

## **AERIAL FIBER OPTIC CABLE**

Optical Ground Wire | AFL-ADSS® | Loose Tube | SkyWrap®

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

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

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

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



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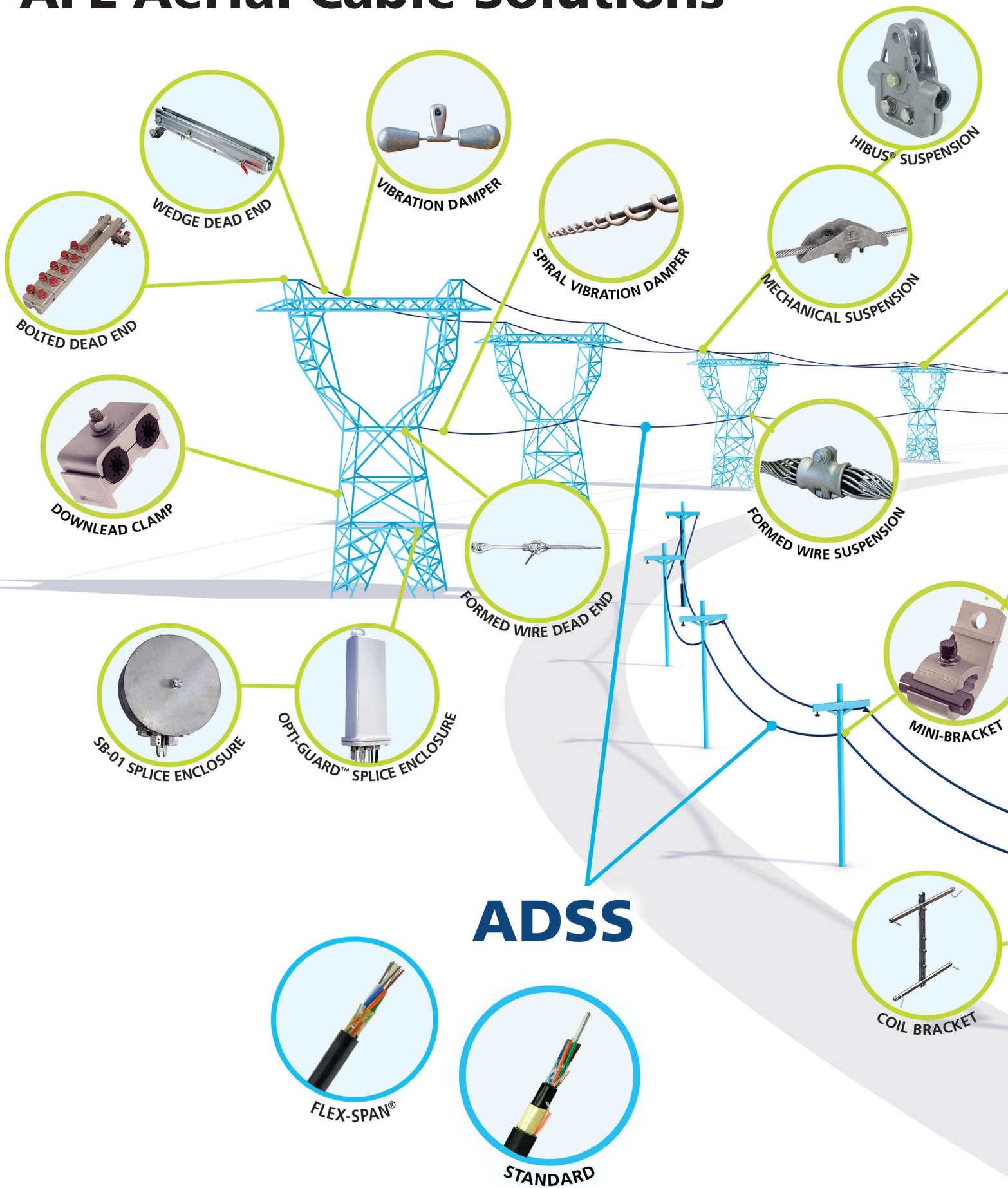
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# AFL Aerial Cable Solutions

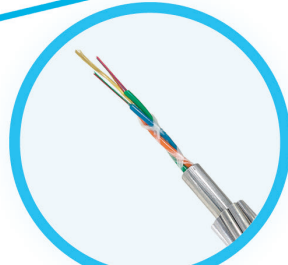


AFL offers a systems solution for your demanding aerial applications. From a variety of cable design options to the accessories required for the cable, AFL offers the industry's widest array of solutions.

