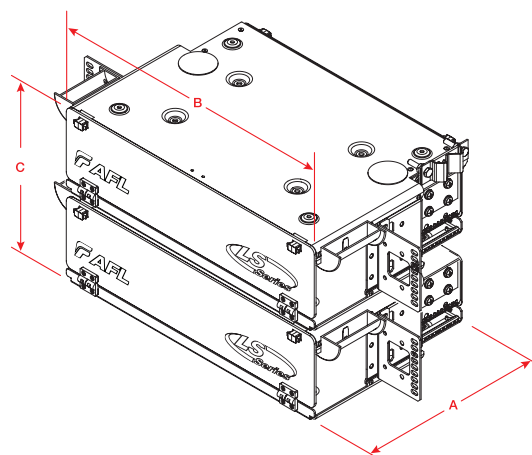
- Fits comfortably into new and existing interconnect, cross-connect, customer premise and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX-compatible master plate (118 mm)
- Modular design
- Compact and versatile method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

### Applications

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

### Dimensions

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



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## LightLink LANSys™ 6RU Fiber Patch and Splice Panel

### Ordering Information

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

AFL NO.	Color	Loading Character
<b>C211552</b>	<b>B</b>	<b>S</b>
	W = White B = Black	E = Empty H = Half-loaded with adapters L = Loaded with adapters and pigtails

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

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

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

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

### Configuration Part Numbers

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

#### Notes:

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

### Qualifications

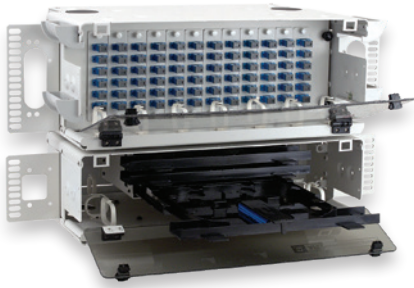
GOVERNING BODY	STANDARD CODE
ASTM	ASTMB209
Telcordia	GR-63NEBS

### Accessories

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

### Connector/Adapter Key

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



## LightLink LANSys™ 7RU Fiber Patch and Splice Panel

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

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

### Specifications

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

### Features

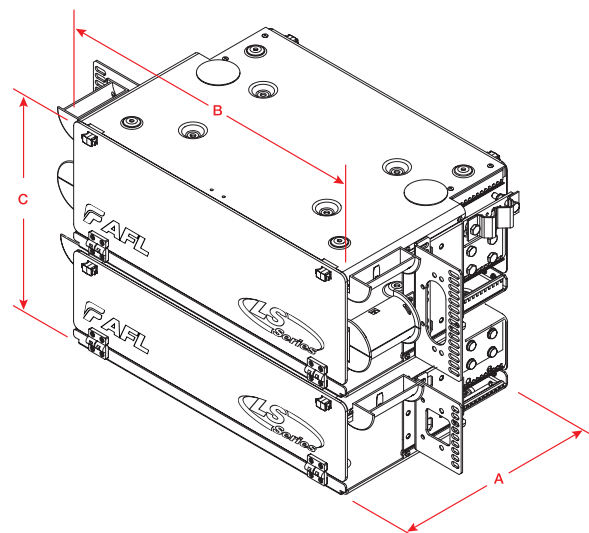
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX-compatible master plate (118 mm)
- Modular design
- Compact and versatile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

### Applications

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

### Dimensions

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



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Telcordia is a registered trademark of Telcordia Technologies, Inc.

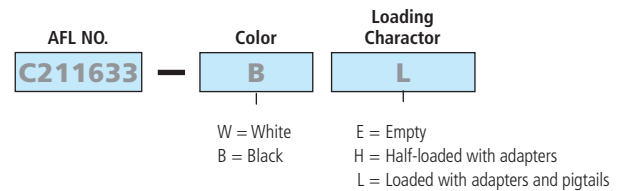


## LightLink LANSys™ 7RU Fiber Patch and Splice Panel

### Ordering Information

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

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



### Ordering Information

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

Notes:

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

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

### Qualifications

GOVERNING BODY	STANDARD CODE
ASTM	ASTMB209
Telcordia	GR-63NEBS

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

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

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

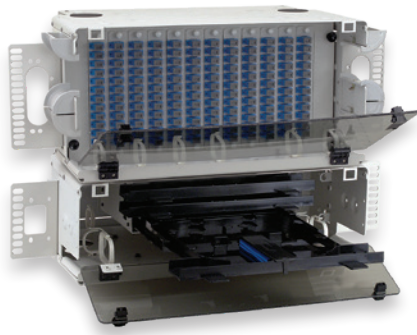
CONFIGURATION	AFL NO.
<b>CNS144HD—7RU HIGH DENSITY PATCH PANELS (1 EA. 4U PATCH, 3U SPLICE)—LGX118</b>	
72 UDL (dup) adapters (12 Six Packs)Splice Drawers (3-48 position)	C211673
72 PSF (dup) adapters (12 Six Packs)Splice Drawers (3-48 position)	C211637
72 PDL (dup) adapters (12 Six Packs)Splice Drawers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

### Accessories

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

### Connector/Adapter Key

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



## LightLink LANSys™ 8RU Fiber Patch and Splice Panel

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

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

### Specifications

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

### Features

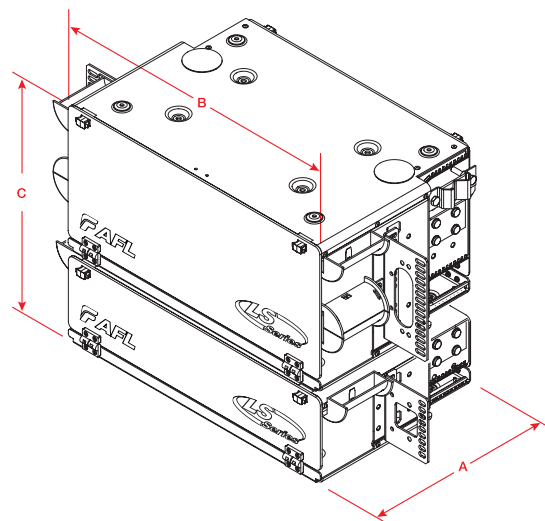
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Most common connector styles and types available
- Compatible with industry standard equipment frames
- LGX compatible master plate (170 mm)
- Modular design
- Compact and versatile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

### Applications

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

### Dimensions

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



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## LightLink LANSys™ 8RU Fiber Patch and Splice Panel

### Ordering Information

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

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

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

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

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

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

### Configuration Part Numbers

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

#### Notes:

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

### Qualifications

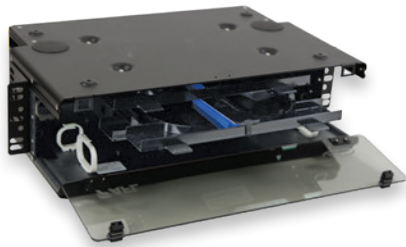
GOVERNING BODY	STANDARD CODE
ASTM	ASTMB209
Telcordia	GR-63NEBS

### Accessories

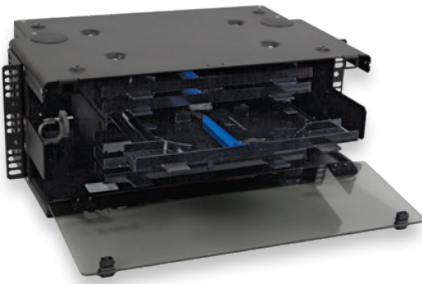
DESCRIPTION	AFL NO.
STF-48 Telescoping Splice Drawer	911442-00-00

### Connector/Adapter Key

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



SPL3RU



SPL5RU

## Specifications

- Designed around Telcordia® GR-63NEBS
- Aluminum construction per ASTM B209
- Durable textured powder coat finish available in black or white
- Universal 19/23" EIA/TIA rack compatibility

## LightLink LANSys™ SPL3RU and SPL5RU—Optical Splice Shelf

The LightLink LANSys™ Optical Splice Shelf is designed to provide a convenient in-rack splicing and interconnection point for Outside Plant (OSP) cable entering a Central Office (CO), Controlled Environmental Vault (CEV), Headend (HE) or customer location. Units are available with three or six STF-48 Telescoping Splice Drawers. Each drawer is capable of handling up to 48 individual single-fused or up to 144 mass-fused fibers, with minimum bend radius routing and protection.

### Features

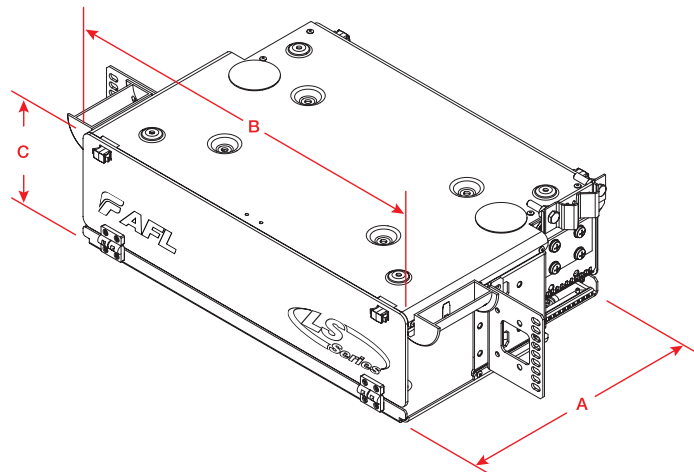
- Fits comfortably into new and existing interconnect, cross-connect, customer premise, and co-location environments
- Compatible with industry standard equipment frames
- For in-rack splicing of outside plant cable to connectorized pigtails or riser cable
- Drawers handle up to 48 single-fused or 144 mass-fused fibers
- Cable entry/exit grommet seals
- Durable and scratch resistant power coated antique white finish
- Hinged plexiglass front and rear door
- Spring loaded latches

### Applications

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

### Dimensions

MODEL	NO. OF TRAYS	DEPTH (A) (inches)	WIDTH (B) (inches)	HEIGHT (C) (inches)	RACK UNITS	SPLICE CAPACITY	UNLOADED WEIGHT	MATERIAL GAUGE
SPL3RU	3	11.00	17.00	5.25	3	144 single, 432 mass	8.4 lbs.	2.03 mm
SPL5RU	6	11.00	17.00	8.75	5	288 single, 864 mass	9.0 lbs.	2.03 mm



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## LightLink LANSys™ SPL3RU and SPL5RU—Optical Splice Shelf

### Ordering Information

DESCRIPTION	AFL NO.
<b>SPL3RU</b>	
White, 3RU Optical Splice Shelf—EMPTY	C211777 - W
Black, 3RU Optical Splice Shelf—EMPTY	C211777 - B
White, 3RU Optical Splice Shelf—with 3 telescoping splice drawers	C211781 - W
Black, 3RU Optical Splice Shelf—with 3 telescoping splice drawers	C211781 - B
<b>SPL5RU</b>	
White, 5RU Optical Splice Shelf—EMPTY	C211795 - W
Black, 5RU Optical Splice Shelf—EMPTY	C211795 - B
White, 5RU Optical Splice Shelf—with 6 telescoping splice drawers	C211799 - W
Black, 5RU Optical Splice Shelf—with 6 telescoping splice drawers	C211799 - B

### Accessories

DESCRIPTION	AFL NO.
STF-48 Telescoping Splice Drawer, up to 48 single fused or 144 mass fused splices	911442-00-00
1x8 Universal Core Tube Fiber Routing Kit	FC000008
1x6 Universal Ribbon or Loose Tube Fiber Routing Kit	FC000070

### Qualifications

GOVERNING BODY	STANDARD CODE
ASTM	ASTMB209
Telcordia	GR-63NEBS

## Xpress Fiber Management® (XFM®) 1RU Patch Panel

The Xpress Fiber Management (XFM) 1U patch panel is a rack mountable interconnect point specifically designed to manage dense fiber applications. Based on the LGX® intermateability platform, the panel is fully compatible with AFL's XFM Optical Cassette, Passive Optical Coupler Modules, and Poli-MOD® solutions. This panel offers enhanced management of densities up to 72 fibers using MTP-LC XFM Optical Cassettes (24 fibers).

### Features

- Steel construction
- Textured black powder coat finish
- Universal WECO/TIA 19"/23" rack compatibility
- (3) LGX 118 adapter plate / module mounting positions
- Slide-out tray with relief cut-outs for simplified connector access
- Optional front door key lock for heightened protection of internal components

### Applications

- Data Centers
- Enterprise Networks
- Telecommunications Closets
- Central Offices / Headends

### Specifications

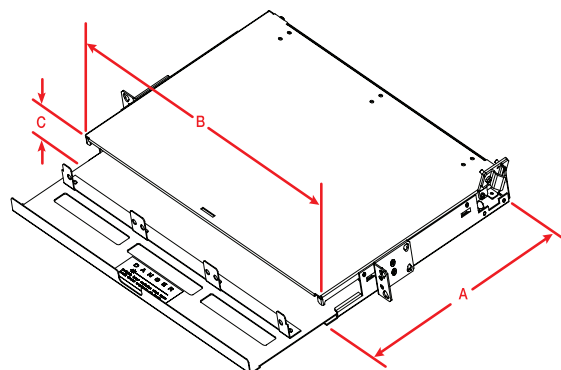
DEPTH (A) (inches)	WIDTH (B) (inches)	HEIGHT (C) (inches)	RACK UNITS	CAPACITY	UNLOADED WEIGHT
15.5	17	1.7	1	(3) LGX 118	13 lbs.

### Ordering Information

DESCRIPTION	MODEL NUMBER	AFL NO.
Xpress Fiber Management 1U Patch Panel, Black, Empty	XFM-1-U-B-0	FM002711-BE

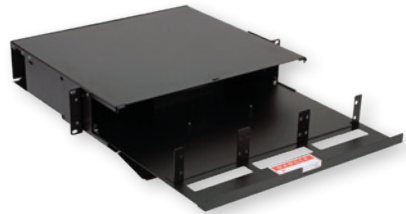
### Accessories

DESCRIPTION	AFL NO.
Kit, Lock, for CON/CNS Panels	FM001318



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





## Xpress Fiber Management® (XFM) 2RU Patch Panel

The Xpress Fiber Management (XFM) 2U patch panel is a rack mountable interconnect point specifically designed to manage dense fiber applications. Based on the LGX® intermateability platform, the panel is fully compatible with AFL's XFM Optical Cassette, Passive Optical Coupler Modules, and Poli-MOD® solutions. This panel offers enhanced management of densities up to 144 fibers using MTP-LC XFM Optical Cassettes (24 fibers).

### Features

- Steel construction
- Textured black powder coat finish
- Universal WECO/TIA 19"/23" rack compatibility
- (6) LGX 118 adapter plate / module mounting positions
- Slide-out tray with relief cut-outs for simplified connector access
- Optional front door key lock for heightened protection of internal components

### Applications

- Data Centers
- Enterprise Networks
- Telecommunications Closets
- Central Offices / Headends

### Specifications

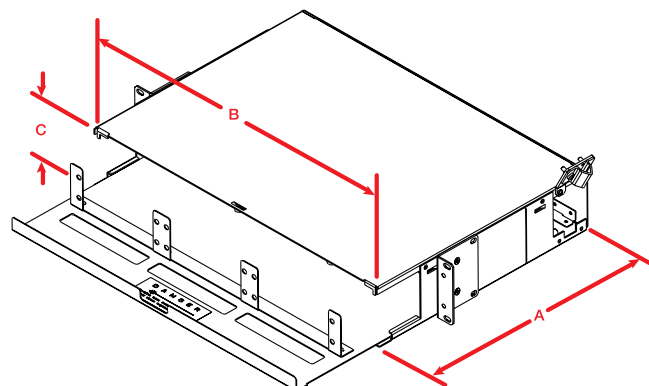
DEPTH (A) IN INCHES	WIDTH (B) IN INCHES	HEIGHT (C) IN INCHES	RACK UNITS	CAPACITY	UNLOADED WEIGHT
15.5	17	3.5	2	(6) LGX 118	15 lbs.

### Ordering Information

DESCRIPTION	MODEL NUMBER	AFL NO.
Xpress Fiber Management 2U Patch Panel, Black, Empty	XFM-2-U-B-0	FM002712-BE

### Accessories

DESCRIPTION	AFL NO.
Kit, Lock, for CON/CNS Panels	FM001318



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## Xpress Fiber Management® (XFM®) 4RU Patch Panel

The Xpress Fiber Management (XFM) 4RU patch panel is a rack mountable interconnect point specifically designed to manage dense fiber applications. Based on the LGX® intermateability platform, the panel is fully compatible with AFL's XFM Optical Cassette, Poli-MOD® and WDM solutions, offering enhanced management of densities up to 288F using MTP/MPO, single fiber, or patch and splice methodologies. Routing rings on the top and bottom of the front panel provide enhanced cable routing allowing cable assemblies to exit comfortably. This panel can be provisioned with a key lock at the time of order for secure environments.

### Features

- Aluminum construction
- Textured black powder coat finish
- Universal WECO/TIA 19"/23" rack compatibility
- (12) LGX 118 adapter plate / module mounting positions
- Mounting depth adjustable from flush to 8" in 1" increments

### Applications

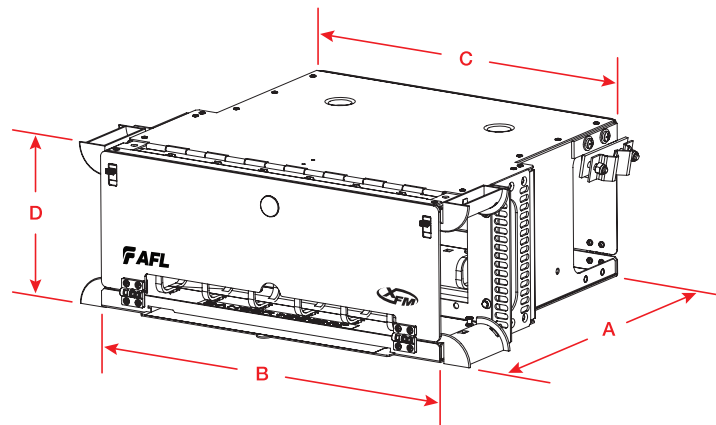
- Data Centers
- Enterprise Networks
- Telecommunications Closets
- Central Offices / Headends

### Specifications

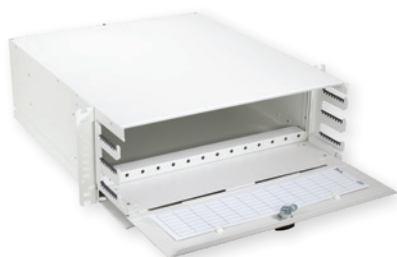
DEPTH (A) IN INCHES	FRONT WIDTH (B) IN INCHES	REAR WIDTH (C) IN INCHES	HEIGHT (D) IN INCHES	RACK UNITS	CAPACITY	UNLOADED WEIGHT
15.5	17	15	7	4	(12) LGX 118	9 lbs.

### Ordering Information

DESCRIPTION	MODEL NO.	AFL NO.
Xpress Fiber Management 4U Patch Panel, Black, Empty	XFM-4U-B-0	FM001090-B
Xpress Fiber Management 4U Patch Panel, Black, Empty, Key Lock	XFM-4U-B-K	FM001218-B



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Front View—Door Open



Side Ports and Lower Pass-thru

## XFM®-28 Dual Access Module Panel

AFL's XFM-28 Dual Access Module Panel is designed to maximize module capacity via both front and rear access in just four rack units.

In applications where additional rack space is unavailable, the XFM-28 doubles the capacity of traditional 14 slot, front-access only 4RU panels, offering a total of 28 slots to accommodate modules (14 front / 14 rear). The panel is lightweight yet robust, with efficient cable management features for routing flexibility.

### Features

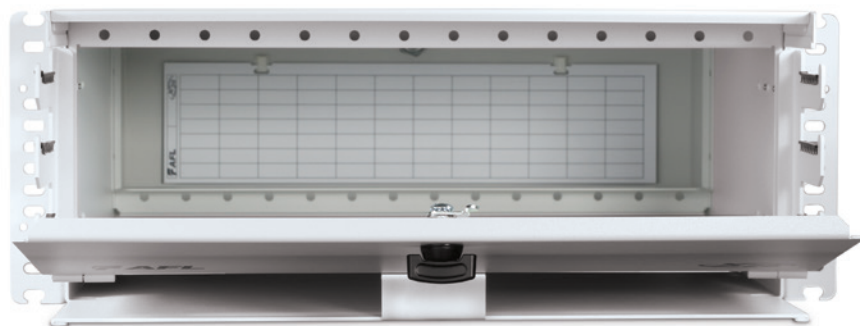
- Dual access via front and rear panel doors
- Aluminum construction
- Universal WECO/TIA 19"/23" rack compatibility
- (28) LGX® 118 module mounting positions (14 front / 14 rear)
- Cable management features include side cable ports and full pass-thru underneath the main bulkhead compartment to allow cable routing from front to back within the panel without eliminating any module positions

### Specifications

DEPTH	WIDTH	HEIGHT	RACK UNITS	CAPACITY	UNLOADED WEIGHT
21 in.	17 in.	7 in.	4	(28) LGX 118	10 lbs.

### Ordering Information

DESCRIPTION	MODEL NO.	AFL NO.
XFM-28, Enclosure, 4RU, 19/23"	XFM-28	FM004268



## Xpress Fiber Management® (XFM) MPO Optical Cassettes

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

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

### Applications

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

### Features

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

### Optical Performance Data

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

#### Notes:

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

### Ordering Information (Method A/B)

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

### Ordering Information (Method F)

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

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Telcordia is a registered trademark of Telcordia Technologies, Inc.

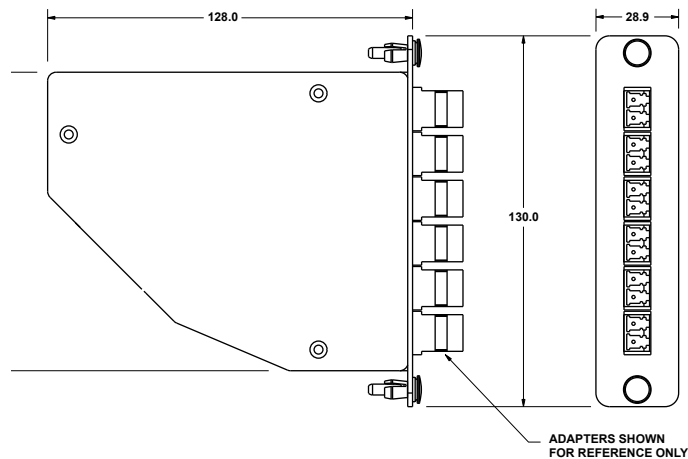
## Xpress Fiber Management® (XFM) MPO Optical Cassettes

### Ordering Information – Accessories

DESCRIPTION	AFL NO.
145 mm Adapter Bracket	FM001636

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

### Dimensions



### Qualifications

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



ASCEND Fiber Housings in Rack

## Features

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

## Applications

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

## ASCEND® Fiber Housings

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

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

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

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

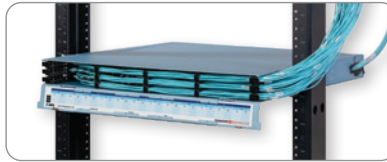
## Ordering Information

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

## ASCEND® Fiber Housings



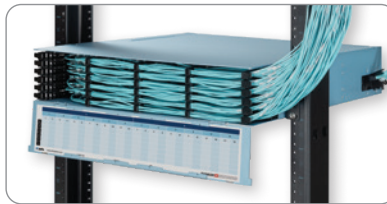
ASCEND 1RU



ASCEND 1RU front



ASCEND 2RU



ASCEND 2RU front



ASCEND 4RU



ASCEND 4RU front

## Specifications

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

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

## Qualifications

GOVERNING BODY	STANDARD CODE
RoHS	Compliant





## ASCEND® Optical Cassettes

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

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

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

### Features

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

### Applications

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





## ASCEND® Fanout Cassettes

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

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

### Optical Performance Data

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

### Features

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

### Applications

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

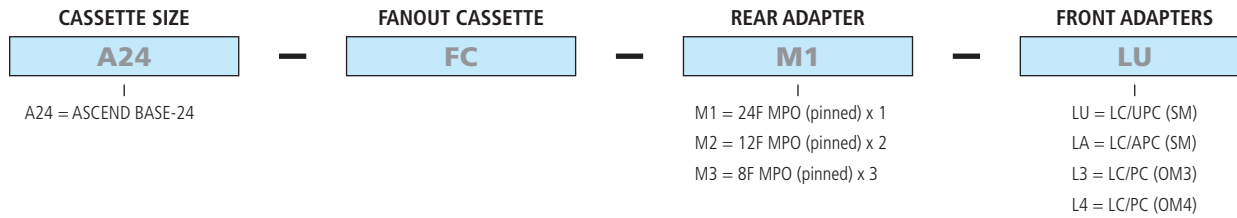
### Ordering Information (BASE-8 and BASE-12)

CASSETTE SIZE	FANOUT CASSETTE	REAR ADAPTER	FRONT ADAPTERS
<b>A8</b>	<b>FC</b>	<b>M1</b>	<b>LU</b>
A8 = ASCEND BASE-8 A12 = ASCEND BASE-12		M1 = MPO (pinned)	LU = LC/UPC (SM) LA = LC/APC (SM) L3 = LC/PC (OM3) L4 = LC/PC (OM4)

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

## ASCEND® Fanout Cassettes

### Ordering Information (BASE-24)



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

### Qualifications

GOVERNING BODY	STANDARD CODE
RoHS	Compliant



## ASCEND® Patch Cassettes

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

### Features

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

### Applications

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

### Ordering Information

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

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

### Qualifications

GOVERNING BODY	STANDARD CODE
RoHS	Compliant



## ASCEND® Splice Cassettes

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

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

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

### Applications

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

### Features

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

### Ordering Information

CASSETTE SIZE		SPLICE CASSETTE		ADAPTER		FIBER ARRANGEMENT
<b>A12</b>	—	<b>SPC</b>	—	<b>LU</b>	—	<b>S</b>
A12 = ASCEND BASE-12				LU = LC/UPC (SM) LA = LC/APC (SM) L3 = LC/PC (OM3) L4 = LC/PC (OM4)		S = Stranded Pigtail R = SWR Pigtail

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

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

### Qualifications

GOVERNING BODY	STANDARD CODE
RoHS	Compliant



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



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



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

## ASCEND® Conversion Cassettes

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

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

### Features

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

### Applications

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

### Specifications

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

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

### Temperature Specifications

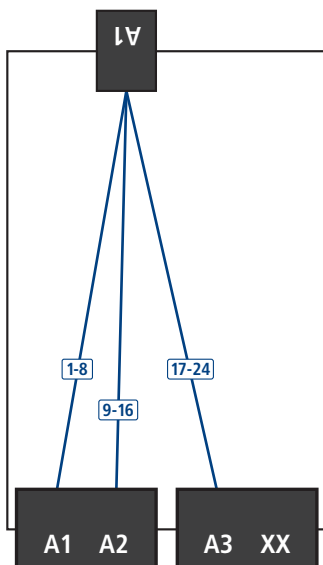
Operating Temperature	-20°C to +75°C
Storage Temperature	-40°C to +85°C

## ASCEND® Conversion Cassettes

### Schematics

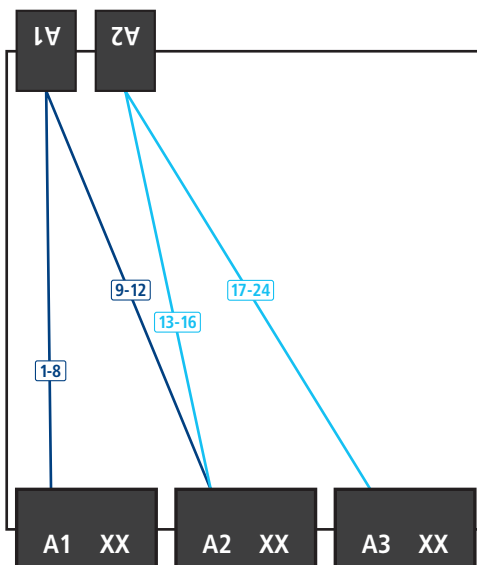
#### BASE-24 to BASE-8

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



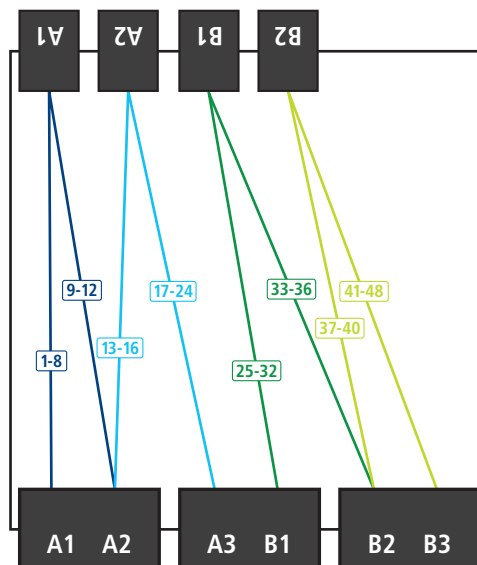
#### BASE-12 to BASE-8 (Single Circuit)

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



#### BASE-12 to BASE-8 (Dual Circuit)

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



### Ordering Information

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

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

### Qualifications

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



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



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



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

## ASCEND® Tap Cassettes

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

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

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

### Features

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

### Applications

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

### Temperature Specifications

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



## ASCEND® Tap Cassettes

### Specifications: Single-mode (SM)

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

### Specifications: Multimode (MM)

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



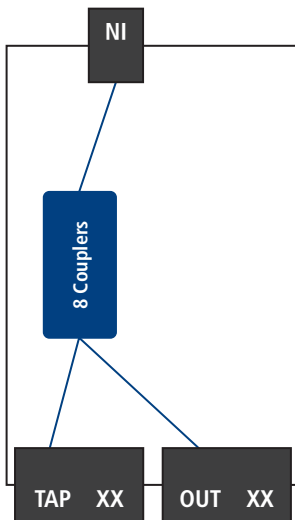


## ASCEND® Tap Cassettes

### Schematics

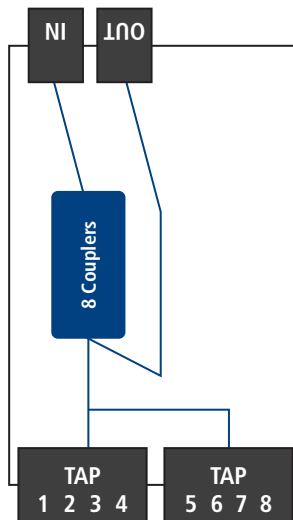
#### BASE-8

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



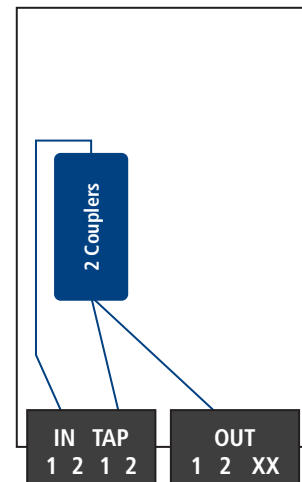
#### BASE-8

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



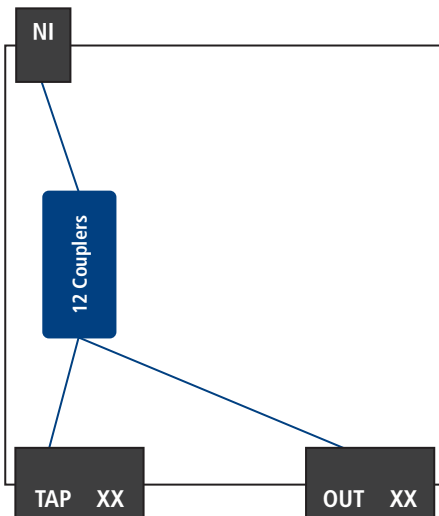
#### BASE-8

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



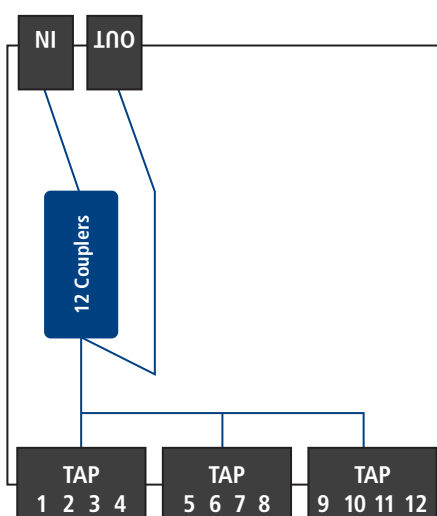
#### BASE-12

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



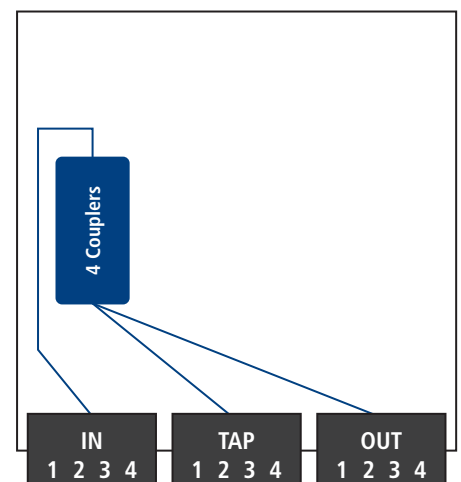
#### BASE-12

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



#### BASE-12

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



## ASCEND® Tap Cassettes

### Ordering Information

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

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

### Qualifications

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



## ASCEND® Patch Cord Assemblies

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

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

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

### Applications

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

### Features

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

### Ordering Information

CONNECTOR END A	CONNECTOR END B	CABLE TYPE	FIBER COUNT	FIBER TYPE	CABLE LENGTH (METERS)
<b>ULS</b>	<b>ULS</b>	<b>P20D</b>	<b>002</b>	<b>Q</b>	<b>0000</b>
ULS = Single-mode LC Uniboot, Push/ Pull Tab PLS = Multimode LC Uniboot, Push/ Pull Tab	ULS = Single-mode LC Uniboot, Push/ Pull Tab PLS = Multimode LC Uniboot, Push/ Pull Tab	P20D = 2.0 mm Dual Link Plenum L20D = 2.0 mm Dual-Link LSZH	002 = 2	Q = Single-mode G.657.A1 L = Multimode OM3 C = Multimode OM4	XXXX = Meters XXXXFT = Feet

### Specifications

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

### Qualifications

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



Integrated mounting clip

## ASCEND® Trunk Cable Assemblies

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

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

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

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

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

### Features

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

### Applications

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

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

## ASCEND® Trunk Cable Assemblies

### Specifications

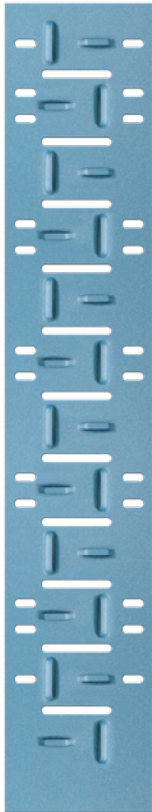
CONNECTOR	Connector Ordering Code	Connector Housing Color	Fiber Type	Cable Jacket Color	IL (Typical dB)	IL (MAX. DB)	Reflectance (Typical dB)
8F MTP Elite (unpinned)	EEF	Yellow	Single-mode G.657.A1 (BIF)	Yellow	0.1	0.35	-60
8F MTP Elite (pinned)	EEM	Yellow	Single-mode G.657.A1 (BIF)	Yellow	0.1	0.35	-60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

### Ordering Information

CONNECTOR END A	CONNECTOR END B	CABLE TYPE	FIBER COUNT	FIBER TYPE	CABLE LENGTH	PULLING EYE	POLARITY	OBC	BASE SELECTION	PLATFORM
ETF	ETF	PL	012	Q	0001	PA	MF	RS	12	ASCEND
EEF = MPO-SM Elite, 8 fiber, Female		Options for Trunk & Pigtail Assemblies:	008 = 8	Q = Single-mode G.657A BIF	XXXX = Meters	N = No Pulling Eye PA = Pulling Eye End A PB = Pulling Eye End B PC = Pulling Eye Both Ends	MF = Method F MA = Method A	HM = Hook & Loop OBC, Mixed HS = Hook & Loop OBC, Small HL = Hook & Loop OBC, Large RS = Rock & Lock*, Small NC = Spool Only Blank = Standard OBC	08 = BASE-8 12 = BASE-12	ASCEND
EEM = MPO-SM Elite, 8 fiber, Male		PL = Plenum MicroCore (250 µm)	012 = 12	L = Multimode OM3	XXXXFT = Feet					
PFEF = MTP PRO-MM, 8 fiber, Female		P4 = 4.8 mm Plenum MicroCore (for 12F cables only)	024 = 24	C = Multimode OM4						
PFEM = MTP PRO-MM, 8 fiber, Male		GE = LSZH MicroCore (250 µm)	048 = 48							
ETF = MPO-SM Elite, 12 fiber, Female			072 = 72							
ETM = MPO-SM Elite, 12 fiber, Male		Options for Pigtail Assemblies Only:	096 = 96							
PFTF = MTP PRO-MM, 12 fiber, Female		GQS = 2.0 mm Plenum MicroCore (SWR)	144 = 144							
PFTM = MTP PRO-MM, 12 fiber, Male		GES = 2.0 mm LSZH MicroCore (SWR)	288 = 288							
XXX = No Connector (Pigtail)										
<p><b>* NOTE</b> – The "Rock and Lock" mounting clip is only available for trunk cable diameters up to 13 mm and will come standard on trunk cables with fiber counts up to 288. The "Hook and Loop" mounting clip is available by request only.</p>										

### Qualifications

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



## ASCEND® Outback Clip Management (OCM) Bracket

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

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

### Features

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

### Applications

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

### Ordering Information

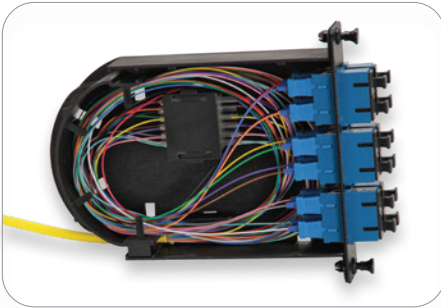
CATEGORY	DESCRIPTION	AFL NO.
ASCEND Accessories	ASCEND, Outback Mounting Clip Bracket, 12 Positions	OCM-12

### Qualifications

GOVERNING BODY	STANDARD CODE
RoHS	Compliant



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



12-Fiber SC/UPC Configuration



24-Fiber LC/UPC Configuration



DAS Poli-MOD



## Poli-MOD® Patch and Splice Module

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

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

### Features

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

### Applications

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



## Poli-MOD® Patch and Splice Module

### Ordering Information

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

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

1. DAS Poli-MOD, with a maximum of 12 fibers each, requires specialty packaging

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

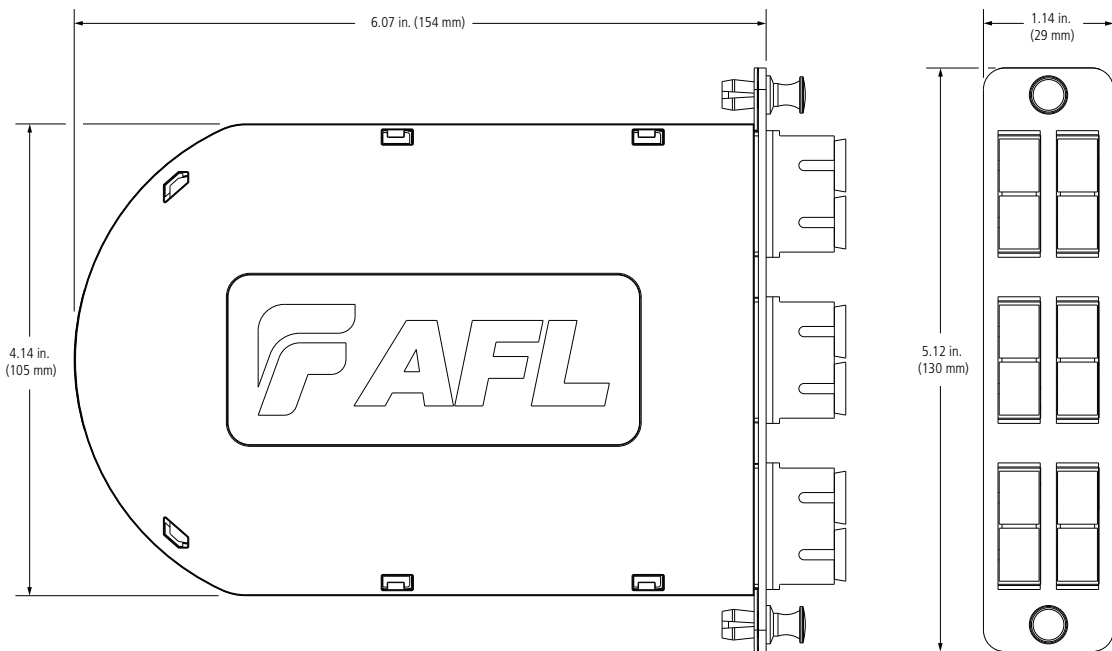
### Adapter Color Codes

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

### Poli-MOD Kits/Accessories

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

### Dimensions







LC

FC

ST

SC

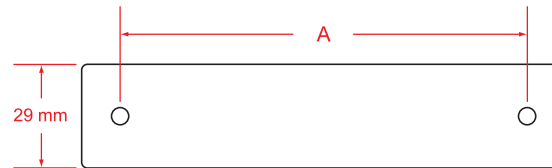
## Features

- Metal Plate with Nylatches
- Polyurethane powder coated (white or black)
- LGX® compatible

## LightLink Adapter Plates

LightLink Adapter Plates add versatility to AFL's panel product line. Adapter plates are compatible with industry standard platforms allowing for easy upgrades to existing panels. Adapter Plates come preloaded with adapters and are available in 6, 8, 12 and 24 pack versions for single-fiber adapters. Higher fiber counts are achievable with multi-fiber adapters. Blank plates are also available for unused space in panels.

## Specifications



### DIMENSION A

118 mm LGX®

170 mm LGX®

## Ordering Information

AFL NO.	ADAPTER TYPE	SIMPLEX/DUPLEX/QUAD	ADAPTER COLOR	FIBER COUNT	PLATE HEIGHT	PLATE COLOR
<b>BLANK</b>						
FM003072	BLANK	BLANK	NA	0	LGX (118)	BLACK
FM003462	BLANK	BLANK	NA	0	LGX (118)	WHITE
FM000343	BLANK	BLANK	NA	0	LGX (118)	SMOOTH BLACK
FM003434	BLANK	BLANK	NA	0	LGX (170)	BLACK
FM003433	BLANK	BLANK	NA	0	LGX (170)	WHITE
<b>SC</b>						
FM003295	SC	DUPLEX	AQUA	12F	LGX (118)	BLACK
FM002272	SC	DUPLEX	AQUA	12F	LGX (118)	WHITE
FM003293	SC	DUPLEX	BEIGE	12F	LGX (118)	BLACK
FM002273	SC	DUPLEX	BEIGE	12F	LGX (118)	WHITE
FM003301	SC	DUPLEX	BLACK	12F	LGX (118)	BLACK
FM003297	SC	DUPLEX	BLUE	12F	LGX (118)	BLACK
FM002271	SC	DUPLEX	BLUE	12F	LGX (118)	WHITE
FM002633	SC	DUPLEX	GREEN	12F	LGX (118)	BLACK
FM002634	SC	DUPLEX	GREEN	12F	LGX (118)	WHITE
FM000149	SC	DUPLEX	BEIGE	12F	LGX (170)	WHITE
FM000148	SC	DUPLEX	BEIGE	12F	LGX (170)	BLACK
FM000144	SC	DUPLEX	BLUE	12F	LGX (170)	BLACK
FM000145	SC	DUPLEX	BLUE	12F	LGX (170)	WHITE
FM000152	SC	DUPLEX	GREEN	12F	LGX (170)	BLACK
FM000153	SC	DUPLEX	GREEN	12F	LGX (170)	WHITE
FM003287	SC	DUPLEX	AQUA	6F	LGX (118)	BLACK
FM003285	SC	DUPLEX	BEIGE	6F	LGX (118)	BLACK
FM003398	SC	DUPLEX	BEIGE	6F	LGX (118)	WHITE
FM003299	SC	DUPLEX	BLACK	6F	LGX (118)	BLACK
FM003289	SC	DUPLEX	BLUE	6F	LGX (118)	BLACK
FM003458	SC	DUPLEX	BLUE	6F	LGX (118)	WHITE
FM003283	SC	DUPLEX	GREEN	6F	LGX (118)	BLACK
FM000115	SC	DUPLEX	GREEN	6F	LGX (118)	WHITE

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

## LightLink Adapter Plates

### Ordering Information (cont.)

AFL NO.	ADAPTER TYPE	SIMPLEX/DUPLEX/ QUAD	ADAPTER COLOR	FIBER COUNT	PLATE HEIGHT	PLATE COLOR
<b>SC</b>						
FM003120	SC	SIMPLEX	AQUA	12F	LGX (118)	BLACK
FM003118	SC	SIMPLEX	BEIGE	12F	LGX (118)	BLACK
FM003242	SC	SIMPLEX	BLACK	12F	LGX (118)	BLACK
FM003122	SC	SIMPLEX	BLUE	12F	LGX (118)	BLACK
FM002842-TW	SC	SIMPLEX	BLUE	12F	LGX (118)	WHITE
FM003116	SC	SIMPLEX	GREEN	12F	LGX (118)	BLACK
FM000800-TW	SC	SIMPLEX	GREEN	12F	LGX (118)	WHITE
FM003411	SC	SIMPLEX	BEIGE	12F	LGX (170)	WHITE
FM003409	SC	SIMPLEX	BLUE	12F	LGX (170)	BLACK
FM003407	SC	SIMPLEX	BLUE	12F	LGX (170)	WHITE
FM003414	SC	SIMPLEX	GREEN	12F	LGX (170)	BLACK
FM003455	SC	SIMPLEX	GREEN	12F	LGX (170)	WHITE
FM003098	SC	SIMPLEX	AQUA	6F	LGX (118)	BLACK
FM003096	SC	SIMPLEX	BEIGE	6F	LGX (118)	BLACK
FM003403	SC	SIMPLEX	BEIGE	6F	LGX (118)	WHITE
FM003238	SC	SIMPLEX	BLACK	6F	LGX (118)	BLACK
FM003100	SC	SIMPLEX	BLUE	6F	LGX (118)	BLACK
FM003467	SC	SIMPLEX	BLUE	6F	LGX (118)	WHITE
FM003094	SC	SIMPLEX	GREEN	6F	LGX (118)	BLACK
FM000480	SC	SIMPLEX	GREEN	6F	LGX (118)	WHITE
FM000156	SC	SIMPLEX	BLUE	8F	LGX (118)	BLACK
FM003435	SC	SIMPLEX	BLUE	8F	LGX (118)	WHITE
FM002841	SC	SIMPLEX	GREEN	8F	LGX (118)	BLACK
FM000158	SC	SIMPLEX	GREEN	8F	LGX (118)	WHITE
<b>LC</b>						
FM001004	LC	DUPLEX	GREEN	12F	LGX (118)	WHITE
FM001303	LC	DUPLEX	AQUA	12F	LGX (118)	WHITE
FM003108	LC	DUPLEX	GREEN	12F	LGX (118)	BLACK
FM003110	LC	DUPLEX	BEIGE	12F	LGX (118)	BLACK
FM003112	LC	DUPLEX	AQUA	12F	LGX (118)	BLACK
FM001185	LC	QUAD	AQUA	12F	LGX (118)	BLACK
FM000297	LC	DUPLEX	BLUE	12F	LGX (170)	WHITE
FM000298	LC	DUPLEX	BLUE	12F	LGX (170)	BLACK
FM000301	LC	DUPLEX	GREEN	12F	LGX (170)	WHITE
FM000302	LC	DUPLEX	GREEN	12F	LGX (170)	BLACK
FM000838	LC	DUPLEX	BLUE	24F	LGX (118)	WHITE
FM000851	LC	DUPLEX	BEIGE	24F	LGX (118)	WHITE
FM000853	LC	DUPLEX	AQUA	24F	LGX (118)	WHITE
FM003069	LC	DUPLEX	GREEN	24F	LGX (118)	WHITE
FM001184	LC	QUAD	AQUA	24F	LGX (118)	BLACK
FM000129	LC	DUPLEX	BLUE	24F	LGX (170)	WHITE
FM000130	LC	DUPLEX	BLUE	24F	LGX (170)	BLACK
FM000338	LC	DUPLEX	GREEN	24F	LGX (170)	WHITE
FM000339	LC	DUPLEX	GREEN	24F	LGX (170)	BLACK
FM000348	LC	DUPLEX	BEIGE	24F	LGX (170)	WHITE
FM000349	LC	DUPLEX	BEIGE	24F	LGX (170)	BLACK
FM000289	LC	DUPLEX	BLUE	6F	LGX (118)	WHITE
FM000293	LC	DUPLEX	GREEN	6F	LGX (118)	WHITE
FM000294	LC	DUPLEX	GREEN	6F	LGX (118)	BLACK
FM003092	LC	DUPLEX	BLUE	6F	LGX (118)	BLACK
FM003429	LC	DUPLEX	BEIGE	6F	LGX (118)	WHITE
FM004252	LC	DUPLEX	AQUA	6F	LGX (118)	BLACK

## LightLink Adapter Plates

### Ordering Information (cont.)

AFL NO.	ADAPTER TYPE	SIMPLEX/DUPLEX/ QUAD	ADAPTER COLOR	FIBER COUNT	PLATE HEIGHT	PLATE COLOR
<b>LC</b>						
FM003240	LC	DUPLEX	BLACK	12F	LGX (118)	BLACK
FM003425	LC	DUPLEX	BLUE	12F	LGX (118)	WHITE
FM003465	LC	DUPLEX	BLUE	12F	LGX (118)	BLACK
FM003202	LC	DUPLEX	GREEN	24F	LGX (118)	BLACK
FM003204	LC	DUPLEX	BEIGE	24F	LGX (118)	BLACK
FM003206	LC	DUPLEX	AQUA	24F	LGX (118)	BLACK
FM003208	LC	DUPLEX	BLUE	24F	LGX (118)	BLACK
FM003244	LC	DUPLEX	BLACK	24F	LGX (118)	BLACK
<b>ST</b>						
FM003126	ST	SIMPLEX	METAL SM/MM	12F	LGX (118)	BLACK
FM003456	ST	SIMPLEX	METAL SM/MM	12F	LGX (118)	WHITE
FM000286	ST	SIMPLEX	METAL SM/MM	12F	LGX (170)	BLACK
FM000285	ST	SIMPLEX	METAL SM/MM	12F	LGX (170)	WHITE
FM003104	ST	SIMPLEX	METAL SM/MM	6F	LGX (118)	BLACK
FM003422	ST	SIMPLEX	METAL SM/MM	6F	LGX (118)	WHITE
FM003102	ST	SIMPLEX	METAL SM/MM	6F	LGX (118)	BLACK
FM003441	ST	SIMPLEX	METAL SM/MM	8F	LGX (118)	BLACK
FM003439	ST	SIMPLEX	METAL SM/MM	8F	LGX (118)	WHITE
<b>FC</b>						
FM000284	FC	SIMPLEX	METAL	12F	LGX (118)	BLACK
FM000283	FC	SIMPLEX	METAL	12F	LGX (118)	WHITE
FM003447	FC	SIMPLEX	METAL	12F	LGX (170)	BLACK
FM003446	FC	SIMPLEX	METAL	12F	LGX (170)	WHITE
FM003420	FC	SIMPLEX	METAL, GREEN DUST CAP	6F	LGX (118)	BLACK
FM003419	FC	SIMPLEX	METAL, GREEN DUST CAP	6F	LGX (118)	WHITE
FM003443	FC	SIMPLEX	METAL	8F	LGX (118)	BLACK
FM003442	FC	SIMPLEX	METAL	8F	LGX (118)	WHITE
<b>MISC</b>						
FM003210	HEYCO	SIMPLEX	BLACK	12F	LGX (118)	BLACK
FM003430	MTP	SIMPLEX	BLACK	36F	LGX (118)	BLACK
FM003212	HEYCO	SIMPLEX	BLACK	6F	LGX (118)	BLACK
FM003437	SC-ST HYBRID	SIMPLEX	BLUE-METAL	6F	LGX (118)	WHITE
FM001606	MTP	SIMPLEX	BLACK	72F	LGX (118)	BLACK
FM003005	MTP	SIMPLEX	BLACK	96F	LGX (118)	BLACK



WME-02



WME-02 shown empty



WME-02 shown fully loaded

## Wall Mount Interconnect Enclosure (WME) with Two LGX® Mounting Positions

AFL's wall mount interconnect enclosure (WME02) provides a convenient convergence point for interconnecting and/or splicing in wall mount applications. Provisioned for up to two LGX compatible adapter plates or optical modules, the enclosure features a well-engineered solution for fiber and cable management on both the ingress and egress openings of the enclosure. Robust steel construction ensures the highest level of protection for sensitive components while integrated roll-formed hinges eliminate possible fiber pinch points while deploying or servicing components within. The WME02 features discrete access doors for provider and customer access which are independently lockable with a common pad-lock or tube-style keyed lock.

### Features

- Fits comfortably into new and existing interconnect, cross-connect and co-location environments
- U-shaped cable entry eliminates the need to feed preconnectorized cables through an inconvenient access port
- Modular design fully compatible with Poli-MOD® products and XFM optical cassettes
- Dual doors with separate locking options for flexibility and security
- Available empty, with adapters, or with adapters, splice trays and pigtails pre-installed
- LGX 118 compatible
- Optional splice tray and holder (ordered separately)
- All major connector types are supported

### Applications

- Co-Location sites
- Customer premise
- Hub/OTN sites
- Telecommunication closets
- Campus/enterprise environments

### Specifications

- Solid steel construction
- Powder coat black textured finish
- Top or bottom cable entry with dust resistant grommets
- Dual-hasp locking/security system
- 12 to 24 fiber patch and splice density
- Two LGX mounting positions
- Physical dimensions: 12.0"H x 14.0"W x 2.5"D
- Empty version weight: 10.65 lbs.

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

## Wall Mount Interconnect Enclosure (WME) with Two LGX® Mounting Positions

### Ordering Information

EMPTY	
DESCRIPTION	AFL NO.
WME02 Empty	WME02E

HALF LOADED: WME WITH ADAPTER PLATES AND ADAPTERS ONLY				
CONNECTOR TYPE	FIBER COUNT	AFL NO.		
		UPC SM (BLUE)	APC SM (GREEN)	PC MM (BEIGE)
SC	6	WME02AS-USCSM-006000	WME02AS-ASCSM-006000	WME02AS-PSCM6-006000
	12	WME02AS-USCSM-012000	WME02AS-ASCSM-012000	WME02AS-PSCM6-012000
	24	WME02AH-USFSM-024000	WME02AH-ASFSM-024000	WME02AH-PSFM6-024000
LC	6	WME02AS-UDLSM-006000	WME02AS-ADLSM-006000	WME02AS-PDLM6-006000
	12	WME02AS-UDLSM-012000	WME02AS-ADLSM-012000	WME02AS-PDLM6-012000
	24	WME02AH-UDLSM-024000	WME02AH-ADLSM-024000	WME02AH-PDLM6-024000
ST	6	WME02AS-USTSM-006000	—	WME02AS-PSTM6-006000
	12	WME02AS-USTSM-012000	—	WME02AS-PSTM6-012000
	24	WME02AH-USTSM-024000	—	WME02AH-PSTM6-024000
FC	6	WME02AS-UFCSM-006000	WME02AS-AFCSM-006000	WME02AS-PFCM5-006000
	12	WME02AS-UFCSM-012000	WME02AS-AFCSM-012000	WME02AS-PFCM5-012000
	24	WME02AH-UFCSM-024000	WME02AH-AFCSM-024000	WME02AH-PFCM5-024000

### Connector/Adapter Key

TYPE	DESCRIPTION
ASC	Angle Polish SC (ZR) sleeve-SM
ASF	Angle Polish SC Duplex (ZR) sleeve-SM
PSC	Physical Polish SC (PB) sleeve-MM
PSF	Physical Polish SC Duplex (PB) sleeve-MM
USC	Ultra Polish SC with (ZR) sleeve-SM
USF	Ultra Polish SC Duplex (ZR) sleeve-SM
PST	Physical Polish ST (PB) sleeve-MM
UST	Ultra Polish ST (ZR) sleeve-SM
AFC	Angle Polish FC (ZR) sleeve-SM
PFC	Physical Polish FC (PB) sleeve-MM
UFC	Ultra Polish FC (ZR) sleeve-SM
ADL	Angle Polish LC Duplex (ZR) sleeve-SM
PDL	Physical Polish LC Duplex (PB) sleeve-MM
PLC	Physical Polish LC (PB) sleeve-MM
UDL	Ultra Polish LC Duplex (ZR) sleeve-SM
ULC	Ultra Polish LC (ZR) sleeve-SM

LOADED: WME WITH ADAPTER PLATES/ADAPTERS/SPLICE TRAYS/PIGTAIL (900 µm TIGHT BUFFERED FIBERS 3 METERS IN LENGTH)					
CONNECTOR TYPE	FIBER COUNT	AFL NO.			
		UPC SM (BLUE)	APC SM (GREEN)	PC MM 62.5 µm (BEIGE)	PC MM 50 µm (BLACK)
SC	6	WME02FS-USCSM-006110	WME02FS-ASCSM-006110	WME02FS-PSCM6-006110	WME02FS-PSCM5-006110
	12	WME02FS-USCSM-012110	WME02FS-ASCSM-012110	WME02FS-PSCM6-012110	WME02FS-PSCM5-012110
	24	WME02FH-USFSM-024120	WME02FH-ASFSM-024120	WME02FH-PSFM6-024120	WME02FH-PSFM5-024120
LC	6	WME02FS-UDLSM-006110	WME02FS-ADLSM-006110	WME02FS-PDLM6-006110	WME02FS-PDLM5-006110
	12	WME02FS-UDLSM-012110	WME02FS-ADLSM-012110	WME02FS-PDLM6-012110	WME02FS-PDLM5-012110
	24	WME02FH-UDLSM-024120	WME02FH-ADLSM-024120	WME02FH-PDLM6-024120	WME02FH-PDLM5-024120
ST	6	WME02FS-USTSM-006110	—	WME02FS-PSTM6-006110	WME02FS-PSTM5-006110
	12	WME02FS-USTSM-012110	—	WME02FS-PSTM6-012110	WME02FS-PSTM5-012110
	24	WME02FH-USTSM-024120	—	WME02FH-PSTM6-024120	WME02FH-PSTM5-024120
FC	6	WME02FS-UFCSM-006110	WME02FS-AFCSM-006110	WME02FS-PFCM6-006110	WME02FS-PFCM5-006110
	12	WME02FS-UFCSM-012110	WME02FS-AFCSM-012110	WME02FS-PFCM6-012110	WME02FS-PFCM5-012110
	24	WME02FH-UFCSM-024120	WME02FH-AFCSM-024120	WME02FH-PFCM6-024120	WME02FH-PFCM5-024120

ACCESSORIES	
DESCRIPTION	AFL NO.
Splice Tray Kit: Single Fusion 12F, 2RU, WME02, WME04, 1 Splice Tray	FM002827-1
Splice Tray Kit: Single Fusion 12F, 2RU, WME02, WME04, 2 Splice Trays	FM002827-2

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



WME-04



WME-04 shown empty



WME-04 shown fully loaded

## Wall Mount Interconnect Enclosure (WME) with Four LGX® Mounting Positions

AFL's wall mount interconnect enclosure (WME04) provides a convenient convergence point for interconnecting and/or splicing in wall mount applications. Provisioned for up to four LGX compatible adapter plates or optical modules, the enclosure features a well-engineered solution for fiber and cable management on both the ingress and egress openings of the enclosure. Robust steel construction ensures the highest level of protection for sensitive components while integrated roll-formed hinges eliminate possible fiber pinch points while deploying or servicing components within. The WME04 features discrete access doors for provider and customer access which are independently lockable with a common pad-lock or tube-style keyed lock.

### Features

- Fits comfortably into new and existing interconnect, cross-connect and co-location environments
- U-shaped cable entry eliminates the need to feed preconnectorized cables through an inconvenient access port
- Modular design fully compatible with Poli-MOD® products and XFM optical cassettes
- Dual doors with separate locking options for flexibility and security
- Available empty, with adapters, or with adapters, splice trays and pigtails pre-installed
- LGX 118 compatible
- Optional splice tray and holder (ordered separately)
- All major connector types are supported

### Applications

- Co-Location sites
- Customer premise
- Hub/OTN sites
- Telecommunication closets
- Campus/enterprise environments

### Specifications

- Solid steel construction
- Powder coat black textured finish
- Top or bottom cable entry with dust resistant grommets
- Dual-hasp locking/security system
- 24 to 48 fiber patch and splice density
- Four LGX mounting positions
- Physical dimensions: 12.0"H x 16.0"W x 3.63"D

## Wall Mount Interconnect Enclosure (WME) with Four LGX® Mounting Positions

### Ordering Information

EMPTY	
DESCRIPTION	AFL NO.
WME04 Empty	WME04E

HALF LOADED: WME WITH ADAPTER PLATES AND ADAPTERS ONLY				
CONNECTOR TYPE	FIBER COUNT	AFL NO.		
		UPC SM (BLUE)	APC SM (GREEN)	PC MM (BEIGE)
SC	24	WME04AS-USCSM-024000	WME04AS-ASCSM-024000	WME04AS-PSCM6-024000
	48	WME04AH-USFSM-048000	WME04AH-ASFSM-048000	WME04AH-PSFM6-048000
LC	24	WME04AS-UDLSM-024000	WME04AS-ADLSM-024000	WME04AS-PDLM6-024000
	48	WME04AH-UDLSM-048000	WME04AH-ADLSM-048000	WME04AH-PDLM6-048000
ST	24	WME04AS-USTSM-024000	—	WME04AS-PSTM6-024000
	48	WME04AH-USTSM-048000	—	WME04AH-PSTM6-048000
FC	24	WME04AS-UFCSM-024000	WME04AS-AFCSM-024000	WME04AS-PFCM5-024000
	48	WME04AH-UFCSM-048000	WME04AH-AFCSM-048000	WME04AH-PFCM5-048000

### Connector/Adapter Key

TYPE	DESCRIPTION
ASC	Angle Polish SC (ZR) sleeve-SM
ASF	Angle Polish SC Duplex (ZR) sleeve-SM
PSC	Physical Polish SC (PB) sleeve-MM
PSF	Physical Polish SC Duplex (PB) sleeve-MM
USC	Ultra Polish SC with (ZR) sleeve-SM
USF	Ultra Polish SC Duplex (ZR) sleeve-SM
PST	Physical Polish ST (PB) sleeve-MM
UST	Ultra Polish ST (ZR) sleeve-SM
AFC	Angle Polish FC (ZR) sleeve-SM
PFC	Physical Polish FC (PB) sleeve-MM
UFC	Ultra Polish FC (ZR) sleeve-SM
ADL	Angle Polish LC Duplex (ZR) sleeve-SM
PDL	Physical Polish LC Duplex (PB) sleeve-MM
PLC	Physical Polish LC (PB) sleeve-MM
UDL	Ultra Polish LC Duplex (ZR) sleeve-SM
ULC	Ultra Polish LC (ZR) sleeve-SM

LOADED: WME WITH ADAPTER PLATES/ADAPTERS/SPLICE TRAYS/PIGTAIL (900 µm TIGHT BUFFERED FIBERS 3 METERS IN LENGTH)					
CONNECTOR TYPE	FIBER COUNT	AFL NO.			
		UPC SM (BLUE)	APC SM (GREEN)	PC MM 62.5 µm (BEIGE)	PC MM 50 µm (BLACK)
SC	24	WME04FS-USCSM-024120	WME04FS-ASCSM-024120	WME04FS-PSCM6-024120	WME04FS-PSCM5-024120
	48	WME04FH-USFSM-048140	WME04FH-ASFSM-048140	WME04FH-PSFM6-048140	WME04FH-PSFM5-048140
LC	24	WME04FS-UDLSM-024120	WME04FS-ADLSM-024120	WME04FS-PDLM6-024120	WME04FS-PDLM5-024120
	48	WME04FH-UDLSM-048140	WME04FH-ADLSM-048140	WME04FH-PDLM6-048140	WME04FH-PDLM5-048140
ST	24	WME04FS-USTSM-024120	—	WME04FS-PSTM6-024120	WME04FS-PSTM5-024120
	48	WME04FH-USTSM-048140	—	WME04FH-PSTM6-048140	WME04FH-PSTM5-048140
FC	24	WME04FS-UFCSM-024120	WME04FS-AFCSM-024120	WME04FS-PFCM6-024120	WME04FS-PFCM5-024120
	48	WME04FH-UFCSM-048140	WME04FH-AFCSM-048140	WME04FH-PFCM6-048140	WME04FH-PFCM5-048140

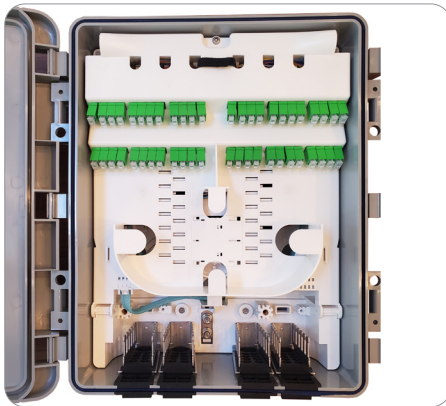
ACCESSORIES	
DESCRIPTION	AFL NO.
Splice Tray Kit: Single Fusion 12F, 2RU, WME02, WME04, 3 Splice Trays	FM002827-3
Splice Tray Kit: Single Fusion 12F, 2RU, WME02, WME04, 4 Splice Trays	FM002827-4





## LL-5D Optical Splicing and Distribution Enclosure

The LL-5D Optical Splicing and Distribution Enclosure provides for organizing, splicing and interconnecting fibers in broadband FTTx, distribution and building entrance applications. The enclosure features a durable outdoor polymer-based material and a fully-gasketed hinged cover. The internal Apex® trays may be removed from the enclosure and brought to a splicing table to complete splicing, fiber routing and fiber management. The cable entry base allows for the installation of cable through a grommet or conduit system, and can be coupled to a fixed 12 inch stackable storage skirt. Multiple skirts can be stacked to achieve the desired length.