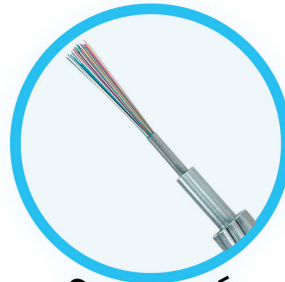
# SKYWRAP®



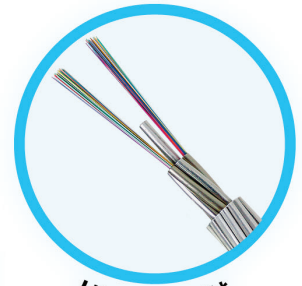
# OPGW



ALUMACORE

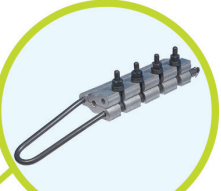
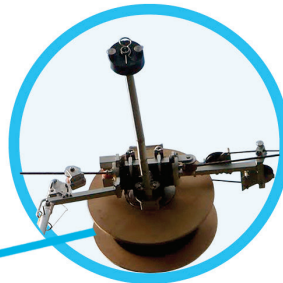


CENTRACORE



HEXACORE\*

# ACCESSWRAP™



COMEALONG



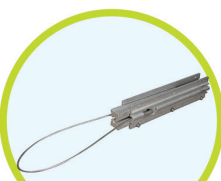
TRUNNION SUSPENSION



SUSPENSION



SPIRAL VIBRATION DAMPER



WEDGE DEAD END

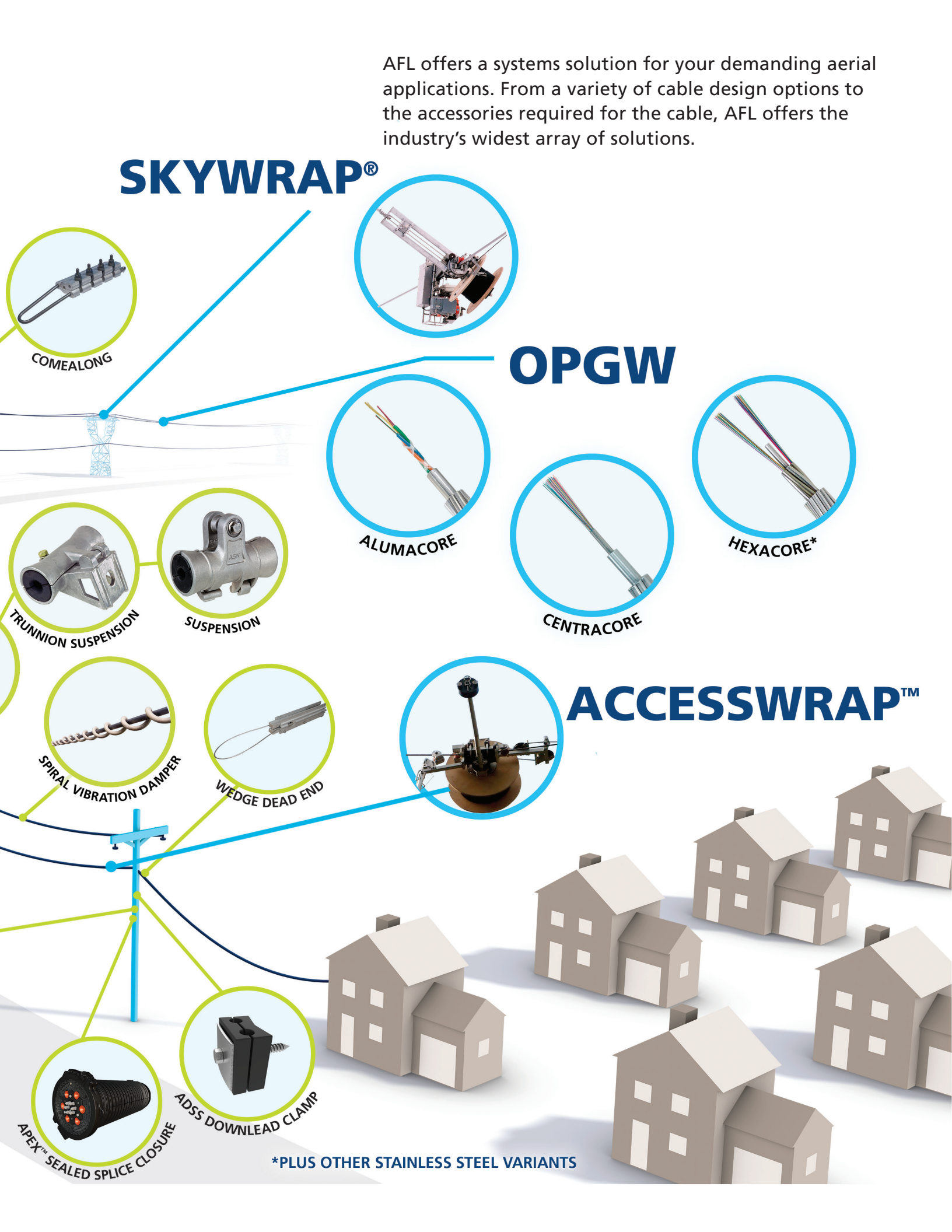


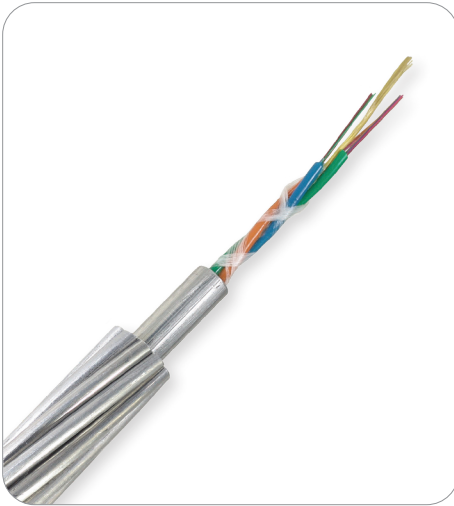
APEX™ SEALED SPLICE CLOSURE



ADSS DOWNLOAD CLAMP

\*PLUS OTHER STAINLESS STEEL VARIANTS





## AlumaCore OPGW

The AlumaCore Optical Ground Wire was AFL’s original OPGW design family dating back to 1984. OPGW provides all of the benefits of a traditional shield wire, such as providing short circuits a path to ground and protecting the circuits from lightning strikes, in addition to providing an optical pathway for communication.

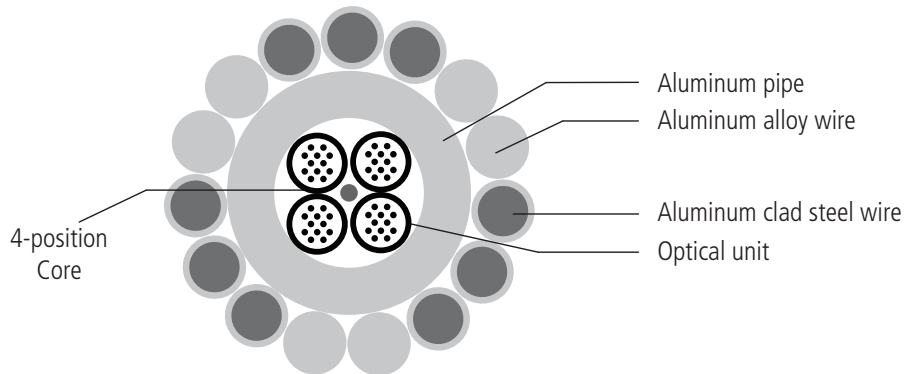
### Features

- Fiber counts up to 216
- Fiber bearing units similar to that of other fiber optic cable such as ADSS and underground cable
- Splicer familiarity and less splicing prep time required
- Aluminum pipe provides high crush resistance and good electrical performance
- Ability to be sectionalized

### Applications

- Energy Market
- Transmission
- Right-of-Way
- Topmost part of the structure (shield wire position)

### Cable Components



### Typical Designs

FIBERS (MAX)	OPGW SIZE	FAULT CURRENT (kA) <sup>2</sup> sec	TOTAL CONDUCTOR AREA		OVERALL DIAMETER		APPROXIMATE WEIGHT		APPROXIMATE RBS		SAG10 CHART #	MAX SHIP LENGTH (PER REEL TYPE)	
			in <sup>2</sup>	mm <sup>2</sup>	in	mm	lbs/ft	kg/m	lbs	kgf		WOOD (m)	STEEL (m)
96	AC-64/528	68	0.1510	97.43	0.528	13.4	0.359	0.535	18,000	8,100	1-1450	6,580	7,000
96	AC-29/34/528	81	0.1510	97.43	0.528	13.4	0.281	0.418	12,000	5,440	1-1439	7,000	7,000
96	AC-74/552	81	0.1666	107.51	0.552	14.0	0.405	0.602	20,500	9,300	1-1453	5,820	7,000
96	AC-37/37/552	98	0.1666	107.51	0.552	14.0	0.306	0.455	13,000	6,000	1-1438	7,000	7,000
96	AC-71/571	95	0.1758	113.39	0.571	14.5	0.411	0.611	20,000	9,050	1-1461	5,780	7,000
96	AC-33/38/571	110	0.1758	113.39	0.571	14.5	0.323	0.478	13,250	6,000	1-1438	7,000	7,000
144	AC-86/646	151	0.2208	142.43	0.646	16.4	0.509	0.757	24,500	11,100	1-1461	4,640	6,600
144	AC-34/52/646	172	0.2208	142.43	0.646	16.4	0.417	0.621	17,250	7,800	1-1439	5,800	7,000
144	AC-129/724	239	0.2876	185.57	0.724	18.4	0.703	1.046	34,250	15,500	1-1453	3,360	4,700
144	AC-65/65/724	292	0.2876	185.57	0.724	18.4	0.530	0.789	21,900	9,900	1-1438	4,450	5,350

continued  
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## AlumaCore OPGW

### Typical Designs (cont.)

FIBERS (MAX)	OPGW SIZE	FAULT CURRENT (kA) <sup>2</sup> sec	TOTAL CONDUCTOR AREA		OVERALL DIAMETER		APPROXIMATE WEIGHT		APPROXIMATE RBS		SAG10 CHART #	MAX SHIP LENGTH (PER REEL TYPE)	
			in <sup>2</sup>	mm <sup>2</sup>	in	mm	lbs/ft	kg/m	lbs	kgf		WOOD (m)	STEEL (m)
216	AC-88/659	154	0.2242	144.65	0.659	16.7	0.516	0.768	25,000	11,250	1-1461	4,400	6,300
216	AC-39/50/659	179	0.2242	144.65	0.659	16.7	0.427	0.636	17,000	7,750	1-1438	5,500	6,300
216	AC-109/699	196	0.2565	165.50	0.699	17.75	0.623	0.928	30,800	13,900	1-1457	3,700	6,300
216	AC-47/62/699	230	0.2565	165.50	0.699	17.75	0.499	0.742	21,200	9,600	1-1455	4,700	6,300
216	AC-125/726	230	0.2813	181.48	0.726	18.4	0.6949	1.034	34,250	15,500	1-1453	3,400	6,000
216	AC-58/67/726	277	0.2813	181.48	0.726	18.4	0.5418	0.806	22,500	10,250	1-1439	4,300	6,000

This information denotes the input data needed for Sag10™ (sag and tension calculation) software. WIR files of all these catalog designs can be found on PLS-CADD web page.