LL-5D Enclosure shown with Interconnect Tray and Grommets installed

### Features

#### Enclosure

- Independent cable strain-relief for input and drop cables
- Unique self-sealing grommet system
- Self-contained inner chassis frame with separate outer housing
- Dual telco can-wrench locking fasteners
- Hinged cover securable with standard padlock
- Internal, owner-accessible security screw
- Available with a variety of connector types and cable entrance choices
- Pre-molded splice tray in the base of the enclosure

#### Apex Splice Tray Kit

- Available with (2) Factory Pre-installed AX-TRAY-2S-2 Universal Splice Trays with SC/APC or SC/UPC 900 µm pigtails for up to 48 connections.
- Pigtails are available in tight buffered or ribbon fiber
- Apex Trays may be purchased separately to upgrade existing splice-only units

### Specifications

PARAMETER	VALUE
Material – Housing	Polycarbonate
Color	Gray
Size (H x W x D in.)	(H x W x D in.) 16" x 14.5" x 5.5" (total length 17.75" including mounting brackets)
Weight (lbs)	7.5
Adapters	Up to (48) SC
Splice	Connectorized: Up to (2) AX-TRAY-2S-2 up to 48 single fused fibers or 4 mass fusion sleeves
	Splice-only: Up to (2) AX-TRAY-2S-2 and (2) AX-TRAY-MOD for 144 single fused or 72 mass fusion splice sleeves



LL-5D Conduit Base



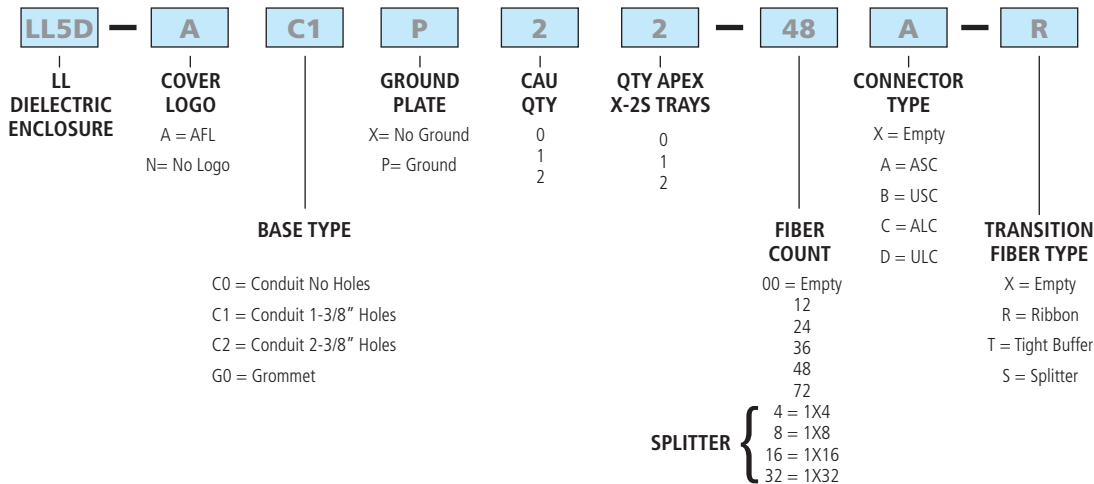
LL-5D Grommet Base

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## LL-5D Optical Splicing and Distribution Enclosure

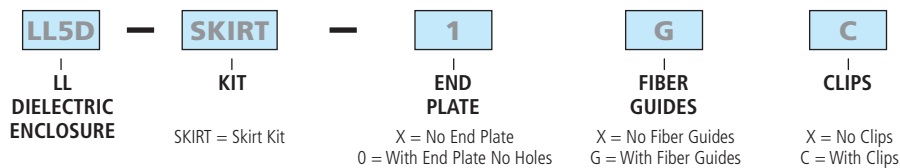
### Ordering Information — LL-5D Enclosure



### Ordering Information — Apex Splice Trays

DESCRIPTION	AFL NO.
X-2S Tray Fully Loaded with Two Splice Modules (288 fibers per tray only recommended for rollable ribbon, e.g. AFL SWR)	AX-TRAY-2S-2

### Ordering Information — LL-5D Skirt Kit



LL-5D Skirt



LL-5D Enclosure with Skirt

### Qualifications

GOVERNING BODY	STANDARD CODE
NEMA	Type 3
Telcordia	GR-2898

Contact AFL for further details.

## Apex® X-2S Splice Trays

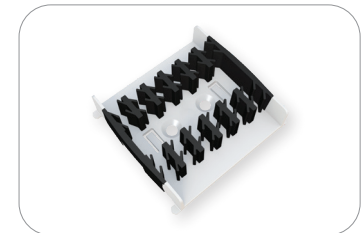
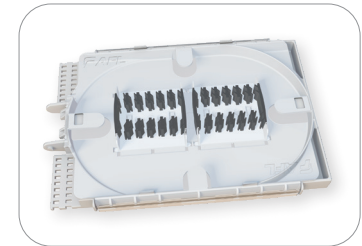
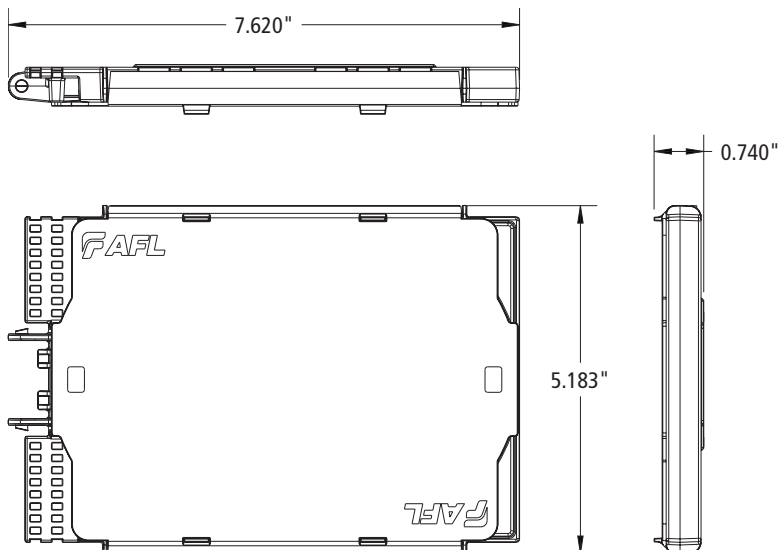
### Splice Trays and Splice Modules

Apex X-2S closures utilize X-2S size splice trays. Trays can be ordered fully loaded or half loaded with splice modules. For "rollable" type ribbon such as AFL's SpiderWeb Ribbon®, trays can be fully loaded for 24 mass splices, or 288 fibers per tray. For standard ribbon, AFL recommends half loaded for 6 mass splices single-stacked, or 72 fibers.

### Ordering Information

DESCRIPTION	TRAY CAPACITY		AFL NO.
	SINGLE	MASS	
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

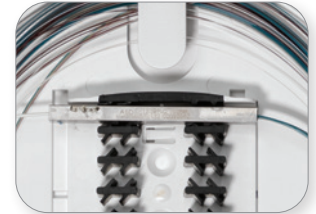
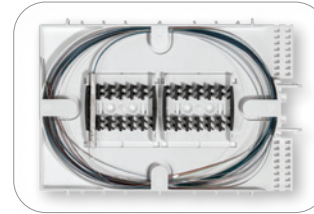
### Dimensions



## Apex® X-2S Splice Trays

### Splitter Splice Trays

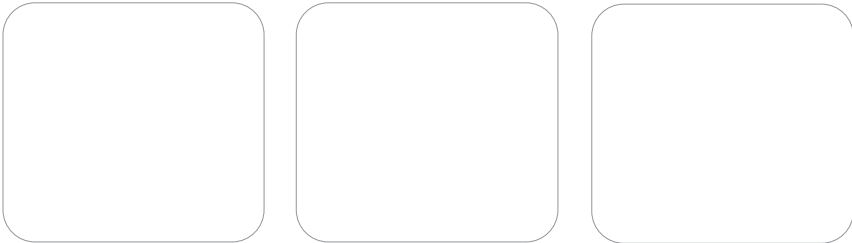
Passive optical splitters, or PLCs (Planar Lightwave Circuits), can be provided preinstalled into the Apex X-2S splice tray. PLCs can either be installed and splice within the same tray, or provided with a separate dedicated tray for splicing, with fibers routed between trays using protective tubing.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



### Ordering Information

DESCRIPTION	SPLIT RATIO	AFL NO.
<b>SPLITTER MODULES FOR SPLICE TRAYS</b>		
X-2S Tray with Four Splice Modules, (1) 1x2 PLC Splitter	1x2	AX-TRAY-2S-12-1
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) 1x2 PLC Splitter and Separate Splicing Tray with Two Splice Modules	1x2	AX-TRAY-2S-12-2
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) 1x2 PLC Splitter and 2 Separate Splicing Trays with Two Splice Modules each	1x2	AX-TRAY-2S-12-3
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

LL-5D Optical Splicing and Distribution Enclosure – Accessories



Caption

Caption

Caption

Ordering Information — Kits

DESCRIPTION	AFL NO.
KITS	
12 Fiber Tight Buffered Pigtail Kit with 12 ASC Connectors	LL5D-KIT-ASCT
12 Fiber Ribbon Pigtail Kit with 12 ASC Connectors	LL5D-KIT-ASCR
LL-5D Skirt Kit Replacement Cover	LL5D-SKIRT-KIT-WRAP



## LightLink 580 Optical Splicing and Distribution Enclosure

The LightLink (LL) 580 Optical Splicing and Distribution Enclosure provides for organizing, splicing and interconnecting fibers in broadband, distribution and building entrance applications. The splice tray panel is equipped with LGX® 118 footprint snaps so various types of connectors may be installed. The enclosure features a scratch resistant powder coated base and a fully gasketed hinged cover. The cover was designed so that it may be installed on either side of the enclosure where there are space restrictions. The internal interconnect tray and back-plate may be removed from the enclosure and brought to a splicing table to complete splicing, fiber routing and fiber management. The cable entry base has four interchangeable configurations to allow the installation of cable through a grommet system, or through pre-installed conduit couplings.

### Features

#### Enclosure

- Independent cable strain-relief for flat drop cable and 2 mm/3 mm drops
- Unique self-sealing grommet system
- Self-contained inner chassis frame with separate outer housing
- Dual telco can-wrench locking fasteners
- Hinged cover securable with standard padlock
- Internal, owner-accessible security screw
- Available with a variety of connector types and cable entrance choices

#### Interconnect Splice Tray Kit

- Included: (2) Factory Pre-installed LL-7644 Universal Splice Tray with SC-UPC 900 µm pigtails for up to 72 connections. LC-UPC Duplex adapters may be installed for up to 144 LC connections with mass fusion.
- Interconnect Tray may be purchased with either SC-UPC adapters and pigtails preinstalled or LC-UPC Duplex adapters and pigtails pre-installed.

### Specifications

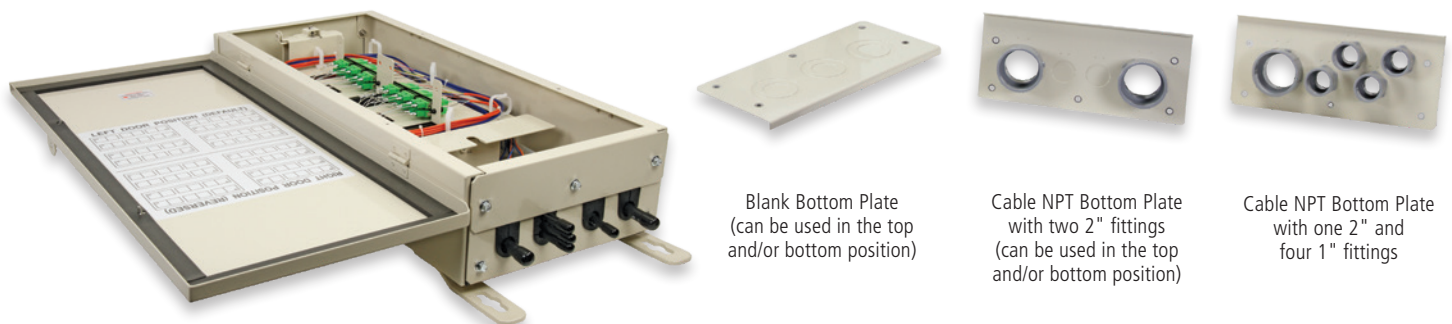
PARAMETER	VALUE
Material – Housing	16 Gauge Aluminum
Coating	Electrostatically applied powder paint
Color	Beige
Size (H x W x D in.)	27.5" x 13.0" x 5.625" (total length: 33.5" L x 13")
Weight (lbs)	15.2
Adapters	(72) SC or (72) LC Duplex
Splice	(2) LL-7644 up to 120 single fused fibers or 24 mass fusion sleeves (2) LL-4808 L-R up to 72 single fused fibers or 24 mass fusion sleeves

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## LightLink 580 Optical Splicing and Distribution Enclosure

### Ordering Information

DESCRIPTION	AFL NO.
LL-580 Enclosure Base (No Bottom Plate or LGX® Tray)	FM002814
<b>Interconnect Trays</b>	
Kit, Splice/4x LGX® Interconnect Tray, with (2) LL-7644 Trays	FM002858-001
Kit, Splice/4x LGX® Interconnect Tray, 24 SCU, with (2) LL-7644 Trays	FM002858-SCU
Kit, Splice/4x LGX® Interconnect Tray, 24 SCA, with (2) LL-7644 Trays	FM002858-SCA
Kit, Splice/4x LGX® Interconnect Tray, 24 LCU, with (2) LL-7644 Trays	FM002858-LCU
<b>Splice Trays</b>	
LL-7644 Splice Tray used with LGX® Interconnect Tray	FA000044
LL-4808 L-R Splice Tray used with LGX® Interconnect Tray	FA000037
<b>Plate Kits</b>	
Plate Kit (2 – 2 in. NPT and 2 – 1 in. KO)	FM002653
Plate Kit (2 – Single Cable Grommets [L&R] and 2 – Multiport Grommets [Center])	FM001937
Plate Kit (2 – Single Cable Grommets [L&R])	FM003014
Plate Kit (1 – 2 in. NPT and 4 – 1 in. NPT)	FM001959
Plate Kit (3 – KO)	FM003023
<b>Grommet and NPT Kits</b>	
1 in. NPT Kit (2 – 1 in NPT Fittings and cable hardware to be used with FM002653)	FM003015
2 in. NPT Kit (2 – 2 in NPT Fittings and cable hardware to be used with FM003023)	FM003016
Dual Cable Grommet Kit (2/kit)	911386-00-01
<b>Accessories</b>	
Conduit Skirt	FM002895
<b>Pre-configured Base Enclosures and Interconnect Tray</b>	
LL-580, 24F SC/UPC Interconnect Kit, 24F SC/UPC Pigtail Kit, (2) LL-7644 Splice Trays, No Bottom Plate	FM003248
LL-580, 48F SC/UPC Interconnect Kit, 48F SC/UPC Pigtail Kit, (2) LL-7644 Splice Trays, No Bottom Plate	FM003249
LL-580, 72F SC/UPC Interconnect Kit, 72F SC/UPC Pigtail Kit, (2) LL-7644 Splice Trays, No Bottom Plate	FM003250
LL-580, Interconnect Kit, No Adapter Plates, No Pigtail Kit, (2) LL-7644 Splice Trays, No Bottom Plate	FM003251



LL-580 Enclosure shown with the Cable Grommet Bottom Plate installed

### Qualifications

GOVERNING BODY	STANDARD CODE
NEMA	Type 3
Telcordia	GR-2898

Contact AFL for further details.



## LightLink 550 Optical Splicing and Distribution Enclosure

The LightLink (LL) 550 Optical Splicing and Distribution Enclosure provides for organizing, splicing and interconnecting fibers in broadband, distribution and building entrance applications. The splice tray panel is equipped with LGX® 118 footprint snaps so various types of connectors may be installed. The enclosure features a scratch resistant powder coated base and a fully gasketed hinged cover. The internal interconnect tray and back-plate may be removed from the enclosure and brought to a splicing table to complete splicing, fiber routing and fiber management. The cable entry base allows for the installation of cable through a grommet system, and can be coupled to either a fixed 12 inch slack storage skirt or a telescoping 24 to 36 inch skirt.

### Features

#### Enclosure

- Independent cable strain-relief for flat drop cable and 2 mm / 3 mm drops
- Unique self-sealing grommet system
- Self-contained inner chassis frame with separate outer housing
- Dual telco can-wrench locking fasteners
- Hinged cover securable with standard padlock
- Internal, owner-accessible security screw
- Available with a variety of connector types and cable entrance choices

#### Interconnect Splice Tray Kit

- Available with (2) Factory Pre-installed LL-4808 Universal Splice Trays with SC/APC or SC/UPC 900 µm pigtails for up to 48 connections.
- Interconnect Tray may be purchased separately to upgrade existing splice-only units to accept LGX-118 adapter plates.

### Specifications

PARAMETER	VALUE
Material – Housing	16 Gauge Aluminum
Coating	Electrostatically applied powder paint
Color	Beige
Size (H x W x D in.)	(H x W x D in.) 18" x 9" x 5.25" (total length 22" including mounting brackets)
Weight (lbs)	7.5
Adapters	Up to (48) SC
Splice	Connectorized: Up to (2) LL-4808 L-R up to 72 single fused fibers or 24 mass fusion sleeves
	Splice-only: Up to (4) LL-4808 L-R up to 144 single fused fibers or 48 mass fusion sleeves

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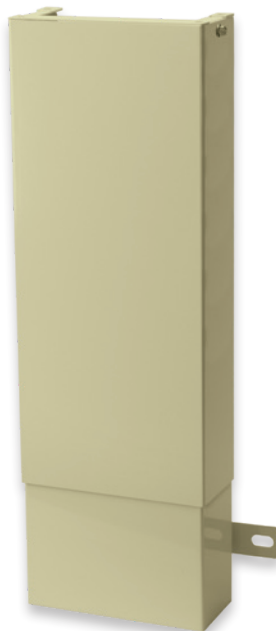
## LightLink 550 Optical Splicing and Distribution Enclosure

### Ordering Information

DESCRIPTION	AFL NO.
<b>Base Enclosures and Interconnect Tray</b>	
LL-550, 24F SC/APC Interconnect Kit, 24F SC/APC Pigtail Kit, (2) LL-4808 Splice Trays, 4 Grommet Bottom Plate	FM004181
LL-550, 48F SC/APC Interconnect Kit, 48F SC/APC Pigtail Kit, (2) LL-4808 Splice Trays, 4 Grommet Bottom Plate	FM004182
LL-550, Splice-only Security Cover, (2) LL-4808 Splice Trays, 4 Grommet Bottom Plate	FM004183
LL-550, 24F SC/UPC Interconnect Kit, 24F SC/UPC Pigtail Kit, (2) LL-4808 Splice Trays, 4 Grommet Bottom Plate	FM004214
LL-550, 48F SC/UPC Interconnect Kit, 48F SC/UPC Pigtail Kit, (2) LL-4808 Splice Trays, 4 Grommet Bottom Plate	FM004215
LL-550 LGX-118 Interconnect Tray (for upgrading splice-only to accept LGX-118 adapter plates)	FM004216
<b>Splice Trays</b>	
LL-4808 L-R Splice Tray used with LGX® Interconnect Tray	FA000037
<b>Grommet and NPT Kits</b>	
1 in. NPT Kit (2 – 1 in NPT Fittings and cable hardware to be used with FM004177)	FM003015
2 in. NPT Kit (2 – 2 in NPT Fittings and cable hardware to be used with FM004177)	FM003016
Dual Cable Grommet Kit (2/kit)	911386-00-01
<b>Accessories</b>	
Fixed Conduit Skirt	FM004177
Telescoping Skirt	FM004072



LL-550 Fixed Skirt



LL-550 Telescoping Skirt

### Qualifications

GOVERNING BODY	STANDARD CODE
NEMA	Type 3
Telcordia	GR-2898

Contact AFL for further details.





LL-500 with interconnect kit installed



LL-500 with LL-2450 splice tray installed

## LightLink 500 Optical Splicing and Distribution Enclosure

The LightLink (LL) 500 Optic Splicing and Distribution Enclosure provides for organizing, splicing and interconnecting fibers in broadband, distribution and building entrance applications. The enclosure features a scratch and corrosion resistant powder paint coating base and a fully gasketed hinged cover. A unique self-sizing grommet design allows for express and pre-terminated cable installation. The LL-500 supports up to five LL-2450 splice trays for up to 60 single fusion splices or three LL-4850 splice trays (not included in base unit) and an optional 12 fiber, hinged Interconnect Module.

### Features

- Independent cable strain relief system
- Cable entry/exit grommet seals
- Fiber routing system
- Splice tray support system
- Hinged cover
- Supports optional Interconnect Modules
- Interconnect Module supports up to 12 SC bulkhead adapters
- Secured with a standard padlock
- 4 cable ports with standard grommets
- 8 cable ports with optional expansion kits

### Specifications

PARAMETER	VALUE
Material	Steel
Coatings	Electrostatically applied, powder coat
Color	Antique white
Cable Ports	4-8
Cable Sizes (Max. O.D. – Min. O.D.)	4 @ 0.3-0.77" Up to 8 with Dual Grommet Kits 4 @ 0.3-0.65" 4 @ 0.3-0.5"
Dimensions (H x W x D) in. (cm)	17.5 x 9.0 x 4.0 (44.45 x 22.86 x 10.16)
Weight lbs. (kg)	6.5 (2.95)

### Ordering Information

DESCRIPTION	AFL NO.
LL-500-U-0	FM000326
LL-500 Interconnect Kit with SC UPC adapters	FM000385
LL-500 Interconnect Kit with SC APC adapters	FM000407
LL-500 Interconnect Kit without adapters	FM000408
LL-500 with Multi-port Grommets	FM000659
LL-2450 Single Fusion Splice Tray (stores 12 single fusion splices)	91957-00
LL-4850 Mass Fusion Splice Tray (stores 8 mass fusion sleeves - 96 fibers)	91958-00
LL-500 Multi-port Grommet Kit, 6 drop cable entry up to 0.37" OD	FC000573

### Qualifications

GOVERNING BODY	STANDARD CODE
NEMA	Type 3

**Contact AFL for further details.**



LL-400sx



LL-400sx in 1212 pedestal

## LightLink 400sx Optical Splicing and Distribution Enclosure

The LightLink (LL) 400sx Fiber Optic Splicing and Distribution Enclosure provides for organizing, splicing, and interconnecting fibers in FTTx, broadband, distribution and building entrance applications. Each LL-400sx enclosure features a scratch resistant powder coated aluminum base and a fully gasketed cover. A unique self-sizing grommet design allows for express and preterminated cable installation. The LL-400sx is a butt-style enclosure equipped with four independent cable entry/exit grommets, used for outdoor pedestal or indoor building entrance and riser splicing applications. The unit supports a maximum storage and splicing capacity of up to 192 single or 576 mass-fused fibers. The LL-400sx can also mount up to two LGX118® adapter plates (splicing capacity limited to 144 single fusion and 432 mass fusion splices when adapter plates are installed).

### Features

- Independent cable strain relief system
- Cable entry/exit grommet seals
- Removable Hinged Front Cover
- Fiber routing system
- Splice tray support system
- 192 single fusion splices
- 576 mass fusion splices
- Grounding hardware kit included

### Applications

- OSP Splicing
- MDU Splicing
- FTTx Distribution

### Specifications

PARAMETER	VALUE
Material	Chassis – aluminum
Coatings	Electrostatically applied, powder coat
Color	Antique white
Dimensions (H x W x D) in. (cm)	23.9 x 9.5 x 5.0 (58.4 x 24.13 x 12.7)
Weight lbs (kg)	5.0 (2.3)

### Ordering Information

DESCRIPTION	AFL NO.
LL-400sx	EA000370
LL-4848 Mass Fusion Splice Tray	911437-00-02
LL-2448 Universal Splice Tray	911289-00-02
LL-2448-48S Single Fusion Splice Tray	FA000045
LL-2400 Single Fusion Splice Tray	91710-06
Channell OP1212 Pedestal	FM000776
IDEAA® Module LGX Mount Bracket	EA000061
IDEAA SC/APC 1x32 Splitter Module	EA000102
IDEAA SC/APC 1x16 Splitter Module	EA000103
IDEAA SC/APC 1x8 Splitter Module	EA000104
IDEAA SC/APC 1x4 Splitter Module	EA000105



LL-400b shown with optional interconnect module



Hardware kit for external grounding (included)

## LightLink 400b Optical Splicing and Distribution Enclosure

The LightLink (LL) 400b Fiber Optic Splicing and Distribution Enclosure provides for organizing, splicing and interconnecting fibers in FTTx, broadband, distribution and building entrance applications. Each LL-400b enclosure features a scratch resistant powder coated aluminum base and a fully gasketed cover. A unique self-sizing grommet design allows for express and preterminated cable installation. The LL-400b is a butt-style enclosure equipped with 6 independent cable entry/exit grommets, used for outdoor pedestal or indoor building entrance and riser splicing applications. The unit supports a maximum storage and splicing capacity of up to 240 single or 432 mass-fused fibers.

When installed into an LL-400b, the Inteconnect Module supports connectivity when used with LGX-118 adapter plates (purchased separately). It is used in outdoor pedestals or building mounted LL-400b enclosures where interconnection is required.

### Features

- Independent cable strain relief system
- Cable entry/exit grommet seals
- Fiber routing system
- Splice tray support system
- Supports optional interconnect modules
- 240 single fusion splices
- 432 mass fusion splices
- Grounding hardware kit included

### Applications

- OSP Splicing
- MDU Splicing
- FTTx Distribution

### Specifications

PARAMETER	VALUE
Material	Chassis – aluminum
Coatings	Electrostatically applied, powder coat
Color	Antique white
Dimensions (H x W x D) in. (cm)	22.75 x 11.00 x 4.0 (57.79 x 27.94 x 10.16)
Weight lbs (kg)	6.5 (2.95)

### Ordering Information

DESCRIPTION	AFL NO.
LL-400b	91894-04
LL-400b In 1212 Pedestal	FM000636
LL-410 Interconnect Module, Supports Up To 2 LGX-118 Adapter Plates	911410-00-04
LL-2448 Universal Splice Tray	911289-00-02
LL-2448-48S Single Fusion Splice Tray	FA000045
LL-2400 Single Fusion Splice Tray	91710-06
LL-400 Security Kit	FM000787
LL-400b Large Dual-port Grommet Kit	911406-00-00
LL-400b Large Multi-port Grommet Kit	FC000352
LG-410/LG-500 Dual-port Grommet Kit	911386-00-01
LG410/LG500 Multi-port Grommet Kit	FC000573



## LightLink 24 Slim-Line Pedestal

The LightLink (LL) 24 Pedestal provides an easily accessible solution for splicing underground fiber cable, branches and drops. The pedestal may be buried up to the burying guide lines located on the pedestal base.

With the capability to hold up to three Apex™ X-2 Splice Trays, the LL-24 pedestal is capable of up to 216 single fusion, 432 mass fusion with standard ribbon, or 864 mass fusion with “rollable ribbon” fiber types such as AFL’s SpiderWeb Ribbon® (SWR®). One side of the pedestal may be used for splicing optical fibers while the opposite side may be used for copper splicing of branch or drop cables.

### Features

- Easily installed in traditional buried pedestal applications
- All cable routing, retention, mounting and grounding accessories included
- Holds up to three (3) Apex X-2 splice trays
- Fiber routing rings allow for easy storage and maintenance of the buffer tubes and using tie-wraps, copper pairs may be secured to the mounting plate
- Defers deployment cost – open buffer tubes when access to fibers is required
- Standard 216-tool or similar tool required to remove the dome

### Applications

- FTTx Networks
- Local Area Networks

### Specifications

PARAMETER	VALUE
Height to Ground Line, in (cm)	30.2 (77.5)
Total Height, in (cm)	40.2 (102.1)
Inner Diameter, in (cm)	7.8 x 6.0 (19.7 x 15.2) Oval
Splice Capacity – Single, Mass (SWR), Mass (Standard)	216, 864, 432
Splice Tray Capacity	3

### Ordering Information

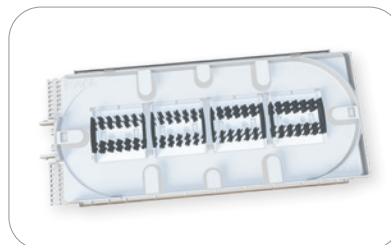
DESCRIPTION	AFL NO.
LL-24 Pedestal, Empty	FE000325

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## LightLink 24 Slim-Line Pedestal

### Splice Trays and Splice Modules

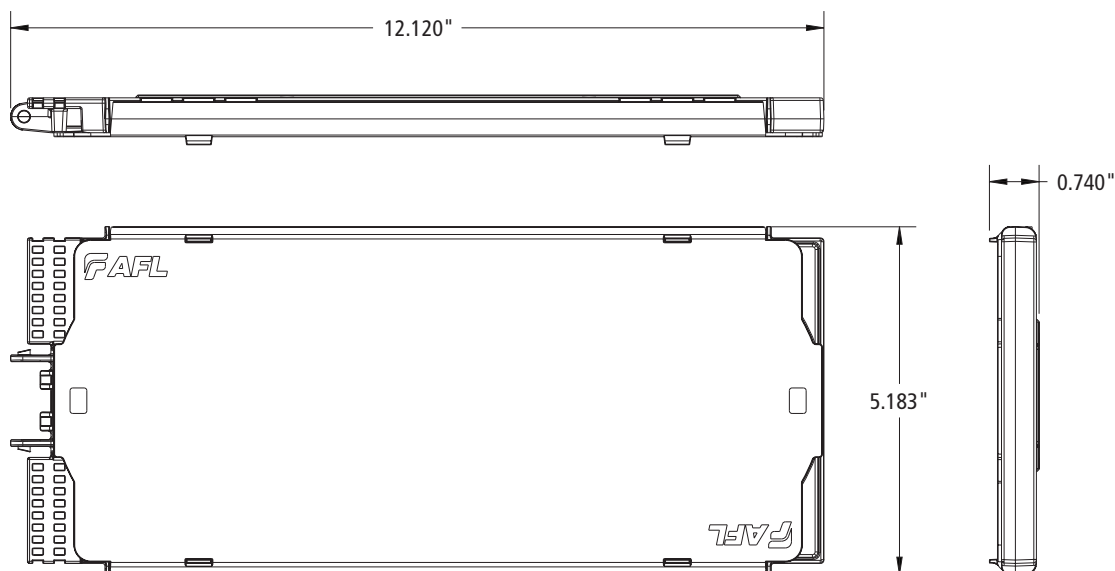
The LL-24 Pedestal utilizes X-2 size splice trays. Trays can be ordered fully loaded or half loaded with splice modules. For “rollable” type ribbon such as AFL’s SpiderWeb Ribbon, trays can be fully loaded for 24 mass splices or 288 fibers per tray. For standard ribbon, AFL recommends half loaded for 12 mass splices single-stacked, or 144 fibers.



### Ordering Information

DESCRIPTION	TRAY CAPACITY		AFL NO.
	SINGLE	MASS	
X-2 Tray Loaded with Two Splice Modules	36	144	AX-TRAY-2-2
X-2 Tray Fully Loaded with Four Splice Modules	72	288	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

### Dimensions

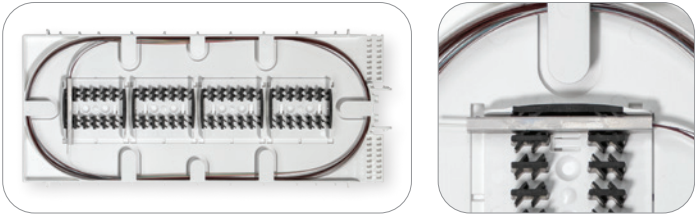


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## LightLink 24 Slim-Line Pedestal

### Splitter Splice Trays

Passive optical splitters, or PLCs (Planar Lightwave Circuits), can be provided preinstalled into the Apex X-2 splice tray. 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.
X-2 Tray with Four Splice Modules, (1) 1x2 PLC Splitter	1x2	AX-TRAY-2-12-1
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) 1x2 PLC Splitter and Separate Splicing Tray with Four Splice Modules	1x2	AX-TRAY-2-12-2
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) 1x2 PLC Splitter and 2 Separate Splicing Trays with Four Splice Modules each	1x2	AX-TRAY-2-12-3
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

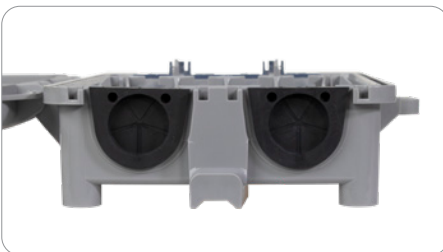


## OptiNID® Duo Optical Demarcation Enclosure

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



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



*"U-Grommet" Entry Option*



*1/2" Hole Entry Option*

### Features

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

### Applications

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

### Specifications

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

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## OptiNID® Duo Optical Demarcation Enclosure

### Ordering Information

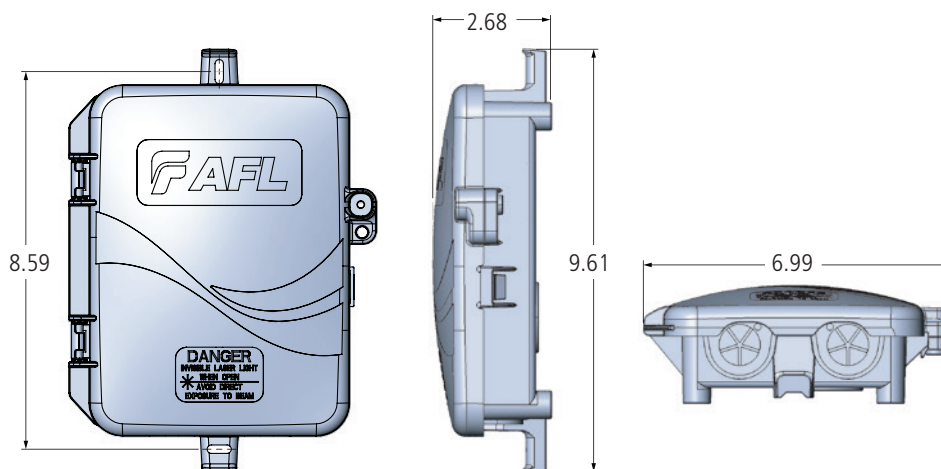
<b>O</b>	-	<b>A</b>	-	<b>A</b>	<b>X</b>	-	<b>A</b>	<b>1</b>	-	<b>X</b>	-	<b>P</b>	-	<b>S</b>	<b>S</b>	-	<b>P</b>	-	<b>P</b>
<b>OptiNID Duo</b>				<b>Base</b>			<b>Adapter</b>			<b>900 µm Pigtail Kit</b>				<b>Splice Holder</b>			<b>Left Entry Port</b>		<b>Right Entry Port</b>
O = OptiNID Duo				A = Base 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		
<b>Cover Logo</b>				<b>Lockscrew</b>			<b>Adapter Quantity</b>			<b>Grounding Plate</b>			<b>Security/Splice Cover</b>						
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						

### Ordering Information – Accessories

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

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

### Dimensions (in inches)



### Qualifications

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

**Contact AFL for further details.**





OPN-327SS



OPN-350SS

## OptiNID® 300 Series Optical Demarcation Slack Storage Closure

The OptiNID (OPN) 300 series are optical demarcation closures designed for use in either indoor or outdoor environments. Smaller to suit FTTH demarcation applications, the OPN-327SS and the OPN-350SS are equipped to handle up to two adapters each. Configured with routing rings positioned to accommodate safe slack storage, the OPN-300 series closures can be either wall or pole-mounted for ease of use and accessibility.

### Features

- Weather-resistant thermoplastic alloy
- Self-latching, hinged cover design allows easy access without loose parts
- Routing rings positioned for safe slack storage
- Capacity for up to two adapters
- Ground stud provided in the OPN-350SS

### Specifications

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

### Ordering Information

DESCRIPTION	AFL NO.
<b>BASE PRODUCT <sup>1,2</sup></b>	
OptiNID OPN-327SS Slack Storage Box, 1 x SC/APC Adapter	DM000720
OptiNID OPN-350SS Slack Storage Box, 1 x SC/APC Adapter, Splice Chip, Ground Stud	DM000795
<b>ACCESSORIES <sup>3</sup></b>	
Heyco M3234 Compression Fitting, 18 mm to 11 mm Grip (includes 4) – Left Port Only	DM001171

#### Notes:

1. All standard OPN-300 Series configurations come equipped with a 3/4" NPT fitting, rubber grommet and Heyco M4519 compression fitting.
2. Contact AFL customer service for additional configurations.
3. See OptiNID Accessory Page for additional kits.



## OptiNID® 500 Optical Demarcation Closure

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

### Features

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

### Specifications

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

### Ordering Information

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

### Notes:

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



## OptiNID® 760XL Optical Demarcation Closure

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

### Features

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

### Specifications

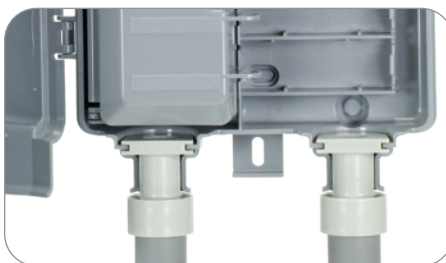
PARAMETER	VALUES
Dielectric Strength	Minimum 2500 Vrms for 1 minute
High Temperature Storage/Mold Stress	14 days at 159°F (70.55 °C)
Temperature Cycling with Humidity	150 day cycling from 40-140°F (4.44-60°C) with 95% RH
Impact Test	-40°F (-40°C), 5*/lbs on all external surfaces
Drop Test	-40°F (-40°C),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



OPN-760XL with optional security cover kit



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



3/4" Pipe Fitting Transition Kit



### Ordering Information

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

#### Notes:

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

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



## OptiNID® 1224 Optical Demarcation Closure

The OptiNID-1224 is an optical demarcation closure designed for use in either indoor or outdoor environments. It is capable of housing up to 36 bulkhead adapters in three 118 LGX® compatible adapter plates and comes equipped with a splice tray (LL-2425), which holds up to 32 single fusion splices. The OPN-1224 can be either wall or pole-mounted.

### Features

- Capacity for up to three 118 LGX compatible adapter plates
- Weather-resistant thermoplastic alloy
- Self-latching, hinged cover design allows easy access without loose parts
- Self-sealing individual entrance ports prevent water and insects from entering
- Provider override is provided so that technician can override customer lock

### Specifications

PARAMETER	VALUES
Dielectric Strength	Minimum 2500 Vrms for 1 minute
High Temperature Storage/Mold Stress	14 days at 159°F (70.55°C)
Temperature Cycling with Humidity	150 day cycling from 40-140°F (4.44-60°C) with 95% RH
Impact Test	-40°F (-40°C), 5*/lbs on all external surfaces
Drop Test	-40°F (-40°C), 5* (12.7 cm) onto concrete surface 4 times
Rain	24 hours at 10 psi
UV Resistance (Days Exposed)	60 per ASTM-G26-84
Salt Fog (Days Exposed)	60 per ASTM-BLL7-90
Flammability	UL94-5V
Chemical Resistance 30 Days at 100°F and 95% RH	Resists chipping and/or cracking when subject to: house paint, wasp spray, sulfuric acid, kerosene and sodium hydroxide
Material	UL® listed flame retardant thermoplastic alloy
Dimensions (H x W x D) in. (cm)	12.25 x 12 x 5.25 (22.80 x 22.80 x 7.60)
Cable Entrances in. (cm) diameter - Output	5 x 0.625 (1.5)
Cable Entrances in. (cm) diameter - Input	2 x 0.75 (1.5), 1 x 0.250 (0.6) (ground wire)
Covers	Standard - molded-in snap finger and "F" termination

### Ordering Information

DESCRIPTION	AFL NO.
OptiNID OPN-1224, Splice Tray, No Adapter Plate Or Adapters	DM000183

## OptiNID® Optical Demarcation Accessories

### Heyco Compression Fittings for OPN-300 Series and OPN-500



Used on the bottom entry ports of the OPN-300 Series and OPN-500 for a tight compression fitting. The Heyco M3234 fits into the larger left port and can compress from 18 mm to 11 mm in port size. The Heyco M3231 fits into the smaller middle and right ports and can compress from 11 mm to 4 mm. Kits include nylon locknuts.

#### Ordering Information

DESCRIPTION	AFL NO.
Heyco M3234 Compression Fitting, 18 mm to 11 mm Grip (includes 4). Left Port Only	DM001171
Heyco M3231 Compression Fitting, 11 mm to 4 mm Grip (includes 4). Middle and Right Port	DM000911

### NPT Conduit Fittings for OPN-300 Series and OPN-500



Used on the bottom entry ports of the OPN-300 series and OPN-500 as an open port or to accept NPT conduit. The 3/4" NPT fitting has a through-hole size of 0.71" and can accept 3/4" NPT conduit. The 1/2" NPT fitting has a through-hole size of 0.51" and can accept 1/2" NPT conduit. Kits include nylon locknuts.

#### Ordering Information

DESCRIPTION	AFL NO.
3/4" NPT Conduit Fitting (includes 4) – Left Port Only	DM001170
1/2" NPT Conduit Fitting (includes 4) – Middle and Right Port	DM000912

### Rubber Grommet for OPN-300 Series and OPN-500



Used on the middle and right entry ports of the OPN-300 series and OPN-500. The rubber grommets can be easily inserted to create a grommetted entry port or to seal an unused port.

#### Ordering Information

DESCRIPTION	AFL NO.
Rubber Grommet, 0.875" (includes 10)	DM001119

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## Opti-NID® Optical Demarcation Accessories



### Splice Chip Kit for OPN-500

Used on the OPN-500 to add an additional splice chip to the splice area to increase the splice capacity to 12 single fusion splices. The chip has an adhesive back, allowing it to adhere to multiple locations within the box.

#### Ordering Information

DESCRIPTION	AFL NO.
Kit, Six-Position Splice Chip (includes 10)	DM000870



### Pipe Transition Kit for OPN-760XL

Used on the OPN-760XL to create a 3/4" NPT transition fitting. The fitting slides into any of the four entry ports on the OPN-760XL and securely clips into place. The 3/4" NPT fitting has a through-hole size of 0.67" and can accept 3/4" NPT conduit.

#### Ordering Information

DESCRIPTION	AFL NO.
3/4" Pipe Fitting Transition Kit (includes 2)	DM001174



### Security Cover Kit for OPN-760XL

Used on the OPN-760XL to create a lockable security cover for provider access. The cover fits over the back portion of the OPN-760XL, covering the splice tray and provider side of the adapters and locks into place with a star head bolt.

#### Ordering Information

DESCRIPTION	AFL NO.
OPN-760XL Security Cover Kit	DM000923



### Pole Mounting Kit for OPN-760XL

Used on the OPN-760XL to provide an easy pole mounting solution. The plate mounts to the back of the OPN-760XL and provides arms for straps or bolts to adhere to a pole.

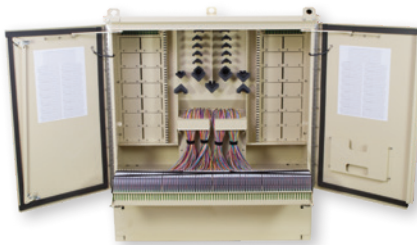
#### Ordering Information

DESCRIPTION	AFL NO.
OPN-760XL Pole Mounting Kit	DM000927

## IDEAA® (Integrated Distribution Enabling Access Apparatus)



288 Fiber (Closed)



864 Fiber (Open)

### IDEAA Exterior Distribution Cabinet

The IDEAA Exterior Distribution Cabinet (EDC) provides a convenient modular approach to centralized fiber distribution. All sizes of the EDC utilize the IDEAA splitter module to enable versatility across the platform. The EDC utilizes innovative jumper routing to enable efficient fiber management utilizing equal length pigtails for the entire cabinet.

#### Features

- Modular distribution platform allows for incremental deployment costs and immediate cost savings
- Small size is unobtrusive in residential deployments
- Enhanced fiber management provides simplified routing and termination
- Dual-door entry allows easy access to distribution and fiber management fields
- Flexible pad and pole mounting options allow for deployment in convenient locations
- Expandable feeder cables allow for point-to-point distribution (cross-connect)

#### 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.
<b>PAD MOUNT WITH SKIRT AND 100 FOOT TAILS</b>	
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

<b>POLE MOUNT WITH BRACKET AND 100 FOOT TAILS</b>	
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

#### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-3215





## Applications

- Direct Wall Mount
- Interior Wall Mount Enclosure / Pedestal
- Exterior Wall Mount Enclosure
- Exterior Distribution Enclosure / Pedestal
- Exterior Distribution Cabinet
- Splice Closure – Sealed
- Rack Mount Bracket

## Features

- SC and LC Module configurations can accommodate up to a 64 fiber distribution
- Modular design allows for highly flexible and scalable deployments
- Durable hardened plastic exterior provides a rugged encasement
- Single and multi-package modules available

## IDEAA®

### Integrated Distribution Enabling Access Apparatus

AFL's Integrated Distribution Enabling Access Apparatus (IDEAA) product family revolutionizes the way passive optical splitters are deployed in the network. Utilizing a small modular design and leveraging planar waveguide technology to yield an ultra low polarization dependent loss, low insertion loss, and high port uniformity, the IDEAA product possesses the flexibility to be used in a wide variety of applications. The IDEAA module provides a lower cost and more versatile alternative to preexisting PON architecture arrangements. Rather than being confined to a traditional "splitter-in-cabinet" design, the IDEAA product family allows service providers to employ PON architecture across all areas of the network.

The IDEAA module's unique design enables customers to utilize a revolutionary stand-alone mounting capability. In addition to conforming to a number of different applications, each IDEAA module can be mounted as an independent distribution point. This unit can be neatly secured to a wall or even placed on an existing rack or cabinet.

### IDEAA SC and LC Modules

The IDEAA SC and LC modules come equipped with an internal PLC device which is factory terminated and tested. An integrated hinge provides easy access to the SC or LC adapter interface while reducing space when mounted. The SC and LC modules use APC connectors to meet the strict back reflection requirements of the latest PON architectures. A wide variety of PLC splitter configurations are available. A dual 1x16 module is available with SC APC outputs and LC APC inputs. Two SC APC to LC APC jumpers are included to connect to the EDC SC APC input ports.

### Direct Wall Mount Capability

The IDEAA product can easily mount to an interior wall without needing any additional enclosures. Simply use the integrated hinge plate to install the module directly to a wall. The module contains port identification for each output fiber.

## Specifications

PARAMETER	VALUE				
	1 X 4	1 X 8	1 X 16	1 X 32	1 X 64
Wavelength Range (nm)	1260 - 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				

## 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

## Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-1209, GR-1221

## IDEAA® (Integrated Distribution Enabling Access Apparatus)



### LL-400sx Optical Splicing/Distribution Enclosure

The LightLink (LL) 400sx Fiber Optic Splicing and Distribution Enclosure provides for organizing, splicing, and interconnecting fibers in FTTx, broadband, distribution and building entrance applications. Each LL-400sx enclosure features a scratch resistant powder coated aluminum base and a fully gasketed cover. A unique self-sizing grommet design allows for express and preterminated cable installation. The LL-400sx is a butt-style enclosure equipped with four independent cable entry/exit grommets, used for outdoor pedestal or indoor building entrance and riser splicing applications. The unit supports a maximum storage and splicing capacity of up to 192 single or 576 mass-fused fibers.

The LL-400sx can also mount up to two LGX118® adapter plates (splicing capacity limited to 144 single fusion and 432 mass fusion splices when adapter plates are installed).

#### Features

- Independent cable strain relief system
- Cable entry/exit grommet seals
- Removable Hinged Front Cover
- Fiber routing system
- Splice tray support system
- 192 single fusion splices
- 576 mass fusion splices
- Grounding hardware kit included
- 1 1x32 IDEAA Module with LGX Mount Bracket

#### Specifications

PARAMETER	VALUE
Material	Chassis – aluminum
Coatings	Electrostatically applied, powder coat
Color	Antique white
Dimensions (H x W x D) in. (cm)	23.9 x 9.5 x 5.0 (58.4 x 24.13 x 12.7)
Weight lbs (kg)	5.0 (2.3)

#### Applications

- OSP Splicing
- MDU Splicing
- FTTx Distribution

#### Ordering Information

DESCRIPTION	AFL NO.
LL-400sx	EA000370
LL-4848 Mass Fusion Splice Tray	911437-00-02
LL-2448 Universal Splice Tray	911289-00-02
LL-2448-48S Single Fusion Splice Tray	FA000045
LL-2400 Single Fusion Splice Tray	91710-06
Channell OP1212 Pedestal	FM000776
IDEAA® Module LGX Mount Bracket	EA000061
IDEAA SC/APC 1x32 Splitter Module	EA000102
IDEAA SC/APC 1x16 Splitter Module	EA000103
IDEAA SC/APC 1x8 Splitter Module	EA000104
IDEAA SC/APC 1x4 Splitter Module	EA000105



### IDEAA® Rack Mount Bracket

The IDEAA RMB allows attachment of one (1) IDEAA module to easily mount to industry standard LGX® 118 fiber management rack panels. Simple push-pull pins allow the module to be easily installed and removed.

#### Capacity

IDEAA MODULE	1RU PANEL	2RU PANEL	3RU PANEL	4RU PANEL
# of 118 Positions	3	6	9	12
1x32 SC	N/A	N/A	3	4
1x16 SC	N/A	3	3	6
1x8 and 1x4 SC	3	6	9	12
3x96 MPO	3	6	9	12

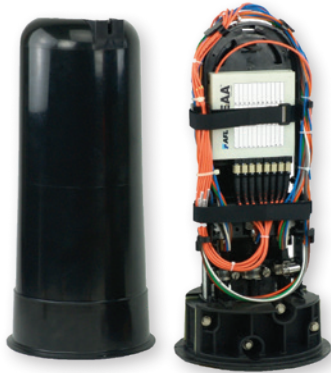
#### Ordering Information

DESCRIPTION	AFL NO.
Rack-mount Panel LGX®118 Bracket for SC/APC IDEAA Module	EA000654
Rack-mount Panel LGX®118 Bracket for MPO IDEAA Module	EA000655

#### Features

- Metal plate with push/pull pins
- Powder coated black
- LGX compatible

## IDEAA® (Integrated Distribution Enabling Access Apparatus)



### Features

- Less than 20" overall length; ideal for small hand-holes
- Installation and re-entry using common hand tools
- Fully sealed to protect fiber and splices
- Fully kitted with all parts necessary for installation

## IDEAA® Splice Closure—Sealed

The IDEAA SCS is designed to mount either in buried or aerial applications. The splice closure comes equipped to install one (1) IDEAA module along with a tray to splice all input and output fiber cables. The splice closure is designed to handle multiple fiber cables.

### Specifications

PARAMETER	VALUE
Splice Capacity (Max.) – single	36
Number of Splice Trays (Max.) – single	1
Cable Entrance Configuration	Butt
Cable Ports	5 Ports (14 cables total using flat-drop grommets)
Cable Sizes (O.D.)	Express Side – 2 (0.4"–1.0") Drop Side – 12 (0.31" flat-drop or 0.25" round)
Dimensions (L x D) – inches (cm)	19.8" x 10.0" (50.3 x 25.4)
Weight - lbs. (kg)	12 (5.44)

### Ordering Information

DESCRIPTION	AFL NO.
IDEAA SPLICE CLOSURE	EA000076
IDEAA Splice Closure Pigtail Kit	EA000168



## Sealed Fiber Optic Splice Closures

AFL's sealed fiber optic splice closures are designed to simplify splice management and maintenance. Intuitive engineering design reduces the installation time and complexity associated with fiber splicing in the field. No heat, adhesives, drills or powered equipment for installation or re-entry are required, just simply use a common can wrench to access and install cable. These closures are durable, easy-to-install and will increase productivity, reduce labor expenses, and last the life of your plant.

### Features

- LG Series closures support stranded loose tube, Uniflex or ribbon fiber cables in either armored or dielectric configurations
- New Apex® Sealed Closures also support "rollable ribbon" fiber types including AFL's SpiderWeb Ribbon® (SWR®)
- Fully sealed to protect fiber and splices ensuring longevity
- Fully kitted with all parts to install cables

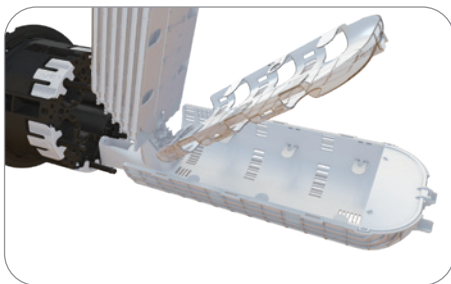
### Specifications

DESCRIPTION	MODEL							
	LG-55-U-0	APEX X-2	APEX X-2S	LG-150-U-0	LG-250-U-0	LG-350-U-0	LG-350-AC	LG-350XL-U-0
Splice Capacity (Max.) – Single, Mass, Mechanical	24, n/a, 24	432, 3456, 864	216, 1728, 432	48, 192, 48	144, 432, 48	480, 1152, 108 <sup>2</sup>	144, 432, 48	864, 2592, 288
Number of Splice Trays (Max.) – Single, Mass, Mechanical	1, n/a, 1	6		4, 3, 4		12, 8, 8	4, 3, 4	9, 9, 9
Cable Entrance Configuration	In-line / Butt	Butt						
Cable Ports	2	6		5			2 (Express Grommets) 3 (4-Drop Grommets)	5 (7 using dual port grommet Express sides)
Cable Sizes (Max. O.D.) in. (mm)	2 @ 0.70 (17.78 ) (splice)	Single Port: 0.40- 1.10 (10.0 - 28.0)  Multi-Drop Kit: 0.20 - 0.39 (5.0 - 9.9) or flat drop		5 @ 0.62 (15.748)	3 @ 0.80 (20.32) 2 @ 1.00 (25.4)	2 @ 1.0 (25.4) 12 @ 0.312 (7.9248 ) Flat or 0.250" (6.35 ) Round		3 @ 1.08 (27.432) 2 @ 1.18 (29.972)
Testing - Cable Retention (100 lbs) - Water Resistance (waterhead) - Impact Resistance (0-40 °C) - Chemical Resistance - Cable Flexing	Passed 20 ft. Passed Passed Passed	—	—			Passed 20 ft. Passed Passed Passed		
Dimensions – (L x D) in. (mm)	14.00 x 4.00 (35.6 x 10.16)	25.0 x 12.0 (64 x 30)	20.0 x 12.0 (51 x 30)	16.25 x 8.75 (412.75 x 222.3)	19.0 x 8.75 (482.6 x 222.3)	28.00 x 10.00 (71.12 x 25.4)	20 x 10 (51 x 25.4)	31.00 x 12.00 (78.74 x 30.48)
Weight – lbs. (kg)	3.0 (1.36)	25 (11.3)	22 (10)	10.5 (4.76)	10.5 (4.76)	16 (7.26)	12.0 (5.44)	25 (11.34)

**NOTES:** 1. For the LG-250-U-0; 36 mechanical splices only using the LL-2448 splice tray.  
2. For the LG-350-U-0; 108 mechanical splices only using the LL-2448 splice tray.

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed



Open to access Apex X-3 splice trays and lock at 72 degrees

## Apex® X-3 Sealed Splice Closure

The Apex X-3 is a sealed splice closure designed for protecting optical fiber splices in both above- or below-grade applications in a butt configuration. The Apex X-3 is capable of up to 864 single fusion, 1296 mass fusion with standard ribbon, or 5184 (200  $\mu$ m, 2592 max for 250  $\mu$ m) mass fusion with “rollable ribbon” fiber types such as AFL’s SpiderWeb Ribbon® (SWR®). 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.

### Features

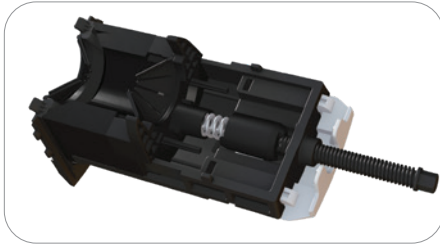
- Individual cable sealing ports with tool-less release mechanism and gel sealing
- Hinging, lockable splice trays
- Plastic slack storage basket with optional segmented basket to separate ribbon and loose tube slack storage
- Six cable ports with up to six ground lugs
- Capable of up to 16 drop cables with an expressed distribution cable using multi-drop entry kits
- Splice trays with universal splice modules capable of holding single fusion, mass fusion and mechanical splices as well as other devices such as passive optical splitters
- Dome-to-base O-ring seal retained into dome to prevent loss or damage, but is still replaceable if necessary

### Specifications

PARAMETER	VALUE
Dimensions – L x D, in (cm)	32.0 x 14 (81.3 x 35.6)
Weight, No Trays – lb (kg)	30 lbs. (13.61 kg)
Splice Capacity – Single, Mass (SWR), Mass (Standard)	864, 5184, 1296
Splice Tray Capacity	6
Cable Diameter, Single Port, in (mm)	0.40" - 1.38" (10.16 - 35.052)
Cable Diameter, Multi-Drop Kit, in (mm)	0.20" – 0.39" (5.0 – 9.9) or flat drop
Application	Direct Bury, Handhole, Aerial, Pole/Wall
Designed in accordance with Telcordia GR-771	Up to 10 ft. water-head

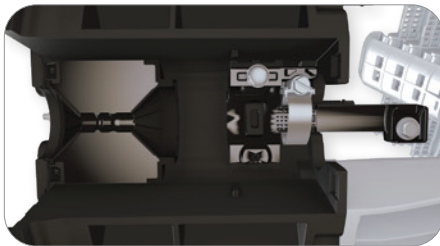


## Apex® X-3 Sealed Splice Closure



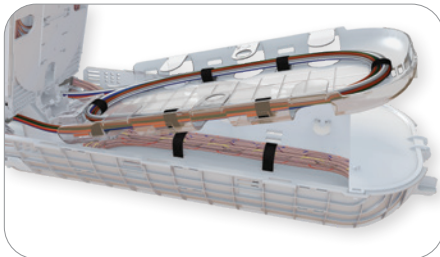
### Gel Sealing

Individual wedges located evenly around the circumference of the base are removed with the press of a button. When cables are in place and ready to be sealed, the gel is compressed by a single screw, decreasing installation time. Individual port seals ensure cables never become unsealed when adding new cables at a later date.



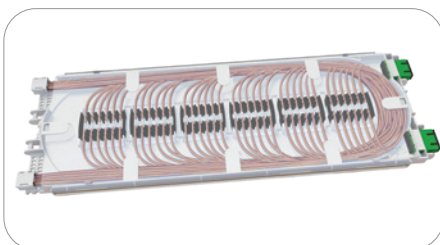
### Cable Entry Ports and Cable Attachment Unit (CAU)

The cable entry ports surrounding the circumference of the base accept single cables from 0.4" to 1.38" in diameter. These ports can be expanded through the use of optional drop cable entry kits, allowing up to 4 flat drops or cables from 0.2" to 0.39" to use a single port. Additionally, each port has the capability to be paired with its own grounding lug if necessary. Closures can be configured with enough CAU kits for 0 to 6 cables from the factory. For closures with less than 6, additional cables can be added through the use of additional cable strain relief kits sold separately.



### Slack Storage

A molded slack storage basket allows for use of the entire cross section of the closure to maximize storage. An optional segmented hinging basket is available to separate ribbon and loose tube slack, and can be locked in the upward position for access to expressed fibers below.



### Splice Trays with Modular Splice Holders

Splice trays are organized in a hinging array that automatically lock when tilted to the upward position for easy access to the splice trays and slack storage below. The universal splice module holds up to 24 single fusion quad-stacked, 6 mass fusion or 12 mass fusion double-stacked when using SWR, or 6 mechanical splices as well as devices such as PLC splitters. This eliminates the need for specifying and stocking multiple splice trays for multiple applications such as WDM and PLC Splitters, (photo at left shown with ASC bulkhead test ports installed). This can be mix-and-match.

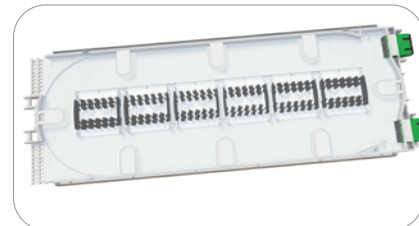
## Ordering Information

AX	3	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
	3 = X-3 Size	B = X-3 Sized Basket	X = No preinstalled tray L = X-3 Square Tray Loaded with splice modules	0 1 2 3 4 5 6	0 1 2 3 4 5 6	0 1 2 3 4 5 6	X = No Inner Basket B = Include Inner Basket

## Apex® X-3 Sealed Splice Closure

### Splice Trays and Splice Modules

Apex X-3 closures utilize X-3 square splice trays. Trays can be ordered empty or fully loaded with splice modules. For "rollable" type ribbon such as AFL's SpiderWeb Ribbon®, closures can be fully loaded with 6 splice trays for 5184 SWR or 864 quad-stacked single fiber splices or 144 fibers per tray. For standard ribbon, AFL recommends half loaded for 18 mass splices single-stacked, or 216 fibers per tray.



### Ordering Information

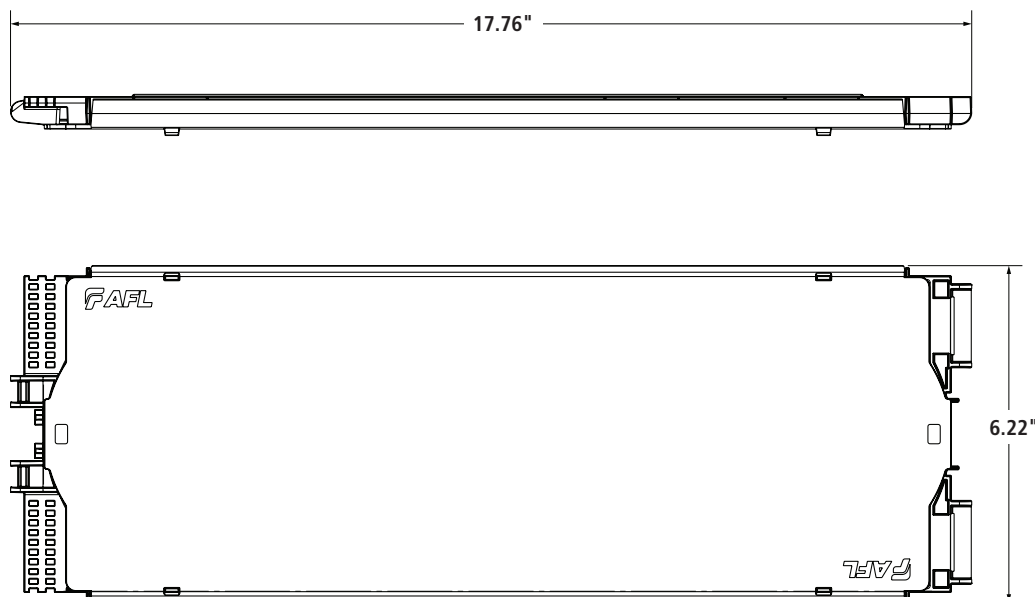
DESCRIPTION	TRAY CAPACITY		AFL NO.
	SINGLE	MASS	
X-3 Tray Fully Loaded with Six (6) Splice Modules (864 fibers per tray only recommended for rollable ribbon, e.g. AFL SWR)	108 triple stacked 144 quad stacked**	864**	AX-TRAY-3-S-6
Additional splice module (18 single fusion double/quad stacked, 12 mass fusion double stacked, 6 mechanical) Pack of 20	—	—	AX-TRAY-MOD-20
X-3 Square Tray Empty	—	—	AX-TRAY-3-S-E
FP-40 40 mm Single Fiber Slim Protection Sleeve	—	—	S018262
FP-60 60 mm Single Fiber Slim Protection Sleeve	—	—	S018263

\* 864 fibers per tray with mass fusion (5184 total closure capacity) only recommended for 200 µm type rollable ribbon. For 250 µm, cut capacity in half with single-stacking.

\*\* When using AFL's Slim Protection Sleeves



### Dimensions





## Apex® X-3 Sealed Splice Closure

### Installation Kits and Accessories

The AFL Apex closure line has a variety of installation accessories kits to fit many applications. Additional accessories may be available. Contact AFL.