**NOTES:**

Data contained in the table are approximations. Please reference the exact cable data sheet for the most up-to-date information. The designs above are only a sampling of the options available from AFL. Contact customer service for a cable designed to your exact specifications.

### Recommended Products for AlumaCore OPGW

DESCRIPTION	AFL NO.
<b>Fiber Optic Cable Accessories</b>	
OPGW Bolted Deadend	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
OPGW Mechanical Suspension	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
SBO1 Splice Enclosure	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
<b>Motion Control</b>	
Stockbridge Vibration Damper	Refer to the <a href="#">Transmission &amp; Distribution catalog, Motion Control section</a> , for specific AFL No.

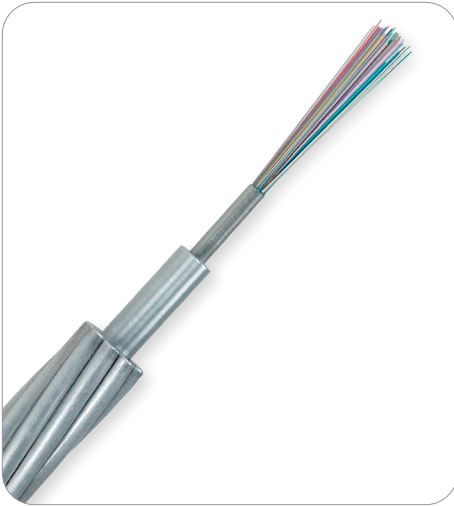
### Temperature Specifications

TEMPERATURE RANGE	
Operation	-40°C to +85°C
Storage	-50°C to +85°C
Installation	-30°C to +85°C

### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
IEEE	1138	Cable
IEC	60794-4	Cable
TIA	598-D	Fiber
ASTM	B415	Alumium Clad Steel Wire (ACS wire) Alumium Alloy Wire
	B398	

Contact AFL for your customized OPGW solution.



## CentraCore OPGW

OPGW provides all of the benefits of a traditional shield wire, such as providing short circuits a path to ground and protecting the circuits from lightning strikes, in addition to providing an optical pathway for communication. The CentraCore design family can provide these features in a compact, light weight, high fiber density OPGW.

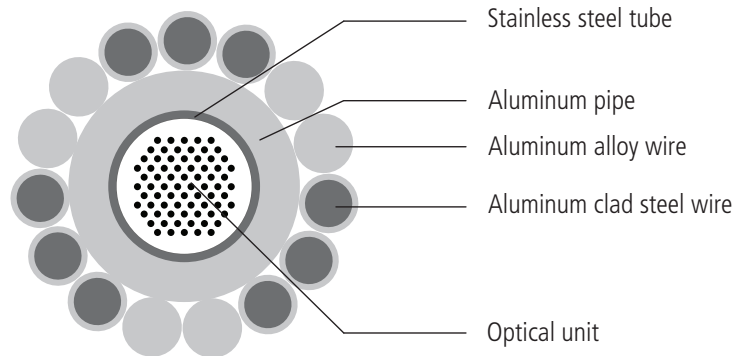
### Features

- Fiber counts up to 96
- Light weight and compact yet robust design offering high fiber density
- Central stainless steel tube housing the fibers inserted into an aluminum pipe provides crush resistance and thermal protection for fibers

### Applications

- Energy Market
- Transmission
- Right-of-Way
- Topmost part of the structure (shield wire position)

### Cable Components



### Typical Designs

FIBERS (MAX)	OPGW SIZE	FAULT CURRENT	TOTAL CONDUCTOR AREA		OVERALL DIAMETER		WEIGHT		APPROXIMATE RBS		SAG10 CHART #	MAX SHIP LENGTH (PER REEL TYPE)	
		(KA) <sup>2</sup> SEC	IN <sup>2</sup>	MM <sup>2</sup>	IN	MM	LBS/FT	KG/M	LBS	KGF		WOOD (M)	STEEL (M)
48	CC-57/465	43	0.1248	80.52	0.465	11.80	0.314	0.467	16,250	7,400	1-1421	7000	7000
48	CC-29/29/465	54	0.1248	80.52	0.465	11.80	0.238	0.354	10,500	4,700	1-1455	7000	7000
48	CC-54/472	53	0.1334	86.09	0.472	12.00	0.316	0.470	15,750	7,100	1-1450	7000	7000
48	CC-27/27/472	63	0.1334	86.09	0.472	12.00	0.244	0.362	10,000	4,600	1-1438	7000	7000
48	CC-72/504	58	0.1482	95.64	0.504	12.80	0.382	0.568	20,500	9,300	1-1442	6350	7000
48	CC-32/40/504	73	0.1482	95.64	0.504	12.80	0.296	0.441	13,750	6,300	1-1440	7000	7000
48	CC-75/528	77	0.1663	107.28	0.528	13.40	0.411	0.612	21,500	9,700	1-1453	5950	7000
48	CC-38/38/528	96	0.1663	107.28	0.528	13.40	0.310	0.462	13,750	6,200	1-1439	7000	7000
72	CC-54/472	51	0.1318	85.01	0.472	12.00	0.316	0.470	15,750	7,100	1-1457	7000	7000
72	CC-27/27/472	61	0.1318	85.01	0.472	12.00	0.243	0.362	10,000	4,600	1-1438	7000	7000
72	CC-63/507	71	0.1547	99.80	0.507	12.90	0.367	0.546	18,250	8,300	1-1450	6650	7000
72	CC-32/32/507	85	0.1547	99.80	0.507	12.90	0.282	0.420	11,750	5,300	1-1438	7000	7000

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## CentraCore OPGW

### Typical Designs (cont.)

FIBERS (MAX)	OPGW SIZE	FAULT CURRENT (KA) <sup>2</sup> SEC	TOTAL CONDUCTOR AREA		OVERALL DIAMETER		WEIGHT		APPROXIMATE RBS		SAG10 CHART #	MAX SHIP LENGTH (PER REEL TYPE)	
			IN <sup>2</sup>	MM <sup>2</sup>	IN	MM	LBS/FT	KG/M	LBS	KGF		WOOD (M)	STEEL (M)
72	CC-75/528	75	0.1646	106.20	0.528	13.40	0.410	0.611	21,500	9,700	1-1421	5950	7000
72	CC-38/38/528	94	0.1646	106.20	0.528	13.40	0.310	0.461	13,750	6,200	1-1455	7000	7000
96	CC-65/500	51	0.1393	89.86	0.500	12.70	0.385	0.573	18,900	8,600	1-1442	4800	4800
96	CC-30/36/500	64	0.1393	89.86	0.500	12.70	0.306	0.456	12,750	5,800	1-1440	4800	4800
96	CC-75/528	62	0.1550	100.00	0.528	13.40	0.431	0.641	21,500	9,800	1-1442	4800	4800
96	CC-38/38/528	81	0.1550	100.00	0.528	13.40	0.331	0.492	14,000	6,300	1-917	4800	4800
96	CC-86/563	86	0.1803	116.31	0.563	14.30	0.488	0.726	24,500	11,100	1-1425	4800	4800
96	CC-34/51/563	106	0.1803	116.31	0.563	14.30	0.340	0.591	17,400	7,900	1-1460	4800	4800

This information denotes the input data needed for Sag10™ (sag and tension calculation) software. WIR files of all these catalog designs can be found on PLS-CADD web page.

**NOTES:**

Data contained in the table are approximations. Please reference the exact cable data sheet for the most up-to-date information.

The designs above are only a sampling of the options available from AFL. Contact customer service for a cable designed to your exact specifications.

### Recommended Products for CentraCore OPGW

DESCRIPTION	AFL NO.
<b>Fiber Optic Cable Accessories</b>	
OPGW Bolted Deadend	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
OPGW Mechanical Suspension	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
SBO1 Splice Enclosure	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
<b>Motion Control</b>	
Stockbridge Vibration Damper	Refer to the <a href="#">Transmission &amp; Distribution catalog, Motion Control section</a> , for specific AFL No.

### Temperature Specifications

TEMPERATURE RANGE	
Operation	-40°C to +85°C
Storage	-50°C to +85°C
Installation	-30°C to +85°C

### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
IEEE	1138	Cable
IEC	60794-4	Cable
TIA	598-D	Fiber
ASTM	B415	Alumium Clad Steel Wire (ACS wire)

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



## HexaCore OPGW

Optical Ground Wire provides all of the benefits of a traditional shield wire, such as providing short circuits a path to ground and protecting the circuits from lightning strikes, in addition to providing an optical pathway for communication. The HexaCore, being that it is a multi-layer stranded design, is familiar in that it is similar to a conductor.

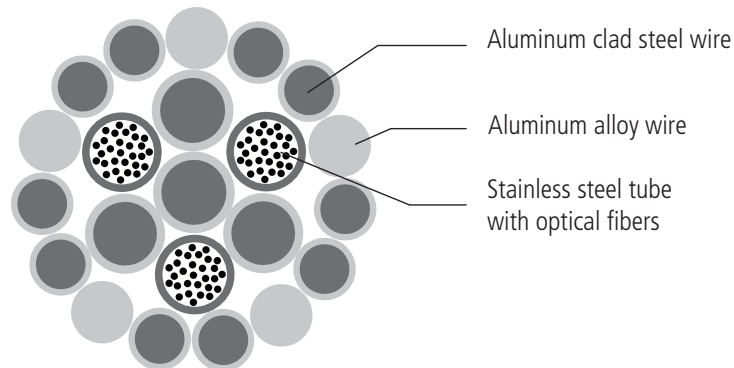
### Features

- Fiber counts up to 432
- Capable of high environmental loading and long spans Anti-rotational device (ARD) typically not required for installation