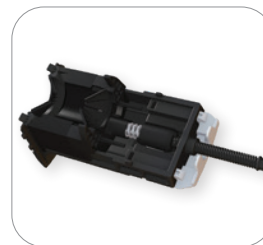
CAU Kit



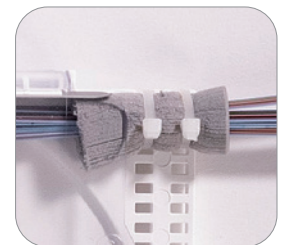
Ring Clamp Replacement Kit



O-Ring Grease Kit



Wedge Replacement Kit



Foam Retention

### Ordering Information — Replacement Kits

DESCRIPTION	AFL NO.
<b>REPLACEMENT KITS</b>	
X-3 and X-3H Single Cable Strain Relief/Cable Attachment Unit (CAU) Kit	AX-KIT-CBLSTRN-3
X-3 and X-3H Dome-to-Base Locking Ring Clamp Replacement Kit	AX-KIT-CLAMP-3
X-3 and X-3H Dome Replacement Kit	AX-KIT-DOME-3
X-3 and X-3H Inner Base Gel Replacement Kit	AX-KIT-GEL-3
X-3 Inner Basket Kit	AX-KIT-SBASKET-3
Apex O-Ring Grease, Pack of 10	AX-KIT-GREASE-10
X-3 and X-3H Dome to Base O-Ring Replacement Kit	AX-KIT-ORING-3
X-3 and X-3H Wedge Replacement Kit	AX-KIT-WEDGE-3
WTC-SWR Bundle Splice Tray Retention Kit - Includes 25 foam grommets for retaining SWR bundles to splice trays	HW000406
Velcro, 75 Foot Length Roll – For securing SWR bundles in the slack basket	FC001759



Apex Aerial Hanger Bracket



Apex Pole/Wall Mount



Adjustable Aerial Hanger Bracket



Mesh Transition Tubing



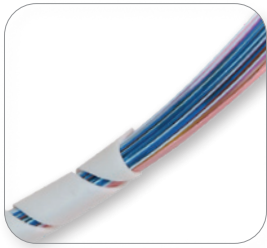
Universal Installation Stand

### Ordering Information — Accessories

DESCRIPTION	AFL NO.
<b>ACCESSORIES</b>	
X-3 and X-3H Pole/wall mount kit	AX-BR33
Aerial strand mount hanger kit	AX-KIT-AERIAL-1
Adjustable Aerial Strand Mount Hanger kit	AX-KIT-AERIAL-ADJ
ADSS Aerial hanger brackets	AX-KIT-AERIAL-ADSS
X-3 and X-3H Multi-Drop Cable Entry Kit (fits up to 4 cables 0.20" to 0.39" in diameter or flat drop cable)	AX-KIT-DROP-4-3
Apex Internal Multiple Ground Bonding Kit	AX-KIT-GNDLD-5
Apex Cable Bonding Kit (Bonds armored cable sheath to ground) – Pack of 10	AX-KIT-GROUND-10
1/4" Colored Mesh Transition Tubing, 250' Spool (*Replace "XX" with color per TIA-598 color code - BL, OR, GR, BR, SL, WH, RD, BK, YL, VI, RS or AQ)	AX-KIT-TUBE-014-XX*
Apex Universal Installation Stand	AX-KIT-U-STAND

## Apex® X-3 Sealed Splice Closure

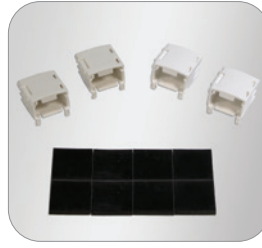
### Installation Accessories (cont.)



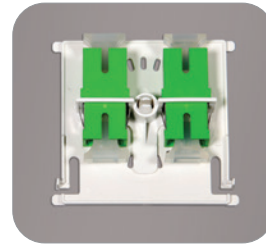
Silicone Spiral Wrap



AFRS Kit 1



AFRS Kit 2



SC Bulkhead Adapter Kit



Replacement Slack Storage Basket Tabs

### Ordering Information — Accessories

DESCRIPTION	AFL NO.
<b>ACCESSORIES</b>	
Silicone Spiral Wrap, 5.5 Foot Length	FC001657
Apex Advanced Fiber Retention System (AFRS) Kit 1 – Used for Ribbon Cable (Flat Matrix, SWR, Tubed, Central Core). Kit includes: Mesh Basket Adapter (2 ea.), Mesh Housing (2 ea.), Mesh Insert (24 ea.), V-Clips (12 ea.), and Clean Cut Gray Mesh (13 ft.).	AX-KIT-AFRSRBN
Apex AFRS Kit 2 – Used for Loose Tube Cable. Kit includes: V-Clip (24 ea.) and Retention Pads (6 sheets of 8 pads)	AX-KIT-AFRSLT
Apex AFRS Kit 3 – V-Clip bulk kit. Includes: V-Clips (120 ea.) and Mesh Inserts (120 ea.)	AX-KIT-AFRSVC-120
Apex AFRS Kit 4 – Mesh bulk kit. Includes: Clean Cut Gray Mesh (100 ft.)	AX-KIT-AFRSMESH-100FT
Apex AFRS Kit 5 – Mesh Housing bulk kit. Includes: Mesh Basket Adapter (10 ea.) and Mesh Housing (10 ea.)	AX-KIT-AFRSAH-10
Apex AFRS Kit 6 – Mesh Basket Adapter bulk kit. Includes: Mesh Basket Adapter (10 ea.)	AX-KIT-AFRSA-10
Apex Bulkhead Kit with Plate SC/APC Adapters, 1 kit	AX-TRAY-ASC
Apex Bulkhead Kit with Plate with SC/UPC Adapters, 1 kit	AX-TRAY-USC
Apex Bulkhead Kit with Plate SC/APC Adapters, 6 pc kit	AX-TRAY-ASC-6
Apex Bulkhead Kit with Plate SC/UPC Adapters, 6 pc kit	AX-TRAY-USC-6
Apex Replacement Slack Storage Basket Tabs – Pack of 25	AX-KIT-BTAB-25



## Apex® X-3H Sealed Splice Closure

The Apex X-3H is a sealed splice closure designed for protecting optical fiber splices in both above- or below-grade applications in a butt configuration. The Apex X-3H is capable of up to 1728 mass fusion with standard ribbon or 6912 (200  $\mu$ m, 3456 max for 250  $\mu$ m) mass fusion with “rollable ribbon” fiber types such as AFL’s SpiderWeb Ribbon® (SWR®). 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 8 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.



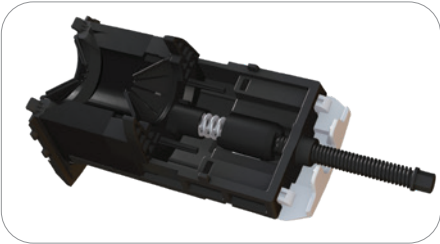
### Features

- Individual cable sealing ports with tool-less release mechanism and gel sealing
- Hinging, lockable splice trays
- Plastic slack storage basket designed for high count WTC with SWR and other rollable ribbon cable
- Six cable ports with up to six ground lugs
- Optimized for 6912 200  $\mu$ m fiber end splice
- Splice trays with universal splice modules capable of holding single fusion, mass fusion and mechanical splices as well as other devices such as passive optical splitters
- Dome-to-base O-ring seal retained into dome to prevent loss or damage, but is still replaceable if necessary

### Specifications

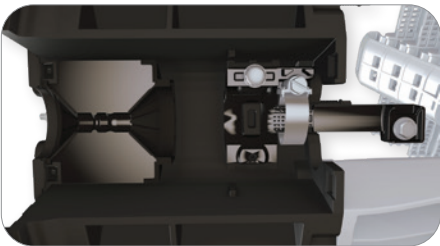
PARAMETER	VALUE
Dimensions – L x D, in (cm)	32.0 x 14 (81.3 x 35.6)
Weight, No Trays – lb (kg)	30 (13.6)
Splice Capacity – Mass (SWR), Mass (Standard)	6912, 1728
Splice Tray Capacity	8
Cable Diameter, Single Port, in (mm)	0.40" - 1.38" (10.16 - 35.052)
Application	Handhole, Aerial, Pole/Wall, Direct Bury

# Apex® X-3H Sealed Splice Closure



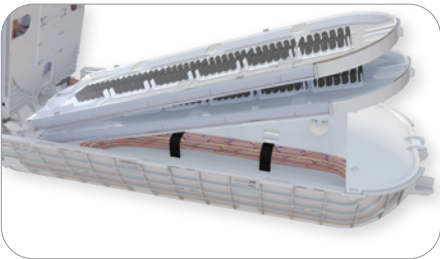
## Gel Sealing

Individual wedges located evenly around the circumference of the base are removed with the press of a button. When cables are in place and ready to be sealed, the gel is compressed by a single screw, decreasing installation time. Individual port seals ensure cables never become unsealed when adding new cables at a later date.



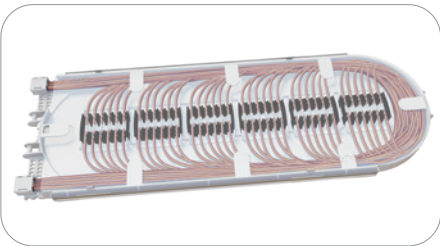
## Cable Entry Ports and Cable Attachment Unit (CAU)

The cable entry ports surrounding the circumference of the base accept single cables from 0.4" to 1.38" in diameter. Additionally, each port has the capability to be paired with its own grounding lug if necessary. Closures can be configured with enough strain relief kits for 0 to 6 cables from the factory. For closures with less than 6, additional cables can be added through the use of additional cable strain relief kits sold separately.



## Slack Storage

A molded slack storage basket allows for use of the entire cross section of the closure to maximize storage.



## Splice Trays with Modular Splice Holders

Apex X-3H round splice trays are organized in a hinging array that automatically lock when tilted to the upward position for easy access to the splice trays and slack storage below. The Apex X-3H round splice trays are only compatible with the X-3H closure. The universal splice module holds up to 24 single fusion, 6 mass fusion or 12 mass fusion double-stacked when using SWR, or 6 mechanical splices as well as devices such as PLC splitters. This eliminates the need for specifying and stocking multiple splice trays for multiple applications.

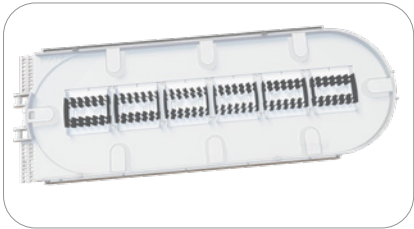
## Ordering Information

<b>AX</b>	—	<b>3H</b>	—	<b>B</b>	—	<b>L</b>	—	<b>0</b>	—	<b>2</b>	—	<b>6</b>	—	<b>X</b>
APEX CLOSURES		CLOSURE SIZE		BASKET TYPE		TRAY TYPE		NUMBER OF TRAYS		CABLE STRAIN RELIEF HARDWARE KITS		NUMBER OF GROUND LUGS		INNER BASKET
		3H = X-3H Size		B = X-3H Sized Basket		X = No preinstalled tray L = X-3 Square Tray Loaded with splice modules		0 OR 8		0 1 2 3 4 5 6		0 1 2 3 4 5 6		X = No Inner Basket

# Apex® X-3H Sealed Splice Closure

## Splice Trays and Splice Modules

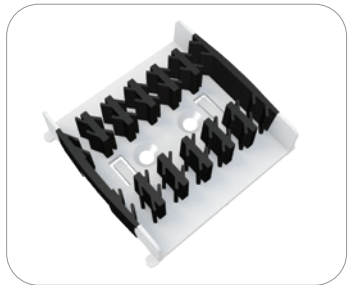
Apex X-3H closures utilize X-3H round splice trays. Trays can be ordered empty or fully loaded with splice modules. For “rollable” type ribbon such as AFL’s SpiderWeb Ribbon®, trays can be fully loaded for 72 double-stacked mass splices, or 864 fibers per tray. For standard ribbon, AFL recommends half loaded for 18 mass splices single-stacked, or 216 fibers.



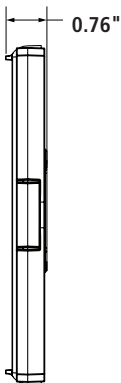
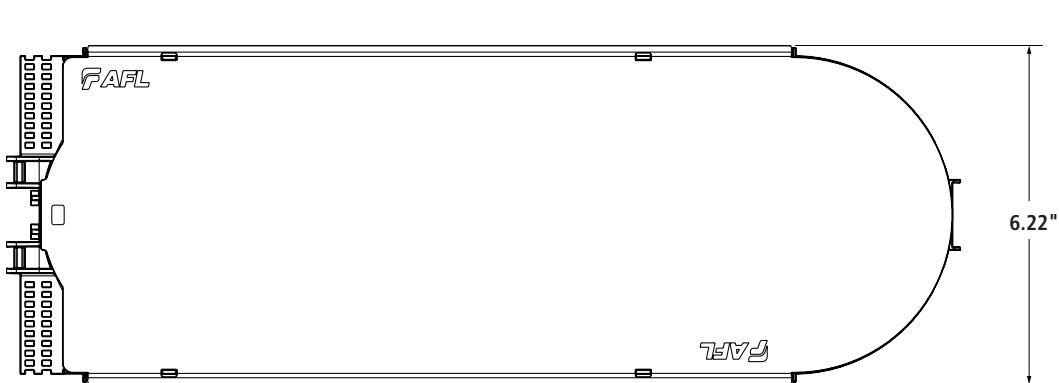
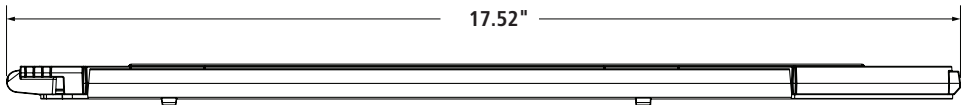
## Ordering Information

DESCRIPTION	MASS	AFL NO.
X-3H Tray Fully Loaded with Six (6) Splice Modules (864 fibers per tray only recommended for rollable ribbon, e.g. AFL SWR)	864**	AX-TRAY-3-R-6
Additional splice module (18 single fusion triple stacked, 12 mass fusion double stacked, 6 mechanical) – Pack of 20	—	AX-TRAY-MOD-20
X-3H Round Tray Empty	—	AX-TRAY-3-R-E
FP-40 40 mm Single Fiber Slim Protection Sleeve	—	S018262
FP-60 60 mm Single Fiber Slim Protection Sleeve	—	S018263

\* 864 fibers per tray with mass fusion (6912 total closure capacity) only recommended for 200 µm type rollable ribbon. For 250 µm, cut capacity in half with single-stacking.  
 \*\* When using AFL’s Slim Protection Sleeves



## Dimensions



## Apex® X-3H Sealed Splice Closure

### Installation Kits and Accessories

The AFL Apex closure line has a variety of installation accessories kits to fit many applications. Additional accessories may be available. Contact AFL.



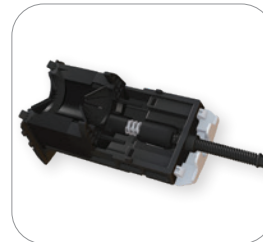
CAU Kit



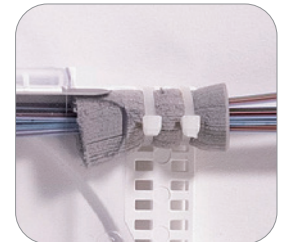
Ring Clamp Replacement Kit



O-Ring Grease Kit



Wedge Replacement Kit



Foam Retention

### Ordering Information — Replacement Kits

DESCRIPTION	AFL NO.
<b>REPLACEMENT KITS</b>	
X-3 and X-3H Single Cable Strain Relief/Cable Attachment Unit (CAU) Kit	AX-KIT-CBLSTRN-3
X-3 and X-3H Dome-to-Base Locking Ring Clamp Replacement Kit	AX-KIT-CLAMP-3
X-3 and X-3H Dome Replacement Kit	AX-KIT-DOME-3
X-3 and X-3H Inner Base Gel Replacement Kit	AX-KIT-GEL-3
Apex O-Ring Grease, Pack of 10	AX-KIT-GREASE-10
X-3 and X-3H Dome to Base O-Ring Replacement Kit	AX-KIT-ORING-3
X-3 and X-3H Wedge Replacement Kit	AX-KIT-WEDGE-3
WTC-SWR Bundle Splice Tray Retention Kit - Includes 25 foam grommets for retaining SWR bundles to splice trays	HW000406
Velcro, 75 Foot Length Roll – For securing SWR bundles in the slack basket	FC001759



Apex Aerial Hanger Bracket



Apex Pole/Wall Mount



Adjustable Aerial Hanger Bracket



Mesh Transition Tubing



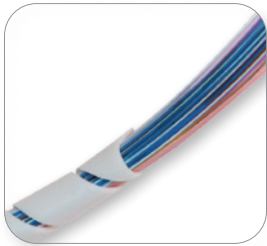
Universal Installation Stand

### Ordering Information — Accessories

DESCRIPTION	AFL NO.
<b>ACCESSORIES</b>	
X-3 and X-3H Pole/wall mount kit	AX-BR33
Aerial strand mount hanger kit	AX-KIT-AERIAL-1
Adjustable Aerial Strand Mount Hanger kit	AX-KIT-AERIAL-ADJ
ADSS Aerial hanger brackets	AX-KIT-AERIAL-ADSS
X-3 and X-3H Multi-Drop Cable Entry Kit (fits up to 4 cables 0.20" to 0.39" in diameter or flat drop cable)	AX-KIT-DROP-4-3
Apex Internal Multiple Ground Bonding Kit	AX-KIT-GNDLD-5
Apex Cable Bonding Kit (Bonds armored cable sheath to ground) – Pack of 10	AX-KIT-GROUND-10
1/4" Colored Mesh Transition Tubing, 250' Spool (*Replace "XX" with color per TIA-598 color code - BL, OR, GR, BR, SL, WH, RD, BK, YL, VI, RS or AQ)	AX-KIT-TUBE-014-XX*
Apex Universal Installation Stand	AX-KIT-U-STAND



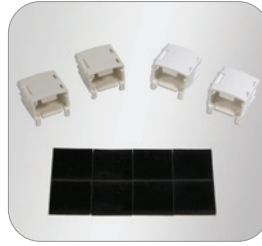
## Apex® X-3H Sealed Splice Closure



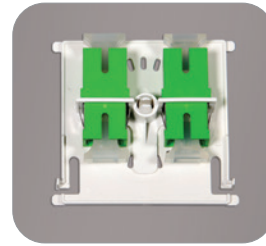
Silicone Spiral Wrap



AFRS Kit 1



AFRS Kit 2



SC Bulkhead Adapter Kit



Replacement Slack Storage Basket Tabs

### Ordering Information — Accessories

DESCRIPTION	AFL NO.
<b>ACCESSORIES</b>	
Silicone Spiral Wrap, 5.5 Foot Length	FC001657
Apex Advanced Fiber Retention System (AFRS) Kit 1 – Used for Ribbon Cable (Flat Matrix, SWR, Tubed, Central Core). Kit includes: Mesh Basket Adapter (2 ea.), Mesh Housing (2 ea.), Mesh Insert (24 ea.), V-Clips (12 ea.), and Clean Cut Gray Mesh (13 ft.).	AX-KIT-AFRSRBN
Apex AFRS Kit 2 – Used for Loose Tube Cable. Kit includes: V-Clip (24 ea.) and Retention Pads (6 sheets of 8 pads)	AX-KIT-AFRSLT
Apex AFRS Kit 3 – V-Clip bulk kit. Includes: V-Clips (120 ea.) and Mesh Inserts (120 ea.)	AX-KIT-AFRSVC-120
Apex AFRS Kit 4 – Mesh bulk kit. Includes: Clean Cut Gray Mesh (100 ft.)	AX-KIT-AFRSMESH-100FT
Apex AFRS Kit 5 – Mesh Housing bulk kit. Includes: Mesh Basket Adapter (10 ea.) and Mesh Housing (10 ea.)	AX-KIT-AFRSAH-10
Apex AFRS Kit 6 – Mesh Basket Adapter bulk kit. Includes: Mesh Basket Adapter (10 ea.)	AX-KIT-AFRSA-10
Apex Bulkhead Kit with Plate SC/APC Adapters, 1 kit	AX-TRAY-ASC
Apex Bulkhead Kit with Plate with SC/UPC Adapters, 1 kit	AX-TRAY-USC
Apex Bulkhead Kit with Plate SC/APC Adapters, 6 pc kit	AX-TRAY-ASC-6
Apex Bulkhead Kit with Plate SC/UPC Adapters, 6 pc kit	AX-TRAY-USC-6





## Apex® X-2 Sealed Splice Closure

The Apex X-2 is a sealed splice closure designed for protecting optical fiber splices in both above- or below-grade applications in a butt configuration. The Apex X-2 is capable of up to 576 single fusion, 1152 mass fusion with standard ribbon, or 3456 (200 µm, 1728 max for 250 µm) mass fusion with “rollable ribbon” fiber types such as AFL’s SpiderWeb Ribbon® (SWR®). 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.

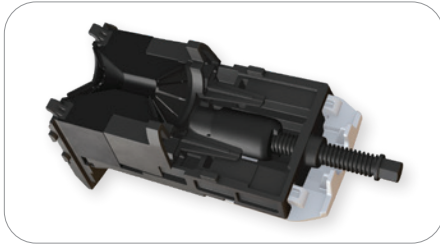
### Features

- Individual cable sealing ports with tool-less release mechanism and gel sealing
- Hinging, lockable splice trays
- Plastic slack storage basket with optional segmented basket to separate ribbon and loose tube slack storage
- Six cable ports with up to six ground lugs
- Capable of up to 16 drop cables with an expressed distribution cable using multi-drop entry kits
- Splice trays with universal splice modules capable of holding single fusion, mass fusion and mechanical splices as well as other devices such as passive optical splitters
- Dome-to-base O-ring seal retained into dome to prevent loss or damage, but is still replaceable if necessary

### Specifications

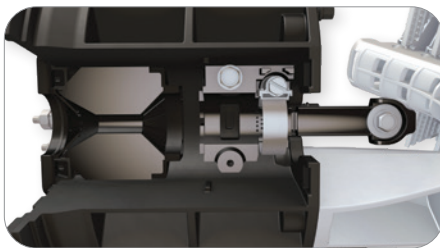
PARAMETER	VALUE
Dimensions – L x D, in (cm)	25.0 x 12.0 (64 x 30)
Weight, No Trays – lb (kg)	25 (11.3)
Splice Capacity – Single, Mass (SWR), Mass (Standard)	576, 3456, 1152
Splice Tray Capacity	6
Cable Diameter, Single Port, in (mm)	0.40" – 1.10" (10.0 – 28.0)
Cable Diameter, Multi-Drop Kit, in (mm)	0.20"-0.39" (5.0-9.9) or flat drop
Application	Direct Bury, Handhole, Aerial, Pole/Wall
Testing	Test to and Passed GR-771-CORE 20 ft. Waterhead test
Temperature Operating	-40°F to 149°F -40°C to 65°C

## Apex® X-2 Sealed Splice Closure



### Gel Sealing

Individual wedges located evenly around the circumference of the base are removed with the press of a button. When cables are in place and ready to be sealed, the gel is compressed by a single screw, decreasing installation time. Individual port seals ensure cables never become unsealed when adding new cables at a later date.



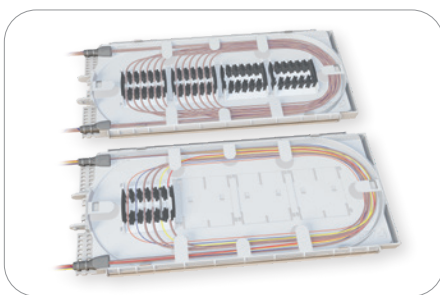
### Cable Entry Ports and Strain Relief

The cable entry ports surrounding the circumference of the base accept single cables from 0.4" to 1.1" in diameter. These ports can be expanded through the use of optional drop cable entry kits, allowing up to 4 flat drops or cables from 0.2" to 0.39" to use a single port. Additionally, each port has the capability to be paired with its own grounding lug if necessary. Closures can be configured with enough strain relief kits for 0 to 6 cables from the factory. For closures with less than 6, additional cables can be added through the use of additional cable strain relief kits sold separately.



### Slack Storage

A molded slack storage basket allows for use of the entire cross section of the closure to maximize storage. An optional segmented hinging basket is available to separate ribbon and loose tube slack, and can be locked in the upward position for access to expressed fibers below.



### Splice Trays with Modular Splice Holders

Splice trays are organized in a hinging array that automatically lock when tilted to the upward position for easy access to the splice trays and slack storage below. The universal splice module holds up to 24 single fusion, 6 mass fusion or 12 mass fusion double-stacked when using SWR, or 6 mechanical splices as well as devices such as PLC splitters or OADM devices. This eliminates the need for specifying and stocking multiple splice trays for multiple applications.

## Ordering Information

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	0 1 2 3 4 5 6	0 1 2 3 4 5 6	0 1 2 3 4 5 6	X = No Inner Basket B = Include Inner Basket

## Apex® X-2 Sealed Splice Closure

### Splice Trays and Splice Modules

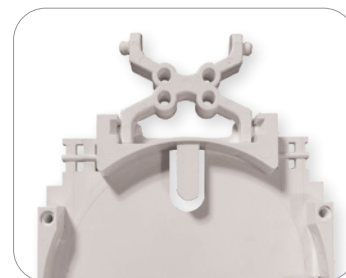
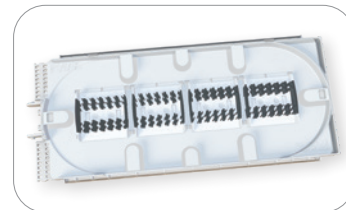
Apex X-2 closures utilize X-2 size splice trays. Trays can be ordered fully loaded or half loaded with splice modules. For “rollable” type ribbon such as AFL’s SpiderWeb Ribbon®, trays can be fully loaded for 48 double-stacked mass splices, or 576 fibers total per tray. For standard ribbon, AFL recommends partially loaded for up to 16 mass splices single-stacked, or 192 fibers. Adapter kits available to install FOSSC® A-B optical trays.

### Ordering Information

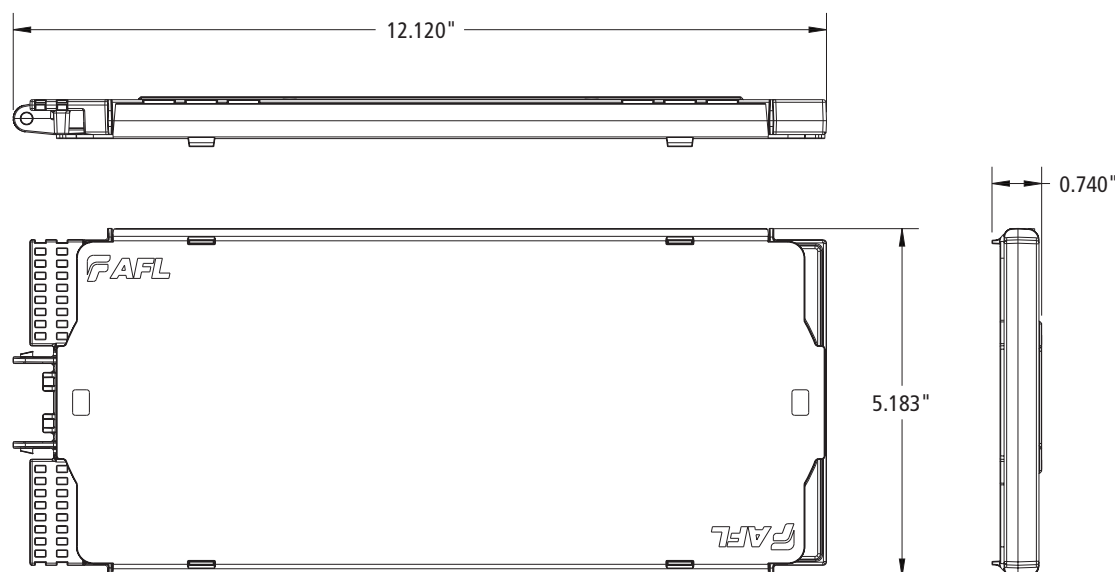
DESCRIPTION	TRAY CAPACITY		AFL NO.
	SINGLE	MASS	
X-2 Tray Loaded with Two Splice Modules	48**	288	AX-TRAY-2-2
X-2 Tray Fully Loaded with Four Splice Modules (576 fibers per tray only recommended for rollable ribbon, e.g. AFL SWR)	96**	576*	AX-TRAY-2-4
Additional splice module (18 single fusion triple stacked, 12 mass fusion double stacked, 6 mechanical) – Pack of 20	–	–	AX-TRAY-MOD-20
X-2 Tray Empty	–	–	AX-TRAY-2-E
FP-40 40 mm Single Fiber Slim Protection Sleeve	–	–	S018262
FP-60 60 mm Single Fiber Slim Protection Sleeve	–	–	S018263

\* 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.

\*\* When using AFL’s Slim Protection Sleeves



### Dimensions



## Apex® X-2 Sealed Splice Closure

### Installation Kits and Accessories

The AFL Apex closure line has a variety of installation accessories kits to fit many applications. Additional accessories may be available. Contact AFL.



CAU Kit



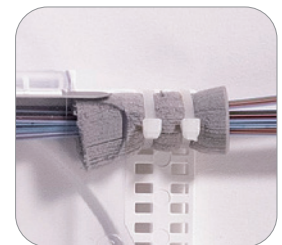
Ring Clamp Replacement Kit



O-Ring Grease Kit



Wedge Replacement Kit



Foam Retention

### Ordering Information — Replacement Kits

DESCRIPTION	AFL NO.
<b>REPLACEMENT KITS</b>	
X-2 and X-2S Single Cable Strain Relief/Cable Attachment Unit (CAU) Kit	AX-KIT-CBLSTRN
X-2 and X-2S Dome to Base O-Ring Replacement Kit	AX-KIT-ORING-2
Apex O-Ring Grease, Pack of 10	AX-KIT-GREASE-10
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 Inner Base Gel Replacement Kit	AX-KIT-GEL-2
X-2 Basket and Yoke Assembly Kit. Can be used in combination with the basket cover.	AX-KIT-BASKET-2
X-2 Inner Basket Kit	AX-KIT-SBASKET-2
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
Velcro, 75 Foot Length Roll – For securing SWR bundles in the slack basket	FC001759



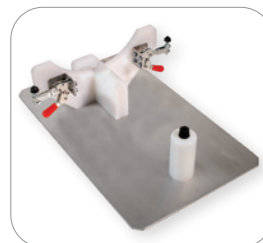
Apex Aerial Hanger Bracket



Apex Pole/Wall Mount



Adjustable Aerial Hanger Bracket



X-2 and X-2S Installation Stand



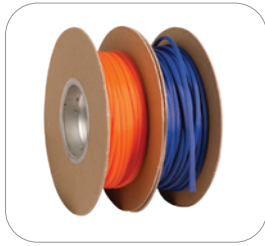
Universal Installation Stand

### Ordering Information — Accessories

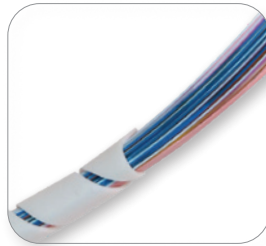
DESCRIPTION	AFL NO.
<b>ACCESSORIES</b>	
Aerial strand mount hanger kit	AX-KIT-AERIAL-1
Pole/wall mount kit	AX-BR30
Adjustable Aerial Strand Mount Hanger kit	AX-KIT-AERIAL-ADJ
ADSS Aerial hanger brackets	AX-KIT-AERIAL-ADSS
Multi-Drop Cable Entry Kit (fits up to 4 cables 0.20" to 0.39" in diameter or flat drop cable)	AX-KIT-DROP-4
X-2 and X-2S Installation Stand	FC104649
Apex Universal Installation Stand	AX-KIT-U-STAND

## Apex® X-2 Sealed Splice Closure

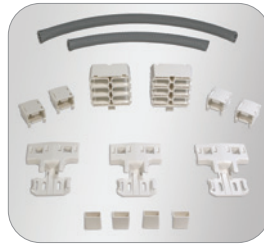
### Installation Accessories (cont.)



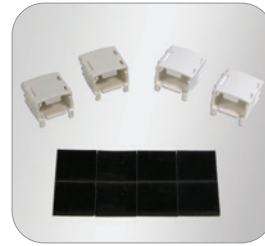
Mesh Transition Tubing



Silicone Spiral Wrap



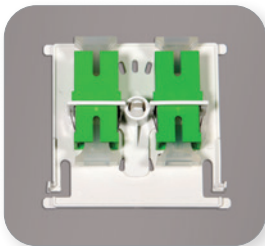
AFRS Kit 1



AFRS Kit 2



A-B Tray Adapter Kit



SC Bulkhead Adapter Kit



Replacement Slack Storage  
Basket Tabs

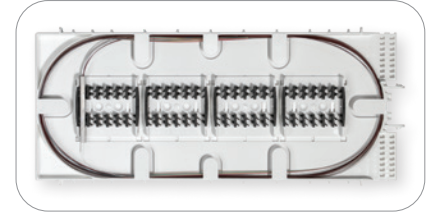
### Ordering Information — Accessories (cont.)

DESCRIPTION	AFL NO.
<b>ACCESSORIES</b>	
Apex Cable Bonding Kit (Bonds armored cable sheath to ground) – Pack of 10	AX-KIT-GROUND-10
Apex Internal Multiple Ground Bonding Kit	AX-KIT-GNDLD-5
1/4" Colored Mesh Transition Tubing, 250' Spool (*Replace "XX" with color per TIA-598 color code - BL, OR, GR, BR, SL, WH, RD, BK, YL, VI, RS or AQ)	AX-KIT-TUBE-014-XX*
Silicone Spiral Wrap, 5.5 Foot Length	FC001657
Apex Advanced Fiber Retention System (AFRS) Kit 1 – Used for Ribbon Cable (Flat Matrix, SWR, Tubed, Central Core). Kit includes: Mesh Basket Adapter (2 ea.), Mesh Housing (2 ea.), Mesh Insert (24 ea.), V-Clips (12 ea.), and Clean Cut Gray Mesh (13 ft.).	AX-KIT-AFRSRBN
Apex AFRS Kit 2 – Used for Loose Tube Cable. Kit includes: V-Clip (24 ea.) and Retention Pads (6 sheets of 8 pads)	AX-KIT-AFRSLT
Apex AFRS Kit 3 – V-Clip bulk kit. Includes: V-Clips (120 ea.) and Mesh Inserts (120 ea.)	AX-KIT-AFRSVC-120
Apex AFRS Kit 4 – Mesh bulk kit. Includes: Clean Cut Gray Mesh (100 ft.)	AX-KIT-AFRSMESH-100FT
Apex AFRS Kit 5 – Mesh Housing bulk kit. Includes: Mesh Basket Adapter (10 ea.) and Mesh Housing (10 ea.)	AX-KIT-AFRSAH-10
Apex AFRS Kit 6 – Mesh Basket Adapter bulk kit. Includes: Mesh Basket Adapter (10 ea.)	AX-KIT-AFRSA-10
Apex Restoration Kit, 1000' of 144F Non-Armored Wrapping Tube Cable (Apex X-2S is in Restoration Kit)	AX-2S-B-L-4-4-X-1R1000F
Apex A-B Tray Adapter Kit, 1 Kit of 6 pieces	AX-ADPTR-ABTRAY-6
Apex A-B Tray Adapter Kit, 10 Kits of 6 pieces	AX-ADPTR-ABTRAY-60
Apex Bulkhead Kit with Plate SC/APC Adapters, 1 kit	AX-TRAY-ASC
Apex Bulkhead Kit with Plate with SC/UPC Adapters, 1 kit	AX-TRAY-USC
Apex Bulkhead Kit with Plate SC/APC Adapters, 6 pc kit	AX-TRAY-ASC-6
Apex Bulkhead Kit with Plate SC/UPC Adapters, 6 pc kit	AX-TRAY-USC-6
Apex Replacement Slack Storage Basket Tabs – Pack of 25	AX-KIT-BTAB-25

## Apex® X-2 Sealed Splice Closure

### Splitter Splice Trays

Passive optical splitters, or PLCs (Planar Lightwave Circuits), can be provided preinstalled into the Apex X-2 splice tray. 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.
<b>SPLITTER MODULES FOR SPLICE TRAYS</b>		
X-2 Tray with Four Splice Modules, (1) 1x2 PLC Splitter	1x2	AX-TRAY-2-12-1
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) 1x2 PLC Splitter and Separate Splicing Tray with Four Splice Modules	1x2	AX-TRAY-2-12-2
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) 1x2 PLC Splitter and 2 Separate Splicing Trays with Four Splice Modules each	1x2	AX-TRAY-2-12-3
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 Sealed Splice Closure

The Apex X-2S is a sealed splice closure designed for protecting optical fiber splices in both above- or below-grade applications in a butt configuration. The Apex X-2S is capable of up to 288 single fusion, 576 mass fusion with standard ribbon, or 1728 (200  $\mu\text{m}$ , 864 max for 250  $\mu\text{m}$ ) mass fusion with "rollable ribbon" fiber types such as AFL's SpiderWeb Ribbon® (SWR®). 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.

### Features

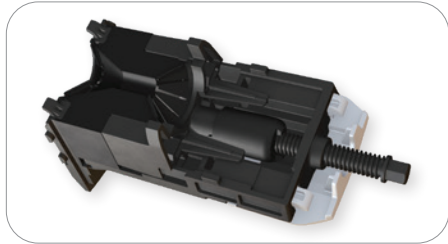
- Individual cable sealing ports with tool-less release mechanism and gel sealing
- Hinging, lockable splice trays
- Plastic slack storage basket with convenient multiple tie-down points with Velcro or tie wraps
- Six cable ports with up to six ground lugs
- Capable of up to 16 drop cables with an expressed distribution cable using multi-drop entry kits
- Splice trays with universal splice modules capable of holding single fusion, mass fusion and mechanical splices as well as other devices such as passive optical splitters
- Dome-to-base O-ring seal retained into dome to prevent loss or damage, but is still replaceable if necessary

### Specifications

PARAMETER	VALUE
Dimensions – L x D, in (cm)	20.0 x 12.0 (51 x 30)
Weight, No Trays – lb (kg)	22 (10)
Splice Capacity – Single, Mass (SWR), Mass (Standard)	288, 1728, 576
Splice Tray Capacity	6
Cable Diameter, Single Port, in (mm)	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
Application	Direct Bury, Handhole, Aerial, Pole/Wall
Testing	Test to and Passed GR-771-CORE 20 ft. Waterhead test
Temperature Operating	-40°F to 149°F -40°C to 65°C

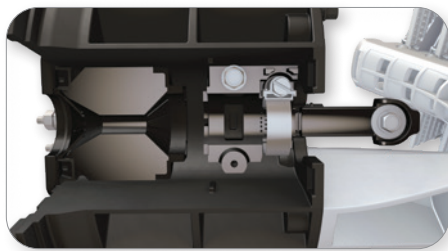


## Apex® X-2S Sealed Splice Closure



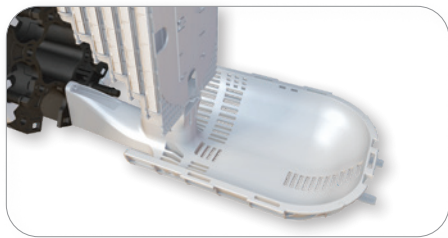
### Gel Sealing

Individual wedges located evenly around the circumference of the base are removed with the press of a button. When cables are in place and ready to be sealed, the gel is compressed by a single screw, decreasing installation time. Individual port seals ensure cables never become unsealed when adding new cables at a later date.



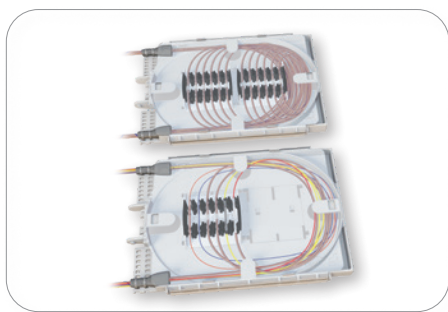
### Cable Entry Ports and Strain Relief

The cable entry ports surrounding the circumference of the base accept single cables from 0.4" to 1.1" in diameter. These ports can be expanded through the use of optional drop cable entry kits, allowing up to 4 flat drops or cables from 0.2" to 0.39" to use a single port. Additionally, each port has the capability to be paired with its own grounding lug if necessary. Closures can be configured with enough strain relief kits for 0 to 6 cables from the factory. For closures with less than 6, additional cables can be added through the use of additional cable strain relief kits sold separately.



### Slack Storage

A molded slack storage basket allows for use of the entire cross section of the closure to maximize storage.



### Splice Trays with Modular Splice Holders

Splice trays are organized in a hinging array that automatically lock when tilted to the upward position for easy access to the splice trays and slack storage below. The universal splice module holds up to 24 single fusion, 6 mass fusion or 12 mass fusion double-stacked when using SWR, or 6 mechanical splices as well as devices such as PLC splitters and OADM devices. This eliminates the need for specifying and stocking multiple splice trays for multiple applications.

### Ordering Information

AX	2S	B	L	0	2	6	X
APEX CLOSURES	CLOSURE SIZE 2S = X-2S Size	BASKET TYPE B = X-2S Sized Basket	TRAY TYPE X = No preinstalled tray L = X-2S Tray Loaded with splice modules	NUMBER OF TRAYS 0 1 2 3 4 5 6	CABLE STRAIN RELIEF HARDWARE KITS 0 1 2 3 4 5 6	NUMBER OF GROUND LUGS 0 1 2 3 4 5 6	INNER BASKET X = No Inner Basket

## Apex® X-2S Sealed Splice Closure

### Splice Trays and Splice Modules

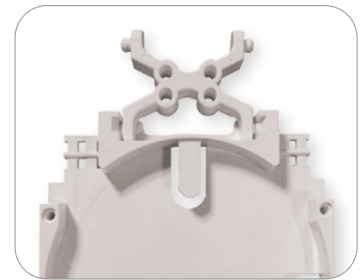
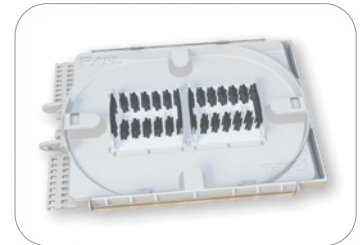
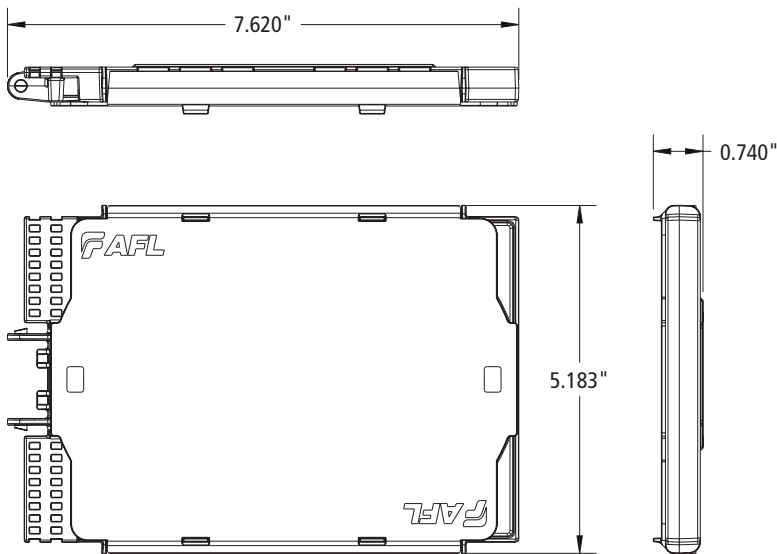
Apex X-2S closures utilize X-2S size splice trays. Trays can be ordered fully loaded or half loaded with splice modules. For “rollable” type ribbon such as AFL’s SpiderWeb Ribbon®, trays can be fully loaded for 24 mass splices, or 288 fibers per tray. For standard ribbon, AFL recommends half loaded for 6 mass splices single-stacked, or 72 fibers. Adapter kits available to install up to four FOSC® A optical trays.

### Ordering Information

DESCRIPTION	TRAY CAPACITY		AFL NO.
	SINGLE	MASS	
X-2S Tray Loaded with One Splice Module	24**	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)	48**	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
FP-40 40 mm Single Fiber Slim Protection Sleeve	—	—	S018262
FP-60 60 mm Single Fiber Slim Protection Sleeve	—	—	S018263

\* 288 fibers per tray with mass fusion double-stacking (1728 total closure capacity) only recommended for 200 μm type rollable ribbon. For 250 μm, cut capacity in half with single-stacking.  
 \*\* When using AFL’s Slim Protection Sleeves

### Dimensions



## Apex® X-2S Sealed Splice Closure

### Installation Kits and Accessories

The AFL Apex closure line has a variety of installation accessories kits to fit many applications. Additional accessories may be available. Contact AFL.



CAU Kit



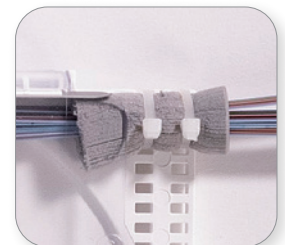
Ring Clamp Replacement Kit



O-Ring Grease Kit



Wedge Replacement Kit



Foam Retention

### Ordering Information — Replacement Kits

DESCRIPTION	AFL NO.
<b>REPLACEMENT KITS</b>	
X-2 and X-2S Single Cable Strain Relief/Cable Attachment Unit (CAU) Kit	AX-KIT-CBLSTRN
X-2 and X-2S Dome to Base O-Ring Replacement Kit	AX-KIT-ORING-2
Apex O-Ring Grease, Pack of 10	AX-KIT-GREASE-10
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 Inner Base Gel Replacement Kit	AX-KIT-GEL-2
X-2S Basket and Yoke Assembly Kit. Can be used in combination with the basket cover.	AX-KIT-BASKET-2S
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
Velcro, 75 Foot Length Roll – For securing SWR bundles in the slack basket	FC001759



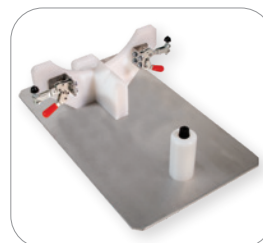
Apex Aerial Hanger Bracket



Apex Pole/Wall Mount



Adjustable Aerial Hanger Bracket



X-2 and X-2S Installation Stand



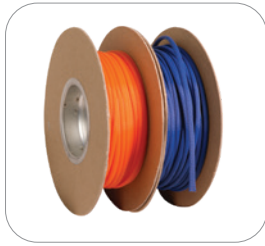
Universal Installation Stand

### Ordering Information — Accessories

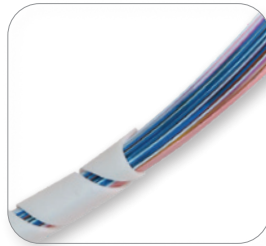
DESCRIPTION	AFL NO.
<b>ACCESSORIES</b>	
Aerial strand mount hanger kit	AX-KIT-AERIAL-1
Pole/wall mount kit	AX-BR30
Adjustable Aerial Strand Mount Hanger kit	AX-KIT-AERIAL-ADJ
ADSS Aerial hanger brackets	AX-KIT-AERIAL-ADSS
Multi-Drop Cable Entry Kit (fits up to 4 cables 0.20" to 0.39" in diameter or flat drop cable)	AX-KIT-DROP-4
X-2 and X-2S Installation Stand	FC104649
Apex Universal Installation Stand	AX-KIT-U-STAND

## Apex® X-2S Sealed Splice Closure

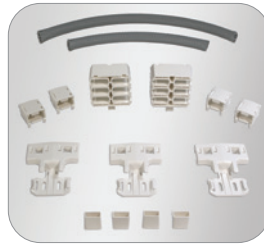
### Installation Accessories (cont.)



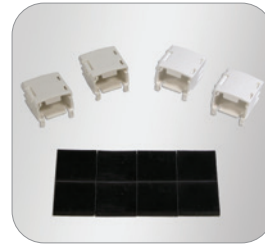
Mesh Transition Tubing



Silicone Spiral Wrap



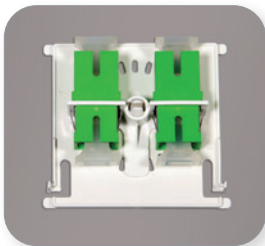
AFRS Kit 1



AFRS Kit 2



A-B Tray Adapter Kit



SC Bulkhead Adapter Kit



Replacement Slack Storage  
Basket Tabs

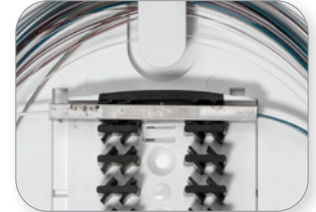
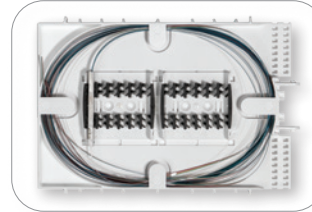
### Ordering Information — Accessories (cont.)

DESCRIPTION	AFL NO.
<b>ACCESSORIES</b>	
1/4" Colored Mesh Transition Tubing, 250' Spool (*Replace "XX" with color per TIA-598 color code - BL, OR, GR, BR, SL, WH, RD, BK, YL, VI, RS or AQ)	AX-KIT-TUBE-014-XX*
Silicone Spiral Wrap, 5.5 Foot Length	FC001657
Apex Cable Bonding Kit (Bonds armored cable sheath to ground) – Pack of 10	AX-KIT-GROUND-10
Apex Internal Multiple Ground Bonding Kit	AX-KIT-GNDLD-5
Apex Advanced Fiber Retention System (AFRS) Kit 1 – Used for Ribbon Cable (Flat Matrix, SWR, Tubed, Central Core). Kit includes: Mesh Basket Adapter (2 ea.), Mesh Housing (2 ea.), Mesh Insert (24 ea.), V-Clips (12 ea.), and Clean Cut Gray Mesh (13 ft.).	AX-KIT-AFRSRBN
Apex AFRS Kit 2 – Used for Loose Tube Cable. Kit includes: V-Clip (24 ea.) and Retention Pads (6 sheets of 8 pads)	AX-KIT-AFRSLT
Apex AFRS Kit 3 – V-Clip bulk kit. Includes: V-Clips (120 ea.) and Mesh Inserts (120 ea.)	AX-KIT-AFRSVC-120
Apex AFRS Kit 4 – Mesh bulk kit. Includes: Clean Cut Gray Mesh (100 ft.)	AX-KIT-AFRSMESH-100FT
Apex AFRS Kit 5 – Mesh Housing bulk kit. Includes: Mesh Basket Adapter (10 ea.) and Mesh Housing (10 ea.)	AX-KIT-AFRSAH-10
Apex AFRS Kit 6 – Mesh Basket Adapter bulk kit. Includes: Mesh Basket Adapter (10 ea.)	AX-KIT-AFRSA-10
Apex Restoration Kit, 1000' of 144F Non-Armored Wrapping Tube Cable (Apex X-2S is in Restoration Kit)	AX-2S-B-L-4-4-X-1R1000F
Apex A-B Tray Adapter Kit, 1 Kit of 6 pieces	AX-ADPTR-ABTRAY-6
Apex A-B Tray Adapter Kit, 10 Kits of 6 pieces	AX-ADPTR-ABTRAY-60
Apex Bulkhead Kit with Plate SC/APC Adapters, 1 kit	AX-TRAY-ASC
Apex Bulkhead Kit with Plate with SC/UPC Adapters, 1 kit	AX-TRAY-USC
Apex Bulkhead Kit with Plate SC/APC Adapters, 6 pc kit	AX-TRAY-ASC-6
Apex Bulkhead Kit with Plate SC/UPC Adapters, 6 pc kit	AX-TRAY-USC-6
Apex Replacement Slack Storage Basket Tabs – Pack of 25	AX-KIT-BTAB-25

## Apex® X-2S Sealed Splice Closure

### Splitter Splice Trays

Passive optical splitters, or PLCs (Planar Lightwave Circuits), can be provided preinstalled into the Apex X-2S splice tray. 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.
<b>SPLITTER MODULES FOR SPLICE TRAYS</b>		
X-2S Tray with Four Splice Modules, (1) 1x2 PLC Splitter	1x2	AX-TRAY-2S-12-1
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) 1x2 PLC Splitter and Separate Splicing Tray with Two Splice Modules	1x2	AX-TRAY-2S-12-2
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) 1x2 PLC Splitter and 2 Separate Splicing Trays with Two Splice Modules each	1x2	AX-TRAY-2S-12-3
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





Expandable to support various cable diameters



Ease of installation (no tapes, washers, or glue)



Multiple layers of sealing protection

## LightGuard® Peel and Seal Grommet Systems for Sealed Fiber Optic Closures

AFL's cable sealing grommet technology for the LightGuard (LG) Sealed Fiber Optic Closures improves sealing technology utilizing MULTICENTRIC® Grommets that do away with time-consuming tasks such as installing washers and messy sealing tapes for cable entry. MULTICENTRIC Grommets are designed to accept a wide range of cable diameters, eliminating the need to stock a variety of diameter-specific grommet kits.

Conversion kits for old LG-100, LG-200, and LG-300 closures allows for "Peel and Seal" grommet technology to be used without changing out the existing closure.

### Features

- All Peel and Seal Grommet Systems support loose tube, core tube, dielectric and armored cable designs
- Installation and re-entry using common hand tools
- Accepts a wide range of cable diameters
- Fast and easy to install
- Fits existing AFL LightGuard sealed closures
- Fully sealed to protect fiber and splices ensuring longevity
- Full conversion kits and dual cable entry port kits



Single



Dual



Quad

### Ordering information

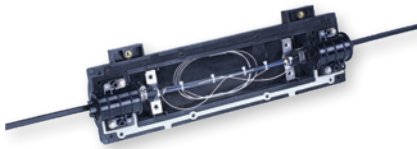
#### SEALED CLOSURE FULL CONVERSION KITS (SINGLE AXIS CABLE ENTRY)

DESCRIPTION	AFL NO.
3 Port Drop Grommet (LG-150/250)	FC000655
Dual Express Grommets for LG-350	FC000337
Quad Express Grommets for LG-350	FC000421
Single Cable Grommet Kit, Drop Port	FC000628
4 Port Drop Grommet (LG-350 / LG-350-AC)	FC000422
LG-350 Express Single Cable Grommet Kit	FC000726
LG-350 Drop Single Cable Grommet Kit	FC000727

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	515

Contact AFL for further details.



In-line Repair Closure (IRC) for repair of flat or round drop cables

## Features

- Accommodates cables to 0.70" O.D for splicing and grounding/bonding
- Incorporates the Peel and Seal Grommet System, fully sealing the closure
- Includes removable, integral central splicing module and individual cable retention clamps
- Requires only a common can wrench for installation

## LightGuard® 55 Sealed Fiber Optic Splice Closure

Designed with versatility in mind, the LightGuard (LG) 55 sealed closure from AFL offers a variety of solutions including repair and distribution splicing, grounding for Fiber-in-the-Loop applications, and for use as an isolation gap with armored cables. This closure accepts stranded loose tube or ribbon fiber cables in either armored or dielectric configurations and can be utilized in a butt or in-line configuration.

The LG-55 closure incorporates a unique cable clamp design sealing the cable, allowing both of the cover halves to be removed without disturbing the contents. In addition, AFL's Peel & Seal Grommet System™ is incorporated to ensure a tight fit on various cable diameters, fully sealing the closure and protecting the fiber while eliminating cumbersome tape and washers—making installation fast and easy.

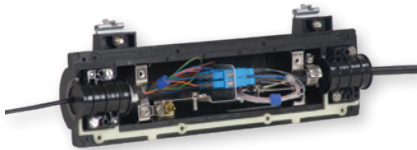
## Specifications

PARAMETER	VALUE
Splice Capacity (Max.)—Single, Mass, Mechanical	24, n/a, 24
Number of Splice Trays (Max.)—Single, Mass, Mechanical*	1, n/a, 1
Cable Entrance Configuration	Butt or In-line
Cable Sizes (Min. O.D. - Max. O.D.)	<b>(2) Express Ports</b> 0.40" - 0.70" (10.0 - 25.4) 0.26" - 0.44" (6.6 - 11.2)
<b>Included Grommets</b> Single in. (mm) Double Express Port Only in. (mm)	
<b>Additional Grommets</b> Quad Express Port Only in. (mm)	
Dimensions—(L x D) in. (mm)	14.0" x 4.0" (343.0 x 101.6)
Weight—lbs. (kg)	3.0 (1.36)

## Ordering Information

DESCRIPTION	MODEL NO.	AFL NO.
LG-55 FC000034-PS Fiber Optic Splice Closure—Stores up to 32 single fusion, includes 2 single cable grommets and 1 dual cable grommet kit for sealing/retention and 2 ground terminals. Splice tray and hanger brackets included. Not included: Cable Grounding Kits	LG55-U-1	FC000034-PS
LL-2425 Single Splice Tray—Stores (32) single fusion splices. Maximum of 1 trays in the LG55. Tray Included.	LL-2425	FC000053
LG-350 Single Grommet Kit (Min. 0.40" - Max. 1.00") For use in LG-55 on Express Port side.	LG-350 Exp Single Kit	FC000726
LG-350 Dual Grommet Kit (Min. 0.26" - Max. 0.44") For use in LG-55 on Express Port side.	LG-350 Exp Dual Kit	FC000337
LG-350 Quad Grommet Kit (Min. 0.26" - Max. 0.38") For use in LG-55 on Express Port side.	LG-350 Exp Quad Kit	FC000421
LG-55 Grommet Kit (1) 3 flat drop grommet (flat drop 0.31" or round cable up to 0.25") and (1) dual grommet (Min. 0.26" - Max. 0.44").	LG-55 Drop Kit	FC000807
Cable Grounding Kit (pack of 5)—Clamp-On Ground Cable Only	CGK-5	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	VHB Tape	FA000089





## LightGuard® 55-SC Sealed Fiber Optic Splice Closure

AFL's LightGuard (LG) 55-SC sealed closure retains all the features of the LG-55, but includes a unique patching system that utilizes pre-terminated SC fiber assemblies or field-installable connectors such as the FASTConnect® SC.

An innovative solution that can be used to facilitate a link between traffic control cabinets and entrance cables, the LG-55-SC closure allows for rapid restoration and minimal damage to a fiber optic cable should an impact disable the cabinet. A breakable tie wrap secures the pre-connectorized cable to one side of the closure (traffic control cabinet), while the main entrance cable is secured with a more rugged cable clamp, allowing the system to separate during a damaging impact.

### Features

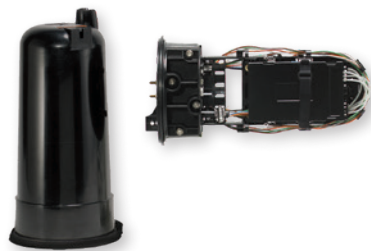
- Durable cover assembly that provides protection for all internal components and acts as an interface/anchor to the cable clamps
- Unique cable clamp seal to anchor the cable to the cover assembly
- Movable sheath retention bracket keeps cable bends at a minimum
- Accommodates up to four SC/UPC connectors
- Utilizes AFL's Peel & Seal Grommet System™, ensuring a tight fit on various cable diameters while eliminating cumbersome tape and washers
- Requires only a common can wrench for installation

### Specifications

PARAMETER	VALUE
Cable Sizes (Min. O.D. - Max. O.D.)	0.4" - 0.7"
Maximum Cable Entry	2 ports (one each end)
Dimensions - (L x D) in. (mm)	14" x 4" (356.0 mm x 102.0 mm)

### Ordering Information

DESCRIPTION	MODEL NO.	AFL NO.
The LG-55-SC allows for 4 SC connections to be installed. A FASTConnect or FUSEConnect, field installable connectors would be used for the connections. The field side cable is held with a tie-wrap while the signal side is secured to the closure with a hose clamp. This allows for a break-out should a vehicle make contact with a traffic box leaving the signal side cable intact.	LG-55-SC	FC000481-PS
Dual Cable Entry Port Kit – Allows two cables to enter closure from each cable port.	Dual Cable Entry Port Kit	FC000062
Quad Cable Entry Port Kits – Allows 4 cables to enter closure from each cable port	Quad Cable Entry Port Kit	FC000421
Cable Grounding Harness Kit – Includes (5) Clamp-On 9.5" long ground wires AWG #6 conductor	CGK-5	FC001091



## LightGuard® 150 Sealed Fiber Optic Splice Closure

The LightGuard (LG) 150 is a sealed dome closure designed for small count fiber splicing (up to 48 single or 192 mass) in a butt configuration. Utilized in aerial or underground environments where a sealed closure is required, the LG-150 is ideal for express or ring applications and requires only a common can wrench for installation.

### Features

- Supports stranded loose tube or ribbon fiber cables in either armored or dielectric configurations
- Installation and re-entry requires only a common can wrench
- Fully sealed to protect fiber and splices ensuring longevity
- Fully kitted with all parts to install five cables
- Designed and tested to Telcordia® GR-771 requirements
- Rural Utilities Service (RUS) Listed

### Specifications

PARAMETER	VALUE	
Splice Capacity (Max.)—Single, Mass, Mechanical	48, 192, 48	
Number of Splice Trays (Max.)—Single, Mass, Mechanical*	4, 3, 4	
Cable Entrance Configuration	Butt	
Cables	5	
Cable Sizes (Min. O.D. - Max. O.D.) Included Grommets	<b>(2) Express Ports</b>	<b>(3) Drop Ports</b>
Single in. (mm)	0.26" - 0.62" (6.6 - 15.7)	0.26" - 0.62" (6.6 - 15.7)
<b>Additional Grommets</b>		
(3) Flat Drop Port Only in. (mm)	n/a	0.19" x 0.34" (4.8 x 8.6) or 0.25" round (6.4)
Dimensions—(L x D) in. (mm)	16.25" x 8.75" (412.75 x 222.3)	
Weight—lbs. (kg)	10.5 (4.76)	

## LightGuard® 150 Sealed Fiber Optic Splice Closure

### Ordering Information

DESCRIPTION	AFL NO.
LG-150-U-0 Fiber Optic Splice Closure—Stores 48 single fusion or 192 mass fusion, includes (5) cable kits for sealing/retention and (2) ground terminals with removable bond. Not included: Splice Trays, Cable Grounding Kits or Hanger Brackets	FC000001-PS
LL-2450 Single Splice Tray—Stores (12) single fusion splices. Maximum of 4 trays in the LG150	91957-00
LL-4850 Mass Splice Tray—Stores (8) mass fusion splices (96 F). Maximum of 4 trays in the LG-150	91958-00
LL-1248 Universal Splice Tray—Stores (12) single fusion splices or (8) mass fusion splices (96 F), or *Mechanical. Max. of 4 trays in the LG-150	911221-00-00
LG-150/250 Single Grommet Kit (Min. 0.26" - Max. 0.62")	FC000704
LG-150/250 3 Flat Drop Grommet Kit (standard flat drop 0.31" or round cable up to 0.25")	FC000655
Universal Aerial Strand Hanger Kit—For use with LG-150/250/350	FC000006
Extended Offset Strand Hanger Kit—For use with LG-150/250/350	FC000208
Pole or Wall Mount Bracket—For use with LG-150/250/350	LGBR-30
OPGW Dual Cable Bracket Kit for use only when installing closure on OPGW cable—For use with LG-150/250/350	FC000683
OPGW Quad Cable Bracket Kit—For use with LG-150/250	FC000746
1x6 Fiber Router Kit with furcation tubes	FC000070
CGK-5 Cable Grounding Kit (pack of 5)—Clamp-On Ground Cable Only	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	FA000089
O-Ring and Lock Ring Kit—For use with LG-150/250	FC000771

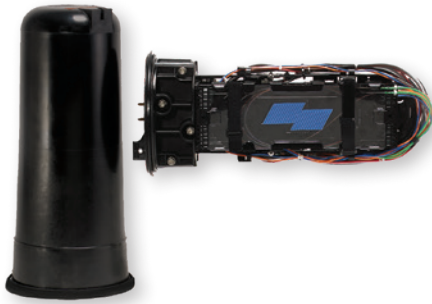
\* See Accessory Specifications.

See Splice Tray Specifications.

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

Contact AFL for further details.



## LightGuard® 250 Sealed Fiber Optic Splice Closure

The LightGuard (LG) 250 is a sealed dome closure designed for medium count fiber splicing (up to 144 single or 432 mass) in a butt configuration. Utilized in aerial or underground environments where a sealed closure is required, the LG-250 is ideal for express or ring applications and requires only a common can wrench for installation.

### Features

- Supports stranded loose tube or ribbon fiber cables in either armored or dielectric configurations
- Installation and re-entry requires only a common can wrench
- Fully sealed to protect fiber and splices ensuring longevity
- Fully kitted with all parts to install five cables

### Specifications

PARAMETER	VALUE	
Splice Capacity (Max.)—Single, Mass, Mechanical	144, 432, 48	
Number of Splice Trays (Max.)—Single, Mass, Mechanical*	4, 3, 4	
Cable Entrance Configuration	Butt	
Cables	5	
Cable Sizes (Min. O.D. - Max. O.D.)		
<b>Included Grommets</b> Single in. (mm)	<b>(2) Express Ports</b> 0.26" - 0.62" (6.6 - 15.7)	<b>(3) Drop Ports</b> 0.26" - 0.62" (6.6 - 15.7)
<b>Additional Grommets</b> (3) Flat Drop Port Only in. (mm)	n/a	0.19" x 0.34" (4.8 x 8.6) or 0.25" round (6.4)
Dimensions—(L x D) in. (mm)	19.0" x 8.75" (482.6 x 222.3)	
Weight—lbs. (kg)	10.5 (4.76)	

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## LightGuard® 250 Sealed Fiber Optic Splice Closure

### Ordering Information

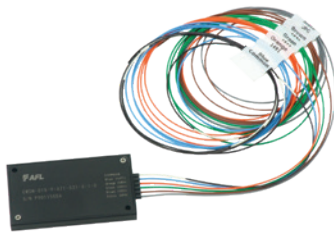
DESCRIPTION	AFL NO.
LG-250-U-0 Fiber Optic Splice Closure—Stores 144 single fusion or 432 mass fusion, includes (5) cable kits for sealing/retention and (2) ground terminals with removable bond. Not included: Splice Trays, Cable Grounding Kits or Hanger Brackets	FC000002-PS
LL-2400 Single Splice Tray—Stores (24) single fusion splices. Maximum of 4 trays in the LG-250.	91710-06
LL-2448 Universal Splice Tray—Stores (24) single fusion or (4) mass fusion splices (48 F). Maximum of 3 trays in the LG-250	911289-00-02
LL-4848 Mass Splice Tray—Stores (12) mass fusion splices (144 F). Maximum of 3 trays in the LG-250	911437-00-02
LL-2448-48S Single Splice Tray—Stores (48) single fusion splices. Maximum of 3 trays in the LG-250	FA000045
LG-150/250 Single Grommet Kit (Min. 0.26" - Max. 0.62")	FC000704
LG-150/250 3 Flat Drop Grommet Kit (standard flat drop 0.31" or round cable up to 0.25")	FC000655
Universal Aerial Strand Hanger Kit—For use with LG-150/250/350	FC000006
Extended Offset Strand Hanger Kit—For use with LG-150/250/350	FC000208
PWK Pole or Wall Mount Bracket—For use with LG-150/250/350	LGBR-30
OPGW Dual Cable Bracket Kit—For use with LG-150/250/350	FC000683
OPGW Quad Cable Bracket Kit—For use with LG-150/250	FC000746
1x6 Fiber Router Kit with furcation tubes	FC000070
CGK-5 Cable Grounding Kit (pack of 5)—Clamp-On Ground Cable Only	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	FA000089
O-Ring and Lock Ring Kit—For use with LG-150/2	FC000771

\* See Accessory Specifications.  
See Splice Tray Specifications.