### Applications

- Energy Market
- Transmission
- Right-of-Way
- Topmost part of the structure (shield wire position)

### Cable Components



### Typical Designs

FIBERS (MAX)	OPGW SIZE	FAULT CURRENT	TOTAL CONDUCTOR AREA		OVERALL DIAMETER		WEIGHT		APPROXIMATE RBS		SAG10 CHART #	MAX SHIP LENGTH (PER REEL TYPE)	
		(KA) <sup>2</sup> SEC	IN <sup>2</sup>	MM <sup>2</sup>	IN	MM	LBS/FT	KG/M	LBS	KGF		WOOD (M)	STEEL (M)
24	SX-32/45/472	41	0.1235	79.67	0.472	12.0	0.281	0.418	14,750	6,700	1-1461	7000	7000
36	SX-41/32/472	41	0.1186	76.53	0.472	12.0	0.247	0.368	12,000	5,400	1-350	7000	7000
24	SX-75/37/555	96	0.1757	113.37	0.555	14.1	0.317	0.471	15,250	6,900	1-1438	7000	7000
24	SX-90/30/575	116	0.1889	121.86	0.575	14.6	0.313	0.466	14,250	6,400	1-430	7000	7000
96	S1-82/52/630	137	0.2131	137.45	0.630	16.0	0.417	0.621	20,000	9,000	1-1170	5800	7000
96	S1-83/59/647	152	0.2265	146.13	0.647	16.4	0.453	0.674	22,000	9,900	1-917	5300	7000
96	S1-91/61/668	177	0.2429	156.69	0.668	17.0	0.479	0.712	23,250	10,500	1-917	5100	6450
144	S1-71/52/630	118	0.2006	129.41	0.630	16.0	0.416	0.619	19,750	8,950	1-1440	5950	7000
144	S1-73/59/647	132	0.2140	138.09	0.647	16.4	0.452	0.673	21,750	9,800	1-350	5400	6850
144	S1-81/61/668	155	0.2304	148.65	0.668	17.0	0.472	0.702	23,000	10,400	1-1440	5150	6450

*continued*  
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## HexaCore OPGW

### Typical Designs (cont.)

FIBERS (MAX)	OPGW SIZE	FAULT CURRENT	TOTAL CONDUCTOR AREA		OVERALL DIAMETER		WEIGHT		APPROXIMATE RBS		SAG10 CHART #	MAX SHIP LENGTH (PER REEL TYPE)	
		(KA) <sup>2</sup> SEC	IN <sup>2</sup>	MM <sup>2</sup>	IN	MM	LBS/FT	KG/M	LBS	KGF		WOOD (M)	STEEL (M)
288	S1-41/52/630	68	0.1632	105.28	0.630	16.0	0.414	0.616	19,000	8,600	1-1461	5890	7000
288	S1-42/59/647	79	0.1766	113.96	0.647	16.4	0.450	0.670	21,000	9,500	1-1461	5400	6850
288	S1-50/61/668	97	0.1930	124.52	0.668	17.0	0.476	0.708	22,250	10,000	1-1461	5125	6450

This information denotes the input data needed for Sag10™ (sag and tension calculation) software. WIR files of all these catalog designs can be found on PLS-CADD web page.

**NOTES:**

Data contained in the table are approximations. Please reference the exact cable data sheet for the most up-to-date information.

The designs above are only a sampling of the options available from AFL. Contact customer service for a cable designed to your exact specifications.

### Recommended Products for HexaCore OPGW

DESCRIPTION	AFL NO.
<b>Fiber Optic Cable Accessories</b>	
OPGW Bolted Deadend	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
OPGW Mechanical Suspension	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
OG03 Opti-Guard Splice Enclosure	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
<b>Motion Control</b>	
Stockbridge Vibration Damper	Refer to the <a href="#">Transmission &amp; Distribution catalog</a> , <a href="#">Motion Control section</a> , for specific AFL No.

### Temperature Specifications

TEMPERATURE RANGE	
Operation	-40°C to +85°C
Storage	-50°C to +85°C
Installation	-30°C to +85°C

### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
IEEE	1138	Cable
IEC	60794-4	Cable
TIA	598-D	Fiber
ASTM	B415	Alumium Clad Steel Wire (ACS wire)

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



## Metallic Aerial Self-Supporting Cable (MASS)

Metallic Aerial Self-Supporting (MASS) Cable is an alternative solution used for installing optical cable on medium and high voltage power lines. It is typically used when the existing phase or ground wire replacement is not possible or economical. MASS cable is a compact, light-weight solution with no electrical functions, designed to provide a telecommunications path without interfering with the existing power lines or infrastructure. Its small size helps minimize loading on towers and poles yet it is completely self-supporting to meet sag and tension requirements. It is typically installed in “under build” applications beneath the live phases.