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

Contact AFL for further details.



CWD4 4-Channel Mini Module



CWD8 8-Channel Mini Module

## Thin Film Filter (TFF) Compact Series CWDM

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

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

### Features

- Low insertion loss
- Compact size
- High thermal stability

### Applications

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

## Specifications

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

\* Actual optical specifications will vary based on product configuration

1. Higher and lower channel counts available

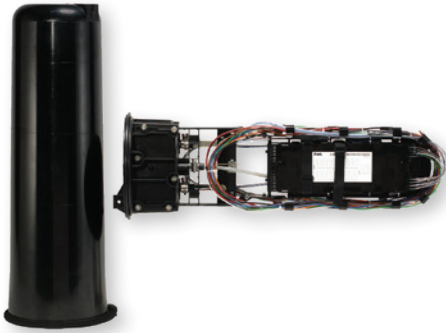
## Qualifications

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

## Temperature Specifications

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

Contact AFL for further details.



## LightGuard® 350 Sealed Fiber Optic Splice Closure

The LightGuard (LG) 350 is a sealed dome closure designed for large count fiber splicing (up to 480 single or 1152 mass) in a butt configuration. Utilized in aerial or underground environments where a sealed closure is required, the LG-350 is ideal for express, ring or long haul applications and requires only a common can wrench for installation.

### Features

- Supports stranded loose tube or ribbon fiber cables in either armored or dielectric configurations
- Installation and re-entry requires only a common can wrench
- Fully sealed to protect fiber and splices ensuring longevity
- Fully kitted with all parts to install five cables

### Specifications

PARAMETER	VALUE	
Splice Capacity (Max.)—Single, Mass, Mechanical	480, 1152, 108	
Number of Splice Trays (Max.)—Single, Mass, Mechanical*	12, 8, 8	
Cable Entrance Configuration	Butt	
Cables	5 to 11	
Cable Sizes (Min. O.D. - Max. O.D.)	<b>(2) Express Ports</b>	<b>(3) Drop Ports</b>
<b>Included Grommets</b>	0.40" - 1.00"	0.26" - 0.80"
Single in. (mm)	(10.0 - 25.4)	(6.6 - 20.0)
<b>Additional Grommets</b>	0.26" - 0.44"	
Dual Express Port Only in. (mm)	(6.6 - 11.2)	
	0.26" - 0.38"	
Quad Express Port Only in. (mm)	(6.6 - 9.7)	
(4) Flat Drop Port Only in. (mm)		0.19" x 0.34"
		(4.8 x 8.6) or
		0.25" round (6.4)
Dimensions—(L x D) in. (mm)	28.0" x 10.0" (710.0 x 254.0)	
Weight - lbs. (kg)	16 (7.26)	

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## LightGuard® 350 Sealed Fiber Optic Splice Closure

### Ordering Information

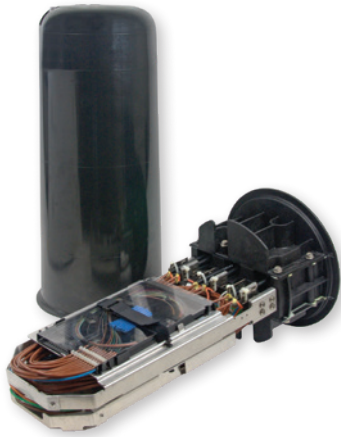
DESCRIPTION	AFL NO.
LG-350-U-0 Fiber Optic Splice Closure – Stores 480 single fusion or 1152 mass fusion, includes (5) cable kits for sealing/retention and (2) ground terminals with removable bond. Not included: Splice Trays, Cable Grounding Kits or Hanger Brackets	FC000009-PS
LL-2400 Single Splice Tray – Stores (24) single fusion splices. Maximum of 12 trays in the LG-350	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-350	911289-00-02
LL-4848 Mass Splice Tray – Stores (12) mass fusion splices (144 F). Maximum of 8 trays in the LG-350	911437-00-02
LL-2448-48S Single Splice Tray – Stores (48) single fusion splices. Maximum of 8 trays in the LG-350	FA000045
LL-4896 Universal Splice Tray – Stores (96) single fusion splices or (24) mass fusion splices (288 F). Maximum of 5 trays in the LG-350	911676-00-02
LL-4896-R Mass Splice Tray – Stores (24) mass fusion splices (288 F). Maximum of 5 trays in the LG-350	FA000022
LL-4896-L Single Splice Tray – Stores (96) single fusion splices. Maximum of 5 trays in the LG-350	FA000023
LL-7644 Universal Splice Tray – Stores (60) single fusion or (288) mass fusion splices or a combination of both in an easy-to-use, deep splice tray. For use with LG-350SD	FA000044
LL-7060 Splice Tray – Stores (60) single fusion splices in an easy-to-use, deep splice tray – For use in LG-350	FA000042
LL-7144 Splice Tray – Stores (288) mass fusion splices in an easy-to-use, deep splice tray – For use in LG-350	FA000043
LG-350 Single Grommet Kit (Min. 0.40" - Max. 1.00") – For use in LG-350/AC/SD on Express Port side	FC000726
LG-350 Dual Grommet Kit (Min. 0.26" - Max. 0.44") – For use in LG-350/AC/SD on Express Port side	FC000337
LG-350 Quad Grommet Kit (Min. 0.26" - Max. 0.38") – For use in LG-350/AC/SD on Express Port side	FC000421
LG-350 Single Grommet Kit (Min. 0.26" - Max. 0.80") – For use in LG-350/AC/SD on Drop Port side	FC000727
LG-350 Drop 4 Flat Drop Grommet Kit – For use with standard flat drop cable and round cable up to 0.25" O.D.	FC000422
Universal Aerial Strand Hanger Kit – For use with LG-150/250/350	FC000006
Extended Offset Strand Hanger Kit – For use with LG-150/250/350	FC000208
PWK Pole or Wall Mount Bracket – For use with LG-150/250/350	LGBR-30
OPGW Dual Cable Bracket Kit – For use with LG-150/250/350	FC000683
OPGW Quad Cable Bracket Kit for use when installing Sealed Closures – For use with LG-350	FC000747
1x6 Fiber Router Kit with furcation tubes	FC000070
CGK-5Cable Grounding Kit (pack of 5) – Clamp-On Ground Cable Only	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	FA000089
O-Ring and Lock Ring Kit – For use with LG-350/350AC/SD	FC000775

\* See Accessory Specifications. See Splice Tray Specifications.  
Micro Duct Grommets available. Please call Customer Service for details.

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

Contact AFL for further details.



## LightGuard® 350-AC Drop Access Sealed Fiber Optic Splice Closure

The LightGuard (LG) 350-AC is a sealed dome closure designed for medium count fiber splicing (up to 144 single or 432 mass) in a butt configuration where space may be limited. Utilized in aerial or underground environments where a sealed closure is required, the LG-350-AC is designed for “drop access” applications providing access for up to 12 drops. The LG-350-AC is ideal for Fiber-to-the-Home installations in small hand-hole application and requires only a common can wrench for installation.

### Features

- Less than 20" overall length; ideal for small hand-holes
- Supports stranded loose tube or ribbon fiber cables in either armored or dielectric configurations
- Installation and re-entry requires only a common can wrench
- Fully sealed to protect fiber and splices ensuring longevity
- Fully kitted with all parts to install two cables and up to 12 drops

### Specifications

PARAMETER	VALUE	
Splice Capacity (Max.)—Single, Mass, Mechanical	144, 432, 48	
Number of Splice Trays (Max.) - Single , Mass, Mechanical*	4, 3, 4	
Cable Entrance Configuration	Butt	
Cables	2 to 8 Express with up to 12 Drop	
Cable Sizes (Min. O.D. - Max. O.D.)	<b>(2) Express Ports</b> 0.40" - 1.00" (10.0 - 25.4)	<b>(3) Drop Ports</b>
<b>Included Grommets</b> Single in. (mm)		
(4) Flat Drop Only in. (mm)		(4 port) 0.26" - 0.80" (6.6 - 20.0)
<b>Additional Grommets</b> Dual Express Port Only in. (mm)	0.26" - 0.44" (6.6 - 11.2)	
Quad Express Port Only in. (mm)	0.26" - 0.38" (6.6 - 9.7)	
(4) Flat Drop Port Only in. (mm)		0.19" x 0.34" (4.8 x 8.6) or 0.25" round (6.4)
Dimensions - (L x D) in. (mm)	19.8" x 10.0" (503.0 x 254.0)	
Weight - lbs. (kg)	12.0 (5.44)	

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## LightGuard® 350-AC Drop Access Sealed Fiber Optic Splice Closure

### Ordering Information

DESCRIPTION	AFL NO.
LG-350-AC Fiber Optic Splice Closure—Stores 144 single fusion or 432 mass fusion, includes (2) Express cable kits and (12) Drop cable kits for sealing/retention and (2) ground terminals with removable bond. Included: (1) LL-4808L Splice Tray Not included: Cable Grounding Kits, or Hanger Brackets	FC000412
LL-4808L-R Universal Splice Tray—Stores (36) single fusion splices or (12) mass fusion splices (144 F). Maximum of 4 trays in the LG-350-AC.	FA000037
LL-4808-R Mass Splice Tray—Stores (12) mass fusion splices (144 F). Maximum of 4 trays in the LG-350-AC	FA000020
LL-4808-L Single Splice Tray—Stores (36) single fusion splices. Maximum of 4 trays in the LG-350-AC	FA000021
LG-350 Single Grommet Kit (Min. 0.40" - Max. 1.00")—For use in LG-55/LG-350/LG-350-AC on Express Port side	FC000726
LG-350 Dual Grommet Kit (Min. 0.26" - Max. 0.44")—For use in LG-55/LG-350/LG-350-AC on Express Port side	FC000337
LG-350 Quad Grommet Kit (Min. 0.26" - Max. 0.38")—For use in LG-55/LG-350/LG-350-AC on Express Port side	FC000421
LG-350 Single Grommet Kit (Min. 0.26" - Max. 0.80")—For use in LG-350/AC/SD on Drop Port side	FC000727
LG-350 Drop 4 Flat Drop Grommet Kit—For use with standard flat drop cable and round cable up to 0.25" O.D.	FC000422
Universal Aerial Strand Hanger Kit—For use with LG-150/250/350	FC000006
Extended Offset Strand Hanger Kit—For use with LG-150/250/350	FC000208
PWK Pole or Wall Mount Bracket—For use with LG-150/250/350	LGBR-30
OPGW Dual Cable Bracket Kit—For use with LG-150/250/350	FC000683
1x6 Fiber Router Kit with furcation tubes	FC000070
CGK-5 Cable Grounding Kit (pack of 5)—Clamp-On Ground Cable Only	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	FA000089
LG-350 O-Ring and Lock Ring Kit—For use with LG-350/AC/SD	FC000775

\* See Accessory Specifications.  
See Splice Tray Specifications.

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

Contact AFL for further details.



## LightGuard® 350XL Sealed Fiber Optic Splice Closure

The LightGuard (LG) 350XL is a sealed dome closure designed for large count fiber splicing (up to 864 single or 2592 mass) in a butt configuration. Utilized in aerial or underground environments where a sealed closure is required, the LG-350XL is ideal for high fiber count splicing and requires only a common can wrench for installation. A Phillips head screw is used to secure the tray support to the basket.

### Features

- Supports stranded loose tube or ribbon fiber cables in either armored or dielectric configurations
- Installation and re-entry requires only a common can wrench
- Fully sealed to protect fiber and splices ensuring longevity
- Fully kitted with all parts to install five cables
- Accommodates up to 7 cables
- Oversized basket allows multiple configurations of slack storage
- O-Ring and Locking Ring for increased protection

### Specifications

PARAMETER	VALUE	
Splice Capacity (Max.)—Single, Mass, Mechanical	864, 2592, 288	
Number of Splice Trays (Max.)—Single, Mass, Mechanical*	9, 9, 9	
Cable Entrance Configuration	Butt	
Cables	5 to 7	
Cable Sizes (Min. O.D. - Max. O.D.)	<b>(2) Express Ports</b> <b>(3) Drop Ports</b>	
<b>Included Grommets</b>	0.40" - 1.18"	0.30" - 1.08"
Single in. (mm)	(10.0 - 30.0)	(7.6 - 27.4)
<b>Additional Grommets</b>	0.38" - 0.56"	
Dual Exp. Port Only in. (mm)	(9.7 - 14.2)	
Dimensions - (L x D) in. (mm)	31.0" x 12.00" (788.5 x 305.0)	
Weight - lbs. (kg)	25.0 (11.3)	

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## LightGuard® 350XL Sealed Fiber Optic Splice Closure

### Ordering Information

DESCRIPTION	AFL NO.
LG-350XL-U-0 Fiber Optic Splice Closure – Stores 864 single fusion or 2592 mass fusion, includes (5) cable kits for sealing/retention and (2) ground terminals with removable bond. Not included: Splice Trays, Cable Grounding Kits or Hanger Brackets	FC000010-PS
LL-4896 Universal Splice Tray – Stores (96) single fusion splices or (24) mass fusion splices (288 F), *Mechanical. Max. of 9 trays in the LG-350XL	911676-00-02
LL-4896-R Mass Splice Tray – Stores (24) mass fusion splices (288 F). Max. of 9 trays in the LG-350XL	FA000022
LL-4896-L Single Splice Tray – Stores (96) single fusion splices. Max. of 9 trays in the LG-350XL	FA000023
LG-350XL Single Grommet Kit (Min. 0.40" - Max. 1.18") – For use in LG-350XL on Express Port side	FC000870
LG-350XL Dual Grommet Kit (Min. 0.38" - Max. 0.56") – For use in LG-350XL on Express Port side	FC000688
LG-350XL Single Grommet Kit (Min. 0.30" - Max. 1.08") – For use in LG-350XL on Drop Port side	FC000871
LG-350XL Drop 4 Flat Drop Grommet Kit – For use with standard flat drop cable and round cable up to 0.25" O.D.	FC001713
Strand Mount Hanger Bracket – For use with LG-350XL in strand or vault mounting	912215-00-00
1x6 Fiber Router Kit with furcation tubes	FC000070
CGK-5 Cable Grounding Kit (pack of 5) – Clamp-On Ground Cable Only	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	FA000089
O-Ring and Lock Ring Kit – For use with LG-350XL	FC001328
Transition tubing 16.25" long – Used to transport ribbon to the splice trays. (20) per kit	FC001372

\* See LL-4896 Splice Tray Specifications.

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

**Contact AFL for further details.**

## LightGuard® Sealed Splice Closure Accessories



### Dual Express Grommets for LG-350XL

Used on the express side of the LG-350XL closure for installing additional branches. Use the drop ports for the express cable while the express ports may be used to introduce small branch cables. Minimum cable diameter is 0.380" - 0.560".

#### Ordering Information

DESCRIPTION	AFL NO.
Dual Express Grommets for LG-350XL	FC000688



Dual Express Grommets



Quad Express Grommets

### Dual and Quad Express Grommets for LG-350

Used on the express side of the LG-350 closure for installing additional branches. Use the drop ports for the express cable while the express ports may be used to introduce small branch cables. A 4-drop flat grommet may be used if drops are also required. Cable diameter for dual grommets is 0.26" - 0.44"; for quad, 0.24" - 0.382".

#### Ordering Information

DESCRIPTION	AFL NO.
Dual Express Grommets for LG-350	FC000337
Quad Express Grommets for LG-350	FC000421



### 4-Port Flat Drop Grommet Kit for LG-350/LG-350-AC

Used with the LG-350 and LG-350-AC Sealed Closures. Allows for quick addition of drop cables as required. Simply replace the drop port grommets with this grommet kit and install standard flat drop cable or round cable up to 0.25" in diameter.

#### Ordering Information

DESCRIPTION	AFL NO.
4-Port Flat Drop Grommet Kit for LG-350/LG-350-AC	FC000422



### Single Cable and 3-Port Flat Drop Grommet Kit for LG-150/LG-250

Used with the LG-150 and LG-250 Sealed Closures. Allows for quick addition of drop cables as required. Simply replace the drop port grommets with this grommet kit. Both closures will accept standard flat drop cable or round cable up to 0.250" in diameter.

#### Ordering Information

DESCRIPTION	AFL NO.
Single Cable Grommet Kit for the LG-150/LG-250	FC000704
3-Port Flat Drop Grommet Kit for the LG-150/LG-250	FC000655

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## LightGuard® Sealed Splice Closure Accessories (cont.)

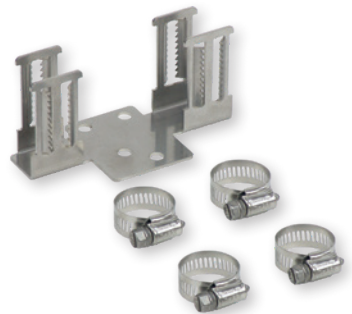


### Single Cable Grommet Kits for LG-350-AC and LG-350

Used with the LG-350-AC when a branch cable is required with the drop cables. May also be used for with the LG-350 as replacement grommets. Simply remove the flat drop grommet and replace with the single cable grommets.

#### Ordering Information

DESCRIPTION	AFL NO.
Single Cable Grommet Kit, Drop Port for LG-350-AC	FC000628
Express Single Cable Grommet Kit for LG-350	FC000726
Drop Single Cable Grommet Kit for LG-350	FC000727



### OPGW Cable Bracket for LG-150/LG-250/LG-350

Attaches to the outer grounding studs of the LG-150/LG-250 or LG-350 Sealed Closures. Stainless steel hose clamps secure the OPGW cable to the bracket preventing twisting or movement.

#### Ordering Information

DESCRIPTION	AFL NO.
OPGW Cable Bracket for the LG-150/LG-250/LG-350 for 2 cables.	FC000683
OPGW Cable Bracket Kit for use when installing Sealed Closures (LG-150/LG-250) to 4 OPGW Cables.	FC000746
OPGW Cable Bracket Kit for use when installing Sealed Closures (LG-350) to 4 OPGW Cables.	FC000747

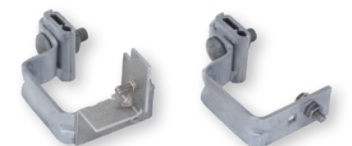


### Pole/Wall Mount Bracket for LG-150/LG-250/LG-350

Used with the LG-150, LG-250, LG-350 and LG-350-AC to secure the closures onto poles or walls in a vertical orientation. Slots on the brackets allow for strapping onto steel or cement poles.

#### Ordering Information

DESCRIPTION	AFL NO.
Pole/Wall Mount Bracket for LG-150/LG-250/LG-350/LG-350-AC	FC000592



### Universal Aerial Bracket and Extended Offset Bracket

Used with the LG-150, LG-250, LG-350 and LG-350-AC for mounting on aerial or messengers.

#### Ordering Information

DESCRIPTION	AFL NO.
Universal Aerial Bracket for LG-150/LG-250/LG-350/LG-350-AC	FC000006
Extended Offset Bracket	FC000208



## LightGuard® Sealed Splice Closure Accessories (cont.)



### Strand Mount Hanger Bracket for LG-350XL

Used with the LG-350XL.

#### Ordering Information

DESCRIPTION	AFL NO.
Strand Mount Hanger Bracket – For use with LG-350XL	912215-00-00

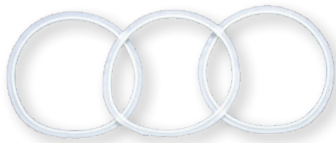


### Cable Ground Kits

Used with the LG-150, LG-250 and LG-350.

#### Ordering Information

DESCRIPTION	AFL NO.
Cable Grounding Kit – Includes harness and hose clamp. One kit needed per cable entry. For use with LG-150/250/350.	FC000003
Cable Grounding Harness Kit – Includes (4) 8" ground harnesses constructed of #6 AWG conductor	FC000024
Cable Grounding Kit (pack of 5) – Includes harness and hose clamp. For use with LG-150/250/350.	FC000040

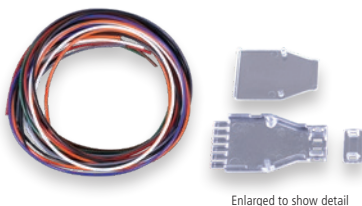


### O-Ring Replacement Kits

Used with the LG-150, LG-250, LG-350 and LG-350XL.

#### Ordering Information

DESCRIPTION	AFL NO.
O-Ring Replacement Kit – For use with LG-150/250	FC000004
O-Ring Replacement Kit – For use with LG-300XL	FC000016
O-Ring Replacement Kit – For use with LG-350.	912231-00-00



Enlarged to show detail

### 1x6 Cable Router Kit

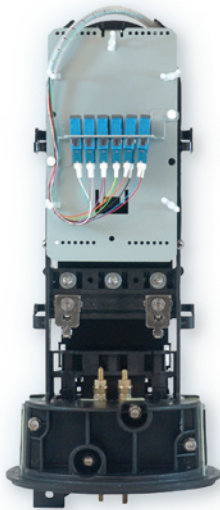
Used with the LG-150, LG-250, LG-350 and LG-350-AC.

#### Ordering Information

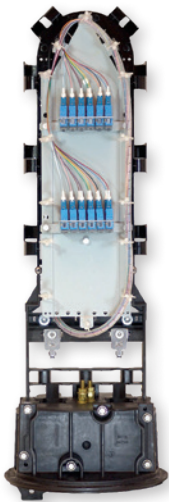
DESCRIPTION	AFL NO.
1X6 Cable Router Kit	FC000070

## LightLink Fiber Optic Terminal Adapters for Sealed Fiber Optic Splice Closures

The LightLink Access Solution (LLAS) Terminal Adapters provide the interconnect and/or demarcation of optical fibers for Fiber-to-the-Node (FTTN), Fiber-to-the-Home (FTTH), Fiber-to-the-Premise (FTTP) and Fiber-to-the-Curb (FTTC) applications. The adapter plates are designed to be used in conjunction with AFL Sealed Fiber Optic Splice Closures and convert the standard closure design into an FTTX or demarcation type fiber optic splice closure. The adapter plates provide mounting positions ranging from six to 24 SC-style bulkheads (depending on the model). The interconnection and routing of 900  $\mu$ m SC pigtails with pre-connectorized SC drop cables is managed through routing rings on the terminal adapter. Three versions are available and are matched to the LG-150, LG-250 and LG-350 series sealed fiber optic splice closures.



LLAS-200-12SC



LLAS-300-24SC

### Ordering Information

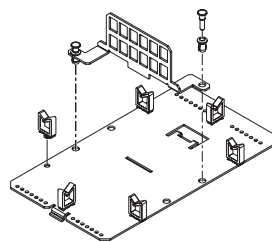
DESCRIPTION	MODEL NO.	AFL NO.
Terminal Adapter for LG-150/250 Sealed Splice Closure	LLAS-200-12SC	FC000068
Terminal Adapter for LG-350 Sealed Splice Closure	LLAS-300-24SC	FC000069

Blank bulkhead adapter plate and routing rings are included.  
SC bulkheads, SC pigtails (900  $\mu$ m) and SC pre-connectorized drop cable may be ordered separately.

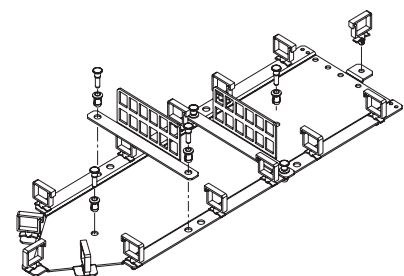
### Accessories Ordering

DESCRIPTION	AFL NO.
(1) Small Flange SC/UPC Bulkhead adapter (Blue)	CS013274
(1) Small Flange SC/APC Bulkhead adapter (Green)	CS013083
(1) Pigtail - SC/UPC Connector with (1) meter 900 $\mu$ m fiber	C146507-0001
(1) Pigtail - SC/APC Connector with (1) meter 900 $\mu$ m fiber	C203278-0001

### LLAS-200-12SC



### LLAS-300-24SC





## LightGuard® Aerial Weathertight Fiber Optic Splice Closures

The AFL family of Aerial Weathertight Splice Closures is designed to provide a cost-effective solution for your aerial splicing needs. Quality engineering reduces the installation time, training and complexity associated with fiber splicing in the field. The closures have all been designed to be installed without the need for special tools, heat, adhesives, drills or any powered equipment. Durable and easy to install, these closures will improve productivity, reduce labor expenses and last the life of the plant.

### Features

- Individual, patented, self-sizing cable grommets and strength member tie downs provide for cable additions without disturbing those previously installed
- Unique tongue-in-groove closure seal and back-to-back grommet design provides for a weathertight and insect seal
- Closures are re-enterable without the need for any re-entry kits and require only a common can wrench for installation

### Specifications

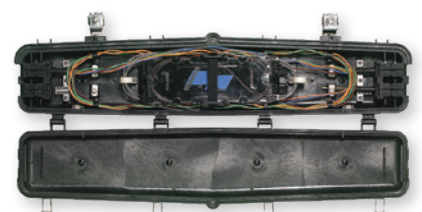
PARAMETER	LG-410-U-0	LG-420-U-0	LG-500-U-0	LG-600-U-0
Splice Capacity (Max.) – Single, Mass, Mechanical	144, 432, 36	12, 48, 12	144, 432, 36	384, 1152, 96
Splice Tray Capacity – Single, Mass	4, 2	n/a, n/a	4, 2	12, 8, 8
Cable Ports	4-8	4-6	4-8	6 (3 per end)
Cable Entrance	In-line, Butt	In-line (taut sheath)	In-line, Butt	In-line, Butt
Cable Sizes (O.D.)	4 @ 0.3-0.82" Up to 8 with Dual Grommet Kits 4 @ 0.27-0.53" 4 @ 0.38-0.70"	4 @ 0.3-0.82" Up to 6 with Dual Grommet Kits 2 @ 0.27-0.53" 2 @ 0.38-0.70"	4 @ 0.3-0.82" Up to 8 with Dual Grommet Kits 4 @ 0.27-0.53" 4 @ 0.38-0.70"	6 @ 0.44 - 1.0" Up to 12 with Dual Grommet Kits 6 @ 0.4-0.6" 6 @ 0.7-0.9"
CLOSURE TEST <sup>1,2</sup>				
- 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 (L x W x D) in. (cm)	36.00 x 8.00 x 4.00 (91.44 x 20.32 x 10.16)	36.00 x 8.00 x 4.00 (91.44 x 20.32 x 10.16)	27.00 x 8.25 x 4.00 (68.58 x 20.96 x 10.16)	27.00 x 11.25 x 7.50 (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)

**NOTES:** 1. Tested to Telcordia GR-771-Core and Aerial Strand requirements  
2. Not all Telcordia tests are listed due to space constraints; All closures are designed and tested to appropriate aerial test requirements

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

**Contact AFL for further details.**



## LightGuard® 410 Aerial Weathertight Fiber Optic Splice Closure

The LightGuard (LG) 410 Aerial Weathertight Fiber Optic Splice Closure is designed for medium count fiber splicing (up to 144 single or 432 mass) in a butt or in-line configuration. Utilized in aerial applications, the LG-410 provides additional fiber bundle storage with its extended length design and requires only a common can wrench for installation.

### Features

- Four individual, self-sizing grommeted cable ports (expandable to eight cable entrances)
- Patented tongue-in-groove cover seal system
- Installation and re-entry only require a common can wrench
- Cable retention clamps provide pullout
- UV-resistant engineered thermoplastic

### Specifications

PARAMETER	VALUE
Splice Capacity (Max.) – Single, Mass, Mechanical	144/432/36
Number of Splice Trays (Max.) – Single, Mass, Mechanical*	4, 3, 4
Cable Entrance Configuration	Butt or in-line
Cables	4 to 8
Cable Sizes (Min. O.D. - Max. O.D.) Included Grommets Single in. (mm) <b>Additional Grommets</b> Dual Grommet in. (mm)	<b>(4) Cable Ports</b> 4 @ 0.38" - 0.82" (7.6 - 20.8)  Sm: 0.27" - 0.53" (6.9 - 13.5) Lg: 0.38" - 0.70" (9.5 - 17.8) 0.20" - 0.37" (5.1 - 9.4)
6-port Multi-Drop Grommet in. (mm)	
Dimensions – (L x D) in. (mm)	36.00" x 8.0" x 4.0" (914.0 x 203.0 x 102.0)
Weight – lbs. (kg)	8.5 (3.81)

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# LightGuard® 410 Aerial Weathertight Fiber Optic Splice Closure

## Ordering Information

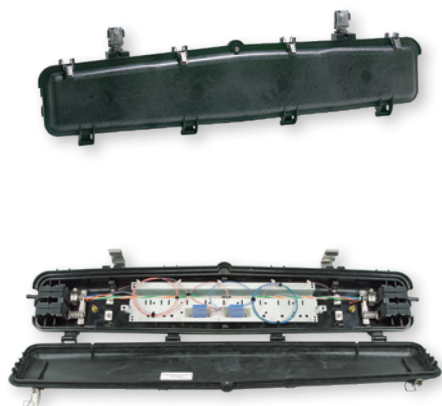
DESCRIPTION	MODEL NO.	AFL NO.
LG-410 Aerial Weathertight Fiber Optic Splice Closure – Stores 144 single fusion or 432 mass fusion, includes (4) cable kits for sealing/retention and (2) ground terminals with removable bond, and hanger brackets. Not included: Splice Trays or Cable Grounding Kits	LG-410-U-0	FC000022
LL-2400 Single Splice Tray – Stores (24) single fusion splices. Maximum of 4 trays in the LG-410.	LL-2400	91710-06
LL-2448 Universal Splice Tray – Stores (24) single fusion or (4) mass fusion splices (48 F). Maximum of 3 trays in the LG-410.	LL-2448	911289-00-02
LL-4848 Mass Splice Tray – Stores (12) mass fusion splices (144 F). Maximum of 3 trays in the LG-410.	LL-4848	911437-00-02
LL-2448-48S Single Splice Tray – Stores (48) single fusion splices. Maximum of 3 trays in the LG-410.	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
Small 6-Port Drop Cable Kit – 2 grommets with tie wrap and foam Allows six cable entries (Min 0.20" - Max 0.365" and flat drop)	Small 6 Port Drop Kit	FC000573
Large Single Grommet Kit with retention hardware (Min 0.44" - Max 1.04")	Large Single Grommet Kit	FC000623
Small 6-Port Drop Cable Kit (10 pc grommet only) (Min 0.20" - Max 0.365" and flat drop)	Small Drop Grommet Kit (10)	FC000644
Large Single Grommet Kit (10 pc grommet only) (Min 0.44" - Max 1.04")	Large Single Grommet Kit (10)	91918-00
Large Dual Grommet Expansion Kit—Includes: (2) Dual grommets and hardware (Min .40"-Max .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
Extended Offset Aerial Hanger Kit LG-400/500/600	Offset Hanger LG-400/500/600	91990-00
Retention hardware for additional cables or replacement hardware—LG-400/500/600 (no grommets)	Cable Retention Kit LG-400/500/600	FC000356
Closure Extension Kit - Used to join multiple closures for extended sheath openings required to repair cable sheath and damaged fibers	Closure Extension Kit LG-400/500/600	911499-00-00
1x6 Fiber Router Kit with furcation tubes.	1x6 Fiber Router	FC000070
Cable Grounding Kit (pack of 5)—Clamp-On Ground Cable Only	CGK-5	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	VHB Tape	FA000089

\* See Accessory Specifications. See Splice Tray Specifications.

## Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

Contact AFL for further details.



## LightGuard® 420 Aerial Weathertight Fiber Optic Splice Closure

The LightGuard (LG) 420 Aerial Weathertight Fiber Optic Splice Closure is designed for taut sheath (no slack) splicing (up to 24 single or 48 mass) in an in-line configuration. Utilized in aerial applications, the LG-420 is ideal for repairing cable sheath or fibers, providing mid-span access and requires only a common can wrench for installation.

### Features

- Four individual, self-sizing grommets cable ports (expandable to eight cable entrances)
- Taut Sheath splice module accommodates up to 12 fusion splices
- Protective channel allowing taut fibers or bundles to pass through the closure
- Patented tongue-in-groove cover seal system
- Installation and re-entry only require a common can wrench
- Cable retention clamps provide pullout
- UV-resistant engineered thermoplastic

### Specifications

PARAMETER	VALUE
Splice Capacity (Max.) – Single, Mass, Mechanical	24, 48, 12
Number of Splice Trays (Max.) – Single, Mass, Mechanical*	Splice chips for 24F single fusion splice (incl.)
Cable Entrance Configuration	In-line (taut sheath)
Cables	4 to 8
Cable Sizes (Min. O.D. - Max. O.D.) Included Grommets Single in. (mm) <b>Additional Grommets</b> Dual Grommet in. (mm)	<b>(4) Cable Ports</b> 4 @ 0.38" - 0.82" (7.6 - 20.8)  Sm: 0.27" - 0.53" (6.9 - 13.5) Lg: 0.38" - 0.70" (9.5 - 17.8) 0.20" - 0.37" (5.1 - 9.4)
6-port Multi-Drop Grommet in. (mm)	0.20" - 0.37" (5.1 - 9.4)
Dimensions – (L x D) in. (mm)	36.0" x 8.0" x 4.0" (914.0 x 203.0 x 102.0)
Weight – lbs. (kg)	8.5 (3.81)

## LightGuard® 420 Aerial Weathertight Fiber Optic Splice Closure

### Ordering Information

DESCRIPTION	MODEL NO.	AFL NO.
LG-420 Aerial Weathertight Fiber Optic Splice Closure – Stores 12 single fusion or 48 mass fusion, includes (4) cable kits for sealing/retention and (2) ground terminals with removable bond, splice chips and hanger brackets. Not included: Cable Grounding Kits	LG-420-U-0	FC000023
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
Small 6-Port Drop Cable Kit – 2 grommets with tie wrap and foam. Allows six cable entries (Min 0.20" - Max 0.365" and flat drop)	Small 6 Port Drop Kit	FC000644
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
Retention hardware for additional cables or replacement hardware – LG-400/500/600 (no grommets)	Cable Retention Kit LG-400/500/600	FC000356
Closure Extension Kit – Used to join multiple closures for extended sheath openings required to repair cable sheath and damaged fibers	Closure Extension Kit LG-400/500/600	911499-00-00
1x6 Fiber Router Kit with furcation tubes	1x6 Fiber Router	FC000070
Cable Grounding Kit (pack of 5) – Clamp-On Ground Cable Only	CGK-5	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	VHB Tape	FA000089

\* See Accessory Specifications. See Splice Tray Specifications.

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

Contact AFL for further details.





## LightGuard® 420 FTTx Aerial Weathertight Fiber Optic Splice Closure

The LightGuard (LG) 420 FTTx Aerial Weathertight Fiber Optic Splice Closure is designed for taut sheath (no slack) splicing (up to 32 single) in an in-line configuration. Utilized in aerial applications, the LG-420-FTTx is ideal for FTTx access networks by providing access for up to 12 drop cables and 16 connections, requiring only a common can wrench for installation.

### Features

- Four individual, self-sizing grommeted cable ports:
  - 2 express ports
  - 2 multi-drop ports
- 12 drop cables and 16 connections
- Special multi-drop grommet and cable retention
- Special lock-out interior enclosure
- Patented tongue-in-groove cover seal system
- Installation and re-entry only require a common can wrench
- Cable retention clamps provide pullout
- UV resistant engineered thermoplastic

### Specifications

PARAMETER	VALUE
Splice Capacity (Max.) – Single, Mass, Mechanical	32, n/a, 12
Number of Splice Trays (Max.) – Single, Mass, Mechanical*	1, n/a, 1
Cable Entrance Configuration	In-line (taut sheath)
Cables	2 to 4 Express with up to 12 Drop
Cable Sizes (Min. O.D. - Max. O.D.) Included Grommets	<b>(4) Cable Ports</b>
Single in. (mm)	2 @ 0.38" - 0.82" (7.6 - 20.8)
6-port Multi-Drop Grommet in. (mm)	2 (6 port) @ 0.20" - 0.37" (5.1 - 9.4)
<b>Additional Grommets</b>	
Dual Grommet in. (mm)	Sm: 0.27" - 0.53" (6.9 - 13.5)
	Lg: 0.38" - 0.70" (9.5 - 17.8)
6-port Multi-Drop Grommet in. (mm)	0.20" - 0.37" (5.1 - 9.4)
Dimensions – (L x D) in. (mm)	36.0" x 8.0" x 4.0" (914.0 x 203.0 x 102.0)
Weight – lbs. (kg)	8.5 (3.81)

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# LightGuard® 420 FTTx Aerial Weathertight Fiber Optic Splice Closure

## Ordering Information

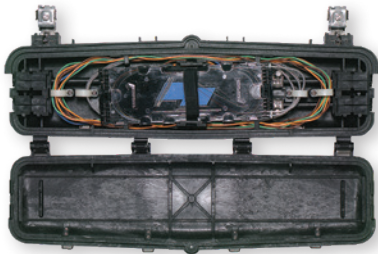
DESCRIPTION	MODEL NO.	AFL NO.
The AFL LightGuard (LG) 420 FTTx Aerial Weathertight Fiber Optic Splice Closures are designed to allow taut sheath (no slack) or conventional splicing in aerial applications such as FTTx access networks. The LG-420 FTTx provides access for 1 to 16 connections and up to 12 subscriber drops and requires only a common can wrench for installation. Includes: Hanger Brackets and Splice Tray. Not included: Cable Grounding Kits.	LG-420-U-FTTx	FC000099
LL-2425 Single Splice Tray – Stores (32) single fusion splices. Maximum of 1 tray in the LG-420-FTTx.	LL-2425	FC000053
Small Single Grommet Kit of (10 pc grommet only) – (Min .38" - Max .82")	Small Single Grommet Kit (10)	911496-00-00
Small Dual Grommet Kit – Includes: (2) small dual grommets and hardware (Min .27" - Max .53" and Min .38" - Max .70")	Small Dual Grommet Kit	911386-00-01
Small Dual Grommet Kit (10 pc grommet only) – (Min .27" - Max .53" and Min .38" - Max .70")	Small Dual Grommet Kit (10)	911495-00-00
Small 6-Port Drop Cable Kit – 2 grommets with tie wrap and foam. Allows six cable entries (Min 0.20" - Max 0.365" and flat drop)	Small 6 Port Drop Kit	FC000644
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
Retention hardware for additional cables or replacement hardware – LG-400/500/600 (no grommets)	Cable Retention Kit LG-400/500/600	FC000356
Closure Extension Kit – Used to join multiple closures for extended sheath openings required to repair cable sheath and damaged fibers	Closure Extension Kit LG-400/500/600	911499-00-00
1x6 Fiber Router Kit with furcation tubes.	1x6 Fiber Router	FC000070
Cable Grounding Kit (pack of 5) – Clamp-On Ground Cable Only	CGK-5	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	VHB Tape	FA000089

\* See Accessory Specifications. See Splice Tray Specifications.

## Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

**Contact AFL for further details.**



## LightGuard® 500 Aerial Weathertight Fiber Optic Splice Closure

The LightGuard (LG) 500 Aerial Weathertight Fiber Optic Splice Closure is designed for medium count fiber splicing (up to 144 single or 432 mass) in a butt or in-line configuration. Utilized in aerial applications, the LG-500 is ideal for congested aerial construction due to its compact design and requires only a common can wrench for installation.

### Features

- Four individual, self-sizing grommeted cable ports (expandable up to eight cable entrances)
- Patented tongue-in-groove cover seal system
- Installation and re-entry only require a common can wrench
- Cable retention clamps provide pullout
- UV resistant engineered thermoplastic

### Specifications

PARAMETER	VALUE
Splice Capacity (Max.) – Single, Mass, Mechanical	144, 432, 36
Number of Splice Trays (Max.) – Single, Mass, Mechanical*	4, 3, 4
Cable Entrance Configuration	Butt or in-line
Cables	4 to 8
Cable Sizes (Min. O.D. - Max. O.D.) Included Grommets Single in. (mm) <b>Additional Grommets</b> Dual Grommet in. (mm)	<b>(4) Cable Ports</b> 4 @ 0.38" - 0.82" (7.6 - 20.8)  Sm: 0.27" - 0.53" (6.9 - 13.5) Lg: 0.38" - 0.70" (9.5 - 17.8) 0.20" - 0.37" (5.1 - 9.4)
6-port Multi-Drop Grommet in. (mm)	0.20" - 0.37" (5.1 - 9.4)
Dimensions – (L x D) in. (mm)	27.0" x 8.3" x 4.0" (686.0 x 210.0 x 102.0)
Weight – lbs. (kg)	6.4 (2.90)

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## LightGuard® 500 Aerial Weathertight Fiber Optic Splice Closure

### Ordering Information

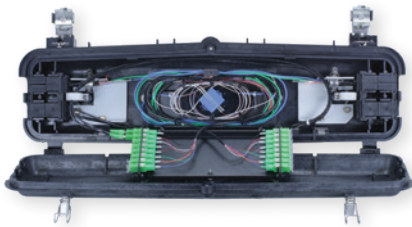
DESCRIPTION	MODEL NO.	AFL NO.
LG-500 Aerial Weathertight Fiber Optic Splice Closure – Stores 144 single fusion or 432 mass fusion, includes (4) cable kits for sealing/retention and (2) ground terminals with removable bond, and hanger brackets. Not included: Splice Trays or Cable Grounding Kits	LG-500-U-0	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 6-Port Drop Cable Kit – 2 grommets with tie wrap and foam. Allows six cable entries. (Min 0.20" - Max 0.365" 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 for LG-400/500/600	Offset Hanger LG-400/500/600	91990-00
Retention hardware for additional cables or replacement hardware – LG-400/500/600 (no grommets)	Cable Retention Kit LG 400/500/600	FC000356
Closure Extension Kit – Used to join multiple closures for extended sheath openings required to repair cable sheath and damaged fibers	Closure Extension Kit LG-400/500/600	911499-00-00
1x6 Fiber Router Kit with furcation tubes.	1x6 Fiber Router	FC000070
Cable Grounding Kit (pack of 5) – Clamp -On Ground Cable Only	CGK-5	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	VHB Tape	FA000089

\* See Accessory Specifications. See Splice Tray Specifications.

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

**Contact AFL for further details.**



## LightGuard® 500 FTTx Aerial Weathertight Fiber Optic Splice Closures

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.

### Features

- Four individual, self-sizing grommated cable ports:
  - 2 express ports
  - 2 multi-drop ports
- 12 drop cables and 16 connections
- Special multi-drop grommet and cable retention
- Special lock-out interior enclosure
- Patented tongue-in-groove cover seal system
- Installation and re-entry only require a common can wrench
- Cable retention clamps provide pullout
- UV resistant engineered thermoplastic

### Specifications

PARAMETER	VALUE
Splice Capacity (Max.) – Single, Mass, Mechanical	32, 48, 12
Number of Splice Trays (Max.) – Single, Mass, Mechanical*	1, 1, 1
Cable Entrance Configuration	Butt or in-line
Cables	2 to 4 Express with up to 12 Drop
Cable Sizes (Min. O.D. - Max. O.D.) Included Grommets	<b>(4) Cable Ports</b>
Single in. (mm)	4 @ 0.38" - 0.82" (7.6 - 20.8)
6-port Multi-Drop Grommet in. (mm)	2 (6 port) @ 0.20" - 0.37" (5.1 - 9.4)
<b>Additional Grommets</b>	
Dual Grommet in. (mm)	Sm: 0.27" - 0.53" (6.9 - 13.5)
	Lg: 0.38" - 0.70" (9.5 - 17.8)
6-port Multi-Drop Grommet in. (mm)	0.20" - 0.37" (5.1 - 9.4)
Dimensions – (L x D) in. (mm)	27.0" x 8.3" x 4.0" (686.0 x 210.0 x 100.0)
Weight – lbs. (kg)	10.1 (4.58)

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# LightGuard® 500 FTTx Aerial Weathertight Fiber Optic Splice Closure

## Ordering Information

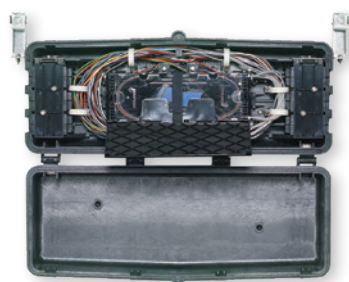
DESCRIPTION	MODEL NO.	AFL NO.
LG-500-FTTx Aerial Weathertight Fiber Optic Splice Closure – Stores 32 single fusion or 48 mass fusion, includes (4) cable kits for sealing/retention and (2) ground terminals with removable bond, (1) splice tray, and hanger brackets. Not included: Cable Grounding Kits, SCAPC 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
Retention hardware for additional cables or replacement hardware – LG-400/500/600 (no grommets)	Cable Retention Kit LG-400/500/600	FC000356
Closure Extension Kit – Used to join multiple closures for extended sheath openings required to repair cable sheath and damaged fibers	Closure Extension Kit LG-400/500/600	911499-00-00
1x6 Fiber Router Kit with furcation tubes	1x6 Fiber Router	FC000070
Cable Grounding Kit (pack of 5) – Clamp -On Ground Cable Only	CGK-5	FC001091
Mechanical Splice Kit*. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	VHB Tape	FA000089
Single-mode SC Simplex Adapter, Flangeless, Green	SC/APC Adapter	CS009394
SC/APC 900 µm Pigtail, 1.5 Meter Length	ASC, XXX, JH, 001, Q, 001.5, White	CS012973C-001.5

\* See Accessory Specifications. See Splice Tray Specifications.

## Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

Contact AFL for further details.



## LightGuard® 600 Aerial Weathertight Fiber Optic Splice Closure

The LightGuard (LG) 600 Aerial Weathertight Fiber Optic Splice Closure is designed for high count fiber splicing (up to 384 single or 1152 mass) in a butt or in-line configuration. Utilized in aerial applications, the LG-600 is an ideal cost-effective solution for high fiber count splicing and requires only a common can wrench for installation.

### Features

- Six individual, self-sizing grommated cable ports (expandable to 12 cable entrances)
- Patented tongue-in-groove cover seal system
- Installation and re-entry only require a common can wrench
- Integrated grounding clamp through aerial hangers
- Cable retention clamps provide pullout
- UV resistant engineered thermoplastic

### Specifications

PARAMETER	VALUE
Splice Capacity (Max.) – Single, Mass, Mechanical	384, 1152, 36
Number of Splice Trays (Max.) – Single, Mass, Mechanical*	12, 8, 8
Cable Entrance Configuration	Butt or in-line
Cables	6 to 24
Cable Sizes (Min. O.D. - Max. O.D.) Included Grommets Single in. (mm) <b>Additional Grommets</b> Dual Grommet in. (mm) 6-port Multi-Drop Grommet in. (mm)	<b>(6) Cable Ports</b> 0.44" - 1.00" (11.2 - 25.4)  Sm: 0.40" - 0.70" (10.0 - 17.8) Lg: 0.60" - 0.90" (15.3 - 22.9) 0.30" - 0.48" (7.6 - 17.8)
Dimensions – (L x D) in. (mm)	27.0" x 11.3" x 7.5" (690.0 x 286.0 x 190.5)
Weight – lbs. (kg)	18.0 (8.16)

*continued*  
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## LightGuard® 600 Aerial Weathertight Fiber Optic Splice Closure

### 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
Extended Offset Aerial Hanger Kit LG-400/500/600	Offset Hanger LG-400/500/600	91990-00
SC 6-pack bracket kit for LG-600	Bracket Kit (6-pack SC) LG-600	FM001294
Retention hardware for additional cables or replacement hardware – LG-400/500/600 (no grommets)	Cable Retention Kit LG-400/500/600	FC000356
Closure Extension Kit – Used to join multiple closures for extended sheath openings required to repair cable sheath and damaged fibers	Closure Extension Kit LG-400/500/600	911499-00-00
1x6 Fiber Router Kit with furcation tubes	1x6 Fiber Router	FC000070
Cable Grounding Kit (pack of 5) – Clamp -On Ground Cable Only	CGK-5	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	VHB Tape	FA000089

\* See Accessory Specifications. See Splice Tray Specifications.

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

Contact AFL for further details.

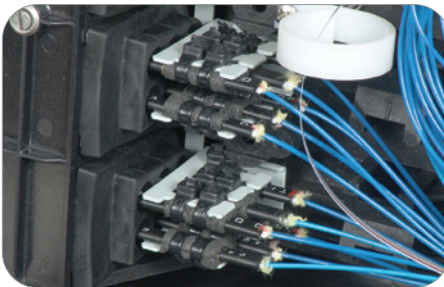


## LightGuard® 600 FTTx Aerial Weathertight Fiber Optic Splice Closure

The LightGuard (LG) 600 FTTx Aerial Weathertight Fiber Optic Splice Closure is designed for small count fiber splicing (up to 48 single or 48 mass) in a butt or in-line configuration. Utilized in aerial applications, the LG-600-FTTx is ideal for express slack look fiber access splicing by providing cable entry and connectivity for up to 24 subscriber drops and requires only a common can wrench for installation.

### Features

- Six individual, self-sizing grommets cable ports:
  - 2 express ports
  - 4 multi-drop ports
- Up to 12 adapters using the LG-600 expansion kit and SC 6-pack adapter brackets
- Special multi-drop grommets and cable retention
- Integrated aerial splicing work tray
- Patented tongue-in-groove cover seal system
- Installation and re-entry only require a common can wrench
- Integrated grounding clamp through aerial hangers
- Cable retention clamps provide pullout
- UV resistant engineered thermoplastic



Cable entrance



Grommet bracket

### Specifications

PARAMETER	VALUE
Splice Capacity (Max.) – Single, Mass, Mechanical	24, 48, 24
Number of Splice Trays (Max.) – Single, Mass, Mechanical*	2, 2, 2
Cable Entrance Configuration	Butt or in-line
Cables	2 to 4 Express with up to 24 Drops
Cable Sizes (Min. O.D. - Max. O.D.) Included Grommets	<b>(6) Cable Ports</b>
Single in. (mm)	2 @ 0.44" - 1.00" (11.2 - 25.4)
6-port Multi-Drop Grommet in. (mm)	4 @ 0.30" - 0.48" (76 - 17.8)
<b>Additional Grommets</b>	
Dual Grommet in. (mm)	Sm: 0.40" - 0.70" (10.0 - 17.8)
	Lg: 0.60" - 0.90" (15.3 - 22.9)
Dimensions – (L x D) in. (mm)	27.00" x 11.25" x 7.50" (690.0 x 286.0 x 190.5)
Weight – lbs. (kg)	18.0 (8.16)

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# LightGuard® 600 FTTx Aerial Weathertight Fiber Optic Splice Closure

## Ordering Information

DESCRIPTION	MODEL NO.	AFL NO.
LG-600-FTTx Aerial Weathertight Fiber Optic Splice Closure – Stores 24 single fusion or 48 mass fusion, includes (6) cable kits for sealing/retention and (2) ground terminals with removable bond, (2) splice tray, and hanger brackets. Not included: Cable Grounding Kits	LG600-FTTx	FC000291
LL-2450 Single Splice Tray – Stores (12) single fusion splices. Maximum of (2) trays in the LG-600-FTTx.	LL-2450	91957-00
LL-4850 Mass Splice Tray – Stores (8) mass fusion splices (96F). Maximum of (2) trays in the LG-600-FTTx.	LL-4850	91958-00
LL-1248 Universal Splice Tray – Stores (12) single fusion splices or (8) mass fusion splices (96F), *Mechanical. Maximum of 2 trays in the LG-600FTTx.	LL-1248	911221-00-00
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
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
Retention hardware for additional cables or replacement hardware – LG/400/500/600 (no grommets)	Cable Retention Kit LG-400/500/600	FC000356
Closure Extension Kit – Used to join multiple closures for extended sheath openings required to repair cable sheath and damaged fibers	Closure Extension Kit LG-400/500/600	911499-00-00
1x6 Fiber Router Kit with furcation tubes	1x6 Fiber Router	FC000070
Cable Grounding Kit (pack of 5) – Clamp-On Ground Cable Only	CGK-5	FC001091
*Mechanical Splice Kit. Includes 10 pieces of VHB tape. Used in all splice trays. Each piece holds 12 splices.	VHB Tape	FA000089
LG-600 FTTx Expansion Kit – Includes (1) Stacker Module, (1) SC-6-Pack Bracket. Allows use of standard splice trays.	LG-600 FTTx Expansion Kit	FC000620

\* See Accessory Specifications. See Splice Tray Specifications.

## Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771
Rural Utilities Service (RUS)	Listed

Contact AFL for further details.

## Interchangeable Grommets for Fiber Optic Splice Closures and Fiber Enclosures

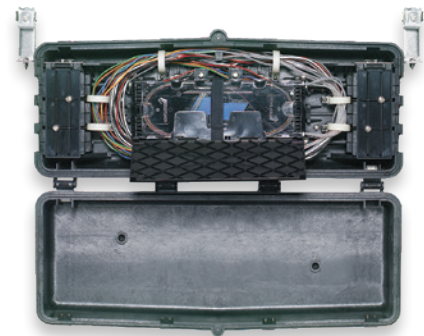


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## Interchangeable Large Grommets for Fiber Optic Splice Closures and Fiber Enclosures



**LL-400b**  
(outer 2 grommets)



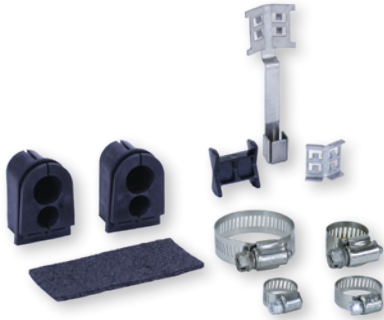
**LG-600**



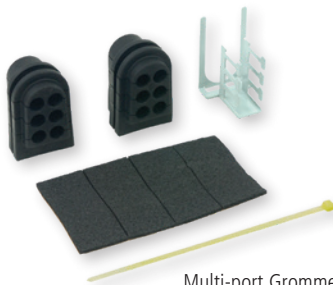
**Cable Sealing  
Grommets**



## LightGuard® Aerial Splice Closure Accessories



Dual-port Grommet Kit



Multi-port Grommet Kit

### Dual- and Multi-port Grommet Kits for LG-400/LG-500/LG-600

For use with the LG-600 Aerial Weathertight Closure. Remove the single-port grommet set from the closure and replace with the multi-port grommet set when drops are required. Retention hardware included.

#### Ordering Information

DESCRIPTION	AFL NO.
Dual-port Grommet Kit for LG-400/LG-500 Diameter for large port is 0.375" - 0.65"; small port, 0.27" - 0.5"	911386-00-01
Dual Grommet Expansion Kit - Includes: (2) Dual Grommets, (1) CSM retention clamp, cable retention clamp and cable spacer	911406-00-00
Dual Grommet Replacement Kit - Includes: (10) Dual Grommets for the LG-400 Series Closures. Diameter for large port is 0.375" - 0.65"; small port, 0.27" - 0.5"	911495-00-00
Grommet Replacement Kit, Kit - Includes: (10) Standard (single port) Grommets for the LG-400 Series Closures. Diameter from 0.3" - 0.82"	911496-00-00
Grommet Replacement Kit - Includes: (10) LG-600 Grommets Diameter from 0.5" - 1.0"	91918-00
Multi-port Grommet Kit for LG-400/LG-500. Diameter up to 0.365"	FC000573
Multi-port Grommet Kit for LG-600. Diameter from 0.67" to 0.475"	FC000352



### Single-port Grommet Kit for LG-600 FTTx

For use with the LG-600 Aerial Weathertight Closure. Remove the multi-port grommet set from the closure and replace with the single-port grommet set when installing a branch cable. Hardware included.

#### Ordering Information

DESCRIPTION	AFL NO.
Single-port Grommet Kit for LG-600 FTTx	FC000623
Single Cable Entry Grommet Kit LG-600 Hardware	FC000356



### Adjustable Aerial Hanger Brackets

For use with all Aerial Weathertight Closures (LG-410, LG-420, LG-420 FTTx, LG-500, LG-600 and LG-600 FTTx). This pair of hanger brackets is shipped from the factory with all weathertight closures. Purchase separately for closures installed over existing utilities.

#### Ordering Information

DESCRIPTION	AFL NO.
Adjustable Aerial Hanger Brackets	911497-00-00

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## LightGuard® Aerial Splice Closure Accessories (cont.)

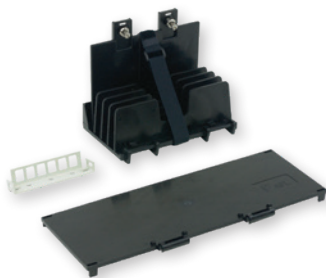


### SC 6-Pack Bracket for LG-600

Installs at each end of the stacker module in the LG-600. Allows up to (12) SC connectors or (24) LC connectors (using duplex connectors) to be installed in the closure. Snaps in place or use self-tapping screws to secure.

#### Ordering Information

DESCRIPTION	AFL NO.
SC 6-Pack Bracket Kit for LG-600	FM001294
SC 6-Pack Adapter Bracket	FM001212



### Expansion Kit for LG-600 FTTx

Expansion kit includes a Stacker Tray Module and one LG-600 SC-6-Pack Bracket to allow for up to six SC connections or 12 LC duplex connections. An additional bracket may be used to increase connectivity to 12 SC or 24 LC connections using duplex adapters. Allows increasing splices with LL-2400, LL-2448 and LL-2448-48S splice trays.

#### Ordering Information

DESCRIPTION	AFL NO.
Expansion Kit for LG-600 FTTx	FC000620

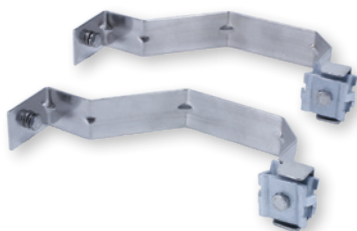


### Cable Grounding Harness

For use with all Aerial Weathertight Closures (LG-410, LG-420, LG-420 FTTx, LG-500, LG-600 and LG-600 FTTx).

#### Ordering Information

DESCRIPTION	AFL NO.
Cable Grounding Harness - Includes: (4) Harness 8" #6 AWG	FC000024



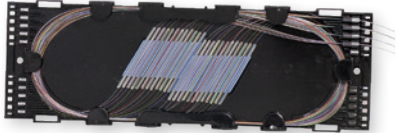
### Aerial Hanger Kits

For use with all Aerial Weathertight Closures (LG-410, LG-420, LG-420 FTTx, LG-500, LG-600 and LG-600 FTTx).

#### Ordering Information

DESCRIPTION	AFL NO.
Extended Aerial Hanger Kit	911497-00-00
Extended Offset Aerial Hanger Kit	91990-00





## LightLink Fiber Optic Splice Trays

AFL's LightLink series of Fiber Optic Splice Trays offers a variety of unique and flexible splice and storage possibilities. They are available in industry standard configurations (single, mass).

### Features

- In-line or butt splice capability (see model descriptions)
- Pre-formed radiuses maintain bend requirements
- Interlocking base and cover provides tray stability without the use of a bolt
- Extended finger guides easily store and route loose fiber or ribbon

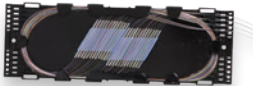

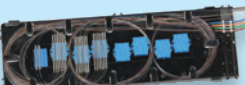
### Ordering Information—Splice Trays for Sealed Fiber Optic Splice Closures

DESCRIPTION	MODEL NO.	AFL NO.	LG-55-U	LG-150-U	LG-250-U	LG-350-U	LG-350-20-WTC	LG-350-27-WTC
Single Fuse: 32 Mass Fuse: N/A 6.300" (L) x 2.730" (W) x 0.829" (H) 	LL-2425	FC000053	<b>Max trays: 1</b> Single: 32 Mass: N/A	N/A	N/A	N/A	N/A	N/A
Single Fuse: 12 Mass Fuse: N/A 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-2450	91957-00	N/A	<b>Max Trays: 4</b> Single: 48 Mass: N/A	N/A	N/A	N/A	N/A
Single Fuse: N/A Mass Fuse: 8 (96 fiber) 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-4850	91958-00	N/A	<b>Max Trays: 4</b> Single: N/A Mass: 32 (384 fiber)	N/A	N/A	N/A	N/A
Single Fuse: 12 Mass Fuse: 8 (96 fiber) 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-1248	911221-00-00	N/A	<b>Max Trays: 4</b> Single: 48 Mass: 48 (384 fiber)	N/A	N/A	N/A	N/A
Single Fuse: 24 Mass Fuse: N/A 12.542" (L) x 4.042" (W) x 0.390" (H) 	LL-2400	91710-06	N/A	N/A	<b>Max Trays: 5</b> Single: 120 Mass: N/A	<b>Max Trays: 13</b> Single: 312 Mass: N/A	N/A	N/A

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## LightLink Fiber Optic Splice Trays (cont.)

### Ordering Information—Splice Trays for Sealed Fiber Optic Splice Closures

DESCRIPTION	MODEL NO.	AFL NO.	LG-250-U	LG-350-U	LG-350-AC	LG-350XL-U	LG-350-20-WTC	LG-350-27-WTC
Single Fuse: 60 Mass Fuse: 12 (144 fiber) 12.000" (L) x 5.125" (W) x 0.485" (H)  *Note: Contains enough splice holders for 24 mass splices (288 fibers) when using AFL Wrapping Tube Cable.	LL-7644	FA000044	N/A	<b>Max Trays: 6</b> Single: 360 Mass: 72 (864 fiber)	N/A	N/A	N/A	<b>Max Trays: 3</b> Single: 180 Mass: 72 (864 fiber)
Single Fuse: 24 Mass Fuse: 4 (48 fiber) 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-2448	911289-00-02	<b>Max Trays: 3</b> Single: 72 Mass: 12 (144 fiber) Mechanical: 36	<b>Max Trays: 8</b> Single: 192 Mass: 32 (384 fiber) Mechanical: 96	N/A	N/A	N/A	N/A
Single Fuse: 48 Mass Fuse: N/A 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-2448-48S	FA000045	<b>Max Trays: 3</b> Single: 144 Mass: N/A	<b>Max Trays: 8</b> Single: 384 Mass: N/A	N/A	N/A	N/A	N/A
Single Fuse: N/A Mass Fuse: 12 (144 fiber) 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-4848	911437-00-02	<b>Max Trays: 3</b> Single: N/A Mass: 36 (432 fiber)	<b>Max Trays: 8</b> Single: N/A Mass: 96 (1152 fiber)	N/A	N/A	N/A	N/A
Single Fuse: 96 Mass Fuse: 24 (288 fiber) 15.950" (L) x 4.875" (W) x 0.485" (H) 	LL-4896	911676-00-02	N/A	<b>Max Trays: 5</b> Single: 480 Mass: 120 (1440 fiber)	N/A	<b>Max Trays: 9</b> Single: 864 Mass: 216 (2592 fiber)	N/A	N/A
Single Fuse: 60 Mass Fuse: N/A 12.000" (L) x 5.125" (W) x 0.485" (H) 	LL-7060	FA000042	N/A	<b>Max Trays: 6</b> Single: 360 Mass: N/A	N/A	N/A	N/A	<b>Max Trays: 3</b> Single: 180 Mass: N/A

continued

## LightLink Fiber Optic Splice Trays (cont.)

### Ordering Information – Splice Trays for LG-350 and LG-350XL-U Sealed Fiber Optic Splice Closures

DESCRIPTION	MODEL NO.	AFL NO.	LG-350-U	LG-350-AC	LG-350XL-U	LG-350-20-WTC	LG-350-27-WTC
Single Fuse: N/A Mass Fuse: 12 (144 fiber) 12.000" (L) x 5.125" (W) x 0.485" (H) 	LL-7144	FA000043	<b>Max Trays: 6</b> Single: 360 Mass: 72 (864 fiber)	N/A	N/A	N/A	<b>Max Trays: 3</b> Single: 180 Mass: 72 (864 fiber)
Single Fuse: 36 Mass Fuse: 12 (144 fiber) 8.125" (L) x 4.875" (W) x 0.485" (H) 	LL-4808L-R	FA000037	N/A	<b>Max Trays: 4</b> Single: 144 Mass: 48 (576 fiber)	N/A	<b>Max Trays: 4</b> Single: 144 Mass: 48 (576 fiber)	N/A
Single Fuse: N/A Mass Fuse: 12 (144 fiber) 8.125" (L) x 4.875" (W) x 0.485" (H) 	LL-4808 R	FA000020	N/A	<b>Max Trays: 4</b> Single: N/A Mass: 48 (576 fiber)	N/A	<b>Max Trays: 4</b> Single: N/A Mass: 48 (576 fiber)	N/A
Single Fuse: 36 Mass Fuse: N/A 8.125" (L) x 4.875" (W) x 0.485" (H) 	LL-4808 L	FA000021	N/A	<b>Max Trays: 4</b> Single: 144 Mass: N/A	N/A	<b>Max Trays: 4</b> Single: 144 Mass: N/A	N/A
Single Fuse: N/A Mass Fuse: 24 (288 fiber) 15.950" (L) x 4.875" (W) x 0.485" (H) 	LL-4896 R	FA000022	<b>Max Trays: 5</b> Single: N/A Mass: 120 (1440 fiber)	N/A	<b>Max Trays: 9</b> Single: N/A Mass: 216 (2592 fiber)	N/A	N/A
Single Fuse: 96 Mass Fuse: N/A 15.950" (L) x 4.875" (W) x 0.485" (H) 	LL-4896 L	FA000023	<b>Max Trays: 5</b> Single: 480 Mass: N/A	N/A	<b>Max Trays: 9</b> Single: 864 Mass: N/A	N/A	<b>Max Trays: 3</b> Single: 180 Mass: N/A

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## LightLink Fiber Optic Splice Trays (cont.)