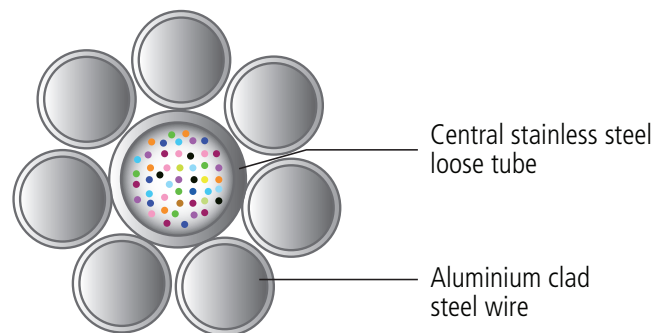
### Features

- Central Stainless Steel loose tube design
- Typical diameter between 7.5 to 11.1 mm (0.295" to 0.438")
- Fiber counts up to 72
- Can be installed without an outage
- Small cable size limits additional structural loading
- Wind-loading properties similar to standard conductors
- Aluminum Clad, Aluminum Alloy or Galvanized Steel wire options available depending on mechanical properties required

### Applications

- Energy Market
- Suitable for use on lines without a ground wire
- Deployed in regions with high lightning activity
- Suitable for wooden poles with universal attachment
- Suitable for medium and high voltage lines
- Convenient means to add fiber where OPGW is already installed

### Cable Components



*continued*  
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## Metallic Aerial Self-Supporting Cable (MASS)

### Specifications

FIBERS (MAX)	CABLE SIZE	AREA		OVERALL DIAMETER		APPROX. WEIGHT		APPROX. RBS		SAG10 #	MAX. SHIP LENGTH	
		in. <sup>2</sup>	mm <sup>2</sup>	in.	mm	lbs/ft	kg/m	lbs	kgf		WOOD (m)	STEEL (m)
24	MC-28/295	0.0459	29.59	0.295	7.5	0.138	0.205	7,900	3,580	1-1449	7000	7000
24	MC-40/346	0.0642	41.39	0.346	8.8	0.191	0.285	11,100	5,000	1-1449	7000	7000
48	MC-40/354	0.0654	42.22	0.354	9.0	0.197	0.294	11,300	5,100	1-1449	7000	7000
48	MC-58/417	0.0928	59.86	0.417	10.6	0.277	0.413	15,700	7,100	1-1449	6000	6000
72	MC-43/370	0.0703	45.36	0.370	9.4	0.212	0.315	12,100	5,500	1-1449	6000	6000
72	MC-63/438	0.1014	65.39	0.438	11.1	0.304	0.452	17,100	7,700	1-1449	5500	5500

ACS – Aluminum Clad Steel wire.

Wire is available in ACS and Aluminum Alloy.

MASS cables are designed to customer specification.

**NOTE:** The designs above are only a sampling of the options available from AFL. Contact customer service for a cable designed to your exact specifications.

### Qualifications

GOVERNING BODY	STANDARD CODE	COMPONENT
IEEE	1138	Cable
IEC	60794-4	Cable
TIA	598-D	Fiber
ASTM	B415	Aluminum Clad Steel Wire (ACS wire)

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



## Optical Phase Conductor

Optical Phase Conductor (OPPC) is used as an alternative telecommunications solution when there is no existing ground wire, meaning Optical Ground Wire (OPGW) is not a viable option. The basic construction is similar to conventional OPGW, only it is designed to simulate the mechanical and electrical characteristics of the phase wire it replaces. Unlike OPGW, where the cable is not carrying continuous current, OPPC is energized along high voltage power lines. Therefore it requires specially adapted splice boxes and insulators to accommodate the live line conditions.

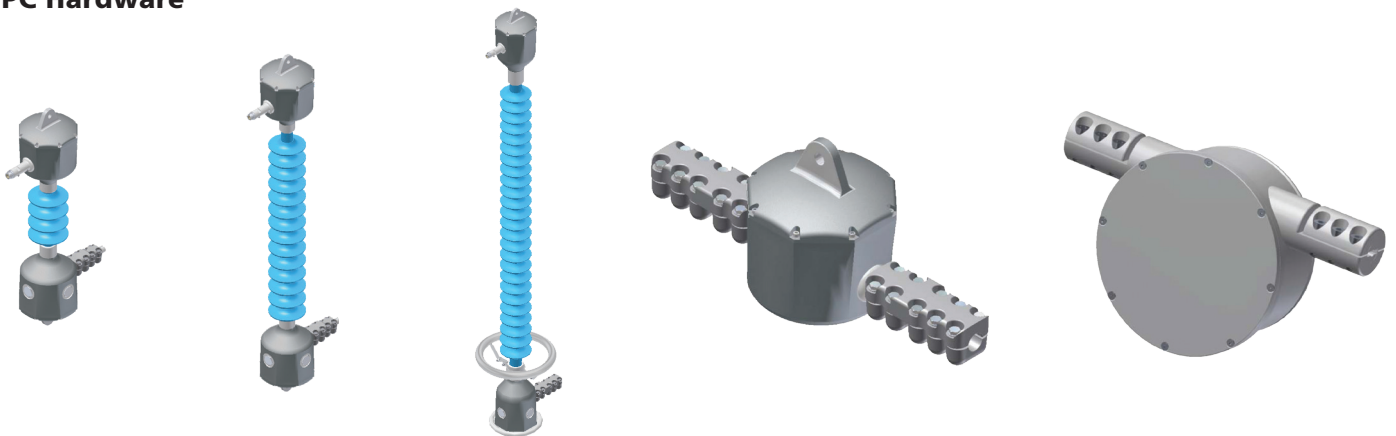
### Features

- Engineered to match existing conductors
- Available in fiber counts up to 144
- Distribution or Transmission – from 36 to 245 kV
- Suitable for any type of optical fiber, single-mode or multimode
- Designed to match electrical properties of conductor it replaces
- Uses standard fiber optic dead ends and suspension grips
- Full range of hardware options available