### Ordering Information – Splice Trays for Aerial Weathertight Fiber Optic Splice Closures

DESCRIPTION	MODEL NO.	AFL NO.	LG-410-U	LG-420-U FTTx	LG-500-U	LG-500-U FTTx
Single Fuse: 24 Mass Fuse: N/A 12.542" (L) x 4.042" (W) x 0.390" (H) 	LL-2400	91710-06	<b>Max Trays: 4</b> Single: 96 Mass: N/A	N/A	<b>Max Trays: 4</b> Single: 96 Mass: N/A	N/A
Single Fuse: 32 Mass Fuse: N/A 6.300" (L) x 2.730" (W) x 0.829" (H) 	LL-2425	FC000053	N/A	<b>Max Trays: 1</b> Single: 32 Mass: N/A	N/A	<b>Max Trays: 1</b> Single: 32 Mass: N/A
Single Fuse: 24 Mass Fuse: 4 (48 fiber) 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-2448	911289-00-02	<b>Max Trays: 3</b> Single: 72 Mass: 12 (144 fiber) Mechanical: 36	N/A	<b>Max Trays: 3</b> Single: 72 Mass: 12 (144 fiber) Mechanical: 36	N/A
Single Fuse: 12 Mass Fuse: N/A 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-2450	91957-00	N/A	N/A	N/A	N/A
Single Fuse: N/A Mass Fuse: 12 (144 fiber) 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-4848	911437-00-02	<b>Max Trays: 3</b> Single: N/A Mass: 36 (432 fiber)	N/A	<b>Max Trays: 3</b> Single: N/A Mass: 36 (432 fiber)	N/A
Single Fuse: N/A Mass Fuse: 8 (96 fiber) 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-4850	91958-00	N/A	N/A	N/A	N/A
Single Fuse: 12 Mass Fuse: 8 (96 fiber) 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-1248	911221-00-00	N/A	N/A	N/A	N/A

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## LightLink Fiber Optic Splice Trays (cont.)


### Ordering Information – Splice Trays for Aerial Weathertight Fiber Optic Splice Closures

DESCRIPTION	MODEL NO.	AFL NO.	LG-500-U-FTTx-ISO	LG-600-U	LG-600-FTTx	LG-600-U-FTTx-ISO
Single Fuse: 24 Mass Fuse: N/A 12.542" (L) x 4.042" (W) x 0.390" (H) 	LL-2400	91710-06	N/A	<b>Max Trays: 12</b> Single: 288 Mass: N/A	<b>Max Trays: 2</b> Single: 48 Mass: N/A	N/A
Single Fuse: 32 Mass Fuse: N/A 6.300" (L) x 2.730" (W) x 0.829" (H) 	LL-2425	FC000053	N/A	N/A	N/A	N/A
Single Fuse: 24 Mass Fuse: 4 (48 fiber) 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-2448	911289-00-02	N/A	<b>Max Trays: 8</b> Single: 192 Mass: 32 (384 fiber) Mechanical: 12	N/A	N/A
Single Fuse: 12 Mass Fuse: N/A 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-2450	91957-00	<b>Max Trays: 1</b> Single: 12 Mass: N/A	N/A	N/A	<b>Max Trays: 2</b> Single: 24 Mass: N/A
Single Fuse: N/A Mass Fuse: 12 (144 fiber) 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-4848	911437-00-02	N/A	<b>Max Trays: 8</b> Single: N/A Mass: 96 (1152 fiber)	N/A	N/A
Single Fuse: N/A Mass Fuse: 8 (96 fiber) 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-4850	91958-00	<b>Max Trays: 1</b> Single: N/A Mass: 8 (96 fiber)	N/A	N/A	<b>Max Trays: 2</b> Single: N/A Mass: 16 (192 fiber)
Single Fuse: 12 Mass Fuse: 8 (96) 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-1248	911221-00-00	<b>Max Trays: 1</b> Single: 12 Mass: 8 (96 fiber)	N/A	N/A	<b>Max Trays: 2</b> Single: 24 Mass: 16 (192 fiber)

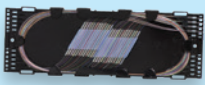



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## LightLink Fiber Optic Splice Trays (cont.)

### Ordering information – Splice Trays for Aerial Weathertight Fiber Optic Splice Closures

DESCRIPTION	MODEL NO.	AFL NO.	LG-410-U	LG-500-U	LG-600-U
Single Fuse: N/A Mass Fuse: 4 (48 fiber) 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-4800	91711-07	<b>Max Trays: 3</b> Single: N/A Mass: 12 (144 fiber)	<b>Max Trays: 3</b> Single: N/A Mass: 12 (144 fiber)	<b>Max Trays: 8</b> Single: N/A Mass: 32 (384 fiber)

### Ordering Information—Splice Trays for Fiber Optic Enclosures

DESCRIPTION	MODEL NO.	AFL NO.	LL-400B WITH INTERCONNECT	LL-400B WITHOUT INTERCONNECT	LL-400SX WITH 2 LGX® PLATES	LL-400SX WITHOUT LGX PLATES
Single Fuse: 24 Mass Fuse: 4 (48 fiber) Mechanical : 12 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-2448	911289-00-02	<b>Max Trays: 4</b> Single: 96 Mass: 16 (192 fiber) Mechanical: 48	<b>Max Trays: 6</b> Single: 144 Mass: 24 (288 fiber) Mechanical: 72	<b>Max Trays: 3</b> Single: 72 Mass: 12 (144 fiber) Mechanical: 36	<b>Max Trays: 9</b> Single: 216 Mass: 36 (432 fiber) Mechanical: 108
Single Fuse: 48 Mass Fuse: N/A 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-2448-48S	FA000045	<b>Max Trays: 4</b> Single: 192 Mass: N/A	<b>Max Trays: 6</b> Single: 288 Mass: N/A	<b>Max Trays: 3</b> Single: 144 Mass: N/A	<b>Max Trays: 9</b> Single: 432 Mass: N/A
Single Fuse: N/A Mass Fuse: 12 (144 fiber) 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-4848	911437-00-02	<b>Max Trays: 4</b> Single: N/A Mass: 48 (576 fiber)	<b>Max Trays: 6</b> Single: N/A Mass: 72 (864 fiber)	<b>Max Trays: 3</b> Single: N/A Mass: 36 (432 fiber)	<b>Max Trays: 9</b> Single: N/A Mass: 108 (1296 fiber)
Single Fuse: N/A Mass Fuse: 4 (48 fiber) 12.542" (L) x 4.270" (W) x 0.531" (H) 	LL-4800	91711-07	<b>Max Trays: 4</b> Single: N/A Mass: 16 (192 fiber)	<b>Max Trays: 6</b> Single: N/A Mass: 24 (288 fiber)	<b>Max Trays: 3</b> Single: N/A Mass: 12 (144 fiber)	<b>Max Trays: 9</b> Single: N/A Mass: 108 (1296 fiber)

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## LightLink Fiber Optic Splice Trays (cont.)

### Ordering Information—Splice Trays for Fiber Optic Enclosures

DESCRIPTION	MODEL NO.	AFL NO.	LL-500	LL-580
Single Fuse: N/A Mass Fuse: 12 (144 fiber) 12.000" (L) x 5.125" (W) 0.485" (H) 	LL-7144	FA000043	N/A	<b>Max Trays: 2</b> Single: N/A Mass: 24 (288 fiber)
Single Fuse: 60 Mass Fuse: 12 (144) 12.000" (L) x 5.125" (W) 0.485" (H) 	LL-7644	FA000044	N/A	<b>Max Trays: 2</b> Single: 120 Mass: 24 (288 fiber)
Single Fuse: 12 Mass Fuse: N/A 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-2450	91957-00	<b>Max Trays: 5</b> Single: 60 Mass: N/A	N/A
Single Fuse: N/A Mass Fuse: 8 (96 fiber) 7.139" (L) x 4.294" (W) x 0.370" (H) 	LL-4850	91958-00	<b>Max Trays: 3</b> Single: N/A Mass: 24 (288 fiber)	N/A
Single Fuse: 36 Mass Fuse: 12 (144 fiber) 8.125" (L) x 4.875" (W) x 0.485" (H) 	LL-4808L-R	FA000037	N/A	<b>Max Trays: 2</b> Single: 72 Mass: 24 (288 fiber)

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## LightLink Fiber Optic Splice Trays (cont.)

### Ordering Information – Splice Tray for Splicing Cabinets and Shelves

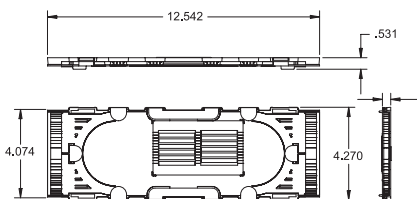
DESCRIPTION	MODEL NO.	AFL NO.
Telescoping Splice Tray - Stores up to 48 single fusion sleeves or 12 mass fusion sleeves (144 fibers). For use in the following products: LL-300, LL-288/576, LL-720/1440, OTSS-SYS1, OSS-SYS2 and OSS-SYS1	STF-48	911442-00-00
FTTx Splice Tray - Stores up to 2 single fusion sleeves. For use in the following products: ONT-760XL, ONT-3000 and CG-1500	—	DM000445
Bare Fiber Splice Tray - Stores up to 24 single fusion fibers without sleeves. For use in the following products: Any product that accepts the LL-2400 splice tray	—	C184190

### Ordering Information—Splice Tray Accessories

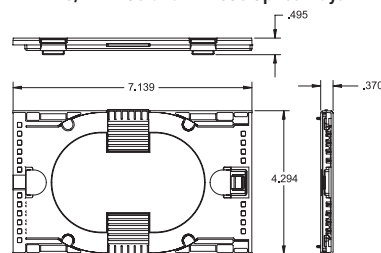
DESCRIPTION	AFL NO.
FP-40 Splice Protection Sleeves, 40 mm length (1000 box/100 pack)	S015916
FP-60 Splice Protection Sleeves, 60 mm length (1000 box/100 pack)	S015915
Single Fusion Splice Chip - 6 splices per chip. (10 pcs. per kit)	FA000034
Single Fusion Splice Chip - 12 splices per chip. (10 pcs. per kit)	FC000657
Single Fusion Splice Chip - 24 splices per chip. (10 pcs. per kit)	91745-02
Mass Fusion Splice Chip - 4 splices per chip. (10 pcs. per kit)	FA000088
Mechanical Fusion Splice Tape (10 pcs. per kit)	FA000089
Core Tube Cable Fiber Router for routing fiber up to 8 directions. For all central core tube sizes.	FC000008
Loose Tube or Ribbon Router for routing fiber up to 6 directions. For all Loose Tube and up to 12 fiber Ribbon.	FC000070

## Dimensions

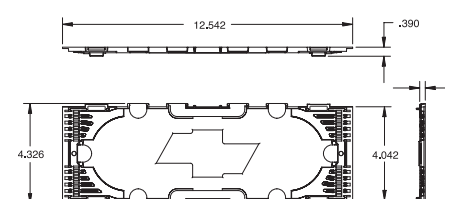
LL-2448 and LL-4848 Splice Trays



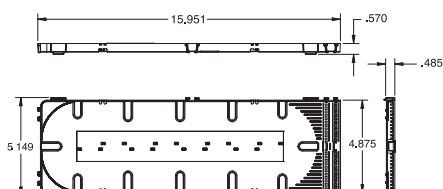
LL-1248, LL-2450 and LL-4850 Splice Trays



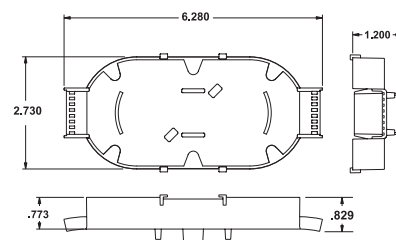
LL-2400 Splice Tray



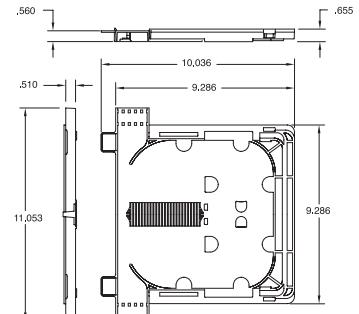
LL-4896 Splice Tray

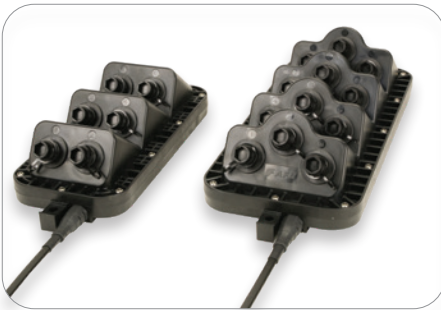


LL-2425 Splice Tray



OEE Splice Tray





AFL TITAN RTD Multiport Terminal



AFL TRIDENT Hardened Connector

## AFL TITAN RTD® FTTx System

The AFL TITAN RTD Multiport is a factory terminated OSP fiber terminal designed for quick and easy subscriber connections anywhere in the OSP network when used in conjunction with AFL TRIDENT® Hardened Fiber Optic Connectors. The sealed and rugged design of both the AFL TITAN RTD Multiport and AFL TRIDENT connector allow for long term reliability when installed anywhere in the network—underground, in pedestals, on poles, or on aerial strand or ADSS cables.

The preterminated AFL TITAN RTD Multiport Terminal is available with a variety of cable stub options. Dielectric or toneable flat drop cables are available for underground or short span self-support applications while ADSS cable stubs are available for longer span self-support applications\*. Round armored cables are available for rodent protection in aerial or direct buried applications. Lastly, a pushable/air-jettable MicroDrop cable is available for microduct jetting applications.

The multiple stub options allow for flexibility when engineering the network and consolidation of multiple terminal stubs into one centralized splice point. The terminal is outfitted with four, six, eight or twelve AFL TRIDENT connector ports. The AFL TITAN RTD Multiport and AFL TRIDENT Hardened Fiber Optic Connector are designed and tested to Telcordia GR-771 and Telcordia GR-3120, respectively.

Lengths less than 350 feet ship coiled in low-profile boxes. Lengths more than 350 feet ship on a 33" corrugated plastic reel inside a cardboard box.

### Features

- AFL TRIDENT Hardened Connector ports for speedy customer connections
- Stubbed with a large variety of cable options including flat drop\*, ADSS\*, pushable/air-jettable MicroDrop, or armored drop.
- Factory sealed for deployment in up to 10 feet of water head, but re-enterable for connector repair
- Pole and swing arm mountable; aerial mounting bracket available for strand mount
- Low profile design—4 and 6 port fit into 6" pedestals

### Multiport Terminal Specifications

PARAMETER		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)

### AFL TRIDENT Hardened Connector 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

### Qualifications

GOVERNING BODY	STANDARD CODE
Telcordia	GR-771, GR-3120

\*Refer to "AFL TITAN/TRIDENT Sag and Tension Guide" Applications Engineering Note for guidance on allowable span lengths for various stub options

## AFL TITAN RTD® FTTx System



Pedestal Mount Application



AFL TITAN RTD / AFL TRIDENT® Interface

### Ordering Information

RTD	12	XXX	DD	0050	F	
	<b>Ports</b>	<b>Cable End</b>	<b>Cable Type</b>	<b>Tail Length</b>	<b>UOM</b>	<b>Reel</b>
	04 = 4-port 06 = 6-port 08 = 8-port 12 = 12-port	XXX = Pigtail	DD = Dielectric Flat Drop TD = Toneable Flat Drop AD = TITAN ADSS Cable PD = Pushable MicroDrop AN = Armored Drop	*4 digits Example: 0050-F for 50 feet	F = Feet M = Meter	Blank = Standard cable-first payout R = Reversed reel, terminal-first payout

### AFL TITAN RTD Accessories

DESCRIPTION	AFL NO.	IMAGE
Strand Mount Bracket Kit	FC001365	
AFL TRIDENT to SC/APC Adapter—for field replacement or jumper referencing	FC001366	
AFL TRIDENT to SC/APC Test Jumper (1 meter)	CS013775-0001	
One-Click® Cleaner SC (500 cleans)	8500-05-0001MZ	
TITAN RTD Multiport Handhole Hanging Bracket Kit, 4/6 Port	FC001474	
TITAN RTD Multiport Handhole Hanging Bracket Kit, 8/12 Port	FC001475	



## AFL TRIDENT® Hardened Drop Cables

AFL TRIDENT factory-terminated drop cables are the final piece of the AFL TITAN RTD® FTTx System. The quarter-turn latching and sealing mechanism of the AFL TRIDENT connector provides quick and easy “plug and play” connections to AFL TITAN RTD multiport terminals, enabling lighting fast service subscriber connections with outstanding long term reliability. The connector/adaptor interface is keyed to ensure proper alignment of the 2.5 mm APC ferrule. Once the connector is keyed and inserted, locking and sealing is provided with a “BNC-like” quarter-turn of the connector coupling. Drops are available with one or both ends terminated (either both ends AFL TRIDENT or hybrid—one end AFL TRIDENT and one end standard SC). Drop cables are available in one, two, or four fibers (flat drop only).



### Features

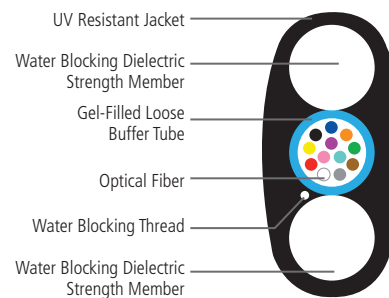
- AFL TRIDENT Hardened Connector ports for speedy customer connections
- Factory terminated on:
  - 250  $\mu\text{m}$  outdoor or 900  $\mu\text{m}$  indoor/outdoor flat drop cable
  - 250  $\mu\text{m}$  armored drop
  - 900  $\mu\text{m}$  pushable/air-jettable MicroDrop
- Flat drop is aerial self-support capable

### Qualifications

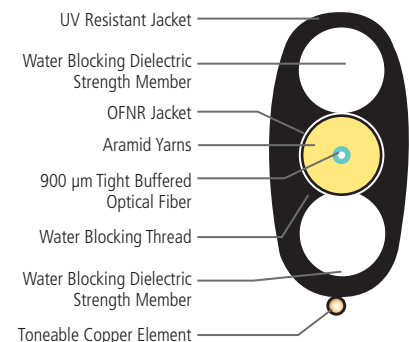
GOVERNING BODY	STANDARD CODE
Telcordia	GR-3120

### Cable Components

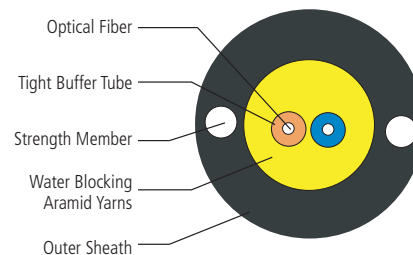
#### Dielectric OSP



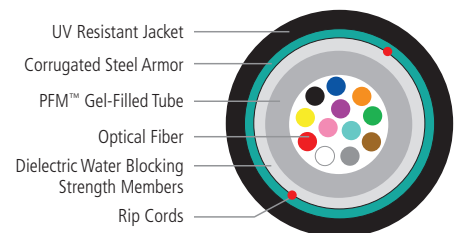
#### Toneable Indoor/Outdoor



#### MicroDrop



#### Armored Drop



## AFL TRIDENT® Hardened Drop Cables

### Cable Specifications (Flat Drop Cable Only)

Max Span Length at 1% Sag	
NESC Light	550 ft (168 m)
NESC Medium	275 ft (84 m)
NESC Heavy	150 ft (46 m)

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



Bluetooth®

90S+



In Work Tray



Wind Protector Open

## Fujikura 90S+ Fusion Splicer

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

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

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

### Features

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

### Applications

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

STOCK ITEM



## Fujikura 90S+ Fusion Splicer

### Ordering Information

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

### Recommended Products for the 90S+

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

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



#### Fiber Holders

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



#### Portable Tripod Work Station

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



#### V-Groove Cleaning Kit

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



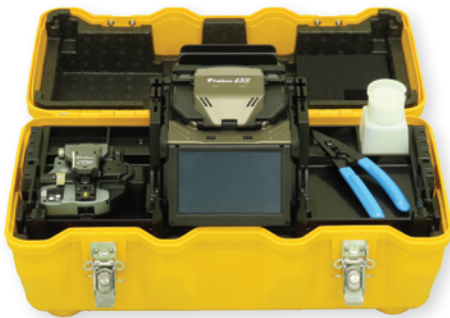
## Fujikura 90S+ Fusion Splicer

### Specifications

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



45S



45S Standard Kit



45S on Tripod

## Fujikura 45S Fusion Splicer

The 45S cladding alignment fusion splicer is changing the way people splice fiber in small to mid-fiber count applications. This Fujikura splicer debuts a landmark improvement to the fusion splicing process with the ability to prepare and load both fibers simultaneously. The hand-held fiber coating stripper, the SS-05, is capable of stripping two 250  $\mu$ m coated fibers in the same pass, along with the CT-16A cleaver adapter plate which can likewise accommodate two bare fibers for cleaving. After preparation, the 45S patented sheath clamps enable loading both fibers simultaneously into the splicer with one fiber in each hand. The user can press down on the sheath clamp base to close it while positioning the fiber in the v-grooves. This enables one-handed operation.

Furthermore, the 45S sheath clamps are mechanically linked to the wind protector, so after splicing is finished, opening the wind protector also opens both sheath clamps for quick sleeve positioning and transfer to the tube heater. The 45S tube heater shrinks sleeves much faster than its predecessor with a nominal ~20 second heat time for 60 mm sleeves down from ~26 seconds. The simultaneous fiber preparation capability, automated sheath clamp opening, and a faster tube heater, combine to lower the overall fusion splicing cycle time by ~30% or more.

The 45S continues to benefit the user experience with improvements to fiber placement, battery access, and machine ergonomics. Previously, when using sheath clamps, if the cleaved fiber was accidentally set past the electrode centerline, the machine would send an error and require manual intervention. The 45S will now accept this mistake and reverse the fiber to correct position automatically. With a cube form factor, the 45S is easily transported and operated in space-constrained environments. The adjustable screen can alleviate glare from the sun and adjust with abnormal splicer positions confronted in challenging splice locations.

Backed by the best service team in the industry, the Fujikura 45S is the ideal splicer to use when portability, ruggedness, speed, and reliability are needed. If you'd like to see the 45S capabilities first-hand, please contact us at 1-800-235-3423 to arrange a product demonstration at your earliest convenience.

### Applications

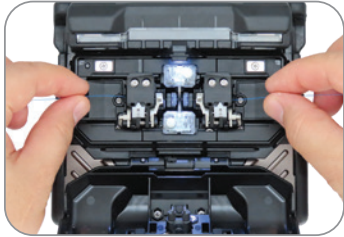
- 5G Small Cell Site
- FTTx drops and terminations
- MDF/IDF splices and terminations
- Rural fiber deployments and restorations

### Features

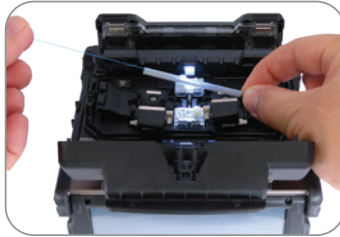
- Simultaneous fiber preparation with newly patented sheath clamp design
- Sheath clamps automatically opened with the wind protector
- Automatic fiber placement correction
- Active Fusion Control for arc optimization with every splice
- Active Blade Management for cleave quality monitoring and correction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

## Fujikura 45S Fusion Splicer

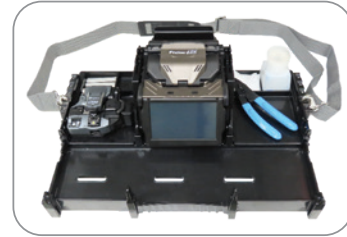
### Features



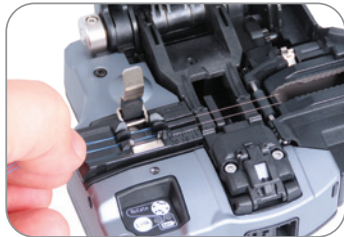
Simultaneous Fiber Loading



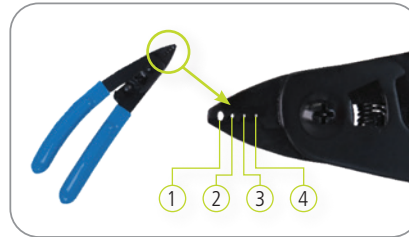
Sleeve Positioning



Work Tray with Neck Strap



CT-16A Adapter Plate on CT-50



Fiber stripper SS-05

- ① For 2.3 mm
- ② For 900  $\mu$ m
- ③ For 250  $\mu$ m
- ④ For 250  $\mu$ m

### Ordering Information

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

### Recommended Accessories

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

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

## Fujikura 45S Fusion Splicer

### Specifications

PARAMETER		VALUE
Fiber alignment method		Active cladding alignment
Fiber count can be spliced		Single fiber
Applicable fiber	Fiber type	Single-mode optical fiber Multimode optical fiber
	Cladding dia.	Approx. 125 μm
Applicable coating	Sheath Clamp	Coating diameter: Max. 3,000 μm Cleave length: 5 to 16 mm * <sup>1</sup>
	Fiber Holder	Coating diameter: 160 μm – 3,000 μm based on available fiber holder options Cleave length: Approx. 10 mm
Fiber splice performance	Splice loss * <sup>2</sup>	ITU-T G.652: Avg. 0.03dB
		ITU-T G.651: Avg. 0.01dB
		ITU-T G.653: Avg. 0.05dB
		ITU-T G.655: Avg. 0.05dB
		ITU-T G.657: Avg. 0.03dB
	Splicing time * <sup>3</sup>	SM FAST mode: Avg. 6 to 7 sec. SM AUTO mode: Avg. 8 to 10 sec.
Applicable protection sleeve	Sleeve type	Heat shrinkable sleeve
	Sleeve length	Max. 66 mm
	Sleeve dia.	Max. 6.0 mm before shrinking
Sleeve heat performance	Heat time * <sup>4</sup>	60 mm mode: Avg. 15 to 22 sec. 60 mm slim mode: Avg. 15 to 17sec.
Fiber tensile test force		Approx. 2.0 N
Electrode life * <sup>5</sup>		Approx. 6,000 splices
Physical description	Dimensions W	Approx.131 mm without projection
	Dimensions D	Approx.123 mm without projection
	Dimensions H	Approx.121 mm without projection
	Weight	Approx. 1.4 kg including battery
Environmental condition	Temperature	Operate : -10 to 50°C Storage : -40 to 80°C
	Humidity	Operate : 0 to 95% non-condensing Storage : 0 to 95% non-condensing
	Altitude	Max. 5,000 m
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 1A
	Output	Approx. DC 19V, Max. 2.1A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC14.4V / 3,190mAh
	Capacity * <sup>6</sup>	60 mm heat mode: Approx. 200 splice & heat cycles
		60 mm slim heat mode: Approx. 230 splice & heat cycles
	Temperature	Operate: -10 to 50°C
		Recharge : 0 to 40°C
		Short term storage of 30 days: -20 to 50°C
Long term storage: -20 to 30°C		
Battery life * <sup>7</sup>	Approx. 500 recharge cycles	
Display	LCD monitor	TFT 4.95 inches with touch screen
	Magnification	Approx. 132 to 300X
Illumination	V-grooves	LED lamp
Interface	PC	USB2.0 MINI B type
	External LED lamp	USB 2.0 A type
		Approx. DC5V, 500mA
	Wireless * <sup>8</sup>	Bluetooth® 5.2

## Fujikura 45S Fusion Splicer

### Specifications

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

#### NOTES:

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





Bluetooth®

90R



In Work Tray



Wind Protector Open

## Fujikura 90R Fusion Splicer

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

### Features

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

### Applications

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

## Fujikura 90R Fusion Splicer

### Ordering Information

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

### Recommended Products for the 90R

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

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



#### Fiber Arrangement Tool

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



#### V-Groove Cleaning Kit

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



## Fujikura 90R Fusion Splicer

### Specifications

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



Shown in CC-37 Carrying Case

## Features

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



## CT50 Fiber Cleaver

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

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

## Specifications

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

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

continued  
→

## CT50 Fiber Cleaver

### Ordering Information

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

### Accessories

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

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

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





## CT16 Fiber Cleaver

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



### Features

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

### Applications

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

### Ordering Information

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

continued  
→

## CT16 Fiber Cleaver

### Specifications

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

### Notes

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



## Features

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

## Thermal Strippers

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

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

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

## Ordering Information

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

## Thermal Strippers

### Specifications

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



## Splice Protection Sleeves

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

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

### Standard Sleeves: Dimensions & Applicable Fiber

#### SLEEVES FOR SINGLE FIBERS 250 MICRONS TO 900 MICRONS

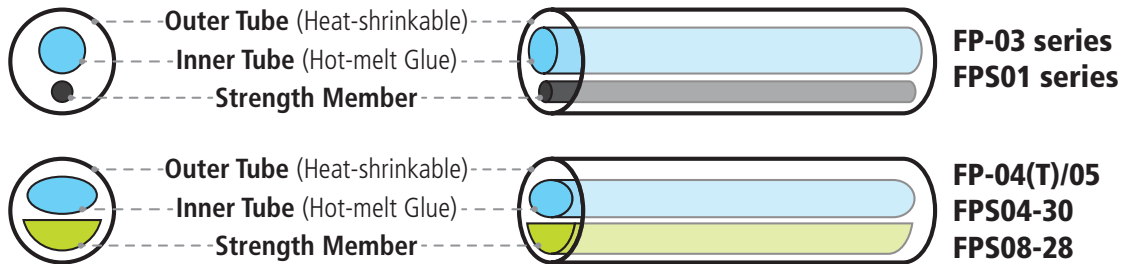
DESCRIPTION	SLEEVE LENGTH	FIBER CLEAVE LENGTH	SLEEVE DIAMETER AFTER SHRINK	MOQ & MOM	AFL NO.
FP-40 Slim Protection Sleeve	40 mm	10 mm	2.3 mm (max.)	1,000 & 100	S018262
FP-60 Slim Protection Sleeve	60 mm	10 mm	2.3 mm (max.)	1,000 & 100	S018263
FP-60	60 mm	10 mm	3.1 mm (max.)	1,000 & 100	S015915
FP-40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

#### SLEEVES FOR UP TO 250 MICRON COATED RIBBON

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

### Specifications

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



## Splice Protection Sleeves

### Micro Sleeves: Dimensions & Applicable Fiber

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

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

















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

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

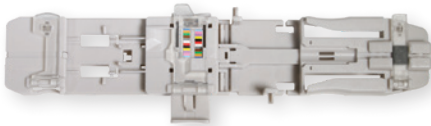
### Specifications

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

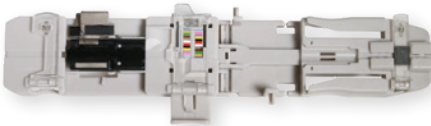
### Type Variations

		
FP-60	FPS01-400-12	FPS01-900-15
		
FP-40	FPS01-400-15	FPS01-900-20
		
FP-04(T)	FPS01-400-20	FPS01-900-25
		
FP-05	FPS01-400-25	FPS01-900-34
		
FPS04-30	FPS01-400-34	FPS01-900-45
		
FPS08-28	FPS01-400-40	
		
FPS24-40		

**FULL SCALE**



RT-02



RT-02 with FH-70-12PC

## RT-02 Ribbonizing Tool

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

### Features

- No glue required
- 200  $\mu\text{m}$  and 250  $\mu\text{m}$  compatible
- Loading with color code sequence not required
- Fibers load directly into fiber holder
- Left and right fiber holder color codes printed on tool

### Applications

- Ribbonizing 200  $\mu\text{m}$  and 250  $\mu\text{m}$  loose fibers
- 200  $\mu\text{m}$  and 250  $\mu\text{m}$  MPO termination
- Mass fusion splicing loose fiber cables

### Ordering Information

DESCRIPTION	AFL NO.
RT-02 (tool only)	S017465
FH-70-12PC (pair of pitch conversion holders for 200 $\mu\text{m}$ loose fibers)	S017464
FH-70-12 (pair – standard 12F ribbon holders)	S017119



## FST-12 Fiber Separation Tool

The FST-12 Fiber Separation Tool is used to quickly, accurately and reliably split ribbons into sub-groups or individual fibers. The ergonomic FST-12 design enables safe and reliable, one-handed operation for use in diverse fiber deployment environments, such as aerial and remote-site applications.

### Features and Benefits

- Enables separation of groups of fibers or single fibers and is not limited to only even-numbered groupings.
- One-handed operation allows the operator's other hand to guide and control the ribbon at all times, minimizing the potential for accidental damage to the fibers or ribbon.
- Hand-held method eliminates the need to utilize valuable work surface space for operation and is the ideal solution for remote-site and aerial operations such as bucket truck or ladder-sling applications.
- Performing two overlapping separations of the ribbon allows any single fiber or any sub-group of fibers to be extracted from the ribbon, even in mid-span taut-sheath operations where minimal ribbon length is available.
- Standard tool designed for fiber counts up to 12-fiber ribbon.

### Specifications

PARAMETER	VALUE
Ribbon Thickness	250 to 360 micron
Ribbon Width	3.2 mm (12-fiber)
Fiber Pitch	250 micron
Fiber Coating Material	UV cured resin
Separation Ratios: 12-fiber Ribbon	1:11, 2:10, 3:9, 4:8, 5:7, 6:6
Environmental Conditions: Operating Temperature	-10° to 50°C, 0 to 95% RH (non-dew)
Storage Temperature	-40° to +80°C, 0 to 95% RH (non-dew)
Dimensions	160L x 126W x 30H (mm) 6.30L x 4.96 x 1.18 (in)
Weight	220 g / 7.76 oz.

### Ordering Information

DESCRIPTION	AFL NO.
<b>FST-12 Fiber Separation Tool</b> Includes: 12-fiber ribbon jaw set, instructional manual and color coded quick reference guide	S014012



FAT-04

## Fiber Arrangement Tool

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

### Ordering Information

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

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



FAA-03A

## Ribbon Forming Adhesive

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

### Ordering Information

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



Splicer V-groove Cleaning Refill Kit



CS-1 Cotton Swabs

## Splicer V-groove Cleaning Kit

Today's splicing equipment is fast, efficient, and requires minimal maintenance due to advances in splicing technology. However, contamination in the V-groove of the splicer is still a primary source of trouble for the splicing technician. This is especially problematic when splicing with a fixed V-groove fusion splicer. Environmental contamination, such as dust, dirt and fiber coating debris, as well as the silica deposits generated during the fusion process eventually find their way to the surface of the v-groove. This contamination will offset the fibers and degrade performance. To help control this problem, a disciplined cleaning regimen and specific tooling is required to ensure the splice is right the first time.

To solve cleaning needs, AFL offers the Splicer V-groove Cleaning Kit. This product integrates eight components into an affordable and effective inspection and cleaning solution for any fusion splicer. Small and lightweight, it fits easily into the Fujikura splicer transit case or it can be carried separately in its own carrying case.

### Kit Includes

- Scrubber Brush with stiff tapered nylon bristles
- Sweeper Brush with soft nylon bristles
- Eye Loupe with 3X to 12X magnification
- LED Pen Light with momentary or constant on switching
- Cleaning Fluid that is nonflammable and environmentally safe
- Lint-free Cotton Swabs
- Instruction Sheet with illustrations
- Canvas Carrying Case

### Refill Kit Includes

To replenish the consumables within the kit, AFL provides a refill kit that includes the following components:

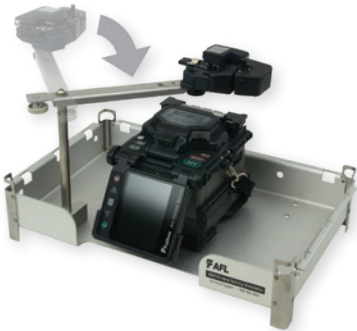
- One can of FCC2 Cleaning Fluid
- One Scrubber Brush
- One Sweeper Brush
- Ten packs CS-1 Cotton Swabs (250 swabs)

### Ordering Information

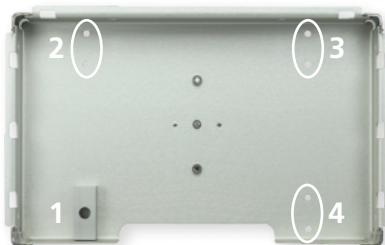
DESCRIPTION	AFL NO.
Splicer V-groove Cleaning Kit	S014397
Splicer V-groove Cleaning Refill Kit	S014416
CS-1 Cotton Swabs (pack of 25 swabs)	S003719



Portable Tripod Workstation Kit  
(splicer and cleaver not included)



Cleaver mount assembly swings into  
and out of the work space



Portable Work Tray showing the four mounting  
positions of the cleaver mount assembly  
(delivered as shown)

## Portable Tripod Workstation

As splicing requirements have migrated from aerial to ground level locations, a sturdy splicing workstation with the ability to adjust for uneven ground surfaces has been missing from the splicing marketplace. That problem is solved with AFL's Portable Tripod Workstation – the critical missing link in splicing productivity.

The Portable Tripod Workstation offers both a sturdy work tray to support the splicer, cleaver and accessories, and a tripod to support the work tray. The two can be purchased together as a kit or separately for those users who prefer to use their own tripod or mounting mechanism.

The work tray incorporates a unique cleaver mounting system that offers flexibility and convenience for the user. The cleaver mounting arm pivots into and out of the work space, as needed, and securely captures the CT50, CT-20 and CT-04 style cleavers. The base of the cleaver mounting assembly can be moved to any one of four positions on the tray to accommodate user preferences.

The tripod is solidly constructed but lightweight, weighing less than six pounds, and collapses to a length of only twenty-five inches. The telescoping legs offer flexible height adjustments from thirteen inches to sixty-one inches and the leg angle can be increased for unusual surfaces.

### Features

- Sturdy work tray supports the splicer, cleaver and accessories
- Tripod supports a load capacity of up to eleven pounds
- Independent telescoping tripod legs support uneven work surfaces
- Leveraged handles securely lock work tray into position
- Cleaver mount assembly swings cleaver into and out of the work space
- Optional cleaver mounting positions accommodate user preferences
- Compatible with all FSM-17, FSM-18, FSM-50, FSM-60 and 12/19/70 series models

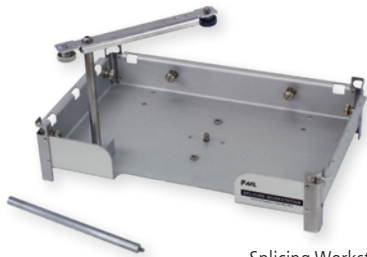
### Ordering Information

DESCRIPTION	AFL NO.
<b>Portable Tripod Workstation Kit – Includes:</b> Tripod with pan head and quick release platform (make and model of tripod may change without notice), portable work tray with cleaver mount assembly and canvas carrying case	S014773
<b>Portable Work Tray – Includes:</b> Portable work tray with cleaver mount assembly and canvas carrying case	S014753
<b>Tripod – Includes:</b> Tripod with pan head and quick release platform (make and model of tripod may change without notice)	S014751

### Optional Accessories

DESCRIPTION	AFL NO.
<b>TS-01 TRIPOD SCREW</b> (required for 12S & 12R models)	S015895

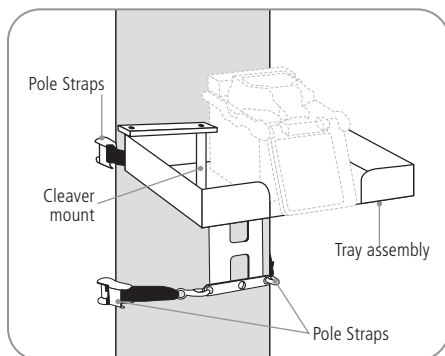




Splicing Workstation

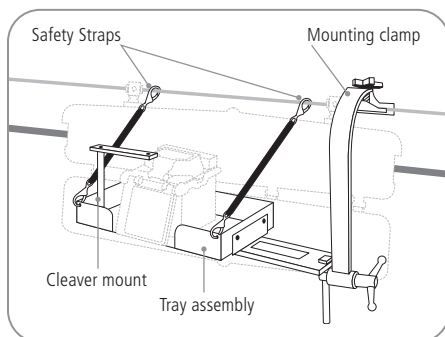


Aerial mounting system



**Pole Mounting System**

*\*Illustration for reference only.*



**Aerial Mounting System**

*\*Illustration for reference only.*

## ASW-02 Splicing Workstation

The ASW-02 Splicing Workstation can be used with a fusion splicer and cleaver in aerial or terrestrial splicing applications. The ASW-02 provides a stable work surface and secure mounting of the splicer and cleaver to prevent accidental drops and equipment damage in challenging splicing locations.

The ASW-02 Splicing Workstation consists of the work tray, a convenient pivoting cleaver mounting arm, a post for attachment to bucket or ladder mounting accessories, a tripod mount, and dual safety straps. An aerial mounting system is available for direct attachment of the workstation to a telephone pole, or for suspending the workstation from an aerial cable strand. The strand mounting system is fully adjustable to provide for optimal location of the workstation when minimal slack fiber is available, such as in a taut-sheath cable access scenario.

In the aerial environment, the safety straps may be secured to the cable strand to provide security and aid with workstation position adjustment. The safety straps are also used to secure the workstation to the pole, and may be used to raise or lower the workstation.

### Features

- Provides direct to pole mounting as well as direct adjustable attachment to aerial strand
- Mounting post provided for attachment to bucket and ladder mounting accessories (utilizing any popular copper splicer-head mounting rigs)
- Tripod mount allows for placement in tight FTTH splicing applications
- Includes cable tie locations to secure cables during splicing
- Optimized to simplify taut sheath splicing applications
- Cleaver mount securely captures cleaver and allows operator to rotate it in and out of the workspace as needed
- Matte finish minimizes glare
- Compatible with all FSM-17, FSM-18, FSM-50, FSM-60 and 19/70 series models

### Ordering Information

DESCRIPTION	AFL NO.
<b>ASW-02 Splicing Workstation</b> (Full kit with aerial mounting system) Includes aerial mounting system to provide strand and pole mounting capability, a post for attachment to bucket or ladder mount accessories and a receptacle for tripod mounting and safety straps	S010532
<b>ASW-02 Splicing Workstation</b> (Without aerial mounting system) Includes a post for attachment to bucket or ladder mount accessories and a receptacle for tripod mounting	S013620

## FlexScan® FS300 Quad OTDR

Be ready for anything with this all-in-one solution



### Features

- Multimode and Single-mode OTDR, including PON test
- SmartAuto® 1-button automated testing for fast results
- Pocket-sized, weighs less than 1 pound, 12-hour battery
- LinkMap® color-coded icons for easy troubleshooting
- Integrated Source, Power Meter and VFL
- Robust reporting including Print-to-PDF
- Available with field-replaceable connector

### Applications

- OTDR and insertion loss test and reporting
- Fast, accurate Pt-to-Pt and PON verification and troubleshooting
- Locate faults exceeding industry or user pass/fail thresholds
- Visually pinpoint location of macrobends or breaks

AFL's FlexScan FS300 Quad OTDR is an all-in-one solution for detecting, identifying, locating and resolving single-mode and multimode optical network issues. It is designed for both novice and expert technicians working in a range of environments from data centers to fiber-to-the-home, as well as local and wide area networks. The FlexScan FS300 automates test setup, shortens test time and simplifies results interpretation, improving efficiency and reducing costs.

**All-in-one test capability:** The FlexScan FS300 includes an integrated VFL, power meter and light source. It can be easily paired to AFL's award-winning FOCIS family of inspection scopes for single-fiber and/or MPO and OptiTip® multifiber inspection, ensuring technicians have everything they need to locate and resolve optical network issues.

**Performance-packed:** With SmartAuto automated multi-pulse acquisition, 37 dB dynamic range and best-in-class dead zones, FlexScan Quad OTDRs test multimode and single-mode networks – including FTTH PONs and POLANs up to 1:64 split ratio – while still detecting and measuring events <2 meters apart.

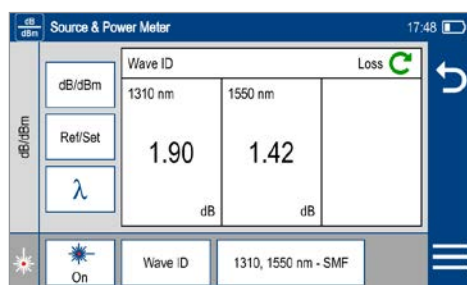
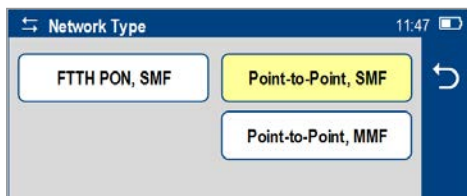
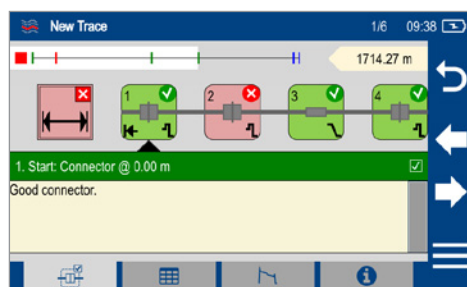
**User-friendly:** The FS300 enables both expert and novice technicians to quickly and accurately detect, locate, identify and measure optical network components and faults. It applies industry-standard or user-set pass/fail criteria and displays results using LinkMap color-coded icons that immediately show the health of the network.

**Pocket-sized:** The FlexScan FS300's small form factor still delivers 12-hour battery operation plus a large, bright, indoor/outdoor, 5-inch 800 x 480 touchscreen display that doesn't need a stylus.

**Multiple sharing and reporting options:** Results can be stored internally, saved to a USB, and downloaded via USB cable or Bluetooth (via Flex App). Reports can be generated directly from the unit using Print-to-PDF feature, or downloaded results can be reported using the included FlexReports™ Test Results Manager software.

**Field-replaceable connector:** With AFL's optional field-replaceable connector, avoid expensive service repairs to replace connectors damaged due to poor cleaning practices and/or normal wear-and-tear.

## FlexScan® FS300 Quad OTDR



### Dramatically Reduces Test Time

In SmartAuto mode, FlexScan OTDRs automatically analyze and test the network using a variety of network-optimized settings to precisely locate, characterize and identify network events with one button push. Loss and reflectance are measured for connectors, splices, splitters and macro-bends. FlexScan even checks for live fiber and verifies OTDR launch quality before initiating a test.

### Simplifies Network Troubleshooting

LinkMap® color-coded icons enable even novice users to easily and accurately troubleshoot optical networks. LinkMap clearly identifies fiber start, end, connectors, splices, PON splitters, and macro-bends.

A LinkMap Summary provides end-to-end link length, loss and ORL. Loss and reflectance of detected events is compared to industry-standard or user-defined pass/fail thresholds and displayed with clear pass/fail indications. Users can instantly toggle between LinkMap and Trace views.

### Multimode and Single-mode plus PON Testing in One OTDR

FlexScan Quad OTDRs are the ideal test tool for verifying and/or maintaining both single-mode and multimode networks. Unlike most Quad OTDRs, FS300 OTDRs test both point-to-point networks and FTTH PONs/Passive Optical LANs (POLANs).

### Connectivity

FlexScan OTDRs easily pair with AFL's ward-winning FOCIS® family of connector inspection probes for fast, easy single-fiber and/or multi-fiber connector end-face inspection. Images and pass/fail results can be transferred to the FlexScan for display and/or archiving with OTDR results.

FlexScan results can be transferred wirelessly via the free FlexApp to a smart device for real-time reporting using the included Windows-based FlexReports™ Test Results Manager software. Monitoring test results in real-time can detect mistakes while the tech is still in the field, preventing future truck rolls.

### OTDR, OLTS, and VFL Testing with a Single Tool

FlexScan optionally includes a Wave ID optical light source (OLS) and optical power meter (OPM). With Wave ID, the OPM auto-synchronizes to a single or multi-wavelength Wave ID optical signal transmitted by an AFL light source. The OPM reports detected wavelengths and measures power and loss at each wavelength, saving significant test time and eliminating setup errors.

The integrated Visual Fault Locator's eye-safe red laser enables users to visually pinpoint the location of macro-bends and fiber breaks often found in splice closures and fiber cabinets.

# FlexScan® FS300 Quad OTDR

## Specifications<sup>a</sup>

OTDR	MULTIMODE	SINGLE-MODE
Emitter Type	Laser	
Safety Class <sup>b</sup>	Class I	
Fiber Type	Multimode; compatible with OM1-OM5	Single-mode; compatible with all G.65x
Wavelengths <sup>c</sup>	850/1300 ±20 nm	1310/1550 ±20 nm
Network Type	Point-to-point	Point-to-point & PON up to 1:64
Connector Type	User-specified APC or UPC ferrule with interchangeable UCI adapters	
Dynamic Range <sup>d</sup>	≥29/29 dB @ 850/1300 nm	≥37/35 dB @ 1310/1550 nm
Event Dead Zone <sup>e</sup>	≤0.8 m @ 850/1300 nm typical	≤0.8 m @ 1310/1550 nm typical
Attenuation Dead Zone <sup>f</sup>	≤3.0 m	≤3.5 m
PON Dead Zone <sup>g</sup>	Not applicable	≤25 m
Pulse Widths	3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns	3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns; 1, 2, 3, 5, 10, 20 μs
Range Settings	250 m to 30 km	250 m to 240 km
Data Points	Up to 300,000	
Data Spacing	≥5 cm to ≤16 m	
Group Index of Refraction	1.3000 to 1.7000	
Distance Uncertainty	±(1 + 0.0025% x distance + data point spacing) m	
Linearity	±0.03 dB/dB	
Loss Resolution	0.001 dB	
Reflectance Range	850 nm: -20 to -58 dB; 1300 nm: -20 to -63 dB	1310/1550 nm: -20 to -65 dB
Reflectance Resolution	0.01 dB	
Reflectance Accuracy	±2 dB	
ORL Range	20 to 60 dB	
ORL Resolution	0.01 dB	
ORL Accuracy	±2 dB over range 30 to 55 dB; ±4 dB over range 20-30 dB and 55-60 dB	
Trace File Format	.SOR, Telcordia SR-4731 Issue 2	
OTDR Results Storage	Internal or external USB memory	
Internal Storage	Minimum 4 GB internal non-volatile memory (App SW + >5000 traces typical)	
Internal Launch Fiber	≥30 m internal MM launch fiber	≥50 m internal SM launch fiber
OTDR Modes	Supports SmartAuto, Expert, Real-Time for PON & point-to-point networks	
Real-time Refresh Rate	1 to 4 Hz	
Live Fiber Protection	No OTDR damage when connected to live fiber delivering ≤ +18 dBm at wavelength(s) in range 825 to 1675 nm	
Live Fiber Detection	Reports live fiber with input signal ≥ -35 dBm for wavelength(s) in range 825 to 1675 nm	

### Notes:

- All specifications valid at 25 °C unless otherwise specified.
- FDA 21 CFR 1040.10 & 1040.11, IEC 60825-1: 2014.
- Measured with laser in CW mode at 23 °C ±3 °C.
- SNR=1, longest range and pulse width, 3 minute averaging.
- Maximum distance between two points 1.5 dB down each side of a reflective peak caused by an event with a -45 dB (or smaller) reflectance. Test pulse width is 3 or 5 ns.
- Maximum distance from the start of a trace spike caused by an event with a -45 dB (or smaller) reflectance, to the point where the trace returns to and stays within ±0.5 dB of backscatter. Test pulse width is 3 or 5 ns.
- Recovery to within 0.5 dB of backscatter after 1:16 splitter (≤13 dB loss) using 100 ns pulse width.

# FlexScan® FS300 Quad OTDR

## Specifications<sup>a</sup>

OPM - OPTICAL POWER METER (P1 Option)	
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550, 1625, 1650 nm
Detector Type	InGaAs PIN, 2 mm diameter
Measurement Range	+3 to -70 dBm (+3 to -65 dBm @ 850 nm)
Tone Auto-Detect	270 Hz, 330 Hz, 1 kHz, 2 kHz
Tone Detect Range	+3 to -50 dBm @1300, 1310, 1550 nm; +3 to -40 dBm @850 nm;
Wave ID	Auto-synchronizes & measures 1, 2 or 3 wavelengths
Wave ID Range	+3 to -50 dBm @1300, 1310, 1550 nm; +3 to -40 dBm @850 nm
Accuracy	±5% @ -10 dBm
Linearity	±0.1 dB (-3 to -40 dBm); ±0.25 dB (-40 to -70 dBm)
Resolution	0.01 dB
Measurement Units	Power in dBm, nW, µW, mW; Loss in dB

OLS - OPTICAL LIGHT SOURCE (P1 Option)	
Wavelengths	850/1300/1310/1550 nm
Emitter Type	Laser
Safety Class	Class I <sup>b</sup>
Launch Condition	Controlled Launch at 850 nm (comparable to encircled flux on OM4 fiber)
Center λ (CW Mode)	±20 nm
Spectral Width	5 nm maximum (FWHM, CW Mode)
Internal Modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz, CW, Wave ID
SM Output Stability	Short-term <sup>c</sup> : ±0.1 dB; Long-term <sup>d</sup> : ±0.05 dB
MM Output Stability	Short-term <sup>e</sup> : ±0.20 dB; Long-term <sup>f</sup> : ±0.15 dB
Output Power	1310/1550 nm: -7 dBm ±1.5 dB (CW, G.652.C/D) 1300 nm: -7 dBm ±1.5 dB (CW, 50 µm MMF) 850 nm: 0 dBm ±1.5 dB (CW, 50 µm MMF)

VFL - VISUAL FAULT LOCATOR	
Emitter Type	Laser, Class IIIa / Class 3R <sup>b</sup>
Wavelength	635 nm ±10 nm
Output Power	1.5 mW (~+2 dBm ±0.5 dB) into SMF-28
Modes	CW and 1 Hz flashing

### Notes:

- All specifications valid at 25 °C unless otherwise specified.
- FDA 21 CFR 1040.10 and 1040.11, and IEC 60825-1:2014.
- Typical maximum deviation over 15 minute after 15 minute warm-up.
- Typical maximum deviation over 8 hours after 1 hour warm-up.
- 15 minutes after 30 minutes warm-up.
- 8 hours after 1 hour warm-up.

GENERAL	
Size (in boot)	98 x 175 x 52.5 mm
Weight	0.8 kg
Operating Temperature	-10 °C to +50 °C, 0 to 95% RH (non-condensing)
Storage Temperature	-30 °C to +70 °C, 0 to 95% RH (non-condensing, battery removed) -20 °C to +60 °C, 0 to 95% RH (non-condensing, battery installed)
Power	Rechargeable Lithium polymer battery; AC adapter
AC Adapter	100-240 VAC, 50-60 Hz input; 5VDC, 2A output
Battery Life (OTDR)	≥12 hours, Telcordia test conditions, 4 hours recharge
Display	5-inch color LCD, 800 x 480 pixels, backlit
Shock and Vibration	GR-196-CORE, drop test, 0.75 m (30 in.), 6 planes
Dust Protection	GR-196-CORE, rubber dust caps for all ports
OTDR/OLS Ports	MM: UPC; SM: UPC or APC; includes tool-free, interchangeable SC adapters
OPM and VFL Ports	Universal, 2.5 mm adapter (SC, FC, ST); others available
USB Ports	USB host port; micro-USB function port
Bluetooth Interface	W1 option; compatible with Windows PC and Android
WiFi Interface	W1 option; compatible with IEEE 802.11 / WLAN
CE Safety	Compliant with EN61010-1
CE EMI/RFI	EN55011, EN61326-1, GR-196-CORE 4.5.1
RoHS	Compliant with RoHS directive 2011/65/EU

## FlexScan® FS300 Quad OTDR

FlexScan FS300 models are available in five kit configurations: Basic, PLUS, PRO, BIPM, and MPO. All kits include FS300 with AC charger, battery, carry strap, SC/2.5 mm connector adapters, FlexReports™ Test Results Manager software, quick reference user guide, and carry case.

### Ordering Information

FS300-325 Basic, Plus, PRO, BIPM kits Order Entry: **FS300-325-[KIT]-[Pn]-[Wn]-[C]-[CC]-[LNG]-[AC]-[SMFR]-[MMFR]-[TIP]**

FS300-325 MPO kits (SMF and MMF) Order Entry: **FS300-325-[MKIT]-P1-[Wn]-[LNG]-[AC]-[MPOC]** where:

[KIT]	FS300 FlexScan Kit Configuration
<b>BAS</b>	Includes: FS300, soft case, FlexReports Basic, USB cable <sup>a</sup>
<b>PLUS</b>	Includes: BAS kit plus 150 m SMF & MMF Fiber Rings, One-Click Cleaner, upgrade to FlexReports Advanced, user-selected soft or hard carry case
<b>PRO</b>	Includes: PLUS kit plus FOCIS Flex with two user-selected adapter tips
<b>BIPM</b>	Includes: PRO kit plus OFI-BIPMe

[MKIT]	FS300-325 MPO Kit Configuration
<b>SMPO</b>	SMF MPO test kit; Includes SMF MPO switch, launch cables, carry case
<b>MMPO</b>	MMF MPO test kit; Includes MMF MPO switch, launch cables, carry case

[PN]	OPTICAL LIGHT SOURCE (OLS) and Optical Power Meter (OPM)
<b>P0</b>	No OLS, no OPM
<b>P1</b>	850/1300 MM; 1310/1550 SM Source and Power Meter

[WN]	Bluetooth/WiFi Configuration
<b>W0</b>	No Bluetooth or WiFi
<b>W1<sup>b</sup></b>	Includes WiFi and Bluetooth

[C]	OTDR / Source Connector Type
<b>A</b>	APC (recommended)
<b>U</b>	UPC

[CC] <sup>c</sup>	Carry Case Option
<b>S1</b>	Standard soft case for FlexScan, Fiber Rings, FOCIS Flex, accessories (Basic, PLUS, PRO kits only)
<b>S2</b>	Large soft case for FlexScan, Fiber Rings, FOCIS Flex, OFI-BIPMe, accessories (PLUS, PRO, BIPM kits only)
<b>H1</b>	Hard carry case (PLUS, PRO, BIPM Kits only)

[LNG]	Language
<b>ENG</b>	English
<b>CHS</b>	Chinese Simp.
<b>CHT</b>	Chinese Trad.
<b>CZE</b>	Czech
<b>DEU</b>	German
<b>DNK</b>	Danish

[LNG]	Language
<b>FIN</b>	Finnish
<b>FRA</b>	French
<b>ITA</b>	Italian
<b>JPN</b>	Japanese
<b>KOR</b>	Korean
<b>NOR</b>	Norwegian

[LNG]	Language
<b>POL</b>	Polish
<b>POR</b>	Portuguese
<b>SPA</b>	Spanish
<b>TUR</b>	Turkish
<b>VNM</b>	Vietnamese

[AC]	Destination Country	AC Plugs
<b>US</b>	USA	2-pin, US
<b>EU</b>	European Union	2-pin, EU
<b>UK</b>	United Kingdom	3-pin, UK
<b>CN</b>	China, Australia	2-pin, SAA

#### Notes:

- Results can be transferred from FlexScan to FlexReports using USB cable, or performed wirelessly (W1 option) after downloading FlexApp from 'Google play' or 'App Store'.
- FlexScans equipped with Bluetooth option (W1) support Bluetooth transfer of results via FlexApp for remote reporting using FlexReports.
- Basic kit always ships with S1 (Standard Soft Case); MPO kit always ships with MPO-specific soft case.

[SMFR]	150 m SMF Fiber Ring
<b>Absent</b>	N/A in Basic kits
<b>USC/USC</b>	FR-SMF-150-USC-USC
<b>USC/UFC</b>	FR-SMF-150-USC-UFC
<b>USC/ULC</b>	FR-SMF-150-USC-ULC
<b>USC/UST</b>	FR-SMF-150-USC-UST
<b>USC/AFC</b>	FR-SMF-150-USC-AFC
<b>USC/ALC</b>	FR-SMF-150-USC-ALC
<b>USC/UE2</b>	FR-SMF-150-USC-UE2
<b>ASC/USC</b>	FR-SMF-150-ASC-USC
<b>ASC/UFC</b>	FR-SMF-150-ASC-UFC
<b>ASC/ULC</b>	FR-SMF-150-ASC-ULC
<b>ASC/UST</b>	FR-SMF-150-ASC-UST
<b>ASC/ASC</b>	FR-SMF-150-ASC-ASC
<b>ASC/AFC</b>	FR-SMF-150-ASC-AFC
<b>ASC/ALC</b>	FR-SMF-150-ASC-ALC
<b>ASC/AE2</b>	FR-SMF-150-ASC-AE2

[MMFR]	150 m OM1 (62.5 μm) Fiber Ring
<b>Absent</b>	N/A in Basic kits
<b>USC/UST1</b>	FR-OM1-150-USC-UST
<b>USC/USC1</b>	FR-OM1-150-USC-USC
<b>USC/ULC1</b>	FR-OM1-150-USC-ULC
<b>USC/UFC1</b>	FR-OM1-150-USC-UFC

[MMFR]	150 m OM2 (50 μm) Fiber Ring
<b>Absent</b>	N/A in Basic kits
<b>USC/UST2</b>	FR-OM2-150-USC-UST
<b>USC/USC2</b>	FR-OM2-150-USC-USC
<b>USC/ULC2</b>	FR-OM2-150-USC-ULC
<b>USC/UFC2</b>	FR-OM2-150-USC-UFC

[MMFR]	150 m OM3/4/5-compatible Fiber Ring
<b>Absent</b>	N/A in Basic kits
<b>USC/UST3</b>	FR-OM3-150-USC-UST
<b>USC/USC3</b>	FR-OM3-150-USC-USC
<b>USC/ULC3</b>	FR-OM3-150-USC-ULC
<b>USC/UFC3</b>	FR-OM3-150-USC-UFC

[TIP]	FOCIS Flex Tips and Cleaning (PRO only)
<b>Blank</b>	Option not available in Basic and PLUS kits
<b>SC</b>	SC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm One-Click
<b>FC</b>	FC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm One-Click
<b>LC</b>	LC-UPC bulkhead tip, 1.25 mm UPC ferrule tip, 1.25 mm One-Click
<b>ASC</b>	SC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm One-Click
<b>AFC</b>	FC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm One-Click
<b>ALC</b>	LC-APC bulkhead tip, 1.25 mm APC ferrule tip, 1.25 mm One-Click

[MPOC]	MPO Launch Cable Network Connector
<b>F</b>	Female (unpinned) to Female (unpinned)
<b>M</b>	Female (unpinned) to Male (pinned)



## FlexScan® FS300 Quad OTDR

### Ordering Information (continued)

#### Accessories

DESCRIPTION	AFL NO.
FlexScan wrist strap	1400-05-0230PZ
FlexScan neck strap, 36"	1400-05-0231PZ
AC charger 100-240 VAC to 5 VDC	4050-00-0931PR
Soft carry case for FS300 with FOCIS, OFI, and Fiber Ring	1400-01-0167PZ
Soft carry case for FS300-325 MPO kits	1400-20-0001PZ
Soft carry case for FS300 with FOCIS, and Fiber Ring	1400-20-0002PZ
Hard carry case for FS300 kits with FOCIS, OFI, and Fiber Ring	1400-01-0177PZ
FS300 extended temperature replacement battery	3900-06-0902MR
Vehicle charger, 12VDC to 5VDC @2A	4050-00-0033MR
Cable, USB-micro B, 5 pin, 6'	6000-00-0031MR
5V USB charging cable (1.5 m), type A to barrel (0.9 X 3.2 X 9 mm)	6000-00-0034PR
One-Clicks, fluid, wipes, etc. See <a href="http://www.AFLglobal.com">www.AFLglobal.com</a>	Cleaning Supplies

#### Field-Replaceable OTDR Connector (Optical Port Ferrule Saver)

Protect your OTDR ports from damage due to mating with dirty or damaged launch cables or patch cords or normal wear-and-tear. Equip your FlexScan FS300 with a field-replaceable connector, which installs in seconds and accepts AFL's tool-free interchangeable SC, LC, FC and ST connector adapters.

Replace damaged connectors in the field: When normal wear-and-tear or poor cleaning practices damage the port saver's end-face, replace it in seconds without having to return the OTDR to a service center for an expensive and time-consuming repair.

DESCRIPTION	AFL NO.
Field-replaceable connector, single-mode, APC female to APC male	2900-58-0001MR
Field-replaceable connector, single-mode, APC female to UPC male	2900-58-0002MR
Field-replaceable connector, single-mode, UPC female to APC male	2900-58-0003MR
Field-replaceable connector, single-mode, UPC female to UPC male	2900-58-0004MR
Field-replaceable connector, multimode, UPC female to UPC male	2900-50-0014MR

#### Connector Adapters

CONNECTOR ADAPTER	AFL NO.		
	OTDR/OLS PORT	OPM PORT	VFL PORT
FC	2900-50-0002MR	2900-52-0001MR	N/A
SC	2900-50-0003MR	2900-52-0002MR	N/A
ST	2900-50-0004MR	2900-52-0003MR	N/A
LC	2900-50-0006MR	2900-52-0004MR	N/A
SC/APC	2900-50-0011MR	N/A	N/A
2.5 mm Universal	N/A	2900-52-0005MR	2900-50-0007MR
1.25 mm Universal	N/A	2900-52-0006MR	2900-50-0010MR



## FlexScan® FS300 Quad OTDR

### Test Management and Reporting Software

DESCRIPTION	AFL NO.
FlexReports™ Advanced, one seat license on USB	RPTS-AD-USB-1
FlexReports Advanced, one seat, Upgrade from TRM® 3 Advanced on USB. Users must have TRM-3 Advanced license	RPTS-UP-TRM3-1
FlexReports Basic, available for download on AFL Software Resources website	FlexReports Basic
FlexApp data transfer mobile App, available on Google Play and Apple App Store	FlexApp

### Recommended Products



#### FOCIS Flex and FOCIS Lightning2 (Multi-Fiber) Connector Inspection Systems

- Self-contained, tether-free, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis
- FOCIS Lightning: extremely fast multi-fiber auto-analysis for datacom and telecom inspection applications



#### OFI-BIPMe Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	Telcordia	Compliant to GR-196-CORE 4.5.1 for requirements on electromagnetic interference
	FCC	Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
RoHS	IEC	Compliant to IEC 60825-1 for safety of laser products
	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	TIA	Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components
	IEC	Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling
	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant
Generic Requirement	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant
	Telcordia	Compliant to GR-196-CORE for generic requirements for OTDR-type equipment
	Telcordia	Compliant to SR-4731 Issue 2 for OTDR data format
	IEC	Compliant to IEC 61746-1 for requirements on calibration of OTDR

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about FlexScan FS300 OTDR.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)

## FlexScan® FS200 Single-mode OTDR

Pocket-sized, Performance-packed, User-friendly, and Affordable



### Features

- Flexpress® mode completes OTDR tests in <5 seconds
- Test up to 1:64 PON with 25 m PON dead zone
- Easy to understand LinkMap® results with pass/fail indications
- Single, dual or triple wavelength single-mode
- Single port for in- and out-of-service OTDR tests
- Integrated source, power meter, VFL (visual fault locator)
- Integrated MPO Switch control via USB
- Rugged, lightweight, hand-held for field use
- Available with field-replaceable Port Saver connector

### Applications

- PON or point-to-point network verification or troubleshooting
- OTDR testing plus insertion loss and power measurements
- Locate faults exceeding industry or user pass/fail thresholds
- Visually pinpoint location of macro-bends or breaks

AFL's FlexScan FS200 OTDR is an all-in-one solution for detecting, identifying, locating, and resolving single-mode optical network issues. It is designed for both novice and expert technicians working in a range of environments, from FTTH PON to point-to-point networks. It applies industry-standard or user-set pass/fail criteria and displays results using LinkMap color-coded icons to show the health of the network. FlexScans automate test setup, shorten test time, and simplify results interpretation improving efficiency and reducing costs.

**All-in-one test capability:** The FlexScan FS200 includes an integrated VFL, power meter, and light source. It can be easily paired to AFL's award-winning FOCIS family of inspection scopes, ensuring technicians have everything they need to locate and quickly resolve optical network issues.

**Performance-packed:** With SmartAuto multi-pulse acquisition, up to 37 dB dynamic range, and best-in-class 25 m PON dead zone, FlexScan FS200 PON OTDRs test FTTH PONs up to 1:64 while still detecting and measuring events only meters apart.

**Fast!** Flexpress mode completes dual-wavelength tests in <5 seconds – 10 x faster than conventional OTDRs! For multi-fiber testing, FS200s automatically control AFL's MFS Multi-Fiber Switch (12-fiber MPO switch) to further reduce multi-fiber test time.

**Pocket-sized:** At 3.5 x 6 x 1.75 in. (86 x 160 x 43 mm) and less than one pound (0.4 kg), FlexScan FS200 OTDRs truly fit in your pocket, yet still provide a large, bright indoor/outdoor touchscreen display, and all-day operation.

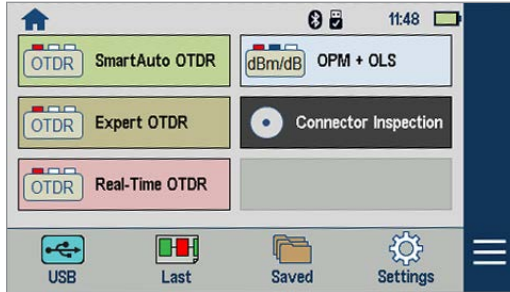
**Multiple sharing and reporting options:** Results can be stored internally, saved to a USB, and uploaded via USB cable, Bluetooth (via FlexApp) or Wi-Fi for real-time reporting using the included FlexReports Test Results Manager software.

**Convenient cost-saving kits:** Bundle the FlexScan FS200 with your choice of launch cable, FOCIS Flex connector inspection probe and tips, and/or AFL's universal optical fiber identifier (OFI-BIPMe) for significant cost-savings!

**PON-optimized FTTH-PRO kits** combine FS200-303/304 with a FOCIS Flex Inspection probe, 4 adapter tips, and launch cables for both SC-APC and LC-APC networks.

**Field-replaceable Port Saver connector:** With AFL's optional field-replaceable Port Saver, avoid expensive service repairs to replace connectors damaged due to poor cleaning practices and/or normal wear-and-tear.

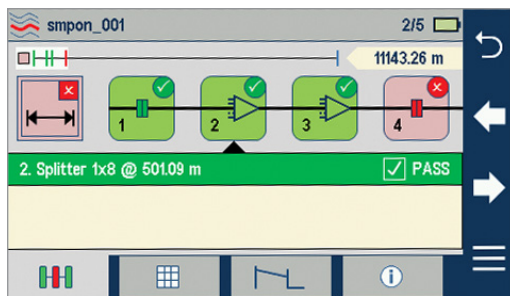
## FlexScan® FS200 Single-mode OTDR



### Dramatically Reduces Test Time

In SmartAuto mode, FlexScan OTDRs automatically analyze and test the network using a variety of network-optimized settings to precisely locate, characterize and identify network events with one button push. Loss and reflectance are measured for connectors, splices, splitters and macro-bends. FlexScan even checks for live fiber and verifies OTDR launch quality before initiating a test.

FlexScan's Flexpress mode completes dual-wavelength tests in seconds, reducing test time by 10x compared to conventional OTDRs. For multi-fiber testing, FlexScan's automatically control AFL's MPO Switch, testing 12 fibers at the touch of a single button.



### Simplifies Network Troubleshooting

LinkMap with pass/fail enables even novice users to easily and accurately troubleshoot optical networks. LinkMap presents an icon-based view of the tested network clearly identifying fiber start, end, connectors, splices, PON splitters, and macro-bends.

A LinkMap summary provides end-to-end link length, loss and ORL. Loss and reflectance are displayed with clear pass/fail indications. Users can instantly toggle between LinkMap and Trace views.

### Connectivity

FlexScan OTDRs easily pair with AFL's award-winning FOCIS® family of connector inspection probes for fast, easy single-fiber and/or multi-fiber connector end-face inspection.

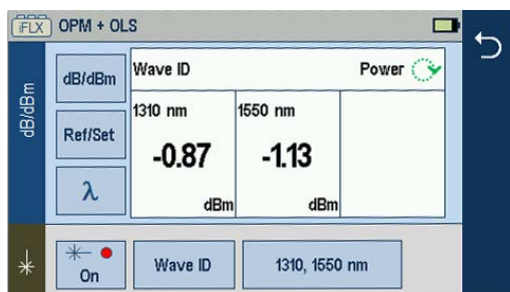
FlexScan results can then be transferred via USB cable, Wi-Fi, or Bluetooth and the free FlexApp running on a mobile device for real-time reporting using the included FlexReports Test Results Manager PC-based software. This real-time monitoring can help avoid mistakes in the field that will require future truck rolls.



### OTDR, OLTS, and VFL Testing with a Single Tool

FlexScan optionally includes a Wave ID optical light source (OLS) and optical power meter (OPM). With Wave ID, the OPM auto-synchronizes to a single or multi-wavelength Wave ID optical signal transmitted by an AFL light source. The OPM reports detected wavelengths and measures power and loss at each wavelength, saving significant test time and eliminating setup errors.

The integrated VFL's eye-safe red laser enables users to visually pinpoint the location of macro-bends and fiber breaks often found in splice closures and fiber cabinets.



## FlexScan® FS200 Single-mode OTDR

FlexScan OTDRs are available with 1310/1550/1625, 1310/1550/1650, 1310/1550, and 1650 nm only wavelengths. The 1310 and 1550 nm versions are available with integrated optical light source (OLS), optical power meter (OPM), visual fault locator (VFL) and Bluetooth/Wi-Fi.

### Specifications<sup>a</sup>

MODEL: FS200-XXX	-60	-100	-300	-303	-304
<b>OTDR</b>					
Emitter Type	Laser				
Safety Class <sup>b</sup>	Class I				
Fiber Type	Single-mode				
Wavelengths (nm)	1650	1310/ 1550	1310/ 1550	1310/ 1550/ 1625	1310/ 1550/ 1650
Center $\lambda$ Tolerance <sup>c</sup>	1310/1550/1650: $\pm 20$ nm; 1625 $+30/-5$ nm				
Dynamic Range <sup>d</sup> (dB)	37	32/30	37/35	37/35/37	37/35/37
Event Dead Zone <sup>e</sup> (m)	0.8	0.8	0.8	0.8	0.8
Atten. Dead Zone <sup>f</sup> (m)	3.5	3.6	3.5	3.5	3.5
PON Dead Zone <sup>g</sup> (m)	30	N/A	25/25	25/25/40	25/25/40
Max Split Ratio	1:64 (FS200-60/30x only); N/A (FS200-100)				
Pulse Widths	3, 5, 10, 20, 30, 50, 100, 200, 300, 500 ns; 1, 2, 3, 10 $\mu$ s; 20 $\mu$ s (FS200-300/300/304 only)				
Range Settings	250 m to 240 km				
Data Points	Up to 300,000 (Expert mode .SOR file)				
Data Spacing	5 cm to 16 m				
Index of Refraction	1.3000 to 1.7000				
Distance Uncertainty	$\pm(1 + 0.003\% \times \text{distance} + \text{data point spacing})$ m				
Linearity (dB/dB)	$\pm 0.05$				
Trace File Format	Telcordia SR-4731 Issue 2 compatible .SOR				
Trace Storage Medium	4 GB internal memory (> 5000 traces typical); External USB memory stick				
Data Transfer to PC	USB cable or Bluetooth® (option)				
OTDR Modes	SmartAuto, Expert, Real-time				
Flexpress Fast Test	FS200-300/303/304				
Display Modes	LinkMap Summary, LinkMap Events, Trace				
Refresh Rate	Up to 4 Hz (Real-time mode)				
Live Fiber Protection	No OTDR damage with input power $\leq +20$ dBm for wavelength(s) in range 1260 to 1675 nm				
Live Fiber Detection	Reports live fiber with input signal $\geq -35$ dBm for wavelength(s) in range 1260 to 1675 nm				
PON Filter Isolation	$>50$ dB for 1260 nm $\leq$ wavelength $\leq 1600$ nm				
Live PON OTDR Test	1625 or 1650 nm using filtered detector when interfering downstream power in range 1600-1675 nm $<-38$ dBm				

#### Notes:

- All specifications valid at 25 °C unless otherwise specified.
- FDA 21 CFR 1040.10 & 1040.11, IEC 60825-1: 2014.
- Using 10 ns pulse width.
- SNR=1, longest range and pulse width, 3-minute averaging.
- Maximum distance between two points 1.5 dB down each side of a reflective peak caused by an event with reflectance  $\leq -45$  dB using 3 or 5 ns pulse.
- Maximum distance from the start of a trace spike caused by an event with a -45 dB (or smaller) reflectance, to the point where the trace returns to and stays within  $\pm 0.5$  dB of backscatter. Test pulse width is 3 or 5 ns.
- Recovery to within 0.5 dB of backscatter after 1:16 splitter ( $\leq 13$  dB loss) using 50 ns pulse width.
- Max temperature while charging is +45 °C.

MODEL: FS200-XXX	-60	-100	-300	-303	-304
VISUAL FAULT LOCATOR (VFL)					
Emitter Type	Visible red laser, 650 ±20 nm				
Safety Class <sup>b</sup>	Class II				
Output Power	0.8 mW into single-mode fiber (-1 dBm ±0.5 dB)				
Modes	CW, 2 Hz flashing				
OPTICAL LASER SOURCE - OLS (Optional)					
Emitter Type	Laser				
Safety Class <sup>b</sup>	Class I				
Fiber Type	Single-mode				
Wavelengths (nm)	N/A	1310/ 1550	1310/ 1550	1310/ 1550	1310/ 1550
Center λ Tolerance	±20 nm (CW mode)				
Spectral Width (FWHM)	5 nm (maximum)				
Internal Modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz, CW, Wave ID				
Wave ID	Compatible with AFL OPM/OLS				
Output Power Stability	≤ ±0.1 dB (15 minutes); ≤ ±0.15 dB (8 hours)				
Output Power	-3 dBm ±1.5 dB				
OPTICAL POWER METER -OPM (Optional)					
Calibrated Wavelengths	1310, 1490, 1550, 1625, 1650 nm				
Detector Type	InGaAs, 1 mm diameter				
Measurement Range	+23 to -50 dBm				
Tone Detect Range	+3 to -35 dBm				
Accuracy	±0.25 dB				
Resolution	0.01 dB				
Measurement Units	dB, dBm or Watts (nW, μW, mW)				
GENERAL					
Size (in boot)	86 x 160 x 43 mm				
Weight	0.4 kg				
Operational Temperature <sup>h</sup>	-10 °C to +50 °C, 0 to 95 % RH (non-condensing)				
Storage Temperature	-40 °C to +70 °C, 0 to 95 % RH (non-condensing)				
Power	Rechargeable Li-Pol or AC adapter				
Battery Life	>12 hours, Telcordia test conditions				
Display	4.3 in color touchscreen LCD, 480x272, backlight				
USB Ports	1 host; 1 micro-USB function				
Bluetooth (optional)	Compatible with Windows PC, Android, iOS				
Wi-Fi	Download results & update software via IEEE 802.11 Wi-Fi				

# FlexScan® FS200 Single-mode OTDR

## Ordering Information

All kits include a FlexScan FS200 with AC charger, battery, carry strap, SC/2.5 mm connector adapters, FlexReports, USB cable, and carry case.

FS200-XXX-Basic, Plus, PRO, BIPM Kits Order Entry: **FS200-[MOD]-[KIT]-[PW]-[C]-[CC]-[LNG]-[AC]-[FR]-[TIP]**

FS200-XXX-MPO Kits Order Entry: **FS200-[MOD]-MPO-P1-W1-[C]-[LNG]-[AC]-[MPOC]**

FS200-303/304-FTTH PRO Kits Order Entry: **FS200-[MOD]-FTTH-PRO-[CC]-[LNG]-[AC]** where:

[MOD]	FS200 FlexScan OTDR Configuration
<b>60</b>	1650 nm filtered Live PON Troubleshooting OTDR
<b>100</b>	1310/1550 nm Verification and Troubleshooting OTDR
<b>300</b>	1310/1550 Pt-to-Pt & PON Verification and Troubleshooting OTDR
<b>303</b>	1310/1550/1625 Pt-to-Pt and PON Verification and Troubleshooting OTDR
<b>304</b>	1310/1550/1650 Pt-to-Pt and PON Verification and Troubleshooting OTDR

[KIT]	FS200 FlexScan Kit Configuration / Kit Contents
<b>BAS</b>	Includes: FS200, FlexReports Basic, USB cable <sup>a</sup> , soft case
<b>PLUS</b>	Includes: BAS Kit plus 150 m SMF Fiber Ring, One-Click Cleaner, upgrade to FlexReports Advanced, soft or hard carry case
<b>PRO</b>	Includes: PLUS Kit plus FOCIS Flex with two user-selected adapter tips
<b>FTTH-PRO</b>	Includes: BAS Kit, 150 m SC/APC & LC/APC Fiber Rings, FOCIS Flex, SC/APC & LC/APC bulkhead and ferrule adapters, SC & LC One-Click Cleaners, Port Saver, FlexReports Advanced, soft or hard carry case (FS200-303/304 only)
<b>BIPM</b>	Includes: PRO Kit plus OFI-BIPMe
<b>MPO</b>	Includes: FlexScan plus MFS Multi-Fiber Switch, MPO launch cable, OTDR-to-Switch patch cord, OTDR-to-Switch USB cable, FlexReports Advanced

[PW]	Power Meter / Wireless Option
<b>P0-W0</b>	No Source, Power Meter, or Bluetooth/WiFi (FS200-60/100 only)
<b>P0-W1 <sup>b</sup></b>	No Source or Power Meter; Includes Bluetooth/WiFi (FS200-300/304 only)
<b>P1-W0</b>	No Bluetooth/WiFi (-303/304 only); Includes Source, Power Meter
<b>P1-W1 <sup>b</sup></b>	Includes Source, Power Meter, Bluetooth/Wi-Fi

[C]	OTDR / Source Connector Type
<b>A</b>	APC (recommended)
<b>U</b>	UPC (available in all models except FS200-60)

[CC] <sup>c</sup>	Carry Case Option (PLUS, PRO, FTTH-PRO, BIPM Kits)
<b>S1</b>	Large soft case for FS200, fiber ring, FOCIS Flex, OFI-BIPMe, accessories
<b>S2</b>	Medium soft case for FS200, fiber ring, FOCIS Flex, accessories
<b>H1</b>	Hard carry case for FS200, fiber ring, FOCIS Flex, OFI-BIPMe, accessories

[LNG]	Language
<b>ENG</b>	English
<b>CHS</b>	Chinese Simplified
<b>CHT</b>	Chinese Traditional
<b>CZE</b>	Czech
<b>DEU</b>	German
<b>DNK</b>	Danish
<b>FIN</b>	Finnish
<b>FRA</b>	French
<b>ITA</b>	Italian

[LNG]	Language
<b>JPN</b>	Japanese
<b>KOR</b>	Korean
<b>NOR</b>	Norwegian
<b>POL</b>	Polish
<b>POR</b>	Portuguese
<b>SPA</b>	Spanish
<b>TUR</b>	Turkish
<b>VNM</b>	Vietnamese

[AC]	Destination Country	AC Plugs
<b>US</b>	USA	2-pin, US
<b>EU</b>	European Union	2-pin, EU
<b>UK</b>	United Kingdom	3-pin, UK
<b>CN</b>	China, Australia	2-pin, SAA

[FR]	150 m SMF Fiber Ring
<b>Absent</b>	N/A in Basic Kits
<b>USC/USC</b>	FR-SMF-150-USC-USC
<b>USC/UFC</b>	FR-SMF-150-USC-UFC
<b>USC/ULC</b>	FR-SMF-150-USC-ULC
<b>USC/UST</b>	FR-SMF-150-USC-UST
<b>USC/ASC</b>	FR-SMF-150-USC-ASC
<b>USC/AFC</b>	FR-SMF-150-USC-AFC
<b>USC/ALC</b>	FR-SMF-150-USC-ALC
<b>USC/UE2</b>	FR-SMF-150-USC-UE2
<b>ASC/UFC</b>	FR-SMF-150-ASC-UFC
<b>ASC/ULC</b>	FR-SMF-150-ASC-ULC
<b>ASC/UST</b>	FR-SMF-150-ASC-UST
<b>ASC/ASC</b>	FR-SMF-150-ASC-ASC
<b>ASC/AFC</b>	FR-SMF-150-ASC-AFC
<b>ASC/ALC</b>	FR-SMF-150-ASC-ALC
<b>ASC/AE2</b>	FR-SMF-150-ASC-AE2

[TIP]	FOCIS Flex Tips and Cleaning (PRO only)
<b>Blank</b>	Option not available in Basic & PLUS Kits
<b>SC</b>	SC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning
<b>FC</b>	FC-UPC bulkhead tip, 2.5 mm UPC ferrule tip, 2.5 mm cleaning
<b>LC</b>	LC-UPC bulkhead tip, 1.25 mm UPC ferrule tip, 1.25 mm cleaning
<b>ASC</b>	SC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning
<b>AFC</b>	FC-APC bulkhead tip, 2.5 mm APC ferrule tip, 2.5 mm cleaning
<b>ALC</b>	LC-APC bulkhead tip, 1.25 mm APC ferrule tip, 1.25 mm cleaning

[MPOC]	MPO Launch Cable Network Connector
<b>F</b>	Female (unpinned) to Female (unpinned)
<b>M</b>	Female (unpinned) to Male (pinned)

### Notes:

- Results can be transferred from FlexScan OTDR to FlexReports using USB cable, or performed wirelessly (W1 option) after downloading free FlexApp. The FlexApp is available as a free download from 'Google play' or 'App Store'.
- FlexScans equipped with Bluetooth option (W1) support Bluetooth transfer of results via FlexApp for remote reporting using FlexReports.
- Basic Kit always ships with S2 (Medium Soft Case); MPO Kit always ships with MPO-specific soft case.



## FlexScan® FS200 Single-mode OTDR

### Ordering Information

#### Accessories

DESCRIPTION	AFL NO.
FlexScan wrist strap	1400-05-0230PZ
FlexScan neck strap, 36"	1400-05-0231PZ
AC charger 100-240 VAC to 5 VDC	4050-00-0931PR
Soft carry case for FS200 kits with FOCIS Flex and Fiber Ring	1400-01-0111PZ
Soft carry case for FS200 kits with FOCIS Flex, OFI-BIPMe and Fiber Ring	1400-01-0128PZ
Hard carry case for FS200 kits with FOCIS Flex, OFI-BIPMe and Fiber Ring	1400-01-0134PZ
Vehicle charger, 12VDC to 5VDC @2A	4050-00-0033MR
Cable, USB-micro B, 5 pin, 6'	6000-00-0031MR
5V USB charging cable (1.5 m), type A to barrel (0.9 X 3.2 X 9 mm)	6000-00-0034PR
One-Clicks, fluid, wipes, etc. See <a href="http://www.AFLglobal.com">www.AFLglobal.com</a>	Cleaning Supplies

### Field-Replaceable OTDR Connector (Optical Ferrule Port Saver)

Protect your OTDR ports from damage due to mating with dirty or damaged launch cables or patch cords or normal wear-and-tear. Equip your FlexScan FS200 with a field-replaceable connector, which installs in seconds and accepts AFL's tool-free interchangeable SC, LC, FC and ST connector adapters.

Replace damaged connectors in the field: When normal wear-and-tear or poor cleaning practices damage the port saver's end-face, replace it in seconds without having to return the OTDR to a service center for an expensive and time-consuming repair.

DESCRIPTION	AFL NO.
FlexScan-facing APC female to APC male field-replaceable Port Saver connector	2900-58-0001MR
FlexScan-facing APC female to UPC male field-replaceable Port Saver connector	2900-58-0002MR
FlexScan-facing UPC female to APC male field-replaceable Port Saver connector	2900-58-0003MR
FlexScan-facing UPC female to UPC male field-replaceable Port Saver connector	2900-58-0004MR

### Connector Adapters


CONNECTOR ADAPTER	AFL NO.		
	OTDR/OLS PORT	OPM PORT	VFL PORT
FC	2900-50-0002MR	2900-52-0001MR	N/A
SC	2900-50-0003MR	2900-52-0002MR	N/A
ST	2900-50-0004MR	2900-52-0003MR	N/A
LC	2900-50-0006MR	2900-52-0004MR	N/A
SC/APC	2900-50-0011MR	2900-52-0002MR	N/A
2.5 mm Universal	N/A	2900-52-0005MR	2900-50-0007MR
1.25 mm Universal	N/A	2900-52-0006MR	2900-50-0010MR

## FlexScan® FS200 Single-mode OTDR

### Test Management and Reporting Software


DESCRIPTION	AFL NO.
FlexReports Advanced, one seat license on USB	RPTS-AD-USB-1
FlexReports Advanced, one seat, Upgrade from TRM® 3 Advanced on USB. Users must have TRM-3 Advanced license	RPTS-UP-TRM3-1
FlexReports Basic, available for download on AFL Software Resources website	FlexReports Basic
FlexApp data transfer mobile App, available on Google Play and Apple App Store	FlexApp

### Recommended Products



**FOCIS Flex & FOCIS Lightning2 (Multi-Fiber) Connector Inspection**

- Self-contained, tether-free, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis
- FOCIS Lightning2: extremely fast multi-fiber auto-analysis for datacom and telecom inspection applications



**OFI-BIPMe Optical Fiber Identifier**

- Works on all fiber types including BIF
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	Telcordia	Compliant to GR-196-CORE 4.5.1 for requirements on electromagnetic interference
	FCC	Bluetooth/Wi-Fi compliant to FCC 47 CFR Part 15C, Part 15.247 subpart C, and FCC Rule Part 1.1.307 (b)(3)(i)(a) SAR
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
RoHS	IEC	Compliant to IEC 60825-1 for safety of laser products
	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
	TIA	Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components
	IEC	Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling
Test Method	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant
	Telcordia	Compliant to GR-196-CORE for generic requirements for OTDR-type equipment
	Telcordia	Compliant to SR-4731 Issue 2 for OTDR data format
	IEC	Compliant to IEC 61746-1 for requirements on calibration of OTDR
Generic Requirement		

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about FlexScan FS200 OTDR.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)



## OTDR Fiber Rings



### Features

- Compact, rugged, lightweight
- 150, 500, and 1000 m lengths standard
- Available with a variety of connector styles
- Compact! Fits easily in OTDR cases or kits

### Applications

- Use to test link loss with an OTDR
- For use as OTDR launch cable
- For use as OTDR receive cable
- Measure insertion loss and reflectance of near- and far-end connections

Fiber Rings are often a necessity when testing with an OTDR or Optical Troubleshooter. A launch cable, which connects the OTDR or Optical Troubleshooter to the link under test, reveals the insertion loss and reflectance of the near-end connection. A receive cable, which connects to the far-end of the link, reveals the insertion loss and reflectance of the far-end connection. Launch and receive test cables can range from 150 m to 1 km (or longer) in length. Because very long test cables are impractical to transport and use, AFL offers coiled lengths of 50  $\mu\text{m}$  multimode, 62.5  $\mu\text{m}$  multimode, or single-mode fiber packaged in compact rings.

Fiber Rings of 150 m of fiber are ideal for premises fiber network test applications. Fiber Rings of 500 m and 1 km of single-mode fiber are designed for broadband, long haul fiber network test applications.

## OTDR Fiber Rings

### Fiber Rings Part Number Order Entry

#### Single Fiber (SM or MM) Fiber Rings

**AFL NO. = FR-FFF-LLLL-CC1-CC2**, where:

**FR** = Fiber Ring (single fiber)

**FFF** = Fiber Type

SMF= Single-mode (G.652)

BIF = Bend Insensitive (G.657)

OM1 = 62.5 µm multimode

OM2 = 50 µm multimode

OM3 = 50 µm laser optimized

OM4 = 50 µm laser optimized

**LLLL** = Fiber Length (meters)

150 = 150 m (492 ft)

500 = 500 m (1640 ft)

1000 = 1000 m (3280 ft)

**CC1** = Connector Configuration OTDR end (see below)

**CC2** = Connector Configuration Network end (see below)

#### MPO-terminated Multi-Fiber (SM or MM) Fiber Rings

**AFL NO. = FRM1-FF-LLLL-P-MC1-MC2**, where:

**FRM1** = MPO-terminated 12-fiber fiber ring

**FF** = Fiber Type

S2 = Standard single-mode (G.652)

M4 = OM4 50 µm laser optimized

**LLLL** = Fiber Length (meters)

61 = 61 m (200 ft)

**P** = Polarity

A = Type A polarity (straight through, fiber 1 to fiber 1)

B = Type B polarity (fiber 1 to fiber 12)

**MC1, MC2** = MPO Connector (OTDR end and Network end, respectively)

AF = APC, female (unpinned)

AM = APC, male (pinned)

UF = UPC, female (unpinned)

UM = UPC, male (pinned)

### Supported Single Fiber Single-mode Fiber Ring Configurations

CONNECTOR TYPE		STANDARD SMF FIBER RINGS		SPECIAL ORDER SMF FIBER RINGS <sup>a</sup>	
ID	DESCRIPTION	CC1	CC2	CC1	CC2
USC	SC/UPC	◆	◆		
ASC	SC/APC	◆	◆		
ULC	LC/UPC		◆	◆	◆
ALC	LC/APC		◆	◆	◆
UFC	FC/UPC		◆	◆	◆
AFC	FC/APC		◆	◆	◆
UST	ST/UPC		◆	◆	◆
UE2	E2000/UPC		Special Order <sup>a</sup>		◆
AE2	E2000/APC		Special Order <sup>a</sup>		◆
OTA	OptiTap APC		Special Order <sup>a</sup>		

### Supported Single Fiber Multimode Fiber Ring Configurations

CONNECTOR TYPE		STANDARD SMF FIBER RINGS		SPECIAL ORDER SMF FIBER RINGS <sup>a</sup>	
ID	DESCRIPTION	CC1	CC2	CC1	CC2
USC	SC/UPC	◆	◆		
ULC	LC/UPC		◆	◆	◆
UFC	FC/UPC		◆	◆	◆
UST	ST/UPC		◆	◆	◆
UE2	E2000/UPC		Special Order <sup>a</sup>		

## OTDR Fiber Rings

### Ordering Information

#### Standard SMF Fiber Rings

DESCRIPTION	AFL NO.
Fiber Ring, 150 m, G.652 SMF, CC1-CC2	FR-SMF-150-CC1-CC2
Fiber Ring, 500 m, G.652 SMF, CC1-CC2	FR-SMF-500-CC1-CC2
Fiber Ring, 1000 m, G.652 SMF, CC1-CC2	FR-SMF-1000-CC1-CC2

#### Special Order SMF Fiber Rings<sup>a</sup>

DESCRIPTION	AFL NO.
Fiber Ring, 150 m, G.652 SMF, CC1-CC2	FR-SMF-150-CC1-CC2
Fiber Ring, 500 m, G.652 SMF, CC1-CC2	FR-SMF-500-CC1-CC2
Fiber Ring, 1000 m, G.652 SMF, CC1-CC2	FR-SMF-1000-CC1-CC2
Fiber Ring, 150 m, G.657.A2 BIF, CC1-CC2	FR-BIF-150-CC1-CC2
Fiber Ring, 500 m, G.657.A2 BIF, CC1-CC2	FR-BIF-500-CC1-CC2
Fiber Ring, 1000 m, G.657.A2 BIF, CC1-CC2	FR-BIF-1000-CC1-CC2

#### Standard OM1, OM2, OM3, OM4 Multimode Fiber Rings

DESCRIPTION	AFL NO.
Fiber Ring, 150 m, OM1 (62.5 mm) MMF, CC1-CC2	FR-OM1-150-CC1-CC2
Fiber Ring, 150 m, OM2 (50 mm) MMF, CC1-CC2	FR-OM2-150-CC1-CC2
Fiber Ring, 150 m, OM3 (50 mm laser-optimized) MMF, CC1-CC2	FR-OM3-150-CC1-CC2
Fiber Ring, 150 m, OM4 (50 mm laser-optimized) MMF, CC1-CC2	FR-OM4-150-CC1-CC2

#### Special Order OM1, OM2, OM3, OM4 Multimode Fiber Rings<sup>a</sup>

DESCRIPTION	AFL NO.
Fiber Ring, 150 m, OM1 (62.5 mm) MMF, CC1-CC2	FR-OM1-150-CC1-CC2
Fiber Ring, 150 m, OM2 (50 mm) MMF, CC1-CC2	FR-OM2-150-CC1-CC2
Fiber Ring, 150 m, OM3 (50 mm laser-optimized) MMF, CC1-CC2	FR-OM3-150-CC1-CC2
Fiber Ring, 150 m, OM4 (50 mm laser-optimized) MMF, CC1-CC2	FR-OM4-150-CC1-CC2

#### Standard MPO-terminated Multi-fiber Single-mode and Multimode Fiber Rings<sup>b</sup>

DESCRIPTION	AFL NO.
MPO Fiber Ring, 61 m (200 ft), G.652 SMF, Type A, APC unpinned to APC unpinned	FRM1-S2-61-A-AF-AF
MPO Fiber Ring, 61 m (200 ft), G.652 SMF, Type A, APC unpinned to APC pinned	FRM1-S2-61-A-AF-AM
MPO Fiber Ring, 61 m (200 ft), OM4 MMF, Type A, UPC unpinned to UPC unpinned	FRM1-M4-61-A-UF-UF
MPO Fiber Ring, 61 m (200 ft), OM4 MMF, Type A, UPC unpinned to UPC pinned	FRM1-M4-61-A-UF-UM

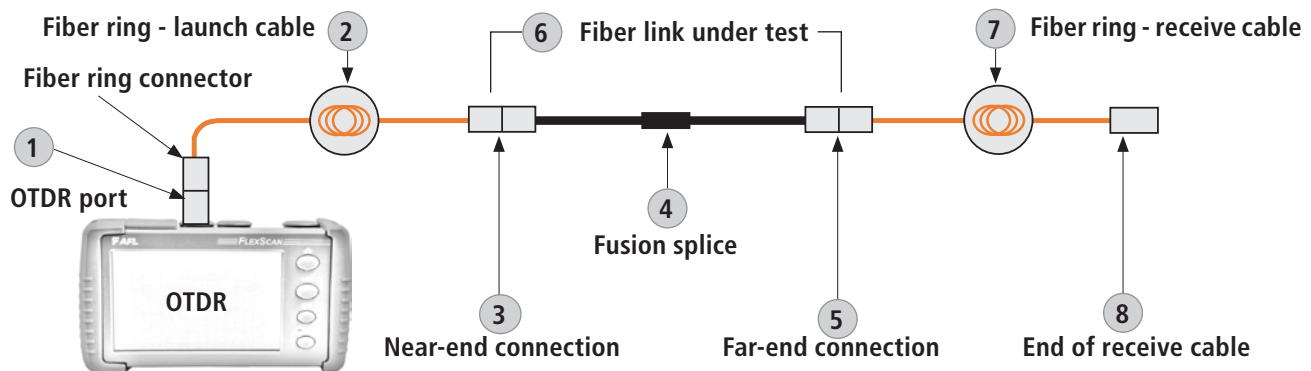
#### Notes:

- Contact AFL for special order fiber rings. Not all combinations of lengths and connectors are supported.
- Contact AFL for other special order configurations of MPO-terminated multi-fiber single-mode or multimode fiber rings.

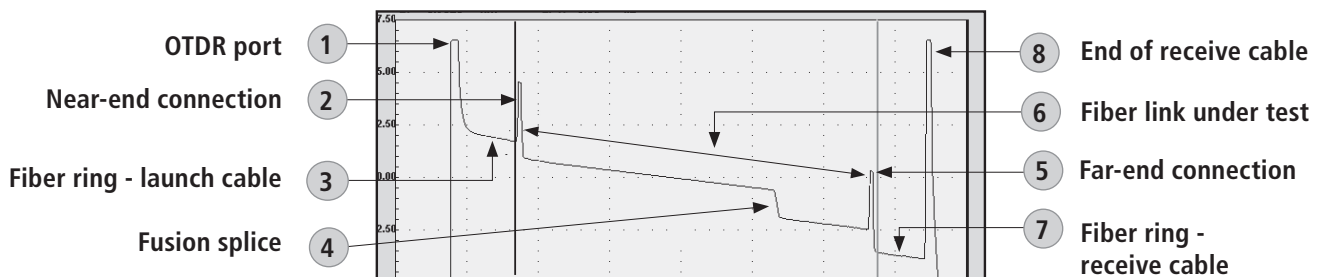
## OTDR Fiber Rings

### How to Generate a Baseline Trace Using Fiber Rings

- Use the Fiber Ring as a launch cable. Connect the Fiber Ring between your OTDR and the fiber link under test. This will allow you to measure the loss of the near-end connection.
- Use the Fiber Ring as a receive cable. Connect the Fiber Ring to the far-end connector of your fiber link under test. This will allow you to measure the loss of the far-end connection.
- By using Fiber Rings as both launch and receive cables, as shown in the diagram below, you can measure total insertion loss of the fiber link under test.



Example OTDR Test Configuration with Launch and Receive Cables



OTDR Trace Made using Launch and Receive Cables

### Recommended Products



#### FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



#### FlexScan® TS100 FTTH PON Troubleshooter

- Locate faults in <3 seconds with the press of a button
- Displays link length, loss, ORL, and pass/fail results
- Single-ended test reduces time and cost
- Rugged, lightweight, hand-held for field use

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about Fiber Rings.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)

## FOCIS Flex – Fiber Optic Connector Inspection System

U.S. Patent 9,217,688

Easy, Fast, Compact, Tether-free



### Features

- 1-button to auto-focus, center, capture, analyze, and save
- IEC, IPC, and user-defined pass/fail analysis
- Untethered, compact, hand-held inspection
- Use independently or pair with OTDR
- Save 10K results internally or share via WiFi or USB

### Applications

- Inspect connectors on patch cords or in bulkhead adapters
- Optical network installation, troubleshooting, and maintenance
- Inspect MPO/MTP multi-fiber connectors
- Assure critical fiber infrastructure performs properly
- Keep fiber connections working at optimal performance levels
- Verify proper connector cleaning practices are being used

FOCIS Flex makes connector inspection simple, fast, and convenient. With the press of a single button, FOCIS Flex auto-focuses, captures and centers the end-face image, applies Pass/Fail rules, displays image and Pass/Fail results, saves results internally and/or wirelessly transfers data to a paired FlexScan OTDR or a smart device. It is fast, small, and easy to use to enable 100% connector inspection.

**Independent, untethered operation:** With rechargeable battery and integrated display, FOCIS Flex can be used independently without requiring an external OTDR or display unit.

**Optional pairing with FlexScan OTDR or smart devices:** Captured images and Pass/Fail results can be immediately displayed and easily saved on either paired FlexScan OTDR or a smart device equipped with the AFL's free FOCIS Flex App. This capability enables inspection results to be included in reporting and archiving.

**Save results internally or externally:** FOCIS Flex internally stores up to 10,000 results using file-naming capabilities similar to those of the FlexScan OTDR. A micro-USB port supports fast upload of internally stored results to PC and ensures your FOCIS Flex software can be updated to the latest features and supported languages.

**Wide range of adapter tips:** Interchangeable adapter tips support connector inspection for a wide range of both single-fiber and multi-fiber patchcords and bulkhead-mounted connectors having either PC or APC polished end-faces.

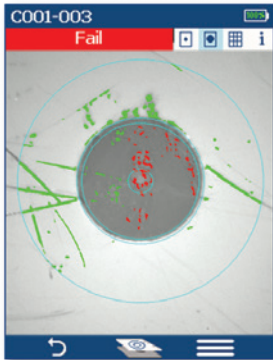
**Bundled kits for significant savings:** FOCIS Flex is available in kits that include a Basic license for Test Result Manager (TRM® 3.0), user-selected adapter tips and cleaning supplies, and a soft carry case.

**Easy reporting and archiving:** Included Test Result Manager (TRM 3.0) provides data processing and reporting locally via a PC. The FOCIS Flex mobile App is available for free download from Google play or App Store for sharing data with smart devices.

## FOCIS Flex – Fiber Optic Connector Inspection System

### Easy, Fast, Compact, Tether-free

U.S. Patent 9,217,688



C001-003			
Fail			
User: APC, SM			
A B C			
A	>0 µm: 0	>0 µm: 7	
B		2-5 µm: 16	
	>3 µm: 0	>5 µm: 0	
D		≥10 µm: 0	

**Pass/Fail results in seconds:** With the press of a single button, FOCIS Flex auto-focuses, captures and centers the end-face image, applies Pass/Fail rules, displays image and Pass/Fail results. Captured Pass/Fail results are easily viewed in either Image or Table view.

Image view shows end-face image with Pass/Fail region overlay, failing scratches/defects highlighted in red, and passing scratches/defects highlighted in green.

Table view shows analysis rule applied to determine Pass/Fail, analysis Zone IDs (A, B, C, D), scratch analysis results for each zone, and defect analysis results for each zone.

### Specifications <sup>a</sup>

OPTICAL PERFORMANCE	
Field of View (viewed on FOCIS Flex)	Live: 710 x 860 µm; Captured, Zoomed Out: 560 x 600 µm; Captured, Partially Zoomed In: 360 x 390 µm; Captured, Fully Zoomed In: 180 x 195 µm
Field of View (Viewed on a PC)	Stored, Zoomed Out: 700 x 525 µm; Stored, Fully Zoomed In: 240 x 180 µm
Manual Detection Capability (minimum)	0.25 µm
Auto Analysis Resolution	<1.0 µm
Captured Image Size (Pixels)	648 x 480 VGA; Images stored internally in three .JPG files, one at each FOV
OPERATING FEATURES	
Focus	Auto-focus and manual focus
Centering	Auto-centering after capture
Pass/Fail Analysis	IEC 61300-3-35 (2015), IPC and user-defined criteria
Image Capture and File Storage Capacity	10,000 files
File Format (Image and Pass/Fail Results)	jpg, gif
Bluetooth Characteristics	SPP to FlexScan and FlexTester OTDRs; IAP to iOS devices
USB Characteristics	USB 1.1 mass storage device
Supported Languages	English, Chinese Simplified, Chinese Traditional, Finnish, French, German, Italian, Japanese, Korean, Polish, Russian, Spanish, Turkish
PHYSICAL AND POWER CHARACTERISTICS	
Display size, type, resolution	2.4", TFT, 240 x 320 with brightness control
Battery Type	NiMH, user replaceable
Battery Operating Time (typical)	8 hours (60 tests in 20 minutes each hour; auto-off enabled)
Recharge Time	<4.5 hours
Power Save Features	Auto-off (disabled, 2, 5, 10 minutes)
AC Charger voltage, frequency, current	100-240 V, 50/60 Hz, 5VDC, 2A
Size	47 x 37 x 183 mm (1.8 x 1.5 x 7.2 in)
Weight	240 g (0.5 lb)
ENVIRONMENTAL CHARACTERISTICS	
Operating Temperature	0 to +50 °C
Storage Temperature	-40 to +70 °C
Relative Humidity	95%, non-condensing
Transit and shock	2G vibration, 30G shock

#### Notes:

a. All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).

## FOCIS Flex – Fiber Optic Connector Inspection System

U.S. Patent 9,217,688

### Easy, Fast, Compact, Tether-free

#### FlexScan OTDR PRO and BIPM Kits with FOCIS Flex

**PRO Kits** include the following items:

- FlexScan with accessories (AC charger, carry strap, SC/2.5 mm connector adapters, TRM® 3.0 Advanced Test Results Manager, carry case)
- FOCIS Flex Fiber Optic Connector Inspection System with accessories (AC charger, USB cable, soft carry case/holster)
- Two user-selected adapter tips and one user-selected One-Click Cleaner
- 150 m Fiber Ring (launch cable) with user-specified connectors

**Complete kits** expand on PRO Kits by adding bend insensitive fiber identifier with optional power meter (OFI-BIPM).

See FlexScan data sheet for FlexScan PRO and Complete Kit ordering information.

#### FOCIS Flex Adapter Tips (Contact AFL for adapter tips for other connector types)

DESCRIPTION	AFL NO.
SC-UPC bulkhead adapter tip	FFLX-01-SC
FC-UPC bulkhead adapter tip	FFLX-01-FC
ST-UPC bulkhead adapter tip	FFLX-01-ST
LC-UPC bulkhead adapter tip	FFLX-01-LC
Universal 2.5 mm, UPC ferrule adapter tip	FFLX-01-U25
Universal 1.25 mm, UPC ferrule adapter tip	FFLX-01-U125
SC-APC bulkhead adapter tip	FFLX-4S-ASC
FC-APC bulkhead adapter tip	FFLX-4S-AFC
LC-APC bulkhead adapter tip	FFLX-4S-ALC
Universal 2.5 mm, APC ferrule adapter tip	FFLX-01-A25
Universal 1.25 mm, APC ferrule adapter tip	FFLX-01-A125
FOCIS Flex adapter extension tube, straight, 46 mm	FFLX-01-EXTS46
FOCIS Flex adapter extension tube, straight, 80 mm:	FFLX-01-EXTS80
E2000 PC/UPC bulkhead adapter tip	FFLX-4S-E2K
E2000 APC bulkhead adapter tip	FFLX-4S-E2KA
Tip for SC/APC (OptiTap®) bulkhead adapter	FFLX-4S-OTA
Tip for OptiTap® APC ferrule and bulkhead adapter	DFS1-01-0013MR
MTP/PC ferrule & bulkhead adapter extended tip kit (base plus MTP/PC front end tip)	DFS1-00-0037MR
MTP/PC and MTP/APC ferrule & bulkhead adapter extended tip kit (base, MTP/PC, MTP/APC front end tips)	DFS1-00-0042MR
MTP/APC ferrule and bulkhead adapter extended tip kit (base plus MTP/APC front end tip)	DFS1-01-0010MR

#### Ordering Information

DESCRIPTION	AFL NO.
FOCIS Flex Kit, soft carry case/holster, USB cable, AC charger, TRM® 3.0 reporting software, reference guide, no tips	FOCIS-FLX-P4XN
FOCIS Flex Kit, soft carry case/holster, USB cable, AC charger, TRM 3.0 reporting software, reference guide, 2 user-selected UPC adapter tips (ferrule and bulkhead), user-selected One-Click cleaner	FOCIS-FLX-P4XU
FOCIS Flex Kit, soft carry case/holster, USB cable, AC charger, TRM 3.0 reporting software, reference guide, 2 user-selected APC adapter tips (ferrule and bulkhead), user-selected One-Click cleaner	FOCIS-FLX-P4XA
FOCIS Flex Kit, soft carry case/holster, USB cable, AC charger, TRM 3.0 reporting software, reference guide, user-selected UPC adapter tips (ferrule and bulkhead), 2 user-selected APC adapter tips (ferrule and bulkhead), user-selected One-Click cleaner	FOCIS-FLX-P4XUA



## FOCIS Flex – Fiber Optic Connector Inspection System


### Easy, Fast, Compact, Tether-free

U.S. Patent 9,217,688

### Test Management and Reporting Software


DESCRIPTION	AFL NO.
TRM 3.0 with Basic License, USB delivery (included with all FOCIS Flex kits)	TRM3-BASIC
TRM 3.0 upgrade from Basic to Advanced License, USB delivery	TRM3-UPGRADE
TRM 3.0 upgrade from Basic to Advanced License, email delivery	TRM3-UP-EMAIL
FOCIS Flex App (Google play or App Store)	Free Download

### Recommended Products



**FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs**

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



**OFI-BIPM Optical Fiber Identifier**

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety /EMC /EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FCC	Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	IEC	Compliant to IEC 61300-3-35 for visual inspection of fiber optic connectors and fiber-stub transceivers
	IPC	Compliant to IPC-8497-1 for cleaning methods and contamination assessment for optical assembly

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about FOCIS Flex.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts).

## FOCIS Lightning®2 Multi-Fiber Optic Connector Inspection System



Mobile App



PC Software



### Features

- Large, simple-to-use touch screen
- Self-contained, tether-free, compact, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- Up to 8x zoom for enhanced fiber end-face viewing
- Stores 10k images or easily shares data via USB or Bluetooth connectivity
- IEC, IPC, AT&T, and user-defined auto-analysis
- Wide variety of adapter tips for MPO and single-fiber connector types

### Applications

- Inspect multi-fiber and single-fiber connectors and adapters
- Data center fiber network installation, turn-up, and troubleshooting
- Inspect hardened connectors in FTTx network
- Verify proper connector cleaning practices
- Pair with OTDR for comprehensive reporting

FOCIS Lightning2 is a compact self-contained inspection probe that captures and displays the entire MPO end-face image in less than two seconds. One button provides auto-focusing, centering, and Pass/Fail analysis at the connector and individual fiber level. It can be used to inspect MPO-8, -12, -16, -24 and -32 connectors. Results can be easily shared via USB and Bluetooth®.

**Pass/Fail results in seconds:** FOCIS Lightning2 was designed to quickly inspect multi-fiber connectors and bulkheads, such as MPO and MTP®, including multi-row varieties. It can perform industry standard and user-defined end-face cleanliness analysis at a rate of about 1 second per fiber – significantly speeding up inspection time when compared with other technologies.

**Internal storage and multiple export options:** FOCIS Lightning2 can store 10,000 individual fiber images, analysis, overlays, and zones tables locally and can provide optional Bluetooth wireless links for archiving and reporting. AFL's FlexApp (iOS and Android) provides a comprehensive and user-friendly feature set as well as connectivity with AFL's FlexReporter-Cloud.

**Untethered operation:** With rechargeable battery and integrated 3.5" TFT color LCD touchscreen, FOCIS Lightning2 can be used independently.

**Multi-fiber front-end adapter tips:** Multi-fiber front-end adapter tips support single row and multi-row MPO connector inspection for a wide range of patch cords and bulkhead-mounted connectors having either PC/UPC or APC polished end-faces. The probe snout includes a key which in combination with a slot on the adapter tips ensures that adapter tips never loosen during use, under any circumstances.

**Easy reporting and archiving:** The FlexReporter™ software suite is a complete platform for report generation and results sharing. This platform includes FlexApp, a mobile App that wirelessly transfers test results from the field to the Cloud. These results can be accessed via FlexReports that provide a variety of easy-to-use options for report generation. FlexReports Basic is included with all AFL OTDRs and enables users to quickly view and analyze results, generate simple single-fiber OTDR and OLTS reports. FlexReports Basic also includes a 60-day Advanced trial that includes full reporting and OTDR Trace Batch Editing.

# FOCIS Lightning®2 Multi-Fiber Optic Connector Inspection System

## Specifications<sup>a</sup>

OPTICAL PORT PARAMETERS	SPECIFICATION
Field of View (FOV; viewed on FOCIS Lightning2)	LFOV <sup>b</sup> Live: 4333 x 6500 µm and 4333 x 5418 µm LFOV <sup>b</sup> Captured: 4333 x 5418 µm Multi Fibers Live: 3200 x 4800 µm and 3200 x 4000 µm Multi Fibers Captured: 3200 x 4000 µm Multi Fibers Captured, Details: 200 x 225 µm Single Fiber Live: 1314 x 2144 µm and 1314 x 1788 µm Single Fiber Captured: 1314 x 1626 µm
Field of View (FOV; viewed on a PC)	LFOV <sup>b</sup> : 4333 x 6500 µm Multi Fibers: 3200 x 4800 µm Single Fiber: 1314 x 2144 µm
Manual Detection Capability (minimum)	0.25 µm
Auto Analysis Resolution	<1.0 µm
Internally Stored Image Size (pixels)	LFOV <sup>b</sup> : 3840 x 2560 JPG file Multi Fibers: 3840 x 2560 JPG file, N x 160 x 160 pixels .GIF files Single Fiber: 3840 x 2560 JPG file, 468 x 468 pixels .GIF file
Bluetooth Image and Overlay	2 x QVGA (320 x 240; image + overlay) to AFL test instruments 2 x VGA (640 x 480; image + overlay) files to Apple iOS and Android devices (IAP / MFi)
Maximum No Damage Live Fiber Power Level	+20 dBm; image cannot be viewed if fiber is live
Focus Methods	Auto-focus and manual focus
Centering	Auto-centering captured single fiber images
Zoom in Live Mode	1x / 2x / 4x / 8x zoom
Image Capture with Pass/Fail Analysis	IEC 61300-3-35 (2015), AT&T TP-76461, IPC-8497-1, user-set criteria
Results Storage (Image and Pass/Fail Results)	Yes
File Format	JPG, GIF
File Storage Capacity	10,000 files
Result Storage Capacity	Multi Fibers: 1000; Single Fiber:1500
OPERATING FEATURES	
Bluetooth Characteristics (Wireless only)	IAP (iPod Accessory Protocol), SPP 0 x 1101, Apple MFi
USB Characteristics	Connector USB-C, Charging, USB 2.0 Mass Storage Device
ENVIRONMENT PARAMETERS	
Storage Temperature	-40 °C to +70 °C
Operating Temperature	0 °C to +50 °C
Relative Humidity	0 to 95% RH
Vibration Limits	2G (transportation)
Transit Drop (without soft case)	300 mm (12 inches, all sides, dust cover installed)
Transit Drop (with soft case)	460 mm (18 inches, all sides, dust cover installed)

## Notes:

- All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).
- Large Field of View (LFOV) parameters are provided using LFOV MPO PC and APC adapters.
- Operating conditions: 60 tests in 20 minutes, then auto-off; repeat each hour.
- Trademarks are the property of their respective owners.

# FOCIS Lightning®2 Multi-Fiber Optic Connector Inspection System

## Specifications<sup>a</sup>

PHYSICAL AND POWER CHARACTERISTICS	
Display Size, Type, Resolution	3,5" color TFT touch screen with backlit, 320 x 480 with brightness control
Battery Type	Li-Pol, user-replaceable
Operating Time (typical)	8 hours <sup>c</sup> ; 5 hours continuous <sup>c</sup>
Power Save Features	Auto-off (disabled, 2, 5, 10 min)
Low-Battery Warning	Alerts when ≤15 minutes battery operation remains
Size	67 x 32 x 190 mm (2.7 x 1.3 x 7.5 in)
Weight	280 g (0.62 lb)
Safety & Compliance Certifications	UL, CE, FCC

## Ordering Information

DESCRIPTION	AFL NO.
FOCIS Lightning2 Kit, soft carry case, USB cable, with no tips or One-Click® cleaner	FOCIS-LT2-N
FOCIS Lightning2 Kit, soft carry case, USB cable, (1) UPC ferrule and bulkhead adapter tip, (2) One-Click MPO cleaners	FOCIS-LT2-U
FOCIS Lightning2 Kit, soft carry case, USB cable, (1) APC ferrule and bulkhead adapter tip, (2) One-Click MPO cleaners	FOCIS-LT2-A
FOCIS Lightning2 Kit, soft carry case, USB cable, (1) UPC and (1) APC ferrule and bulkhead adapter tips, (2) One-Click MPO cleaners	FOCIS-LT2-UA
FOCIS Lightning2 Kit, soft carry case, USB cable, (1) UPC and (1) APC ferrule and bulkhead adapter tips, (2) One-Click MPO cleaners, single fiber adapter	FOCIS-LT2-UASF
FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, with no tips or One-Click cleaner	FOCIS-LT2-NW-N
FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, (1) UPC ferrule and bulkhead adapter tip, (2) One-Click MPO cleaners	FOCIS-LT2-NW-U
FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, (1) APC ferrule and bulkhead adapter tip, (2) One-Click MPO cleaners	FOCIS-LT2-NW-A
FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, (1) UPC and (1) APC ferrule and bulkhead adapter tips, (2) One-Click MPO cleaners	FOCIS-LT2-NW-UA
FOCIS Lightning2 No Wireless Kit, soft carry case, USB cable, (1) UPC and (1) APC ferrule and bulkhead adapter tips, (2) One-Click MPO cleaners, single-fiber adapter	FOCIS-LT2-NW-UASF

## FOCIS Lightning Adapter Tips and Accessories

DESCRIPTION	TIP ID	AFL NO.
Adapter tip for MPO-12/24 APC bulkhead (with key)	M12A	FLTNG-01-M12A
Adapter tip for MPO-12/24 UPC bulkhead (with key)	M12U	FLTNG-01-M12U
Adapter tip for MPO-16/32 UPC bulkhead (with key)	M16U	FLTNG-01-M16U
Adapter tip for MPO-12/16/24/32 UPC bulkhead (no key)	MPOU	FLTNG-01-MPOU
Adapter Tip for MPO-12/16/24/32 APC connector (with key)	MAC	FLTNG-01-MAC
Adapter Tip for MPO-12/16/24/32 UPC connector (with key)	MUC	FLTNG-01-MUC
Adapter Tip for OptiTip male (pinned) connector	OPTM	FLTNG-01-OPTM
Adapter Tip for OptiTip female (unpinned) connector	OPTF	FLTNG-01-OPTF
Coupler for most 'FFLX' single fiber connector adapter tips	SFC	FLTNG2-01-SFC
Extended adapter tip for LC-APC bulkhead	ALCM	FLTNG-01-ALCM
Extended adapter tip for LC-UPC bulkhead	ULCM	FLTNG-01-ULCM
MPO extender barrel	MPE	FLTNG-01-MPE
Adapter tip for Large Field of View (LFOV) - UPC	LVU	FLTNG2-01-LVU

### Notes:

- All specifications valid at 23 °C ±2°C (73.4 °F ±3.6 °F).
- Large Field of View (LFOV) parameters are provided using LFOV MPO PC and APC adapters.
- Operating conditions: 60 tests in 20 minutes, then auto-off; repeat each hour.
- Trademarks are the property of their respective owners.


## FOCIS Lightning®2 Multi-Fiber Optic Connector Inspection System

### Test Management and Reporting Software

FlexReports Basic software is available as free download on AFL Software Resources website. FlexReports Basic includes a 60-day Advanced software trial. Once the evaluation period ends, users must upgrade to FlexReports Advanced software license to continue using FlexReports Advanced features.


DESCRIPTION	AFL NO.
FlexReports Advanced, one seat license on USB	RPTS-AD-USB-1
FlexReports Advanced, one seat, Upgrade from TRM® 3 Advanced on USB. Users must have TRM-3 Advanced license	RPTS-UP-TRM3-1
FlexReports Basic, available for download on AFL Software Resources website	FlexReports Basic
FlexApp data transfer mobile App, available on Google Play and Apple App Store	FlexApp

### Recommended Products



**FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs**

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- Flexpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



**One-Click® Cleaner MPO / MPO-16**

- Ideal for Data Centers and high density optical networks
- Designed to work on MTP®/MPO multi-fiber connectors
- Cleans connectors on jumpers and in adapters

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety /EMC /EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FCC	Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	IEC	Compliant to IEC 61300-3-35 for visual inspection of fiber optic connectors and fiber-stub transceivers
	IPC	Compliant to IPC-8497-1 for cleaning methods and contamination assessment for optical assembly

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about FOCIS Lightning2.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts).

## FOCIS WiFi2® Fiber Optic Connector Inspection System

Fiber Inspection



### Features

- Trim, lightweight, ergonomic and highly productive tool
- App-based automatic and manual focus; auto-centering after image capture
- One button workflow using rapid LED feedback on probe
- Multi-color LED on probe for fast pass/fail user inspection feedback
- Pairs with an iOS or Android smart device or the aeRos® cloud-based workflow management platform
- IEC, IPC, AT&T and user-defined pass/fail analysis when paired with a smart device
- Wide range of adapter tips including MPO/MTP multi-fiber connectors and bulkheads
- Over 8 hours operation with rechargeable Li-Ion battery

### Applications

- Inspection of connectors on patch cords or in bulkhead adapters
- Installation, troubleshooting and maintenance of fiber network
- Inspection of multi-fiber connectors including MPO16 and MXC®
- Critical fiber infrastructure performance assurance
- Verification of proper connector cleaning methods of procedure

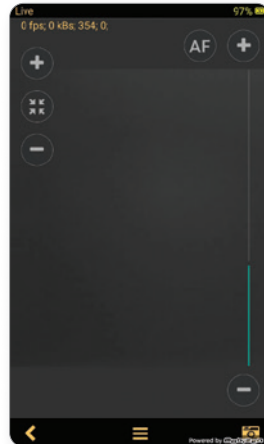
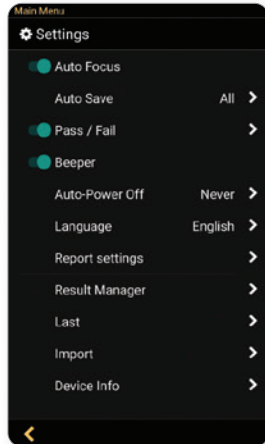
FOCIS WiFi2 is an ergonomic Fiber Optic Connector Inspection System that, when paired with an iOS or Android smart device, provides fast and accurate IEC/IPC/AT&T compliant and user-defined pass/fail end-face cleanliness analysis. Free of charge iOS and Android companion apps support a comprehensive and user-friendly feature set.

**Pass/fail results in seconds:** With the press of a single button, FOCIS WiFi2 auto-focuses, captures, centers and analyzes the end-face image to industry standard IEC 61300-3-35 (2015), IPC-8497-1, AT&T TP-76461 and user-defined criteria.

**Untethered operation:** App-based report generator with results/reports transferable to the aeRos cloud. With rechargeable battery and convenient pass/fail LED feedback, FOCIS WiFi2 can be used semi-independently.

**Wide range of adapter tips:** Interchangeable adapter tips support single and multi-fiber connector inspection for a wide range of patch cords and bulkhead-mounted connectors having either PC/UPC or APC polished end-faces.

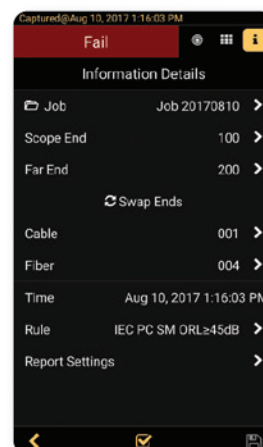
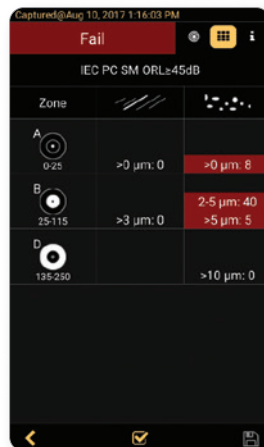
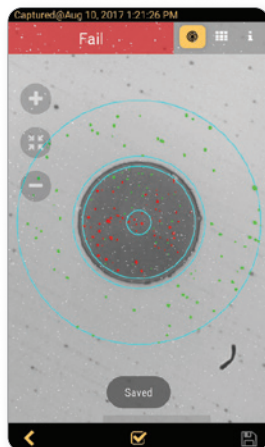
## FOCIS WiFi<sup>®</sup> Fiber Optic Connector Inspection System



### Smart Device Apps: FOCIS WiFi2

#### Features

- Live image video streaming
- Auto-focus and auto centering
- IEC, IPC, industry standard, and user-defined inspection rules
- Pinch-to-zoom fiber end-face images
- Report generation
- Multi-language Graphical User Interface (GUI)
- Day/time stamped job saving





# FOCIS WiFi2® Fiber Optic Connector Inspection System

## Specifications<sup>a</sup>

OPTICAL PERFORMANCE	
Field of View (FOV) <sup>b</sup>	Live and Captured: 612 x 460 µm;
Manual Detection Capability (minimum)	0.25 µm
Auto Analysis Resolution	<1.0 µm
Stored <sup>c</sup> Image Size	2592 x 1944 (5M) pixels
End-face Illumination	Coaxial blue LED 476 nm
Maximum No Damage Live Fiber Power Level	+20 dBm (Image cannot be viewed if fiber is live)
OPERATING FEATURES	
WiFi Characteristics	IEEE 802.11bng
Focus	Auto-focus (≤3 sec) and manual focus
Centering	Auto-centering (<1 sec)
Button Functionality	Power On/Off (>3 secs); Capture/Analysis/Auto-save/Live
Main LED Functionality	Blue = Power On, Green = Pass, Red = Fail, White = No Fiber
Magnification <sup>b</sup>	Variable from 80X to 700X, in Live and Capture modes
Applications Compatibility	Android ≥4.0.3, iOS ≥8.1
Image Capture with Pass/Fail Analysis <sup>c</sup>	IEC 61300-3-35 (2015), AT&T TP-76461, IPC-8497-1, user-set criteria
Image File Format	JPEG, GIF
Image & Pass/Fail Results Storage <sup>c</sup>	Yes
File Storage Capacity <sup>c</sup>	Unlimited
Result Manager <sup>c</sup>	Storage, rename, delete, transfer
Reporting <sup>c</sup>	Built-in fillable PDF reporter
Supported Languages <sup>c</sup>	English, French, German, Japanese, Korean, Russian, Spanish
PHYSICAL AND POWER CHARACTERISTICS	
Battery Type	Li-Ion, non-replaceable by user
Maximum Charger Current Draw	1.2A, battery charge current + device consumption current
Operating Time (typical)	60 hours <sup>d</sup> ; 8 hours continuous
Recharge Time	≤4 hours
Low-Battery Warning	Viewed on smart device
Charging LED Status; viewed on smart device	Red = Charging, Green = Fully Charged, Blinking Red/Green = Battery Fault
Power Save Features (Controlled by App)	Probe Auto-Off – disabled, 5, 10, 30, 60 minutes; Probe WiFi Not Connected – 5 minutes
AC Charger Voltage, Frequency, Current	100-240VAC, 50/60Hz, 5VDC, 2A
Charger Jack	0.9 x 3.2 mm barrel, center (tip) positive
Size (Max Diameter x Length)	Ø 40 x 226 mm (Ø 1.6 x 8.9 in)
Weight	150 g (5.3 oz)
ENVIRONMENTAL CHARACTERISTICS	
Operating Temperature	0 to +50 °C; 95% RH, non-condensing
Storage Temperature	-40 to +70 °C; 95% RH, non-condensing

### Notes:

- All specifications valid at 23°C ±2°C (73.4°F ±3.6°F).
- Viewed on Smart Device.
- In iOS & Android Apps.
- Operating conditions: 60 tests in 20 minutes, then auto-off; Repeat each hour

## Ordering Information

DESCRIPTION	AFL NO.
FOCIS WiFi2 Kit, soft carry case, AC charger, with NO tips or One-Click cleaner	FOCIS-WIFI2-N
FOCIS WiFi2 Kit, soft carry case, AC charger, user-selected: (2) UPC ferrule & bulkhead adapter tips and (1) One-Click cleaner	FOCIS-WIFI2-U
FOCIS WiFi2 Kit, FOCIS WiFi2, soft carry case, AC charger, user-selected: (2) APC ferrule & bulkhead adapter tips and (1) One-Click cleaner	FOCIS-WIFI2-A
FOCIS WiFi2 Kit, soft carry case, AC charger, user-selected: (2) UPC and (2) APC ferrule & bulkhead adapter tips and (1) One-Click cleaner	FOCIS-WIFI2-UA

## FOCIS WiFi2® Fiber Optic Connector Inspection System

### Recommended Products



FS300



FS200

#### FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FlexPress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



#### OFI-BIPM Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety /EMC /EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FCC	Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	IEC	Compliant to IEC 61300-3-35 for visual inspection of fiber optic connectors and fiber-stub transceivers
	IPC	Compliant to IPC-8497-1 for cleaning methods and contamination assessment for optical assembly

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## ROGUE® OLTS Certifier

Measure insertion loss, return loss and length on multimode and single-mode fiber optic networks



### Features

- Bi-directional testing on up to 2 fibers at once
- Pass/Fail certification to ISO/IEC/TIA/IEEE and custom test limits
- Automatic dual-wavelength identification (Wave ID)
- Test cord reference wizard and built-in encircled flux compliance
- Integrated power meter and visual fault identifier
- 12-fiber MPO certification with optional Multi-fiber switch (MFS)
- Reporting with TRM® PC software and optional cloud-based workflow integration with aeRos®

### Applications

- Certify Tier 1 networks to industry standards
- Test LAN structured cabling and data center networks with single fiber (LC, SC, FC, ST) and multi-fiber (MTP/MPO) connectivity
- Test access, metro and core networks
- Document network installations

AFL's ROGUE OLTS Certifier measures insertion loss, return loss, and length bi-directionally to industry standards on both multimode and single-mode networks. ROGUE OLTS Certifier is offered as a matched pair of units, with each unit featuring 4 test ports. Two of the ports combine a light source and power meter to enable bi-directional testing on single or dual fibers. The other two ports are a dedicated power meter and a visual fault identifier (VFI) to help troubleshoot networks.

ROGUE OLTS Certifier is available as an intelligent base (iB1) model with an integrated display. It can provide either single-fiber testing on quad SM/MM wavelengths (850/1300/1310/1550 nm) or single and dual-fiber testing at 1310/1550 nm.

**Test Management and Reporting Software:** All ROGUE OLTS Certifier kits include a basic license for Test Result Manager (TRM® 3.0) providing data processing and reporting locally via a PC. The optional aeRos® Pro test management software provides cloud-based workflow integration to remotely build projects, assign jobs, collect results, track progress and generate reports.

## ROGUE® OLTS Certifier

### Specifications<sup>a</sup>

OLTS	MULTIMODE	SINGLE-MODE
Emitter Type	LED	Laser
Wavelengths	850 ±30 nm; 1300 ±20 nm	1310, 1550 ±20 nm
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC EN60825-1: 2007-03	
Detector Type	InGaAs	InGaAs
Launch Condition	Encircled Flux Compliant <sup>b</sup>	N/A
Length Measurement Range	5 km	200 km (SMF28e)
Power Measurement Range	+3 to -60 dBm	+3 to -60 dBm
Output Power	-24/-23 dBm, 62.5/50 µm	-3 dBm, 9 µm
Stability <sup>c</sup>	±0.1 dB over 1 hour ±0.15 dB over 8 hours	±0.1 dB over 1 hour ±0.15 dB over 8 hours
Wave ID Transmit	Yes	Yes
Tone Generation	330 Hz, 1 kHz, 2 kHz	330 Hz, 1 kHz, 2 kHz
Input Connector	Interchangeable connector adapter (LC standard, SC, ST, FC optional)	

OPTICAL POWER METER (OPM)	
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550, 1625, 1650 nm
Detector Type	InGaAs PIN, 2 mm diameter
Measurement Range	+3 to -70 dBm
Wave ID	Automatically synchronizes and measures 1, 2 or 3 λ Wave ID combinations
Range	+3 to -40 dBm @ 850 nm; +3 to -50 dBm @ 1300, 1310, 1550 nm
Tone Detect	Auto-detects 270, 330 Hz; 1, 2 kHz tones;
Accuracy	±5% @-10 dBm
Linearity	±0.1 dB (-3 to -40 dBm); ±0.25 dB (-40 to -50 dBm)
Measurement Units	Power in dBm, nW, µW, mW; Loss in dB; 0.01 dB resolution

VISUAL FAULT LOCATOR (VFL)	
Emitter Type	Visible red laser, 650 ±20 nm
Safety Class	Class II FDA 21 CFR 1040.10 and 1040.11, IEC EN60825-1: 2007-03
Output Power (nominal)	0.8 mW into single-mode fiber
Modes	CW and 2 Hz flashing

GENERAL	iB1
Size	23.5 x 13.3 x 7.6 cm (9.25 x 5.25 x 3.0 in)
Weight	1.56 kg (3.46 lb)
Operating Temperature	-10 °C to +50 °C, 0 to 90 % RH (non-condensing)
Storage Temperature	-20 °C to +60 °C, 0 to 90 % RH (non-condensing)
Power	Rechargeable Li-Ion or AC power adapter
Battery Life	>8 hours continuous testing

#### Notes:

- All specifications valid at 23°C ±2°C (73.4°F ±3.6°F) unless otherwise specified.
- TIA-526-14-B, ISO/IEC 14763-3 and IEC 61280-4-1.
- After 15 minutes warm-up.

## ROGUE® OLTS Certifier

### Ordering Information

Each ROGUE OLTS Certifier kit includes two (2) of each: ROGUE iB1 Base, kit-specific ROGUE Modules, battery, AC charger, carry strap, carry case. Each ROGUE OLTS Certifier kit includes (1) One-Click Cleaner SC/2.5 mm, (1) One-Click Cleaner LC/1.25 mm, switchable test port adapters and test accessories.

DESCRIPTION	CONTAINS (two of each)	AFL NO.
ROGUE OLTS Certifier kit with iB1 Base, Quad SM/MM	ROGUE iB1 Base, Quad SM/MM Module, battery, AC charger, adjustable carry strap, carry case	RGK-CERT01B1
ROGUE OLTS Certifier kit with iB1 Base, Dual SM ports	ROGUE iB1 Base, Dual Ports SM Module, battery, AC charger, adjustable carry strap, carry case	RGK-CERT03B1

### ROGUE Hardware and Accessories

DESCRIPTION	AFL NO.
ROGUE OLTS with iB1 Base; contains ROGUE iB1 Base, Dual Ports SM Module, battery, AC charger, adjustable carry strap	RGK-OLTS03B1
ROGUE iB1, Intelligent Base; contains ROGUE iB1 Base, battery, AC charger, adjustable carry strap	RG-B01
ROGUE OLTS Certifier Quad Module; contains Quad Module; test port adapters: (2) SC for OLS port, SC and LC for OPM port	RG-1100-Q01
ROGUE OLTS Certifier SM Module; contains SM Module; test port adapters (2) SC for OLS port, SC and LC for OPM port	RG-1100-S01-D
ROGUE Kit Carry Case	RGA-CASE-01
ORL Referencing Mandrel	5400-00-0200
Adjustable Carry Strap	RGA-STRAP-01
AC charger for cB1 Base	4050-00-0132PR
AC charger for iB1 Base	4050-00-0918PR
Reference cable, SC/UPC-LC/UPC, SMF28E/E+, 2 m	8700-00-0081
Reference cable, SC/APC-LC/UPC, SMF, 2 m	8700-00-0050
Reference grade cable, SC/UPC-LC/UPC, MMF, 50 µm, OM4, 2 mm, Red, 2 m	8700-04-0007MR



ROGUE OLTS Certifier kit with iB1 Bases

## ROGUE® OLTS Certifier

### ROGUE OLTS Certifier Adapters

DESCRIPTION	TEST PORT USAGE	AFL NO.
FC	OLS	2900-50-0002MR
SC	OLS	2900-50-0003MR
ST	OLS	2900-50-0004MR
LC	OLS	2900-50-0006MR
FC	OPM	2900-52-0001MR
SC	OPM	2900-52-0002MR

DESCRIPTION	TEST PORT USAGE	AFL NO.
ST	OPM	2900-52-0003MR
LC	OPM	2900-52-0004MR
2.5 mm Universal	OPM	2900-52-0005MR
1.25 mm Universal	OPM	2900-52-0006MR
2.5 mm Universal	VFL	2900-50-0007MR
1.25 mm Universal	VFL	2900-50-0010MR

### Test Management and Reporting Software

DESCRIPTION	AFL NO.
TRM 3.0 upgrade from Basic to Advanced software	TRM3-UGRADE
TURBO App (Android Google play)	Free Download

### Recommended Products

**aeros®**

#### Cloud-based Test Management and Reporting

- Seamless interaction with Android™ applications
- Run reports at the push of a button

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety /EMC /EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FCC	Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	TIA	Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components
	IEC	Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises
	EN	Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling
	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant

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## Multi-Fiber Switch



Multi-fiber Switch paired with ROGUE

### Features

- Stand-alone operation as well as pairing with other testers including OTDRs and OLTS
- 12-fiber switching capability
- Dual wavelength, single-mode or multimode
- Rechargeable battery with USB port charging/communication

### Applications

- Converts a single port tester into a multi-fiber tester utilizing your existing OLTS, OTDR, and VFL test equipment
- Efficiently test 12-fiber links without disconnecting/reconnecting
- Bi-directional testing without moving cables
- Certify MPO links to industry standards including base 8 applications

The density demands of today's networks are driving more demand for multi-fiber connectivity. As the adoption of multi-fiber connectors becomes more prevalent in data centers, the ability to test these types of connections accurately and quickly has become even more critical.

AFL's Multi-Fiber Switch enables the testing of MPO/MTP®-terminated cables. The switch allows you to utilize a single piece of test equipment to verify some or all of the fibers in a multi-fiber connector in a single test, saving you both time and money.

AFL's Multi-Fiber Switch is compatible with your AFL FlexScan FS200 and FS300 series OTDRs and ROGUE® OLTS Certification equipment. The switch can be manually configured or remotely controlled via USB from both FlexScan OTDRs and ROGUE OLTS.

### Specifications<sup>a</sup>

OPTICAL		
Wavelength	1310/1550 nm, SM dual-wavelength	850/1300 nm, MM dual-wavelength
Insertion Loss	2.8 dB typ. – 3.3 dB max.	1.8 dB typ. – 2.3 dB max.
Optical Return Loss (ORL)	50 dB min.	—
Fiber Length	4.4 ± 0.5 m	
Optical Length Uniformity	± 0.15 m	
GENERAL		
Power	Li-Ion battery or USB interface	
Battery Life	1000 hours continuous operation	
Weight	0.3 kg (0.66 lb)	
Dimensions	12.9 x 6.9 x 3.1 cm (5.1 x 2.7 x 1.2 in)	
Operating Temperature	-20 °C to +60 °C, 0 to 90 % RH (non-condensing)	
Storage Temperature	-20 °C to +70 °C, 0 to 90 % RH (non-condensing)	

#### Notes:

a. All specifications valid at 23 °C ± 2 °C (73.4 °F ± 3.6 °F) unless otherwise specified.



## Multi-Fiber Switch

### Ordering Information

DESCRIPTION	AFL NO.
Multi-fiber Switch, 12 fibers SM, APC-SC, MPO fiber ring (non-pinned), soft case	MFS-12-SM-ASC-FR
Multi-fiber Switch, 12 fibers SM, APC-SC, soft case	MFS-12-SM-ASC
Multi-fiber Switch, 12 fibers SM, UPC-SC, soft case	MFS-12-SM-USC
Multi-fiber Switch, 12 fibers MM, UPC-SC, soft case	MFS-12-MM-USC

### ROGUE MFS Certification Add-on Kits

Each Multi-Fiber Switch Certification Add-on kit include (2) Multi-Fiber Switches, (2) 6 in. USB-USB mini cables, (2) key up / key down MPO-MPO mating adapters, (2) MFS carry holsters, (1) One-Click Cleaner MPO, (2) MFS kit carry cases, test cords and mating adapters (see table below).


ADD-ON KIT	CONTAINS (ea.)			AFL NO.
	12F MFS SWITCH	REFERENCE TEST CORDS		
		SC-SC, 0.3 (m)	12F MPO-MPO, 2 (m)	
SM, SC/UPC-MPO/APC	(2) SM, SC/UPC-MPO/APC	(2) SM	(2) SM, type A unpinned; (2) SM, type A pinned/unpinned; (1) SM, type B unpinned	MPO-SM-CERT-ADD
MM, SC/UPC-MPO/UPC	(2) MM, SC/UPC-MPO/UPC	(2) MM	(2) OM4, type A unpinned; (2) OM4, type A pinned/unpinned; (1) OM4, type B unpinned	MPO-MM-CERT-ADD

### MFS Multi-Fiber Switch OTDR Add-on Kit

Single-mode and multimode Multi-Fiber Switches (MFS) are available to accelerate OTDR testing of MPO-connectorized, multi-fiber cables. OTDR MFS Add-on Kits include (1) MFS with MPO connector, (1) single-fiber Fiber Ring to connect OTDR to the switch, plus (1) MPO Fiber Ring.


CONTAINS (ea.)			AFL NO.
12F MFS SWITCH	FIBER RING	MPO FIBER RING	
MFS-12-SM-ASC, SM, SC/APC-MPO/APC pinned	SM, 150 m, SC-ASC or ASC-ASC (depending on OTDR connector)	12F, 61m, MPO/APC-unpinned to MPO; Select pinned or unpinned network MPO connector	MPO-SM-OTDR-ADD
MFS-12-MM-USC, MM, SC/UPC-MPO/UPC pinned	OM3/4/5-compatible, SC-SC, 150 m	12F, 61m, MPO-unpinned to MPO; Select pinned or unpinned network MPO connector	MPO-MM-OTDR-ADD

### Recommended Products



**ROGUE® OLTS Certifier**

- Bi-directional testing on up to 2 fibers at once
- Pass/Fail certification to ISO/IEC/TIA/IEEE and custom test limits
- Automatic dual-wavelength identification (Wave ID)



**FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs**

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- Flexpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
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## FlowScout® SE100 Single-Ended Test Set

### Quickly and Easily Verify Continuity and Insertion Loss From One End

US Patent Pending



FlowScout SE100 with 1430 nm Wavelength Optical Reflector

#### Features

- Verifies fiber continuity and insertion loss at 1430 nm from a single end
- Excess reflection (low ORL) detection at 1550 nm
- Live fiber detection and reporting
- Built-in optical continuous wave (CW) reflectometer
- Combines light source and power meter into a single unit

#### Applications

Used to verify:

- FTTH continuity and insertion loss during service activation or troubleshooting
- FTTA continuity and insertion loss between Distribution Unit (DU) and Radio Unit (RU)
- Fiber backhaul continuity and insertion loss to demarcation point

AFL's FlowScout SE100 is designed to verify fiber continuity and measure insertion loss to the end of fibers terminated with AFL's 1430 nm Wavelength Optical Reflectors. When a reflector is detected, the FlowScout SE100 immediately reports its presence (confirming continuity to the reflector) and measures insertion loss to the reflector at 1430 nm wavelength. The reflector is near-transparent to PON and other wavelengths, allowing it to remain installed during network operation.

**Reduce cost:** Combining an optical light source and power meter into one low-cost test set, the FlowScout SE100 enables a single technician to verify continuity and measure insertion loss, reducing equipment costs by over 38% and labor costs by over 50%.

**Shorten test time and eliminate setup errors:** Traditional two-ended testing requires equipment configuration and test coordination. FlowScout SE100 eliminates time-consuming setup and technician coordination time. It also speeds up testing by reducing visits to subscriber premises, demarcation points, and cell tower climbs.

**Enhance customer experience:** The FlowScout SE100 eliminates the need for onsite troubleshooting of FTTH drop issues. All testing can be completed from a distribution panel or splitter, eliminating technician time at the subscriber premises and overcoming scheduling and access challenges for both subscribers and service providers.

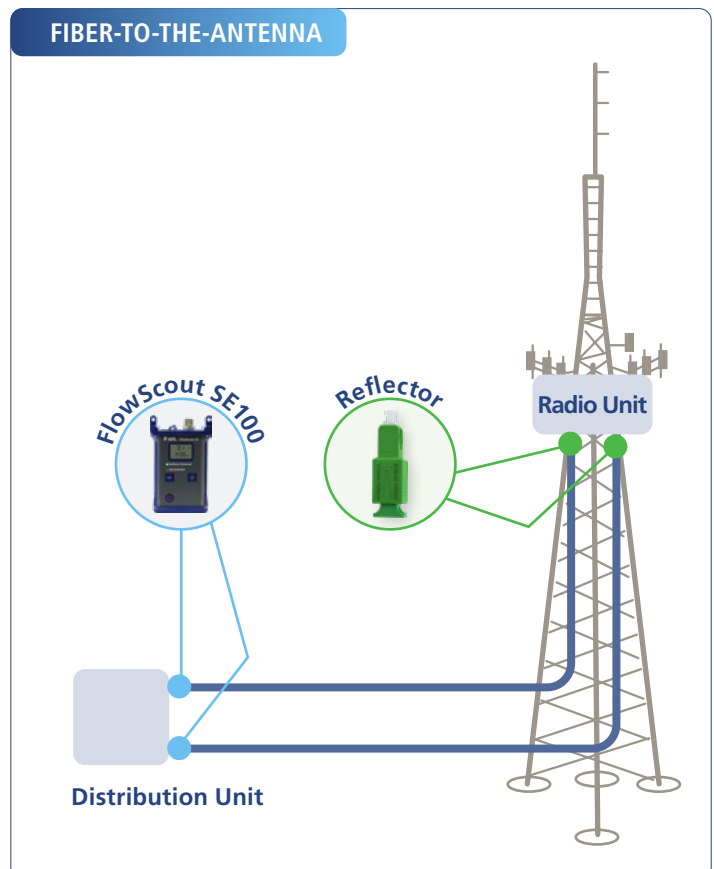
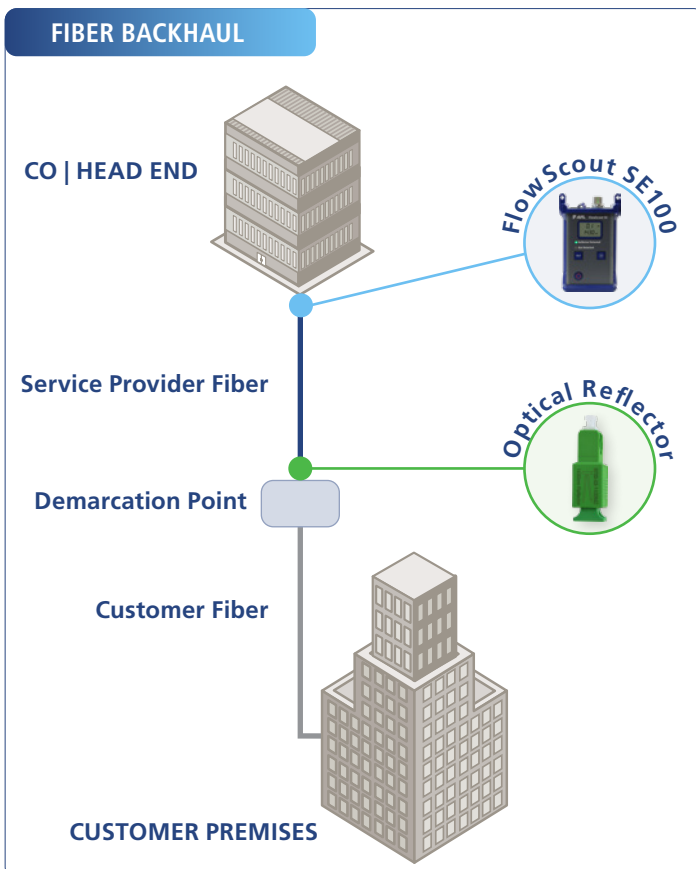
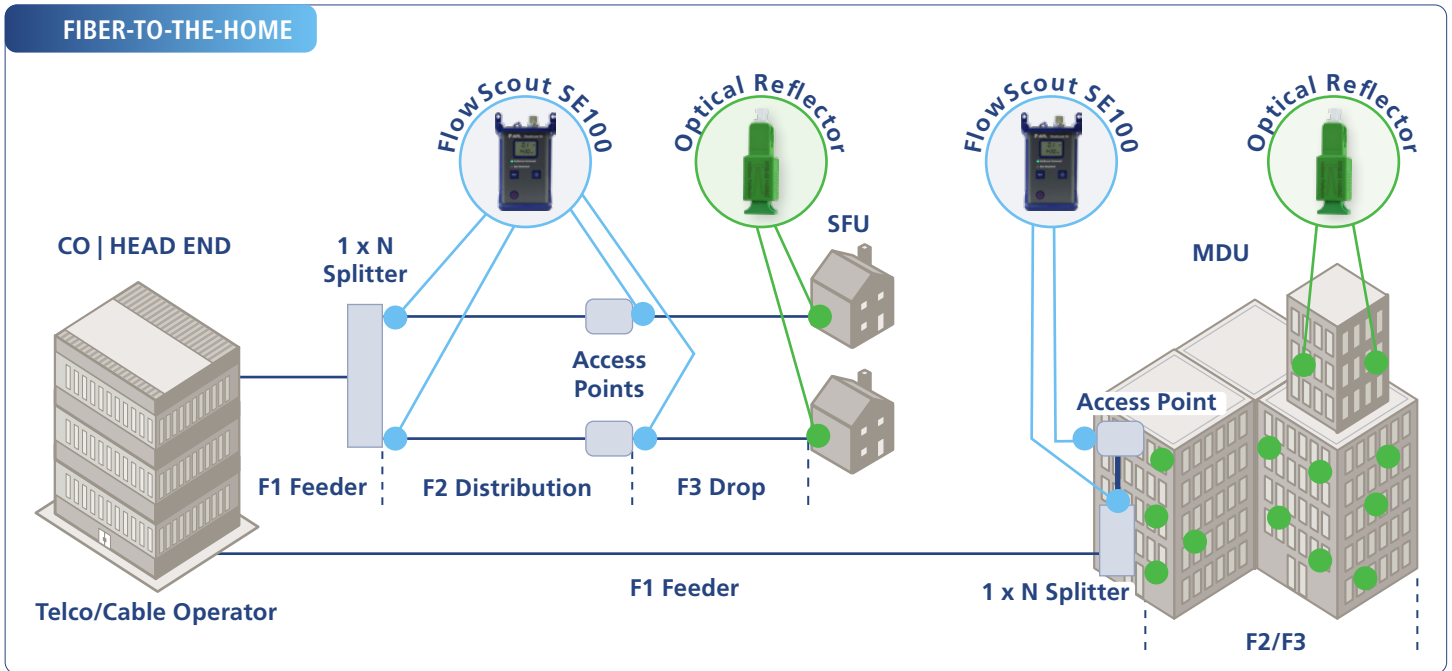
**Increase technician safety:** Repeated tower climbs for troubleshooting FTTA fibers are eliminated by using the FlowScout SE100 to test from the ground to optical reflectors installed at the Radio Unit.

**Ensure integrity of test results:** FlowScout SE100 alerts the user when excess reflection or a live signal is present on the tested network. Reflection issues from damaged, open, mismatched, or dirty connectors often result in poor network performance. FlowScout SE100 immediately alerts the user and displays ORL when excess reflection is present.

**Complements subscriber-installed ONT initiatives:** Reducing the need for FTTH premises visits, the FlowScout SE100 solution supports service provider goals to reduce costs by adopting a subscriber self-install ONT methodology.

# FlowScout® SE100 Single-Ended Test Set

## Example Applications



## FlowScout® SE100 Single-Ended Test Set

### PRODUCT HIGHLIGHTS



**Easy to Use**



**Brightness Control**



**Battery Operated**



**Handheld**



**USB Power Port /  
Software upgrades**

**Single SC/APC Connection**  
Simply plug in the fiber connector and get readings in >5 sec!

**Large LCD display**  
Multi-function screen clearly shows all measurements and prompts

**Clear color-coded readings**  
LED indicators allow you to view if reflector is detected in seconds

**Easy, one-handed operation**  
Easily one hand operation. Large buttons for easy operation

**Durable design for field use**  
Protective rubber boot for in-field durability and reliability



### Specifications<sup>a</sup>

OPTICAL	
Emitter Type	Laser
Safety Class <sup>b</sup>	Class I
Fiber Type	Single-mode; compatible with all G.652, G.655, and G.657 SMF
Calibrated Wavelengths	1430 and 1550 nm
Center Wavelength	1430 ±5 nm; 1550 ±20 nm
Spectral Width (FWHM)	≤5 nm
Output Power Level	-1 to -4 dBm CW
Output Power Stability	±0.1 dB over 1 hour (after 1 minute warmup)
Detector Type	InGaAs PIN
Detection Range	Reflector detected / not detected up to 20 km (18 mi) with optical loss ≤9 dB at 1430 & 1550 nm and 1550 nm ORL ≥25 dB
Insertion Loss Measurement Range	At least 10 dB when ORL ≥25 dB @1550 nm   At least 6 dB when ORL in range 14 – 20 dB @ 1550 nm
Loss Accuracy	±1.0 dB for loss in range 0 to 6 dB
Loss Resolution	0.1 dB
Measurement Units	Loss in dB; ORL in dB
GENERAL	
Size (in boot)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	≤0.3 kg (≤0.7 lb)
Operating Temperature	-10 °C to +50 °C, 0 to 95% RH (non-condensing)
Storage Temperature	-30 °C to +60 °C, 0 to 95% RH (non-condensing, batteries installed)
Battery Power	2 x AA alkaline batteries; user-replaceable
AC Power	Optional external AC power supply (100-240 VAC, 50-60 Hz; 5VDC @2A)
Battery life	Typical 120 hrs, minimum 75 hrs (continuous operation, backlight off)
Display	Backlit monochrome LCD
Shock and vibration	Drop test, 1 m, 6 planes
Optical port	Fiber-coupled, 2.5 mm ceramic ferrule plus SC/APC connector adapter
Dust Cap	Captive dust cap mounts over SC/APC connector adapter

#### Notes:

a. All specifications valid at 25°C unless otherwise specified.

b. FDA 21 CFR 1040.10 and 1040.11; IEC 60825-1:2014

## FlowScout® SE100 Single-Ended Test Set

### Ordering Information

FlowScout SE100 kits include the FlowScout SE100 test set, SC/APC to SC/APC patch cord to connect to network under test, reference 1430 nm Wavelength Optical Reflector, wrist strap, and Quick Reference Guide in a convenient soft carry case.


DESCRIPTION	AFL NO.
FlowScout SE100 Single-Ended Test Set	SE100-00-0901PR

### Accessories

DESCRIPTION	AFL NO.
<b>ACCESSORIES INCLUDED WITH SE100-00-0901PR KIT</b>	
1430 nm Wavelength Optical Reflector, SC/APC, female-to-male, plug type	8700-03-1430MZ
Universal flip-top dust cap for UCI outputs	8800-00-0072PR
Single-mode test jumper, SC/APC to SC/APC, 2 m, 3 mm jacketed	8700-00-0218MR
Wrist atrap	1400-05-0230PZ
Soft carry case with strap	1400-01-0107MZ
<b>ADDITIONAL OPTIONAL ACCESSORIES</b>	
SC/APC adapter for optical port	2900-50-0011MR


DESCRIPTION	AFL NO.
USB – Micro-B cable, 5 pin, 6 ft	6000-00-0031MR
AC Adapter ( <b>shipped with one power plug of customer choice; select one from plugs listed below!</b> )	4050-00-0034MR
<ul style="list-style-type: none"> <li>4050-00-0030EUMR EU Power Plug for AC charger</li> <li>4050-00-0030USMR US power plug for AC charger</li> <li>4050-00-0030SAAMR CN/AUS power plug for AC charger</li> <li>4050-00-0030UKMR UK power plug for AC charger</li> </ul>	
FlowScout SE100-facing APC female to APC male field-replaceable Port Saver SMF	2900-58-0001MR
One-Click Cleaner Mini 500 SC, ST, FC; 500+ Cleans	8500-05-0009MZ

### Recommended Products




**FOCIS Flex Connector Inspection**

- Self-contained, tether-free, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



**One-Click® Cleaners**

- Patented single-action
- Variety of sizes and types
- Low cost per clean



**VF14 Visual Fault Identifier**

- Eye-safe Class 3R visible red laser source, 650 nm
- Output power of  $\leq 5.0 \mu\text{W}$  with 10 km range
- Universal connector interface for quick connection

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
UKCA Marking	UK	Compliant to relevant UK Directives on health, safety, and environmental protection, and certified with the UKCA marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Generic Requirement	IEC	Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about complementary AFL fiber optic test and inspection products.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)

## FlowScout® Through-Mode PON Optical Power Meter

US Patent 9,602,200 and US Patent 10,771,153

Optical Loss Testing



### Features

- Detect multiple wavelengths automatically - NO setup required!
- Detects GPON, XGS-PON, and Video signals all at once
- Rugged and water resistant, IP54 rating
- Field-swappable connector adapters
- Large color touchscreen display daylight viewable
- Rechargeable Li-Polymer battery

### Applications

- Detects and measures PON upstream and downstream signals
- PON network activation
- BPON, EPON, GPON, 10G-EPON, XG-PON, XGS-PON, Video network verification and troubleshooting
- Evaluate PON power level Pass/Fail based on limits

AFL is a trusted supplier of optical testing equipment with more than 30 years of experience and tens of thousands of units in the field. AFL's full range of N.I.S.T. traceable power meters are used for testing single-mode and/or multimode fiber networks.

**Designed for all:** AFL's power meters are designed to meet the demands in an outside plant environment. The FlowScout Through-Mode PON Power Meter (TPPM) easily withstands a one-meter drop and has splash resistant controls that are easy to use, even with gloves on.

**Flexible and efficient:** A range of field-swappable output adapters support multiple connector styles and enables access for easy cleaning. The efficient design ensures a long run time from its rechargeable Li-Polymer battery and includes an auto-off feature to save power.

**Stores test results:** The built-in File Management system allows technicians to organize test results into multiple files and transfer them via USB to a PC for analyzing, generating reports, and printing. The FlowScout's QR code feature can easily collect and transfer test data via any smart devices.

# FlowScout® Through-Mode PON Optical Power Meter

## Specifications<sup>a</sup>

OPTICAL				
MODEL		TPPM-XG		
Upstream	Wavelength	1270 nm	1310 nm	
	Measurement Range	-28 to +13 dBm	-28 to +13 dBm	
Downstream	Wavelength	1490 nm	1550 nm	1577 nm
	Measurement Range	-50 to +13 dBm	-35 to +26 dBm	-50 to +17 dBm
Accuracy <sup>b</sup>		±0.50 dB @0 dBm		
Resolution		0.01 dB		
Insertion Loss		1.7 dB Typical		
Inline ORL		55 dB typical		
Measurement Units		dBm, µW		

GENERAL	
Power	Rechargeable Li-Polymer battery
Adapter Caps	SC APC standard, LC APC available
Battery Life	>8 hours
Recharge time	~4 hours
Operating Temperature	-10 °C to 50 °C, 95 % RH (non-condensing)
Storage Temperature	-20 °C to 60 °C, 95 % RH (non-condensing)
Size (H x W x D)	17.1 x 10.4 x 4.6 cm (6.75 x 4.1 x 1.8 in)
Weight	0.59 kg (1.3 lb)

### Notes:

- a. All specifications valid at 25°C unless otherwise specified.  
b. Accuracy was measured at 25 °C and -10 dBm per N.I.S.T. standards.

## Ordering Information

All models include PON optical power meter, rechargeable batteries, SC/APC adapter cap, two SC/APC-SC/APC jumpers, USB-A to USB-C cable for charging and data transfer, AC plug, and carry case. Quick reference guide is available at [www.AFLglobal.com](http://www.AFLglobal.com).

DESCRIPTION	AFL NO.
FlowScout PON optical power meter XGPON/XGSPON	TPPM-XG
INCLUDED ACCESSORIES	
(2) SC/APC to SC/APC Test Jumpers, 2 m	8700-00-0090MR
USB-A to USB-C Charge and Data Transfer Cable	6000-00-0036MR
AC Adapter	4050-00-0034MR
One-Click® Cleaner Mini-500 SC, ST, FC (500+ cleans)	8500-05-0009MZ
AFL ships one power plug (of customer choice) along with the order. Please select one out of the four plugs listed below.	
EU Power Plug for AC charger	4050-00-0034EUMR
US power plug for AC charger	4050-00-0034USMR
CN/AUS power plug for AC charger	4050-00-0034SAAMR
UK power plug for AC charger	4050-00-0034UKMR



## FlowScout® Through-Mode PON Optical Power Meter

### Recommended Products



#### Optical Light Sources

- Encircled Flux Compliant
- 5-Year Product Warranty
- Integrated LED and Laser light sources



#### One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean



#### VFI4 Visual Fault Identifier

- Eye-safe Class 3R visible red laser source, 650 nm
- Output power of  $\leq 5.0$  mW with 10 km range
- Universal connector interface for quick connection

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
UKCA Marking	UK	Compliant to relevant UK Directives on health, safety, and environmental protection, and certified with the UKCA marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	TIA	Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components
	IEC	Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises
	EN	Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling
	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant
Generic Requirement	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about FlowScout PON optical power meters.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)

## Optical Loss Test Kits

**5 YEAR  
WARRANTY**



SMLP5-5 Kit

### Features

- Rugged, dependable, and backed by industry-best 5-year warranty
- Wave ID tests up to three wavelengths simultaneously - slashing test time
- Field-swappable connector adapters for maximum flexibility
- Long battery life from globally available AA batteries

### Applications

- Certify multimode and single-mode links per TIA/EIA standards
- Passive Optical Networks (PON) testing
- Certification report generation with TRM® 2.0 software
- Fiber identification for splicing and continuity checking

Optical Loss Test Sets (OLTS) provide the most accurate method for determining the total loss of a link. AFL's OLTS have been an industry favorite for over 30 years with more than 100,000 units shipped. Leading service providers and enterprise customers rely on AFL's OLTS for their ruggedness, reliability, and best-in-the-industry 5-year warranty.

An OLTS test is performed with a light source on one end of the fiber sending a continuous wave at specific wavelength(s) and a power meter on the opposite end measuring the light received. The loss measured is compared to the loss budget, which is usually calculated prior to installation, and reflects the industry standards used to ensure that the link can meet its application requirements.

OLTS are mainly used to certify multimode and single-mode links, test Passive Optical Networks (PONs), identify fibers before splicing, and to ensure network continuity.

**Designed for use in outside plant environments:** AFL OLTS are extremely rugged and withstand one-meter drops, have splash resistant controls that are easy to use with gloves on, and the field-swappable connector adapters provide flexibility and access for cleaning optical ports at time of test.

**Test faster with fewer errors:** AFL's Wave ID increases test speed by performing simultaneous multi-wavelength testing that cuts loss measurement time in half or more. AFL's automatic wavelength identification eliminates setup errors and simplifies coordination between users at opposite ends of fiber.

# Optical Loss Test Kits

## Specifications<sup>a</sup>

OPTICAL SPECIFICATIONS - POWER METERS			
MODEL	OPM5-4D	OPM5-3D, OPM4-3D	OPM5-2D
Calibrated Wavelengths	850, 980, 1300, 1310, 1490, 1550, 1625 nm	850, 1300, 1310, 1490, 1550, 1625 nm	850, 1300, 1310, 1490, 1550 nm
Detector Type	Filtered InGaAs	InGaAs	Germanium (Ge)
Measurement Range	+26 to -50 dBm	+10 to -75 dBm	+6 to -60 dBm
Tone Detect Range	+6 to -30 dBm +6 to -25 dBm for 850 nm	+10 to -50 dBm +10 to -45 dBm for 850 nm	+6 to -50 dBm +6 to -45 dBm for 850 nm
Wavelength ID Range	+6 to -30 dBm +6 to -25 dBm for 850 nm	+10 to -50 dBm +10 to -45 dBm for 850 nm	+6 to -50 dBm +6 to -45 dBm for 850 nm
Accuracy	±0.1 dB (typical); ±0.25 dB		
Resolution	0.01 dB		
Measurement Units	dB, dBm, µW		

OPTICAL SPECIFICATIONS: OLS7 MODELS			
MODEL	OLS7-FTTH (Single Port)		
Wavelength (±20 nm)	1310 nm	1490 nm	1550 nm
Spectral Width	5 nm	3 nm	5 nm
Emitter Type	Laser		
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03		
Output Power	-5 dBm (typical), 9/125 fiber		
Output Stability	±0.05 dB over 1 hour (after 15 minutes warm-up) ±0.1 dB over 8 hours (after 15 minutes warm-up)		
Tone Output	270 Hz, 330 Hz, 1 kHz, 2 kHz		

OPTICAL SPECIFICATIONS: OLS4, OLS2-DUAL & OLS1-DUAL MODELS						
MODEL	OLS4 (MM Optical Port)		OLS4 (SM Optical Port)		OLS2-DUAL (Single Port)	
Wavelength	850 ±30 nm	1300 +30/-20 nm	1310 ±20 nm	1550 ±20 nm	1310 ±20 nm	1550 ±20 nm
Spectral Width	45 nm (typ)	120 nm (typ)	5 nm (max)	5 nm (max)	5 nm (max)	
Emitter Type	LED		Laser		Laser	
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03					
Output Power	>-20 dBm, 62.5 μm multimode <sup>b</sup>		0 dBm, 9 μm single-mode		0 dBm, 9 μm single-mode <sup>c</sup>	
Output Stability	±0.1 dB over 8 hours (after 5 minutes warm-up)		±0.05 dB over 1 hour (after 15 minutes warm-up) ±0.1 dB over 8 hours (after 15 minutes warm-up)			
Tone Output	N/A		2 kHz		270 Hz, 330 Hz, 1 kHz, 2 kHz	

GENERAL SPECIFICATIONS: ALL OPM AND OLS MODELS	
Available Adapters	SC FC, ST, LC
Power	2 AA batteries
Operating Temperature	-10 °C to 50 °C, 90 % RH (non-condensing)
Storage Temperature	-30 °C to 60 °C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.29 kg (0.65 lb)

### Notes:

- All specifications valid at 25°C unless otherwise specified.
- May be used to test 50 or 62.5 µm fiber with supplied mandrels.
- Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.
- Adjustable 2 dB.

## Optical Loss Test Kits

### Ordering Information

Test kits include light source, power meter, protective rubber boots, AA batteries, adapter caps, and carry case.

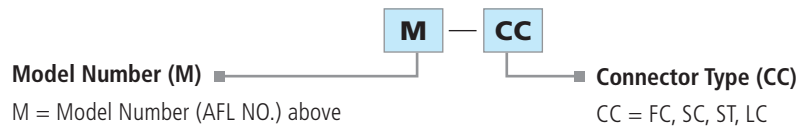
AFL NO.	POWER METER	LIGHT SOURCE	FIBER TYPE	LOSS MEASUREMENTS (nm)					DYNAMIC RANGE (dB)	TRM® 2.0 PC REPORTING
				850	1300	1310	1490	1550		
SLP5-6	OPM5-3D	OLS2-DUAL	SM			◆		◆	70 <sup>b</sup>	◆
SLP5-FTTH	OPM5-4D	OLS7-FTTH	SM			◆	◆	◆	45 <sup>b</sup>	◆
SMLP5-5	OPM5-2D	OLS4	MM SM	◆	◆	◆		◆	40 @ 850/1300 nm <sup>a</sup> 60 @ 1310/1550 nm <sup>b</sup>	◆

#### Notes:

a. On 62.5/125 µm multimode fiber.

b. On 9/125 µm single-mode fiber.

### Part Number – Connector Specification



Examples: SMLP5-5-SC => (SMLP5-5 Test Kit with SC adapters)

### Accessories

DESCRIPTION	AFL NO.
<b>LIGHT SOURCE CONNECTOR ADAPTERS</b>	
FC connector adapter	2900-50-0002MR
SC connector adapter	2900-50-0003MR
ST connector adapter	2900-50-0004MR
LC connector adapter	2900-50-0006MR
<b>POWER METER CONNECTOR ADAPTERS</b>	
FC connector adapter	8800-00-0200
SC connector adapter	8800-00-0209
ST connector adapter	8800-00-0202
LC connector adapter	8800-00-0225
<b>MULTIMODE TEST CORDS (50/125 µm – 2 meters)</b>	
FC/FC	8700-00-0093
SC/ST	8700-00-0064
SC/SC	8700-00-0065
LC/LC	8700-00-0082
<b>SINGLE-MODE TEST CORDS (9/125 µm – 2 meters)</b>	
FC/FC	8700-00-0005
FC/ST	8700-00-0016
ST/ST	8700-00-0017
SC/SC	8700-00-0018
FC/SC	8700-00-0021
SC/ST	8700-00-0022
SC/LC	8700-00-0046
FC/LC	8700-00-0071
LC/LC	8700-00-0097

DESCRIPTION	AFL NO.
<b>MATING ADAPTERS (Bulkheads)</b>	
FC/FC	8400-00-0004MR
SC/SC	8400-00-0045MR
ST/ST	8400-00-0020
LC/LC	8400-00-0075
<b>CLEANING SUPPLIES</b>	
One-Click Cleaner SC/ST/FC	8500-05-0001MZ
One-Click Cleaner LC	8500-05-0002MZ
Cletope –SB Cassette Cleaner	8500-10-0016MZ
Cletope –SB Refill Cartridge	8500-10-00017MZ

## Optical Loss Test Kits

### Test Management and Reporting Software

DESCRIPTION	AFL NO.
TRM® 2.0 with Basic License (OTDR Trace/OLTS Viewer, Batch Editor and Reports), USB delivery	TRM-00-0900PR

### Recommended Products



#### OFI-BIPM Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option



#### One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	TIA	Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components*
	IEC	Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises*
	EN	Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises*
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises*
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant*
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling*
	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling*
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant*
	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant
Generic Requirement	IEC	Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters

\* A complementary encircled flux mode conditioner may be needed to comply with encircled flux launch conditions for testing multimode optical fiber cabling and components

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about OLTS kits.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)

## Encircled Flux (EF) Compliant Light Sources and Test Kits



### Features

- EF Complaint light sources and test kits per TIA 526-14-B and IEC 61280-4-1 Ed. 2.0
- EF Compliant by design – no additional equipment required
- Industry-leading 5-year warranty
- Wave ID for error free testing of multiple wavelengths simultaneously
- Test cords included

### Applications

- MMF and SMF testing requiring EF Compliant equipment
- Passive Optical Network (PON) testing
- Certify multimode and single-mode links to TIA/EIA standards
- Certification report generation with TRM® 2.0 software

**Designed for use in outside plant environments:** AFL OLTS are extremely rugged and withstand one-meter drops, have splash resistant controls that are easy to use with gloves on, and the field-swappable connector adapters provide flexibility and access for cleaning optical ports at time of test.

**Test faster with fewer errors:** AFL's Wave ID increases test speed by performing simultaneous multi-wavelength testing that cuts loss measurement time in half or more. AFL's automatic wavelength identification eliminates setup errors and simplifies coordination between users at opposite ends of fiber.

## Encircled Flux (EF) Compliant Light Sources and Test Kits

### Specifications <sup>a</sup>

OPTICAL SPECIFICATIONS - POWER METERS	
MODEL	OPM5-2D
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550 nm
Detector Type	Germanium (Ge)
Measurement Range	+6 to -60 dBm
Tone Detect Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Wavelength ID Range	+6 to -50 dBm +6 to -45 dBm for 850 nm
Accuracy	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW

OPTICAL SPECIFICATIONS: OLS4 AND OLS1-DUAL MODELS				
MODEL	OLS4 EF (MM Optical Port)		OLS4 EF (SM Optical Port)	
Wavelength	850 ±30 nm	1300 +30/-20 nm	1310 ±20 nm	1550 ±20 nm
Spectral Width	45 nm (typ)	120 nm (typ)	5 nm (max)	5 nm (max)
Emitter Type	LED		Laser	
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03			
Output Power	≥ -24 dBm, 50 μm multimode		0 dBm, 9 μm single-mode	
Output Stability	±0.1 dB over 8 hours (after 5 minutes warm-up)		±0.05 dB over 1 hour (after 15 minutes warm-up) ±0.1 dB over 8 hours (after 15 minutes warm-up)	
Tone Output	N/A		2 kHz	

GENERAL SPECIFICATIONS: ALL OPM AND OLS MODELS	
Available Adapters	SC FC, ST, LC
Power	2 AA batteries
Operating Temperature	-10 °C to 50 °C, 90 % RH (non-condensing)
Storage Temperature	-30 °C to 60 °C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.29 kg (0.65 lb)

#### Notes:

a. All specifications valid at 25°C unless otherwise specified.

### Ordering Information

#### Encircled Flux (EF) Compliant Light Sources

Since adoption by the IEC, Encircled Flux (EF) multimode launch requirements are increasingly specified into fiber loss testing job requirements. Meeting EF specification requires technicians use EF qualified test sets. It is important to note IEC 61280-1-4 and TIA-568-14-B, specify EF multimode launch conditions at the end of an EF qualified Reference Grade Test Cord (RGTC) – not directly out source test port. Thus, EF compliance requires an EF Light Source and RGTC used together. AFL offers OLS4 MM/SM light source with designed in Encircled Flux (EF) optics supplied with EF qualified RGTC. OLS4 EF is supplied with one multimode RGTC and one standard 9/125 single-mode test cord.

WAVELENGTHS	TEST CORDS INCLUDED	AFL NO.
MM 850/1300 nm	(1) RGTC, 50 µm, MM, 2-meter	OLS4-EF
SM 1310/1550 nm	(1) 9/125 µm, SM, 2-meter	



## Encircled Flux (EF) Compliant Light Sources and Test Kits

### Ordering Information

#### Encircled Flux (EF) Compliant Test Kits

AFL EF compliant loss test kits include:

Multimode Test Ports:

- Light Source with designed in Encircled Flux (EF) optics paired with one EF qualified RGTC.
- 50/125  $\mu$ m receive test cord

Single-mode Test Ports:

- Light Source with two 9/125  $\mu$ m test cords (launch / receive)

POWER METER	LIGHT SOURCE	FIBER TYPE	WAVELENGTH (nm)	DYNAMIC RANGE (dB)	AVAILABLE CONNECTORS		INCLUDED 2-METER TEST CORDS		AFL NO.
					SOURCE PORT	TEST CORD	LAUNCH ( $\mu$ m)	RECEIVE ( $\mu$ m)	
OPM5-2D	OLS4-EF	MM SM	850, 1300 1310, 1550	36 @ 850/1300 nm 60 @ 1310/1550 nm	FC, SC	FC, SC, ST, LC	MM: RGTC, 50/125 SM: 9/125	MM: 50/125 SM: 9/125	SMLP5-5-EF

### Accessories

DESCRIPTION	AFL NO.
<b>LIGHT SOURCE CONNECTOR ADAPTERS</b>	
FC connector adapter	2900-50-0002MR
SC connector adapter	2900-50-0003MR
ST connector adapter	2900-50-0004MR
LC connector adapter	2900-50-0006MR
<b>POWER METER CONNECTOR ADAPTERS</b>	
FC connector adapter	8800-00-0200
SC connector adapter	8800-00-0209
ST connector adapter	8800-00-0202
LC connector adapter	8800-00-0225
<b>REFERENCE GRADE LAUNCH CORDS (RGLC) (50/125 <math>\mu</math>m – 2 meters)</b>	
FC to FC	8700-04-0001MR
FC to SC	8700-04-0002MR
FC to LC	8700-04-0003MR
FC to ST	8700-04-0004MR
SC to FC	8700-04-0005MR
SC to SC	8700-04-0006MR
SC to LC	8700-04-0007MR
SC to ST	8700-04-0008MR
<b>MULTIMODE TEST CORDS (50/125 <math>\mu</math>m – 2 meters)</b>	
FC/FC	8700-00-0093
SC/ST	8700-00-0064
SC/SC	8700-00-0065
LC/LC	8700-00-0082

DESCRIPTION	AFL NO.
<b>SINGLE-MODE TEST CORDS (9/125 <math>\mu</math>m – 2 meters)</b>	
FC/FC	8700-00-0005
FC/ST	8700-00-0016
ST/ST	8700-00-0017
SC/SC	8700-00-0018
FC/SC	8700-00-0021
SC/ST	8700-00-0022
SC/LC	8700-00-0046
FC/LC	8700-00-0071
LC/LC	8700-00-0097
<b>MATING ADAPTERS (Bulkheads)</b>	
FC/FC	8400-00-0004MR
SC/SC	8400-00-0045MR
ST/ST	8400-00-0020
LC/LC	8400-00-0075
<b>CLEANING SUPPLIES</b>	
One-Click Cleaner SC/ST/FC	8500-05-0001MZ
One-Click Cleaner LC	8500-05-0002MZ
Cletope –SB Cassette Cleaner	8500-10-0016MZ
Cletope –SB Refill Cartridge	8500-10-00017MZ

## Encircled Flux (EF) Compliant Light Sources and Test Kits

### Test Management and Reporting Software

DESCRIPTION	AFL NO.
TRM® 2.0 with Basic License (OTDR Trace/OLTS Viewer, Batch Editor and Reports), USB delivery	TRM-00-0900PR

### Recommended Products



#### OFI-BIPM Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option



#### One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	TIA	Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components*
	IEC	Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises*
	EN	Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises*
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises*
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant*
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling*
	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling*
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant*
	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant
Generic Requirement	IEC	Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters

\* A complementary encircled flux mode conditioner may be needed to comply with encircled flux launch conditions for testing multimode optical fiber cabling and components.

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Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about Encircled Flux (EF) Compliant Light Sources and Test Kits.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)

## OLS Series Light Sources

**5 YEAR  
WARRANTY**



OLS7 Optical Laser Source

### Features

- Rugged, dependable, and backed by industry-best 5-year warranty
- Generates up to three Wave ID wavelengths simultaneously - slashing test time
- Field-swappable connector adapters for maximum flexibility
- Long battery life from globally available AA batteries

### Applications

- Certify multimode and single-mode links per TIA/EIA standards
- Link loss measurements
- Pair with power meters, OTDRs or OFIs for testing
- Fiber identification for splicing and continuity checking

AFL is a trusted supplier of optical testing equipment with more than 30 years of experience and tens of thousands of units in use in the field. AFL's full range of light sources are used for testing single-mode and/or multimode fiber networks. Sources with wave ID can transmit two or more wavelengths simultaneously – decreasing test time and reducing user errors when paired with AFL wave ID power meters.

**Designed for the real world:** AFL's light sources were designed to meet the demands of the outside plant environment. They withstand the one-meter drop and have splash resistant controls that are easy to use, even with gloves on.

**Flexible and efficient:** A range of field-swappable output adapters enables access for cleaning optical ports and supports multiple connector styles. The efficient design provides long test time from globally available AA batteries. External power adapter available for extended testing or lab situations.

**Reduce test time and errors:** Wave ID (Triple, Dual, or Single) decreases test time while reducing technician errors and CW mode provides continuous output (no encoding).

**Supported output modes:** Test Tone (2000, 1000, 330, 270 Hz) for use in fiber identification with AFL brand power meters, OTDRs (with fiber end access) or Optical Fiber Identifier (OFI) products for non-intrusive, mid-span testing.

## OLS Series Light Sources

### OLS Series Models and Applications

MODEL	MM / SM	WAVELENGTHS (nm)	APPLICATIONS
OLS1-Dual	MM	850, 1300	Ethernet, Token Ring, and FDDI Fiber Links
OLS2-Dual	SM	1310, 1550	SM Networks, LAN/WAN Testing
OLS4	MM / SM	850, 1300 / 1310, 1550	Loss Testing of SM/MM networks
OLS7-FTTH	SM	1310, 1490, 1550	FTTH Networks
OLS7-3	SM	1310, 1550, 1625	Telecom & CATV Networks

### Specifications <sup>a,e</sup>

OPTICAL SPECIFICATIONS: OLS4, OLS2-DUAL & OLS1-DUAL MODELS								
MODEL	OLS1-DUAL (Single Port <sup>b</sup> )		OLS2-DUAL (Single Port)		OLS4 (SM Optical Port)		OLS4 (MM Optical Port)	
Wavelength	850 ±30 nm	1300 +30/-20 nm	1310 ±20 nm	1550 ±20 nm	1310 ±20 nm	1550 ±20 nm	850 ±30 nm	1300 +30/-20 nm
Spectral Width	45 nm (typ)	120 nm (typ)	5 nm (max)		5 nm (max)	5 nm (max)	45 nm (typ)	120 nm (typ)
Emitter Type	LED		Laser		Laser		LED	
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03							
Output Power	>-20 dBm, 62.5 μm multimode <sup>c</sup>		0 dBm, 9 μm single-mode <sup>d</sup>		0 dBm, 9 μm single-mode		>-20 dBm, 62.5 μm multimode <sup>c</sup>	
Output Stability	±0.1 dB over 8 hours (after 5 minutes warm-up)		±0.05 dB over 1 hour (after 15 minutes warm-up) ±0.1 dB over 8 hours (after 15 minutes warm-up)				±0.1 dB over 8 hours (after 5 minutes warm-up)	
Tone Output	N/A		270 Hz, 330 Hz, 1 kHz, 2 kHz		2 kHz		N/A	

OPTICAL SPECIFICATIONS: OLS7 MODELS						
MODEL	OLS7-FTTH (Single Port)			OLS7-3 (Single Port)		
Wavelength (±20 nm)	1310 nm	1490 nm	1550 nm	1310 nm	1550 nm	1625 nm
Spectral Width	5 nm	3 nm	5 nm	5 nm	5 nm	2 nm
Emitter Type	Laser					
Safety Class	Class I FDA 21 CFR 1040.10 and 1040.11, IEC 60825-1: 2007-03					
Output Power	-5 dBm (typical), 9/125 fiber					
Output Stability	±0.05 dB over 1 hour (after 15 minutes warm-up) ±0.1 dB over 8 hours (after 15 minutes warm-up)					
Tone Output	270 Hz, 330 Hz, 1 kHz, 2 kHz					

GENERAL SPECIFICATIONS: ALL OLS MODELS	
Available Adapters	SC FC, ST, LC
Power	2 AA batteries, optional AC adapter
Battery Life	SM port: 72 hours typical (40 hours minimum). MM port: 30 hours typical (20 hours minimum)
Operating Temperature	-10 °C to 50 °C, 95 % RH (non-condensing)
Storage Temperature	-30 °C to 60 °C, 95 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.29 kg (0.65 lb)

#### Notes:

- All specifications valid at 25°C unless otherwise specified.
- May be used to test 50 or 62.5 µm fiber with supplied mandrels.
- Output power will be approximately 3 dB less if a 50 µm mandrel-wrapped jumper is used instead of a 62.5 µm mandrel-wrapped jumper.
- Adjustable 2 dB.
- All OLS products come with the UPC optical port.

## OLS Series Light Sources

### Ordering Information

When ordering, specify connector type at the end of model number (e.g. OLS2-DUAL-SC). All OLS models include protective rubber boot, 2 AA batteries, carry case. AC adapters are available (ordered separately), see table below. Test jumpers and connector adapters are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

OUTPUT WAVELENGTHS (nm)						OUTPUT PORTS	EMITTER TYPE	WAVE ID TRANSMIT	AVAILABLE CONNECTORS	POWER	AFL NO.
850	1300	1310	1490	1550	1625						
◆	◆					1	LED	◆	FC, SC, ST, LC	(2) AA, AC	OLS1-DUAL
		◆		◆		1	Laser	◆	FC, SC, ST, LC	(2) AA, AC	OLS2-DUAL
◆	◆	◆		◆		2	LED and Laser	◆	FC, SC, ST, LC	(2) AA, AC	OLS4
		◆	◆	◆		1	Laser	◆	FC, SC, ST, LC	(2) AA, AC	OLS7-FTTH
		◆		◆	◆	1	Laser	◆	FC, SC, ST, LC	(2) AA, AC	OLS7-3

### OLS Connector Adapters and AC Adapter

DESCRIPTION	AFL NO.
FC connector adapter	2900-50-0002MR
SC connector adapter	2900-50-0003MR
ST connector adapter	2900-50-0004MR
LC connector adapter	2900-50-0006MR
Universal flip-top dust cap for UCI outputs	8800-00-0072PR
100-240 VAC to 9 VDC, AC adapter	4050-00-0119PR

## OLS Series Light Sources

### Recommended Products



#### OFI-BIPM Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option



#### One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	TIA	Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components*
	IEC	Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises*
	EN	Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises*
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises*
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant*
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling*
	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling*
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant*
	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant

\* A complementary encircled flux mode conditioner may be needed to comply with encircled flux launch conditions for testing multimode optical fiber cabling and components

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## Contractor Series Light Sources and Power Meters

**5 YEAR  
WARRANTY**

Contractor Series Light Sources and Power Meters are rugged test instruments designed with a simple user interface and backed by an industry-leading 5-year warranty. Both single-mode and multimode kit options provide tools for measuring network insertion loss, continuity checks, and fiber identification.



CSS1-MM LED Source



CSS1-SM Laser Source



CSM1 Power Meter

### Features

- Palm-sized rugged, dependable tools
- Industry-leading 5-year warranty
- Cost-effective, easy to use
- Auto-off to maximize battery life on Power Meter
- Large readable in bright or dim conditions

### Applications

- Link loss measurements
- Certify SM and MM links to industry standards
- Continuity check and fiber identification prior to fusion splicing

### CSM1 Power Meter

- Four models provide wide wavelength and power level ranges
- Stores optical references for each calibrated wavelength
- Auto-detects Test Tones for use in fiber identification
- Optical input port accepts a variety of thread-on adapter caps

### CSS1-SM Laser Source

- 1310 nm and 1550 nm LASER output from single test port
- Output port accepts UCI threaded adapters (FC, SC, ST, LC) for flexibility and access to launch fiber for cleaning and inspection

### CSS1-MM LED Source

- 850 nm and 1300 nm LED output from single test port
- 50 μm and 62.5 μm mandrels included
- **Test Tones** (2000, 1000, 330, 270 Hz) for fiber identification
  - Use power meters when technician has fiber end access

### CSS1 Sources Transmit:

- **CW** continuous wave output (DC)
- **Test Tones** (2000, 1000, 330, 270 Hz) for fiber identification
  - Use power meters when technician has fiber end access
  - Use OFI (optical fiber identifier) for mid-span testing



## Contractor Series Light Sources and Power Meters

### Contractor Series Models

POWER METER MODELS	CALIBRATED WAVELENGTHS (nm)	TARGET APPLICATIONS
CSM1-3	850, 1300, 1310, 1490, 1550, 1625	Single-mode Measurements
CSM1-4	850, 980, 1310, 1490, 1550, 1625	High Power Single-mode Measurements

LIGHT SOURCES MODELS	FIBER TYPE	WAVELENGTHS (nm)	TARGET APPLICATIONS
CSS1-SM	SM	1310, 1550	SM Networks, LAN/WAN Testing
CSS1-MM	MM	850, 1300	Ethernet, Token Ring, and FDDI Fiber Links

LOSS TEST KITS MODELS	FIBER TYPE	POWER METER	LIGHT SOURCE	DYNAMIC RANGE (dB)
CKS-3	SM	CSM1-3	CSS1-SM	70 @ 1310/1550 nm, on 9/125 single-mode fiber
CKM-3	MM	CSM1-3	CSS1-MM	40 @ 850/1300 nm, on 62.5/125 multimode fiber
CKSM-2	SM	CSM1-3	CSS1-SM	60 @ 1310/1550 nm, on 9/125 single-mode fiber
	MM		CSS1-MM	40 @ 850/1300 nm, on 62.5/125 multimode fiber

### Specifications <sup>a</sup>

OPTICAL SPECIFICATIONS: CSM1 POWER METER		
MODEL	CSM1-3	CSM1-4
Calibrated Wavelengths	850, 1300, 1310, 1490, 1550, 1625 nm	850, 980, 1310, 1490, 1550, 1625 nm
Detector Type	InGaAs	Filtered InGaAs
Measurement Range	+6 to -70 dBm	+26 to -50 dBm
Tone Detect Range	+6 to -50 dBm +6 to -45 dBm for 850 nm	+6 to -30 dBm +6 to -25 dBm for 850 nm
Accuracy <sup>b</sup>	±0.15dB (typical), ±0.3 dB	
Resolution	0.01 dB	
Measurement Units	dB, dBm, µW	

OPTICAL SPECIFICATIONS: CSM1 LIGHT SOURCE				
MODEL	CSS1-SM (Single Port)		CSS1-MM (Single-Port)	
Wavelength	1310 nm ±20 nm	1550 nm ±20 nm	850 nm ±20 nm	1300 nm +40/-60 nm
Spectral Width (max)	5 nm	5 nm	35 nm	170 nm
Emitter Type, Safety Class	Laser, Class I FDA 21 CFR 1040.10 & 1040.11, IEC 60825-1: 2007-03		LED, Class I FDA 21 CFR 1040.10 & 1040.11, IEC 60825-1: 2007-03	
Output Power	≥0.0 dBm into 9/125 fiber		≥-20.0 dBm into 62.5/125 fiber	
Output Stability <sup>c</sup>	±0.05 dB over 1 hour; ±0.15 dB over 8 hours		±0.1 dB over 1 hour; ±0.15 dB over 8 hours	
Tone Output	2000, 1000, 330, 270 Hz			

GENERAL SPECIFICATIONS			
MODEL	CSM1	CSS1-SM	CSS1-MM
Output Connector	Supports Most Industry Standard Connectors	SC, FC, ST, LC	SC Fixed
Power	2 AA batteries	2 AA batteries	2 AA batteries
Battery Life	>300 hours	75 hours (typical)	30 hours (typical)
Operating Temperature	-10 °C to 50 °C, 90 % RH (non-condensing)		
Storage Temperature	-30 °C to 60 °C, 90 % RH (non-condensing)		
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in) without boot		
Weight	0.29 kg (0.65 lb) without boot		

#### Notes:

- All specifications at 25 °C unless otherwise specified.
- Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.
- After typical 30 second warm up.

## Contractor Series Light Sources and Power Meters

### Ordering Information

Each Contractor Series Kit ships with adapter caps for all included instruments, AA alkaline batteries, user guide, and carry case with room for optional cleaning supplies (see below). Fiber mandrels (50 micron and 62.5 micron) are included with CKSM-2 and CKM-2 kits.

When purchased separately, CSM1 power meters and CSS1 light sources ship with connector adapter, AA alkaline batteries, user guide, and carry case. Fiber mandrels (50 micron and 62.5 micron) are included with CSS1-MM units.

Test jumpers are required for operation (purchased separately). Test jumpers with a variety of connector styles and fiber types and adapter caps for most common connectors may be purchased from AFL.

### Models and Configurations

MODEL NUMBER	INCLUDES
CKS-3-cc (cc = FC or SC)	Single-Mode Test Kit. Available with FC or SC connectors adapters.
CKM-3	Multimode Test Kit. Available with SC connector adapters.
CKSM-2	Single-mode and Multimode Test kit. Available with SC connector adapters.
CSS1-SM-cc (c = FC, SC, ST, or LC)	Single-mode LASER Source. Available with FC, SC, ST, or LC connector adapters.
CSS1-MM	Multimode LED Source. Available with SC connector adapter..
CSM1-3-cc (cc = *)	InGaAs Detector for single-mode applications.
CSM1-4-cc (cc = *)	High Power InGaAs Detector for single-mode applications.

\* For CSM1 power meters, cc = FC, SC, ST, LC, 2.5 mm, 1.25 mm. Other connector styles are available; see accessories section.

### CSS1-SM Single-mode Light Source Accessories

DESCRIPTION	AFL NO.
FC UCI connector adapter	2900-50-0002MR
SC UCI connector adapter	2900-50-0003MR
ST UCI connector adapter	2900-50-0004MR
LC UCI connector adapter	2900-50-0006MR
Universal flip-top dust cap for UCI outputs	8800-00-0072PR

### CSM1 Power Meter Adapter Caps

DESCRIPTION	AFL NO.
2.5 mm Universal (accepts FC, SC, and ST ferrules)	8800-00-0214
1.25 mm Universal (accepts LC and MU ferrules)	8800-00-0224
FC	8800-00-0200
SC	8800-00-0209
ST	8800-00-0202
LC simplex	8800-00-0225
E-2000	8800-00-0221
2.5 mm open Universal, Accepts SC duplex, OptiTap connector	8800-00-0219
SMA	8800-00-0203
D4	8800-00-0201
Biconic	8800-00-0204

## Contractor Series Light Sources and Power Meters

### Recommended Products



#### OFI-BIPM Optical Fiber Identifier

- World class signal sensitivity
- Trigger lock, positive stop for optimum detection
- Integrated optical power meter option



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- Patented single-action
- Variety of sizes and types
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	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
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	EN	Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises*
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises*
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant*
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling*
	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling*
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant*
	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant
Generic Requirement	IEC	Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters

\* A complementary encircled flux mode conditioner may be needed to comply with encircled flux launch conditions for testing multimode optical fiber cabling and components.

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about Contractor Series light sources and power meters.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)

## OPM5 and OPM4 Optical Power Meters

**5 YEAR  
WARRANTY**



OPM5 Optical Power Meter

### Features

- Rugged, dependable, and backed by industry-best 5-year warranty
- Wave ID tests up to three wavelengths simultaneously - slashing test time
- Field-swappable connector adapters for maximum flexibility
- Long battery life from globally available AA batteries

### Applications

- Passive Optical Networks (PON) testing
- OPM(5/4)-4D (Filtered-InGaAs) for high power (+26 dBm) CATV broadband networks or DWDM system applications
- OPM(5/4)-3D (InGaAs) for telecommunications networks
- OPM(5/4)-2D (Ge) for premises LAN/WAN multimode or single-mode networks
- OPM4-1D (Silicon) for multimode/plastic optical fiber applications

AFL is a trusted supplier of optical testing equipment with more than 30 years of experience and tens of thousands of units in use in the field. AFL's full range of power meters are used for testing single-mode and/or multimode fiber networks. Power meters with wave ID can detect two or more wavelengths simultaneously – decreasing test time and reducing user errors when paired with AFL wave ID light sources.

**Designed for the real world:** AFL's power meters are designed to meet the demands of the outside plant environment. They withstand the one-meter drop test and have splash resistant controls that are easy to use, even with gloves on.

**Flexible and efficient:** A range of field-swappable output adapters enables access for cleaning optical ports and supports multiple connector styles. The efficient design provides long test time from globally available AA batteries. Equipped with five-minute auto-off feature to save power.

**Reduce test time and errors:** Wave ID (Triple, Dual, or Single) decreases test time while reducing technician errors.

**Stores test results:** AFL's OPM5 stores optical reference at each calibrated wavelength. This enables technicians to organize test results into multiple files and transfer stored results via USB to the included PC-based TRM® 2.0 software for analyzing, generating reports, and printing. Users can generate network Pass/Fail results demonstrating compliance to industry standards and illustrate headroom. Fully N.I.S.T. traceable.

## OPM5 and OPM4 Optical Power Meters

### Specifications <sup>a</sup>

OPTICAL				
MODEL	OPM5-4D, OPM4-4D	OPM5-3D, OPM4-3D	OPM5-2D, OPM4-2D	OPM4-1D
Calibrated Wavelengths	850, 980, 1300, 1310, 1490, 1550, 1625 nm	850, 1300, 1310, 1490, 1550, 1625 nm	850, 1300, 1310, 1490, 1550 nm	650, 660, 850 nm
Detector Type	Filtered InGaAs	InGaAs	Germanium (Ge)	Silicon (Si)
Measurement Range	+26 to -50 dBm	+10 to -75 dBm	+6 to -60 dBm	+6 to -70 dBm
Tone Detect Range	+6 to -30 dBm +6 to -25 dBm for 850 nm	+10 to -50 dBm +10 to -45 dBm for 850 nm	+6 to -50 dBm +6 to -45 dBm for 850 nm	+6 to -45 dBm
Wavelength ID Range	+6 to -30 dBm +6 to -25 dBm for 850 nm	+10 to -50 dBm +10 to -45 dBm for 850 nm	+6 to -50 dBm +6 to -45 dBm for 850 nm	—
Accuracy <sup>b</sup>	±0.1 dB (typical); ±0.25 dB			
Resolution	0.01 dB			
Measurement Units	dB, dBm, µW			

GENERAL	
Power	2 x AA batteries, accepts standard mini-USB power adapter
Adapter Caps	Order with one: 1.25 mm Universal, 2.5 mm Universal, FC, SC, ST, LC. Other connector adapters available
Battery Life	300 hours
Operating Temperature	-10 °C to 50 °C, 95 % RH (non-condensing)
Storage Temperature	-30 °C to 60 °C, 95 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

#### Notes:

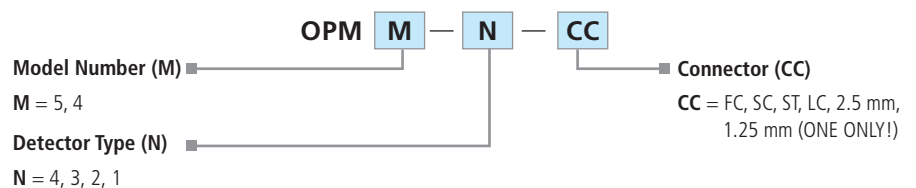
- a. All specifications valid at 25°C unless otherwise specified.  
b. Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.

### Ordering Information

All OPM models include optical power meter, 2 AA batteries, protective rubber boot, customer specified adapter cap, and carry case. OPM5 models also include TRM® 2.0 software (Basic License).

When placing an order, select options as follows:

- Model Number (M)
- Detector Type (N)
- Connector Configuration (CC)



MODEL	CALIBRATED WAVELENGTHS (nm)									DETECTOR TYPE	MEASUREMENT RANGE (dBm)	PC SOFTWARE
	650	660	850	980	1300	1310	1490	1550	1625			
OPM5-4D			◆	◆		◆	◆	◆	◆	InGaAs	+26 to -50	TRM 2.0
OPM5-3D			◆		◆	◆	◆	◆	◆	InGaAs	+10 to -75	TRM 2.0
OPM5-2D			◆		◆	◆	◆	◆		Germanium	+6 to -60	TRM 2.0
OPM4-4D			◆	◆		◆	◆	◆	◆	InGaAs	+26 to -50	
OPM4-3D			◆		◆	◆	◆	◆	◆	InGaAs	+10 to -75	
OPM4-2D			◆		◆	◆	◆	◆		Germanium	+6 to -60	
OPM4-1D	◆	◆	◆							Silicon	+6 to -70	

## OPM5 and OPM4 Optical Power Meters

### OPM Accessories

DESCRIPTION			AFL NO.
<b>ADAPTER CAPS</b>			
2.5 mm Universal (accepts FC, SC, and ST ferrules)			8800-00-0214
1.25 mm Universal (accepts LC and MU ferrules)			8800-00-0224
FC			8800-00-0200
SC			8800-00-0209
ST®			8800-00-0202
LC simplex			8800-00-0225
E-2000			8800-00-0221
2.5 mm open Universal. Accepts SC duplex, OptiTap connector for measuring optical power.			8800-00-0219
SMA			8800-00-0203
D4			8800-00-0201
Biconic			8800-00-0204
<b>USB CABLE</b>			
USB Cable: PC (USB-A) to OPM (USB-MINI B): • Connect OPM to PC for data upload to TRM® 2.0 • External Power for OPM (when used with customer supplied USB-A power source)	OPM5 MODEL	OPM4 MODEL	6000-00-0024MR
	Connect to PC and External power	External power only	

### Test Management and Reporting Software

DESCRIPTION	AFL NO.
TRM® 2.0 with Basic License (OTDR Trace/OLTS Viewer, Batch Editor and Reports), USB delivery	TRM-00-0900PR

## OPM5 and OPM4 Optical Power Meters

### Recommended Products



FS300



FS200

#### FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- FleXpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



#### Optical Light Sources

- Encircled Flux Compliant
- 5-Year Product Warranty
- Integrated LED and Laser light sources

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Test Method	TIA	Compliant to TIA-568.3-D for test and measurement requirements for premises optical fiber cabling and components
	IEC	Compliant to IEC 11801 for test and measurement requirements for optical fiber cabling for use within premises
	EN	Compliant to EN 50173 for test and measurement requirements for optical fiber cabling for use within premises
	AS/NZS	Compliant to AS/NZS 3080 for test and measurement requirements for optical fiber cabling for use within premises
	TIA	Compliant to TIA-526-7 for test procedures for installed optical fiber cable plant
	TIA	Compliant to TIA-526-14 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 14763-3 for systems and methods for the inspection and testing of installed optical fiber cabling
	AS/NZS	Compliant to AS/NZS 14763.3 for systems and methods for the inspection and testing of installed optical fiber cabling
	IEC	Compliant to IEC 61280-4-1 for test procedures for installed optical fiber cable plant
	IEC	Compliant to IEC 61280-4-2 for test procedures for installed optical fiber cable plant
Generic Requirement	IEC	Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters

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Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about OPM5 and OPM4 optical power meters.

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## Mandrels

### For use with 62.5 and 50 $\mu$ m Multimode Test Jumpers with 3 mm Jackets



#### Features

- Allows existing 850/1300 nm LED light sources to test 50 and 62.5  $\mu$ m links
- Attaches to 3 mm jumpers in seconds, without tools or tape
- May be reused indefinitely

#### Applications

- Required by TIA/EIA-568-B to measure attenuation on multimode fiber links
- Certification of multimode links for Gigabit and 10 Gigabit Ethernet

TIA/EIA-568-B specifies that attenuation (insertion loss) measurements of multimode fiber links, for all applications, must be made using an overfilled light source, such as an LED, with a mandrel-wrap mode filter on the transmit jumper. A key advantage of this specification is that it allows the use of existing overfilled LED light sources to certify both 50 and 62.5  $\mu$ m fiber links for current and planned high bit rate applications including Gigabit Ethernet and 10 Gigabit Ethernet.

To meet the new multimode light source requirements in TIA/EIA-568-B, we offer mandrels for 50 and 62.5  $\mu$ m test jumpers with 3 mm jackets. Both mandrels have grooves to ensure that jumpers are wrapped exactly five times (as specified by TIA/EIA-568-B) and can be easily attached to test jumpers in seconds without tools or tape.

#### Ordering Information

DESCRIPTION	AFL NO.
Kit with two mandrels: 62.5 and 50 $\mu$ m fiber	5400-00-0900
Mandrel, 62.5 $\mu$ m fiber	5400-00-0201
Mandrel, 50 $\mu$ m fiber	5400-00-0202

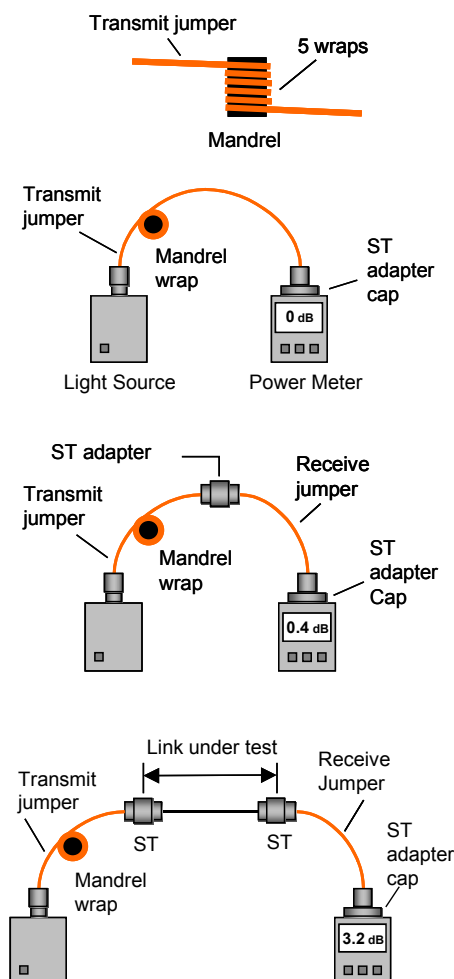
## Mandrels

### For use with 62.5 and 50 $\mu\text{m}$ Multimode Test Jumpers with 3 mm Jackets

#### Example Procedure

The following procedure illustrates how to make attenuation measurements of multimode fiber links using an LED light source, optical power meter, and mandrels. The procedure assumes that the link under test is terminated by ST connectors at both ends. However, it can easily be adapted for links terminated by other connector types simply by using the appropriate test jumpers and adapter caps. For this procedure you will need the following:

- (1) MM (LED) light source
- (1) optical power meter
- (1) ST adapter cap
- (1) 62.5 or 50  $\mu\text{m}$  mandrel
- (2) test jumpers with 3 mm jackets and the same fiber type (62.5 or 50  $\mu\text{m}$ ) as the multimode link under test
- (1) ST-ST (mating) adapter



#### 1 Attach Mandrel

Wrap the transmit jumper five times around the mandrel and attach it to the output port of the OLS 1 (LED source). Attach the ST adapter cap to the input port of the OPM 5 (optical power meter). Turn both units on and set wavelength to 850 nm.

#### 2 Set Reference (One Jumper Method)

Connect the output of the OLS 1 directly to the input (ST adapter cap) of the OPM 5. Then press and hold the Set Ref (set reference) key until the word "HELD" appears. When you release the Set Ref key the OPM 5 should display "0 dB" (+/- 0.05 dB) indicating that the power measured at output of the transmit jumper has been recorded as the reference level for your insertion loss measurements.

#### 3 Check Jumpers

Disconnect the transmit jumper from the OPM 5 (be sure NOT to remove the end of the jumper connected to the OLS 1). Attach the receive jumper to the OPM 5. Mate the free ends of the transmit and receive jumpers using the ST-ST adapter. Verify that the insertion loss of this mated connector pair is well under 0.75 dB, the maximum allowed by the TIA. Noyes recommends that the loss of your mated test jumpers be 0.4 dB. If not, clean both jumpers and repeat steps 2 and 3.

#### 4 Test Links

Connect the OLS 1 and OPM 5 to opposite ends of the first link to be tested. Store the insertion loss measured by the OPM 5 by pressing the STORE key. You can repeat Step 4 to measure the insertion loss of each multimode link at 850 nm. Then, if required, set both units to 1300 nm and repeat Steps 2 thru 4 to measure the insertion loss of your multimode links at 1300 nm. The OPM 5 can store insertion loss results at 850 and 1300 nm for up to 500 fibers.

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about mandrels.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)

## MFIS Multi-Fiber Identification System



### Features

- Identifies up to 12 fibers at a time
- Light-weight, rugged, and can be operated with one hand
- Optimized for use on 250  $\mu$ m, 900  $\mu$ m, and ribbon fiber
- Three-year calibration interval

### Applications

- Multi-fiber network continuity assurance
- Fiber identification on both MFP power meter and MFI identifier
- Verify long-haul networks (up to 110 miles)
- Quickly verify FlexNap® network mapping

Multi-fiber network construction is time consuming, complicated, and often built by more than one contractor with mixed sets of documentation. There are guaranteed to be mislabeled and cross-connected fibers, which cost valuable time to find and fix. AFL's Multi-Fiber Identification System (MFIS) is a simple user-friendly way to verify network construction quickly and efficiently.

**Rugged lightweight tools that can be operated with one hand:** MFIS is a set of three tools that can be used to easily verify the fiber ID. The MFT (Multi-Fiber Trace) features 12 discrete laser sources (1550 nm single-mode) and an MTP fan-out connector. The digitally-coded light is then detected by either the MFI (Multi-Fiber Identifier), which clamps onto the fiber under test or the MFP (Multi-Fiber Power Meter), which plugs into the fiber under test.

**Slash multiple fiber activations cost by up to 75% over conventional method:** During service activation field technicians often run into unlabeled, mislabeled, and cross-connected fibers that can take two technicians hours to figure out - increasing cost and delaying service for customers. MFIS enables one technician to verify up to 12 fibers at a time, slashing the time it takes to activate new customers.

**Ensure 100% multi-fiber network continuity:** MFIS can be used to efficiently verify potentially cross-connected fibers at any point of an existing network – providing peace of mind to network managers.

## MFIS Multi-Fiber Identification System

### MFT Multi-Fiber Tracer Specifications<sup>a</sup>

OPTICAL	
Wavelength	1550 ±20 nm
Spectral Width	5 nm (maximum)
Output Power	+1.75 dBm ±1 dB peak into 9/125 µm fiber @ +25 °C
GENERAL	
Power Supply	2 X 1.5 V AA alkaline batteries
Battery Life (Alkaline)	@ +25 °C: 40 hours (minimum); 50 hours (typical)
Connectors	SM: MTP/MPO-APC (unpinned) 12-fiber connector.
Size (without boot) W x L x H	96 x 145 x 35 mm (3.8 x 5.7 x 1.4 in)
Weight	307 g (0.676 lb) without boot; 458 g (1.01 lb) with boot
Operational Temperature	-20 °C to +50 °C 90 % RH (non-condensing)
Storage Temperature	-30 °C to +60 °C 90 % RH (non-condensing)

### MFI Multi-Fiber Identifier Specifications<sup>a, b</sup>

FIBER TYPE	PARAMETER	WAVELENGTH, SIGNAL	DETECTABLE SIGNAL RANGE
250 µm ribbon fiber, SMF28e+	Minimum data detect level (peak power, typical)	1550 nm, Data – Fiber ID	-35 dBm (typical)
	Insertion loss (typical/maximum)	1550 nm	2.5 dB/3.0 dB

OPTICAL	
Detector Type	InGaAs
Calibrated Fiber Size and Wavelength	250 µm @1550 nm (SMF-28/28E) ribbon fiber
Working Fiber Size	250 µm ribbon fiber
Data Detection Range	+2 to -35 dBm
GENERAL	
Display Type	Multi 7-segment LCD, 3 LEDs
Power Supply	2 X 1.5 V AAA, alkaline batteries
Battery Life (backlight off)	>10,000 operations <sup>c</sup>
Operation Temperature	-20 °C to +50 °C 90 % RH (non-condensing)
Storage Temperature	-30 °C to +60 °C 90 % RH (non-condensing)
Dimensions (H x W x D)	22 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in)
Weight	168 g (6 oz)

#### Notes:

- All specifications valid at 25 °C unless otherwise specified.
- All specs are typical unless otherwise noted. Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, active fiber position, and other factors.
- Operation is defined as turning unit on by taking 1 reading in a 10 second period.

## MFIS Multi-Fiber Identification System

### MFP Multi-Fiber Power Meter Specifications<sup>a</sup>

OPTICAL	
Detector Type	InGaAs
Detector Size	1 mm
OPM Mode	
Calibrated Wavelength	850, 1300, 1310, 1490, 1550, 1625 nm
Measurement Range	+10 to -75 dBm
Accuracy <sup>b</sup>	±0.25 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW
Fiber ID Mode <sup>e</sup>	
Wavelength	1550 nm
Measurement Range <sup>c</sup>	+10 to -35 dBm
Accuracy <sup>d</sup>	±0.5 dB
Resolution	0.01 dB
Measurement Units	dB, dBm, µW

GENERAL	
Power	2 x AA batteries, accepts standard mini-USB power adapter
Adapter Caps	Order with one: 1.25 mm Universal, 2.5 mm Universal, FC, SC, ST, LC. Other connector adapters available
Battery Life	300 hours
Operating Temperature	-10 °C to 50 °C, 90 % RH (non-condensing)
Storage Temperature	-30 °C to 60 °C, 90 % RH (non-condensing)
Size (H x W x D)	14.0 x 8.1 x 3.8 cm (5.5 x 3.2 x 1.5 in)
Weight	0.26 kg (0.58 lb)

#### Notes:

- All specifications valid at 25 °C unless otherwise specified.
- Accuracy measured at 25 °C and -10 dBm per N.I.S.T. standards.
- Measured using MFT (Multi-Fiber Tracer) as the light source.
- Accuracy measured at 25 °C with MFT (Multi-tiber Tracer).
- Subject to change.

### Ordering Information

DESCRIPTION	AFL NO.
Multi-Fiber Identifier, no case	MF11-00-0900MR
Multi-Fiber Power Meter, no case	MFP1-12-0900MR
Multi-Fiber Tracer & Identifier with soft case	MFTI-12-BAS
Multi-Fiber Tracer & Power Meter with soft case	MFTP1-12-BAS
Multi-Fiber Tracer, Identifier, and Power Meter with soft case	MFTIP1-12-BAS
ACCESSORIES	
Cable, MPO/APC(M)-SC/APC, 12-fiber, SM, fan-out, 3 meters	8700-00-0198MR
Cable, MPO/APC (M) - SC/UPC, 12-fiber, SM, fan-out, 3 meters	8700-00-0200MR
Cable, MPO/APC (M) - LC/UPC, 12-fiber, SM, fan-out, 3 meters	8700-00-0201MR
One-Click Cleaner MPO (500+ cleans)	8500-05-0030MZ
One-Click Cleaner Mini-100 SC, ST, FC (100+ cleans)	8500-05-0005MZ

## MFIS Multi-Fiber Identification System

### Recommended Products



#### FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



#### One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)
Generic Requirement	IEC	Compliant to IEC 61315 for requirements on calibration of fibre-optic power meters

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Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about OPM5 and OPM4 optical power meters.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts).

## OFI-BIPM and OFI-BIPMe Optical Fiber Identifiers



OFI-BIPM

OFI-BIPMe

### Features

- World-class signal detection sensitivity
- Positive-stop trigger lock for optimum detection
- Integrated optical power meter
- 2.4" color touchscreen with backlight
- Up to 4 Tones detection (OFI-BIPMe only)

### Applications

- Maintenance of fiber optic networks
- Troubleshooting network issues
- Identification of live fibers or trace fibers
- Power levels verification

The OFI-BIPM/-BIPMe optical fiber identifier is an easy-to-use tool that determines if a fiber is live, the transmission direction, and the relative core power on standard and bend-insensitive single-mode and multimode fibers. Its positive-stop trigger mechanism provides the right amount of pressure every time to assure proper detection, while keeping loss to a minimum. This ensures that traffic will not be interrupted and the fiber will not be damaged.

**Nicknamed "The Job saver":** The OFI-BIPM/-BIPMe removes the need to access the optical fiber at a connection or splice point, eliminating the possibility of interrupting service to a customer.

**No heads to change or lose:** The universal head of the OFI-BIPM/-BIPMe eliminates the need to change an adapter head for jacketed, coated, or ribbon fibers, making it extremely easy to use in the field.

**Integrated optical power meter:** The optical power meter mode verifies power levels during installation or troubleshooting.

**Color touchscreen:** The touchscreen provides simple-to-follow setup instructions and clear results that are easy to read.

**Field technician favorite:** The OFI-BIPM/-BIPMe is a favorite of technicians for its accuracy, ease of use, integrated power meter, and ergonomic design.

**Doesn't damage delicate fibers:** The positive-stop trigger ensures that the right pressure is applied every time, while the slim head makes it easier to reach and test tightly-packed fibers without damaging them.



## OFI-BIPM and OFI-BIPMe Optical Fiber Identifiers

### Specifications<sup>a</sup>

OPTICAL (OFI)							
Fiber Type	0.25 mm SM and MM fiber; SM and MM ribbon fiber (up to 12 ribbon fiber) 1.1 mm/1.5 mm/1.7 mm/2.0 mm/3.0 mm SM and jacketed fiber						
Optical Characteristic	Wavelength Range	900 to 1700 nm					
	Detectable Light Signals	CW, Traffic or 270 Hz, 330 Hz (OFI-BIPMe only), 1 kHz, 2 kHz Tone <sup>b</sup>					
Insertion Loss (IL) & Minimum Detect Level <sup>c</sup> at Normal, Fast or Fine operation mode	Wavelength	1310 nm		1550 nm		1650 nm	
	Fiber Type	IL (dB)	Normal/Fast/Fine (dBm)	IL (dB)	Normal/Fast/Fine (dBm)	IL (dB)	Normal/Fast/Fine (dBm)
	0.25 mm (R=30 mm)	0.2	-58/-53/-64	1.0	-67/-62/-73	2.5	-67/-62/-73
	0.25 mm (R=15 mm), Ribbon	0.1	-44/-39/-50	0.3	-57/-52/-63	1.0	-57/-52/-63
	0.5 mm (R=15 mm)	0.2	-58/-53/-64	1.0	-67/-62/-73	2.5	-67/-62/-73
	1.1 mm/1.5 mm Jacketed	0.3	-43/-37/-53	1.0	-55/-50/-61	2.5	-57/-52/-63
	1.7 mm/2.0 mm Jacketed	0.5	-22/-17/-28	2.0	-27/-22/-33	3.0	-27/-22/-33
	3.0 mm Jacketed	1.0	-20/-15/-25	3.0	-23/-18/-28	3.0	-23/-18/-28

POWER METER (OPM)	
Wavelength	1310 nm, 1490 nm, 1550 nm
Detectable Light Signal	CW, Traffic or 270 Hz, 330 Hz (OFI-BIPMe only), 1 kHz, 2 kHz Tone <sup>b</sup>
Detector Sensitivity	+10 to -60 dBm at modulated tone; +10 to -40 dBm at CW or Traffic <sup>b</sup>
Accuracy <sup>d</sup>	±0.3 dB @1310/1550 nm; ±0.6 dB @1490 nm

GENERAL	
Operation Conditions	-10 to +50 °C, 0 to 95 % RH (non-condensing)
Storage Conditions	-20 to +60 °C, 0 to 95 % RH (non-condensing)
Power Supply	2 x AA batteries; 1.2 to 1.5 V DC
Battery Life	8 hours <sup>e</sup>
Dimensions (W x H x D)	5.0 x 11.5 x 21.2 cm (1.9 x 4.5 x 8.3 in) <sup>f</sup>
Weight	230 g (8.1 oz) including battery

#### Notes:


- All specifications valid at 25°C unless otherwise specified.
- Traffic is a light signal modulated by a random data sequence.
- Typical value. The minimum detect level (core power) the insertion loss varies due to coating material, color, etc.
- Under the condition of temperature 25°C with input power at -20 dBm.
- Using 2 Alkaline AA Batteries.
- Except protruding part.

## OFI-BIPM and OFI-BIPMe Optical Fiber Identifiers

### Ordering Information

DESCRIPTION	AFL NO.
BI Optical Fiber Identifier with integrated Optical Power Meter. The kit includes one 2.5 mm Universal Power Meter Port Adapter, BIPM-00-25.	OFI-BIPM
BI Enhanced Optical Fiber Identifier with integrated Optical Power Meter. The kit includes one 2.5 mm Universal Power Meter Port Adapter, BIPM-00-25.	OFI-BIPMe
<b>OPTIONAL ADAPTERS (ordered separately)</b>	
2.5 mm Universal Power Meter Port Adapter	BIPM-00-25
SC Power Meter Port Adapter	BIPM-00-SC
FC Power Meter Port Adapter	BIPM-00-FC
ST Power Meter Port Adapter	BIPM-00-ST
LC Power Meter Port Adapter	BIPM-00-LC

### Recommended Products



**FlexScan® FS300 (quad) and FS200 (single-mode) OTRs**

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- Flexpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



**Optical Light Sources**

- Encircled Flux Compliant
- 5-Year Product Warranty
- Integrated LED and Laser light sources

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety /EMC /EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FCC	Compliant to code of federal regulations FCC 47 CFR 15 on unlicensed transmissions
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)

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Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about OFI-BIPM/-BIPMe.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)

## OFI-400 Series Optical Fiber Identifiers



### Features

- 5-year product warranty; 3-year recommended calibration interval
- Rugged, hand-held, lightweight, and easy-to-use
- Unique optical head with two-position plunger for use with all fiber types
- Built-in power meter with Set Reference feature

### Applications

- Live fiber detection to avoid technician-induced outages
- Fiber identification and tracing with CW or tones
- Core power measurements
- Testing 250  $\mu$ m, 900  $\mu$ m, and ribbon fiber or 2 mm and 3 mm jacketed fiber

AFL's OFI-400 Optical Fiber Identifiers are rugged, hand-held, and easy-to-use fiber optic test instruments designed to detect and measure the core power levels of optical signals on single-mode optical fiber without disrupting traffic on that fiber. They are simply clamped onto a fiber and display the presence and direction of traffic, continuous test signals, and modulated test tones. This permits network personnel to easily and quickly identify a specific fiber without the risk of disrupting service. All of AFL's optical light sources are ideal companions to the OFI-400 family of optical fiber identifiers.

**No adapters to purchase, store, swap, or misplace:** Each OFI-400 uses a unique optical head design featuring a two-position plunger that enables it to be used with 250  $\mu$ m, 900  $\mu$ m, and ribbon fiber or 2 mm and 3 mm jacketed fiber. Other brands of optical fiber identifiers require users to purchase, store and change optical plungers each time a different type of fiber is tested.

**Low insertion loss for in-service ID tasks:** OFI-400's optical heads induces a safe, repeatable macro-bend to the fiber that allows a small amount of light to escape for analysis. The insertion loss induced by the macro-bend is too small to affect the signal on the fiber and the integrity of the fiber is unaffected by the measurement process.

**Designed for the real world:** The OFI-400 family are simple, easy-to-use tools that feature rugged, drop-proof construction - perfect for inside or outside plant use. Their ergonomically designed macro-bend trigger is comfortable to use and the integrated, backlit LCD display enables them to be used in dimly lit spaces. Each OFI-400 uses readily available 1.5 V AAA batteries which can power thousands of fiber tests before needing to be replaced.

**OFI-400 model:** The OFI-400 is designed for use with a wide range of single-mode fibers including 250  $\mu$ m (bare) coated, 900  $\mu$ m buffered and ribbon fibers or 2 mm and 3 mm jacketed fibers. The OFI-400 is ideal for network personnel involved in installation, reconfiguration, restoration and maintenance tasks that involve bare, buffered, jacketed or ribbon fibers in outside plant pedestals, fiber cabinets, aerial enclosures and inside plant premises demarcation cabinets. The slim design of the OFI-400 head facilitates access in crowded splice trays.

**OFI-400C model:** Designed specifically for use with 2 mm or 3 mm jacketed single-mode fibers, the OFI-400C is ideal for general purpose maintenance, configuration and installation tasks. The OFI-400C is functionally equivalent to the OFI-400 but includes an optical head design and a calibration scheme optimized for use with jacketed fiber.

**OFI-400HP model:** The OFI-400HP is designed for use where high levels of optical power are present. This includes fibers carrying a single high-power signal, CWDM or DWDM signals with high total power levels, amplified optical signals, or pump lasers associated with EDFA or Raman amplifiers. When display reaches +23 dBm (200 mW) or greater, the OFI-400HP will display "High" warning indication.

## OFI-400 Series Optical Fiber Identifiers

### Specifications<sup>a</sup>

DETECTABLE SIGNAL RANGE					
FIBER TYPE <sup>b</sup>	PARAMETER	TEST CONDITIONS <sup>c</sup>	OFI-400	OFI-400C	OFI-400HP
250 µm coated fiber (SMF-28 with 250 µm CPC6 coating)	Minimum level detected, average power	1310 nm, CW, Tone, Traffic 1550 nm, CW, Tone, Traffic	-45 dBm -50 dBm	N/A	N/A
	Insertion loss (typical)	@ 1310 nm @ 1550 nm	0.6 dB 2.5 dB	N/A	N/A
3 mm jacketed fiber (SMF-28/28E with 250 µm CPC6 coating and 3 mm, yellow jacket)	Minimum level detected, average power	1310 nm, CW, Tone, Traffic 1550 nm, CW, Traffic 1550 nm, Tone	-30 dBm -33 dBm -33 dBm	-35 dBm -40 dBm -40 dBm	-30 dBm -40 dBm -35 dBm
	Insertion loss (typical)	@ 1310 nm @ 1550 nm	1.0 dB 2.8 dB	1.0 dB 2.8 dB	0.2 to 0.5 dB 0.8 to 1.3 dB

OPTICAL SPECIFICATIONS <sup>d</sup>	OFI-400	OFI-400C	OFI-400HP
Calibrated Fiber and Wavelength	250 µm @ 1550 nm (SMF-28/28E)	3 mm @ 1550 nm (SMF-28/28E)	
Working Fiber Size	250 µm, 900 µm, ribbon, 2 mm and 3 mm jacketed	2 mm and 3 mm jacketed	
Core Power Measurement Range <sup>e</sup>	+13 to -50 dBm @ 1550 nm, 250 µm	+13 to -40 dBm @ 1550nm, 3 mm	+33 to -40 dBm @ 1550 nm, 3 mm
Detector Type	InGaAs		
Wavelength Range	800 - 1700 nm		
Measurement Units	dBm, dB		
Fiber Stress	<100 kPSI max		
Tone Detection	270, 330, 1000, 2000 Hz (±5 %)		

GENERAL SPECIFICATIONS	ALL OFI-400 MODELS
User Interface	Multi 7 segment LCD; 3 LEDs; 1 piezo buzzer
Power	2 x 1.5 V AAA alkaline
Battery Life	>10,000 operations typical
Operation Temperature	-5°C to 50°C 95 % RH (Non-condensing)
Storage Temperature	-30°C to +60°C 95 % RH (Non-condensing)
Dimensions (H x W x D)	21.5 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in)
Weight	168 g (6 oz)

#### Notes:

- All specifications stated above are as measured at 25°C.
- 250 µm coated fiber parameters are specified with OFI plunger in the "250 / 900 / RIB" position. 2 mm / 3 mm jacketed fiber parameters are specified with OFI plunger in the "2 mm / 3 mm" position.
- CW is a light signal that is not modulated. Traffic is a light signal modulated by high speed user data. Tone is a light signal modulated into a nominal 50 % duty cycle square wave.
- Unless noted otherwise, all specifications are typical. Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, and other factors.
- SMF-28/28E.

## OFI-400 Series Optical Fiber Identifiers

### Ordering Information

All OFI-400 products include a user's guide, 2 AAA batteries and a soft carry case. Each carries a 5-year warranty and a 3-year recommended calibration interval.

INCLUDES	AFL NO.
Users guide, 2 AAA batteries, soft carry case	OFI-400
Users guide, 2 AAA batteries, soft carry case	OFI-400C
Users guide, 2 AAA batteries, soft carry case	OFI-400HP

### Recommended Products



**FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs**

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- Flexpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



**Optical Light Sources**

- Encircled Flux Compliant
- 5-Year Product Warranty
- Integrated LED and Laser light sources

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety /EMC /EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)

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## OFI-200 Optical Fiber Identifier



### Features

- 5-year product warranty; 3-year recommended calibration interval
- Rugged, hand-held, lightweight, and easy-to-use
- Unique optical head with two-position plunger for use with all fiber types
- Visually and audibly indicates tone signal across 2 kHz range

### Applications

- Live fiber identification to avoid technician-induced service outages
- Fiber tracing or identification with CW or test tones
- Testing 250  $\mu$ m, 900  $\mu$ m coated, 2 mm, 3 mm jacketed, and ribbon fiber

AFL Optical Fiber Identifiers are rugged, hand-held, and easy-to-use fiber optic test instruments designed to detect optical signals transmitted through a single-mode fiber without disrupting traffic.

The OFI-200 is simply clamped onto a fiber and indicates if there is NO SIGNAL, TONE, or TRAFFIC and the associated signal direction. This permits network personnel to easily and quickly identify a specific fiber without the risk of disrupting service. When testing coated fibers, the slim design of the OFI-200 allows easier access on a splice tray where the amount of workspace is limited.

**No adapters to purchase, store, swap, or misplace:** The OFI-200 uses a unique optical head design featuring a two-position plunger that enables it to be used with 250  $\mu$ m, 900  $\mu$ m, and ribbon fiber or 2 mm and 3 mm jacketed fiber. Other brands of optical fiber identifiers require users to purchase, store, and change optical plungers each time a different type of fiber is tested.

**Low insertion loss for in-service ID tasks:** The OFI-200 optical head induces a safe, repeatable macro-bend to the fiber that allows a small amount of light to escape for analysis. The insertion loss induced by the macro-bend is too small to affect the signal on the fiber and the integrity of the fiber is unaffected by the measurement process.

**Designed for the real world:** The OFI-200 is a simple, easy-to-use tool that features rugged, drop-proof construction perfect for inside or outside plant use. Its ergonomically designed macro-bend trigger is comfortable to use and the integrated, backlit LCD display enables it to be used in dimly lit spaces. The OFI-200 uses readily available 1.5 V AAA batteries, which power thousands of fiber tests before needing to be replaced.

## OFI-200 Optical Fiber Identifier

### Specifications <sup>a</sup>

DETECTABLE SIGNAL RANGE			
FIBER TYPE <sup>b</sup>	PARAMETER	TEST CONDITIONS <sup>c</sup>	OFI-200D
250 µm coated fiber (SMF-28 with 250 µm CPC6 coating)	Minimum level detected, average power	1310 nm, CW or Traffic 1310 nm, Tone 1550 nm, CW or Traffic 1550 nm, Tone	-40 dBm -43 dBm -45 dBm -50 dBm
	Insertion loss (typical)	1310 nm 1550 nm	0.6 dB 2.5 dB
3 mm jacketed fiber (SMF-28 with 250 µm CPC6 coating and 3 mm, yellow jacket)	Minimum level detected, average power	1310 nm, CW or Traffic 1310 nm, Tone 1550 nm, CW or Traffic 1550 nm, Tone	-30 dBm -32 dBm -33 dBm -37 dBm
	Insertion loss (typical)	1310 nm 1550 nm	0.8 dB 2.5 dB
OPTICAL SPECIFICATIONS <sup>d</sup>			
Detector Type	InGaAs		
Wavelength Range	800 - 1700 nm		
Calibrated Size of Fiber and Wavelength	N/A		
Fiber Stress	<100 kPSI max		
Fiber Size	250 µm, 900 µm, ribbon, 2 mm or 3 mm and jacketed fiber		
Tone Detection	2000 ±100 Hz		
GENERAL SPECIFICATIONS			
Display Type	N/A		
Power	1 9-Volt Alkaline		
Battery Life	>10,000 operations typical		
Operation Temperature	0°C to 50°C 90 % RH (Non-condensing)		
Storage Temperature	-30°C to +60°C 90 % RH (Non-condensing)		
Dimensions (H x W x D)	22 x 3.8 x 2.8 cm (8.5 x 1.5 x 1.1 in)		
Weight	210 g (7.5 oz)		

### Notes:

- All specifications stated above are as measured at 25°C.
- 250 µm coated fiber parameters are specified with OFI plunger in the "250/900/RIB" position. 2 mm/ 3 mm jacketed fiber parameters are specified with OFI plunger in the "2 mm/3 mm" position.
- CW is a light signal that is not modulated. Traffic is a light signal modulated by a random data sequence. Tone is a light signal modulated into a nominal 50% duty cycle square wave.
- Unless noted otherwise, all specifications are typical. Actual results can vary by several dB depending on fiber type, coating material, jacket color, jacket hardness, and other factors.



## OFI-200 Optical Fiber Identifier

### Ordering Information

INCLUDES	AFL NO.
Users guide and carry case	OFI-200D

### Recommended Products



**FlexScan® FS300 (quad) and FS200 (single-mode) OTDRs**

- SmartAuto® 1-button automated testing for fast results
- LinkMap® color-coded icons for easy troubleshooting
- Flexpress® mode (FS200) completes OTDR test in <5 seconds!
- Integrated Source, Power Meter and VFL



**Optical Light Sources**

- Encircled Flux Compliant
- 5-Year Product Warranty
- Integrated LED and Laser light sources

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety /EMC /EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
	EN	Compliant to EN 61326-1 for EMC requirements for electrical equipment
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## VFI4 Visual Fault Identifiers



VFI4 High Power Model

VFI4-L Low Power Model

### Features

- Eye-safe Class 3R visible red laser source, 650 nm (High power version)
- Output power of 5.0 mW with 10 km range (High power version)
- Universal connector interface for quick connection
- 2.5 mm universal adapter (included) accepts FC, SC, ST, etc. connectors
- 1.25 mm universal adapter (included in High power version only) accepts LC and MU connectors
- Low power model - VFI4-L is available with output power of 1.0 mW with 4 km range

### Applications

- Identify and trace fibers during activation and installation
- Identify poorly mated connectors
- Verify AFL's FASTConnect® field-installable connector installation
- Find faults inside OTDR dead zones

A Visible Fault Identifier (VFI), also referred to as a Visual Fault Locator (VFL), is an essential tool for fiber installation and maintenance technicians.

AFL's compact VFI4 injects high-powered red-laser light to provide exceptional brightness and range for locating defects in single-mode and multimode fibers. The light generated by these units will escape from sharp bends and breaks in jacketed or bare fibers, as well as poorly mated connectors enabling technicians to quickly spot faults. The universal connector interface mates with many connector styles without needing an adapter.

**Rugged and Compact:** The rugged VFI4 is designed for the rigors of real-life field testing. It has a range of up to 10 km, fits on a keychain, and features extensions that protect the red-laser port. It has both CW and pulsating modes and is powered by a single AA battery for up to 30 hours of operation.

**Installation and Activation:** VFI4 is used for quick continuity checks, fiber tracing, splice verification, and Pass/Fail validation for mechanical connectors. VFI4 is also an excellent complement to any OTDR because it can locate faults inside the OTDR's dead zone.

**Essential Troubleshooting Tool:** The VFI4 highlights sharp bends, breaks, faulty connectors, and other defects that "leak" light. Other applications include end-to-end continuity checks, as well as identifying connectors in patch panels and fibers during splicing operations.

## VFI4 Visual Fault Identifiers

### Specifications<sup>a</sup>

OPTICAL	VFI4	VFI4-L
Emitter Type	Laser, Class IIIa FDA 21 CFR 1040.10 and 1040.11, Class 3R IEC 60825-1:2014	Laser, Class II FDA 21 CFR 1040.10 and 1040.11, Class 2 IEC 60825-1:2014
Wavelength	650 nm ±15 nm	
Output Power	5 mW maximum	1 mW maximum
Modulation	2 Hz or CW selected	

#### Notes:

a. All specifications valid at 25°C unless otherwise specified.

GENERAL	VFI4	VFI4-L
Adapter	2.5 mm Universal, 1.25 mm Universal	
Power	1 AA battery, <30 hours (flash mode)	1 AA battery, <50 hours (flash mode)
Operating Temperature	-10°C to 50°C, 85 % humidity non condensing	
Storage Temperature	-30°C to 60°C, 95 % humidity non condensing	
Size (H x W x D)	7.9 x 5.1 x 2.2 cm (3.1 x 2.0 x 0.9 in)	
Weight	43 g (1.5 oz)	

### Ordering Information

DESCRIPTION	AFL NO.
VFI4 visual fault identifier with 2.5 mm and 1.25 mm adapters	VFI4-01-0900PR
VFI4-L visual fault identifier with 2.5 mm adapter	VFI4-02-0900PR

### Adapters

DESCRIPTION	AFL NO.
2.5 mm Universal for VFI port	2900-50-0013MR
1.25 mm Universal for VFI port	2900-50-0012MR

### Recommended Products



#### One-Click® Cleaner Mini

- Small compact design with single action cleaning
- Automatically advance ensures each clean is performed with fresh cleaning tape
- 100 clean and 500 clean versions available
- Low cost per clean



#### FASTConnect® Field-Installable Connectors

- Field-installable, takes less than a minute to complete
- Fast and easy to terminate
- Low insertion/return loss
- Reusable

### Qualifications

CATEGORY	REGULATION/STANDARD	QUALIFICATION
CE Marking	EU	Compliant to relevant EU Directives on health, safety, and environmental protection, and certified with CE marking
Safety/EMC/EMI	IEC	Compliant to IEC 61010-1 for safety requirements for electrical equipment
	EN	Compliant to EN 61010-1 for safety requirements for electrical equipment
	IEC	Compliant to IEC 61326-1 for EMC requirements for electrical equipment
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	EN	Compliant to EN 55011 for EMC requirements for industrial, scientific and medical equipment
	FDA	Compliant to code of federal regulations FDA 21 CFR 1040.10 and 1040.11 on laser products
	IEC	Compliant to IEC 60825-1 for safety of laser products
RoHS	EU	Compliant to EU regulations Directive 2011/65/EU (RoHS 2) and Directive 2015/863 (RoHS 3)

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Test](http://www.AFLglobal.com/Test) to learn more about VFI4 Visual Fault Identifier.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts).

**NEW**

## Push-Type Cleaners

### One-Click® Cleaners

#### Features

- Patented single-action cleaning in a small ergonomic design
- Variety of sizes and types for different connector styles
- Cleans connectors in both jumpers and bulkhead adapters
- Low cost per clean

#### Applications

- Removing oil, dust, and dirt without damaging delicate fiber end-faces
- Both dry and wet cleaning (add cleaning fluid)
- Clean connectors in tight spaces
- Field or laboratory use

#### One-Click Cleaner

Easy-to-use solution for cleaning fiber optic connectors on jumpers and in adapters. Since over 85% of network outages are attributed to dirty and/or damaged connectors, it is critical to clean every connector! The patented One-Click Cleaner uses the mechanical push action to advance an optical grade cleaning tape while the cleaning tip is rotated to ensure the fiber end-face is effectively, but gently, cleaned. It is a favorite of field technicians for its ease of use, durability, effectiveness, and small size.

**One-Click® Cleaner PRO** - The One-Click Cleaner PRO is a high-performance cleaner built for speed and efficiency. It features an integrated guide cap design that reduces cleaning time up to 50% by eliminating constant switching of caps for cleaning the ferrule end-face on connectors, in or out of bulkhead adapters. The One-Click Cleaner Pro boasts over 775 cleaning cycles in an ergonomic push-type cleaner, which is a significant increase from the previous model's 500 clean limitation. Designed to meet the needs of data centers, factories, and FTTH environments, One-Click Cleaner PRO optimizes optical connectivity, reduces downtime, and improves efficiency, making it an essential tool for fiber connector cleaning.

**Compact One-Click Cleaner Mini** - Offering the same technology and performance as the original, the One-Click Cleaner mini enables cleaning connectors in tighter places. Its smaller size also makes it a great addition to test kits and cleaning kits. The mini One-Click Cleaners come in both 100+ or 500+ cleans per unit.

**One-Click Ultra Cleaner 2.5** - The One-Click Ultra Cleaner 2.5 has an enlarged cleaning area to clean more of the connector end-face. Cleaning up to a 2 mm diameter area of the connector end-face, the One-Click Ultra Cleaner 2.5 is a superior cleaner for SC, ST, and FC connectors.

**One-Click Cleaner D-LC (Duplex LC)** - The One-Click Cleaner D-LC cuts cleaning time in half by effectively cleaning both connectors of a duplex LC connector simultaneously. Available in a long-lasting 500+ clean pen shape.



SC PRO

LC PRO

SC/ST/FC

MU/LC



Mini-100  
SC, ST, FC



Mini-100  
MU/LC



Ultra 2.5



D-LC

## Push-Type Cleaners

### One-Click® Cleaners

#### One-Click Cleaner MPO and MPO-16

The One-Click Cleaner MPO/MPO-16 is a revolutionary push-type cleaner that simplifies cleaning of the ferrule end-face of MPO/MTP® connector. The One-Click MPO-16 cleans 16-fiber MPO/MTP connectors, both pinned (male) and socketed (female). MPO-16 is used with IEEE 802.3bs 400G trunk cabling with each fiber carrying 25 Gbps data signals (400GBASE-SR16 for example), among other applications.

#### One-Click Cleaner CS/MDC Duplex

The One-Click Cleaner CS/MDC cuts cleaning time in half by effectively cleaning both connectors of a duplex CS/MDC at one time.

#### One-Click Cleaner SN Duplex

The One-Click Cleaner SN cuts cleaning time in half by effectively cleaning both connectors of a duplex SN at one time.

#### One-Click Cleaner HOC

The Hardened Outdoor Connector (HOC) One-Click Cleaner is an essential cleaning tool for OptiTap®, TITAN RTD®, TRIDENT®, and SC connectors. The new design of the HOC Cleaner allows it to be used for Plug/Receptacle without the need for the conventional guide cap.



MPO

MPO-16



CS, MDC

SN Duplex

HOC

### Ordering Information

DESCRIPTION	AFL NO.
One-Click Cleaner SC, ST, FC (500+ cleans)	8500-05-0001MZ
One-Click Cleaner MU/LC (500+ cleans)	8500-05-0002MZ
One-Click Cleaner ODC, outdoor connector (500+ cleans)	8500-05-0004MZ
One-Click Cleaner Mini-100 SC, ST, FC (100+ cleans)	8500-05-0005MZ
One-Click Mini-100 MU/LC (100+ cleans)	8500-05-0006MZ
One-Click Cleaner Mini-500 SC, ST, FC (500+ cleans)	8500-05-0009MZ
One-Click Cleaner Mini-500 MU/LC (500+ cleans)	8500-05-0010MZ
One-Click Ultra Cleaner 2.5 (enlarged cleaning) SC, ST, FC (500+ cleans)	8500-05-0007MZ
One-Click Cleaner D-LC, Duplex LC (2 x 500+ cleans)	8500-05-0008MZ
One-Click Cleaner MPO (500+ cleans)	8500-05-0030MZ
One-Click Cleaner MPO-16 (500+ cleans)	8500-05-0013MZ
One-Click Cleaner MT-RJ (500+ cleans)	8500-05-0031MZ
One-Click Cleaner M20, 2.0 mm ferrule (500+ cleans)	8500-05-0014MZ
One-Click Cleaner CS, MDC Duplex (500+ cleans)	8500-05-0015MZ
One-Click Cleaner SN Duplex (500+ cleans)	8500-05-0016MZ
One-Click Cleaner HOC, Hardened Optic Connectors (500+ cleans)	8500-05-0018MZ
One-Click Cleaner SC Pro (775+ cleans)	8500-05-PRO-SC
One-Click Cleaner LC Pro (775+ cleans)	8500-05-PRO-LC
<b>BOXES OF 5 UNITS</b>	
One-Click Cleaner SC, ST, FC (box of 5 units)	8500-05-0021MZ
One-Click Cleaner MU/LC (box of 5 units)	8500-05-0022MZ
One-Click Cleaner Mini-100 SC, ST, FC (box of 5 units)	8500-05-0025MZ
One-Click Cleaner Mini-100 MU/LC (box of 5 units)	8500-05-0026MZ
One-Click Ultra Cleaner 2.5 SC, ST, FC (box of 5 units)	8500-05-0027MZ
One-Click Cleaner MPO-16 (box of 5 units)	8500-05-0023MZ



## Push-Type Cleaners

### One-Click® Cleaner MMC

#### Features

- Cleans high-density, low-insertion-loss pinned or unpinned MMC connectors
- Patented single-action cleaning in a small ergonomic design
- Precise mechanical action delivers consistent cleaning results
- Automatic tape advance ensures each clean is performed with fresh cleaning tape

#### Applications

- Clean MMC-16 and MMC-24 connectors on jumpers and in adapters
- Maximum density, pre-terminated cabling installations
- High fiber count data center interconnects
- Structured cabling

Designed to clean Very Small Form Factor (VSFF) MMC multi-fiber connectors used in Data Centers and other high density optical networks, the new One-Click Cleaner MMC is a revolutionary push-type cleaner, which simplifies cleaning of the ferrule end-face of both MMC exposed connectors and connectors in adapters.

**Ease of use** - With its patented push-action cleaning, the One-Click Cleaner MMC removes dirt, dust, and contaminants with just one click. Its straightforward use requires no training. Simply insert and click to clean MMC connectors

**Maximized efficiency** - By utilizing the one-click design, technicians can speed through the cleaning process. No manual wipes or wet solvents are needed. The mechanical push action instantly advances the optical grade cleaning tape while the cleaning tip is rotated to ensure the MMC end-face is effectively, but gently, cleaned.

**Increased uptime** - With the move to next-gen VSFF data-center connectivity, it is essential to maintain connections for optimal performance. Using the specialized One-Click Cleaner MMC, technicians can clean MMC-16 and MMC-24 connectors easily and effectively in 1/2 the time as traditional methods leading to reliable signal transmission and extended lifespan of the connector.

#### Ordering Information

DESCRIPTION	AFL NO.
One-Click Cleaner MMC for MMC-16 Connectors (500+ cleans)	8500-05-MMC16
One-Click Cleaner MMC for MMC-24 Connectors (500+ cleans)	8500-05-MMC24



## Push-Type Cleaners

### NEOCLEAN Cleaners



NEOCLEAN-E Models (E1, E2, E3)



NEOCLEAN-M

#### Features

- Push action
- Replaceable cleaning cartridge - 750 cleaning per cartridge (NEOCLEAN-E)
- Low cost per clean

#### Applications

- Cleans connectors on jumpers or in adapters
- SC, FC, ST, E2000, LC, and MU connectors
- MPO and MTP connectors
- Suitable for field or laboratory use

**NEOCLEAN-E** uses a push action to clean contamination from the end-face of connectors on jumpers or in adapters. The replaceable cleaning cartridge can perform 750 cleans, reducing cleaning cost.

**NEOCLEAN-M** is designed for cleaning MPO and MTP multi-fiber connectors used in data centers and other high-density optical networks. It uses a one-push operation, which simplifies cleaning of the ferrule end-face of both MPO and MTP connectors and connectors in adapters.

#### Ordering Information

MODEL	APPLICABLE CONNECTORS & DESCRIPTION	# OF CLEANS	AFL NO.
NEOCLEAN-E1	For MU, LC with UPC/APC polishes	750+	8500-15-0900MZ
NEOCLEAN-E2	For SC,FC with UPC/APC polishes; OptiTap		8500-15-0901MZ
NEOCLEAN-E3	For SC, ST, FC, E2000 with UPC/APC polishes; OptiTap		8500-15-0902MZ
NEOCLEAN-M	For MPO/MTP	600+	8500-15-0909MZ

## Recommended Products



#### FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



#### Cletop Cleaners

- Simple push-button shutter application
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape



#### FCC2 Cleaning Fluid

- Unique dispenser for use with AFL Connector Cleaning Tips and FiberWipes
- Dissipates static charge
- Up to 400+ cleanings per can

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Clean](http://www.AFLglobal.com/Clean) to learn more about Push-Type Cleaners.

International Sales and Service Contact Information available at [www.AFLglobal.com/Test/Contacts](http://www.AFLglobal.com/Test/Contacts)



## Cletop Optical Fiber Connector Cleaner



### Features

- Simple push-button shutter application
- Compact lightweight design
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape

### Applications

- Ideal for labs, assembly lines, and field use
- Cleans a wide variety of connector types
- Excellent anti-static properties for static sensitive applications

The Cletop Optical Fiber Connector Cleaner is a rugged palm-sized cleaner that offers exceptional performance with a proven track record. The choice of many leading manufacturers and telecom carries worldwide for nearly 20 years, Cletop is a name you can rely on.

### Cletop Options

- Cletop Series – Original
- Cletop –S Series - Second generation cleaner offering “Drop-in” replacement tape cartridge and ergonomic design
- Type A & -SA - Designed for single 2.5mm ferrules (SC, FC, ST, & D4)
- Type B & -SB - Cleans SC, SC2, FC, ST®, DIN, D4, MU, LC, MT, MPO/MTP® without pins

### Ordering Information

DESCRIPTION	AFL NO.
<b>CLETOP – S SERIES</b>	
Cletop -SA with Blue Tape	8500-10-0020MZ
Cletop -SB with Blue Tape	8500-10-0029MZ
Cletop -SB with White Tape	8500-10-0016MZ
Replacement Tape Type S - Blue	8500-10-0021MZ
Replacement Tape Type S - White	8500-10-0017MZ

DESCRIPTION	AFL NO.
<b>CLETOP ORIGINAL SERIES</b>	
Cletop Type A with Blue Tape	8500-10-0027MZ
Cletop Type A with White Tape	8500-10-0011MZ
Cletop Type B with Blue Tape	8500-10-0028MZ
Cletop Type B with White tape	8500-10-0014MZ
Cletop for MT-RJ with pins (White Tape)	8500-10-0032MZ
Cletop for MPO/MTP with pins (White Tape)	8500-10-0033MZ
Replacement Tape Blue	8500-10-0012MZ
Replacement Tape White	8500-10-0015MZ

### Recommended Products



#### Cleaning Kits

- Complete kits for cleaning variety of connectors
- Includes wet and dry cleaning products
- Convenient refill options



#### One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean



#### WFW FiberWipes™

- Lint free and fully optical grade
- Robust and tear-resistant
- Softer than traditional cellulose wipes

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

Visit [www.AFLglobal.com/Clean](http://www.AFLglobal.com/Clean) to learn more about Cletop Optical Fiber Connector Cleaners.

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## Cleaning Fluids and Wipes

### FCC2 Enhanced Fiber Connector Cleaner and Preparation Fluid



#### Features

- Not Hazardous/Not Regulated for all modes of transport, including air cargo
- Unique dispenser for use with AFL Connector Cleaning Tips and FiberWipes™
- Dissipates static charge
- Up to 400+ cleanings per can

#### Applications

- Cleans of all types of connector end-faces
- Cleans bare fiber before field terminating or fusion splicing
- Removes oils, salts, dust, dirt, and uncured epoxies
- Safe on glass, ceramic, metal, plastic optical fiber

FCC2 Enhanced Fiber Connector Cleaner and Preparation Fluid is a nonflammable, environmentally safe, residue-free solvent engineered to clean fiber connector end-faces and bare fiber. The 3-way dispenser provides easy one-handed use as tap dispenser for fiber wipes, a well for CCT Connector Cleaning Tips, and a spray nozzle for larger areas. Packaged in a spill-proof container, it can be shipped with connector cleaning and termination kits providing everything techs need in the field. FCC2 was developed with Micro Care Corporation, a world leader in cleaning solvents.

#### Ordering Information

DESCRIPTION	AFL NO.
Fiber Connector Cleaner and Preparation Fluid in 3 oz / 85 g can	FCC2-00-0902
Fiber Connector Cleaner and Preparation Fluid , Case of 12 cans	FCC2-00-0903

#### Recommended Products



##### FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



##### One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean



##### Cletop Cleaners

- Simple push-button shutter application
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape

## Cleaning Fluids and Wipes

### Debris Destroyer® Fiber Cleaning Pen



#### Features

- Precise applicator tip for controlled cleaning
- Eliminates electrostatic charge
- Designed for use with One-Click® Cleaners, FiberWipes™, CleanWipes™
- Safe for plastic components

#### Applications

- Cleaning fiber optic connector end-faces and bare fiber
- Wet to dry cleaning with wipes and One-Click cleaners
- Ideal for bare fiber preparation prior to fusion splicing
- Remove dirt, dust, oils, and other debris from fiber optic components

The Debris Destroyer is a cleaning pen for fiber optic connectors and bare fiber. It can be used for controlled application of cleaning fluid to cassette cleaners and wipes. AFL offers multiple products that can be used with the Debris Destroyer, including CLETOP-S, OPTIPOP-R, FiberWipe, and CleanWipe. The Debris Destroyer can also be used to moisten the tip of One-Click cleaners, turning them into a wet cleaning solution for tough end-face contamination.



#### Ordering Information

DESCRIPTION	AFL NO.
Debris Destroyer Fiber Cleaning Pen, 9 grams/0.32 oz.	FCC3-00-PEN1

#### Recommended Products



##### FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



##### CleTOP Cleaners

- Simple push-button shutter application
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape



##### One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

## Cleaning Fluids and Wipes

### Optical Cloth Wipes



FiberWipes

#### Features

- Lint free and fully optical grade
- Robust and tear-resistant
- Softer than traditional cellulose wipes

#### Applications

- Cleaning optical fibers prior to termination or splicing
- Cleaning fiber optic connector ferrule end-faces
- Cleaning lenses, mirrors, and other optical surfaces
- Use for wet cleaning with FCC2 Connector Cleaning Fluid or FCC3 Fiber Cleaning Pen

Specifically designed to lift and trap common contaminants found in fiber optic installations, AFL wipes provide superior cleaning results because they are made from material that is stronger, softer, and more absorbent than traditional cellulose wipes. Packaged in a clean room, the fabric is optical-quality grade and comes in two convenient form factors and are perfect additions to both tool kits and test kits.

#### WFW FiberWipes™

- Rugged 90-wipe mini-tub ideal for laboratory and field use
- Hexagonal cover minimizes rolling distance when dropped
- Solvent safe – wipes may be moistened to provide wet / dry cleaning

#### Ordering Information

DESCRIPTION	AFL NO.
FiberWipes – 90 optical quality wipes per tub, (1 tub)	9000-03-0025MZ
FiberWipes – case of 24 mini-tubs (2160 total wipes, 90 wipes per mini-tub)	9000-03-0026MZ

#### Recommended Products



##### FOCIS Flex Connector Inspection

- Self-contained, tether-free, hand-held
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis



##### Cletop Cleaners

- Simple push-button shutter application
- Easily replaceable cost-effective tape cartridges
- Over 400 wipes per tape



##### One-Click® Cleaners

- Patented single-action
- Variety of sizes and types
- Low cost per clean

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## Cleaning Kits



FCP1 Kit



FCP2 Kit



FCP3 Kit

### Features

- Mix of wet and dry cleaning products for most applications
- MPO/MTP® Option
- Field portable
- Convenient refill options

### Applications

- Field cleaning connectors on jumpers and through bulkhead adapters
- Clean SC, ST, FC, LC, MU, and MPO connectors
- Clean a variety of contaminants

Cleaning saves time and money! Over 85% of network failures can be traced back to dirty and damaged connectors. The foolproof way to avoid these outages is to inspect and clean every connector, every time - without fail. You should even inspect new ones right out of the box. Proper fiber hygiene can extend the life of connectors and reduces replacement costs. FCP Cleaning Kits from AFL offer a complete selection of fiber optic cleaning products for field cleaning of connector end-faces in a convenient carry case.

FCP1 kits consist of a wall or rack mountable carry case, FCC2 Fiber Connector Cleaner and Preparation Fluid, CCT Connector Cleaning Tips, Cletop-SB, and color-coded instructions.

FCP2 kits include FCC2 Fiber Connector Cleaner and Preparation Fluid, FCC3 Debris Destroyer® Fiber Cleaning Pen, WFW FiberWipes™, Cletop SB, One-Click Cleaners for SC, ST, FC, LC/MU, MPO connectors, and a field portable duffle bag.

FCC3 kits include FCC2 Fiber Connector Cleaner and Preparation Fluid, FCC3 Debris Destroyer® Fiber Cleaning Pen, CCT Connector Cleaning Tips, Cletop-SB, One-Click Cleaners for SC, ST, FC, LC/MU, MPO connectors, and an easy-access soft carry case.

## Cleaning Kits


### Ordering Information

FCP1 WALL/RACK MOUNTABLE FIELD PORTABLE CLEANING KITS	AFL NO.		
	FCP1-00-0901	FCP1-00-0907	FCP1-00-0914
CONTENTS / ITEMS DESCRIPTION			
FCC2 Fiber Connector Cleaner And Preparation Fluid (Can)	◆	◆	◆
CCTS-12 (for 1.25 mm ferrule) Connector Cleaning Tips		◆	◆
CCTS-25 (for 2.5 mm ferrule) Connector Cleaning Tips	◆	◆	◆
CCTP-25 (for all connectors) Connector Cleaning Tips	◆	◆	◆
CCTX-MT (for MTP, MPO, MPX connectors) Connector Cleaning Tips		◆	
Cletop-S, Type B with White Tape	◆	◆	◆
Color-coded Instructions	◆	◆	◆
Wall/Rack Mountable Carry Case	◆	◆	◆

FCP2 FIELD PORTABLE DUFFLE BAG CLEANING KITS	AFL NO.	
	FCP2-10-0900	FCP2-00-0901
CONTENTS / ITEMS DESCRIPTION		
FCC2 Fiber Connector Cleaner and Preparation Fluid (Can)	◆	◆
FCC3 Debris Destroyer® Fiber Cleaning Pen	◆	◆
WFW FiberWipes™	◆	◆
Cletop-S, Type B with White Tape	◆	◆
One-Click Cleaner SC, ST, FC	◆	◆
One-Click Cleaner MU/LC	◆	◆
One-Click Cleaner MPO		◆
Field Portable Duffle Bag	◆	◆


FCP3 EASY-ACCESS CLEANING KITS	AFL NO.	
	FCP3-00-0900	FCP3-00-0901
CONTENTS / ITEMS DESCRIPTION		
FCC2 Fiber Connector Cleaner And Preparation Fluid (Can)	◆	◆
FCC3 Debris Destroyer® Fiber Cleaning Pen	◆	◆
CCTS-12 (for 1.25 mm ferrule) Connector Cleaning Tips	◆	◆
CCTS-25 (for 2.5 mm ferrule) Connector Cleaning Tips	◆	◆
Cletop-S, Type B with White Tape	◆	◆
One-Click Cleaner SC, ST, FC	◆	
One-Click Cleaner MU/LC	◆	◆
One-Click Cleaner Ultra 2.5 (enlarged cleaning) SC, ST, FC	◆	◆
One-Click Cleaner D-LC, Duplex LC		◆
One-Click Cleaner MPO	◆	◆
Soft Carry Case	◆	◆

### Recommended Products



**FOCIS Flex & FOCIS Lightning (Multi-fiber) Connector Inspection**

- Self-contained, tether-free, hand-held inspection solution
- Auto-focus and auto-centering for fast, easy inspection
- IEC, IPC and user-defined pass/fail analysis
- FOCIS Lightning: extremely fast multi-fiber auto-analysis for datacom and telecom inspection applications



**FOCIS WiFi2™ Fiber Optic Connector Inspection**

- Trim, lightweight, ergonomic and highly productive tool
- App-based automatic and manual focus; auto-centering after image capture
- One button workflow using rapid LED feedback on probe
- Multi-color LED on probe for fast pass/fail user inspection feedback

Contact [Sales@AFLglobal.com](mailto:Sales@AFLglobal.com) to schedule a demonstration or learn how to buy.

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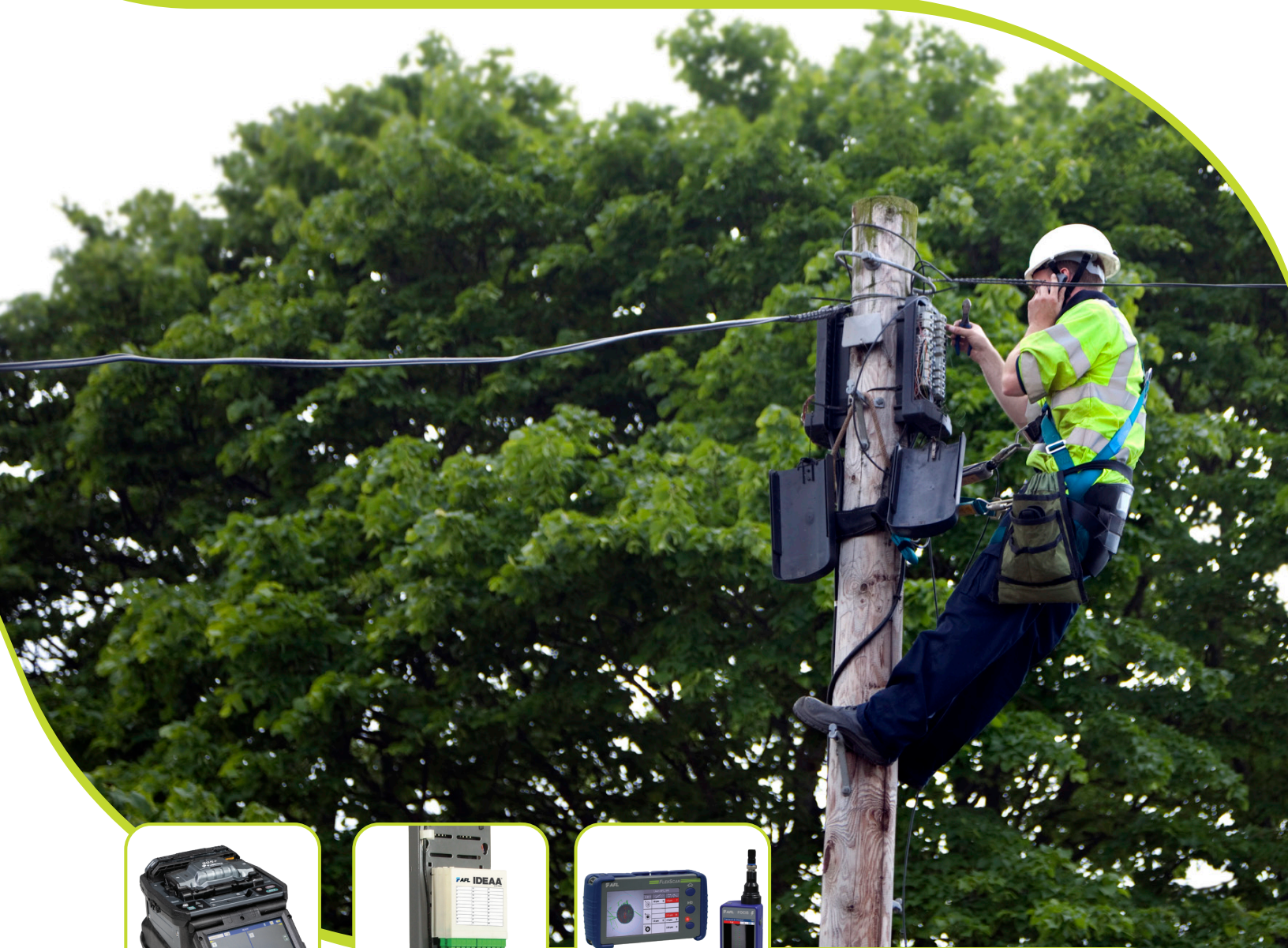


## Visit Our Resource Center!

As an end-to-end solutions provider, AFL has a vast amount of content on the many aspects of fiber optic networks for a variety of broadband and telecom applications—now in one easy-to-find location. Our resource center provides quick and easy viewing of everything “AFL.” Everything from instructional videos to best practices for test and inspection as well as:

- White Papers on industry-related technology and applications
- Quick access to brochures and PDFs
- Articles and blog posts on application-specific topics
- Video tutorials and instructions on various products

Explore the new AFL resource center and discover all that it has to offer! Go to [learn.AFLglobal.com](https://learn.AFLglobal.com)



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CAT-01203

6.5.2024