### Applications

- Energy Market

### OPPC Hardware



Typical OPPC Insulators

OPPC joint box – Cast Aluminium

OPPC joint box – Self Supporting

### Recommended Products for Optical Phase Conductor

DESCRIPTION	AFL NO.
<b>Fiber Optic Cable Accessories</b>	
OPPC Hardware	Refer to the <a href="#">Fiber Optic Cable Hardware catalog</a> for specific AFL No.
Dead Ends	Refer to the <a href="#">OPGW Fiber Optic Cable Hardware</a> web page.
Suspensions	Refer to the <a href="#">Mechanical Suspensions</a> spec sheet.

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



## 26 kV Isolator Kit for OPGW

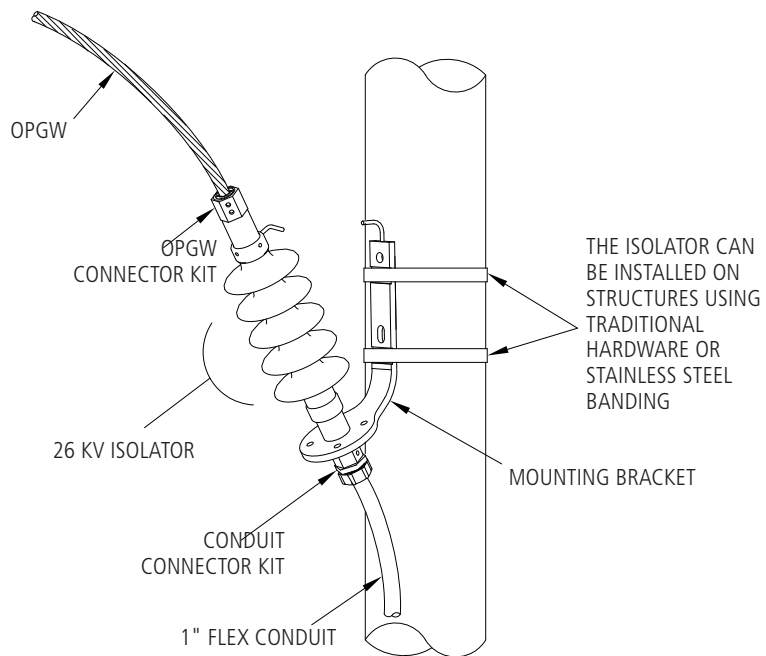
The 26 kV Isolator Kit is designed for aerial optical cable system applications in which complete electrical discontinuity is required. The isolator kit provides reliable interruption of electrical current, at voltages up to 26 kV and is a critical component of optical conductor and neutral systems, as well as optical ground-wire systems in which sectionalization of transient currents is required. The isolator can be installed on structures using traditional hardware or stainless steel banding.

### Kit Includes

- OPGW Connector Kit
- 26 kV Isolator
- Conduit Connector Kit
- Mounting Bracket
- For use on AFL AlumaCore cables only

### Specifications

PARAMETER	VALUE
Max. Voltage	26 kV
Weight	5 lbs. (approx.)

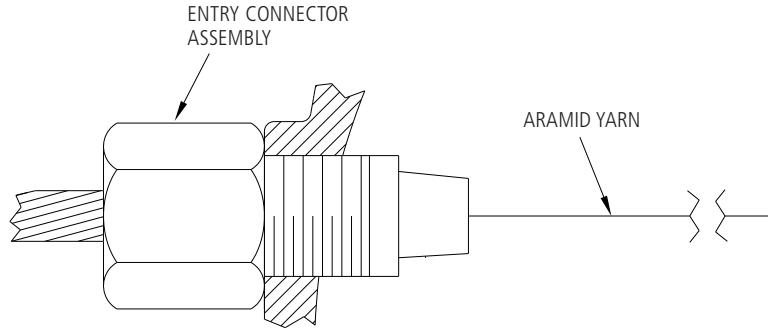
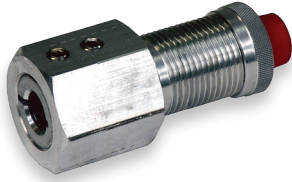


### Ordering Information

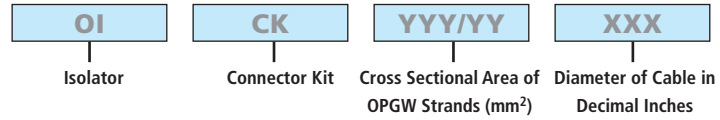
ISOL	P	XX/YY	ZZZ
Isolator	Blank = Standard Bracket (as shown) P = 90° Bracket for Routing Cable Parallel to Pole	Cross Sectional Area Aluminum Strands / AW Strands (mm <sup>2</sup> )	Cable OD (Decimal Inches)

**Ordering Example:** ISOL47/53/680

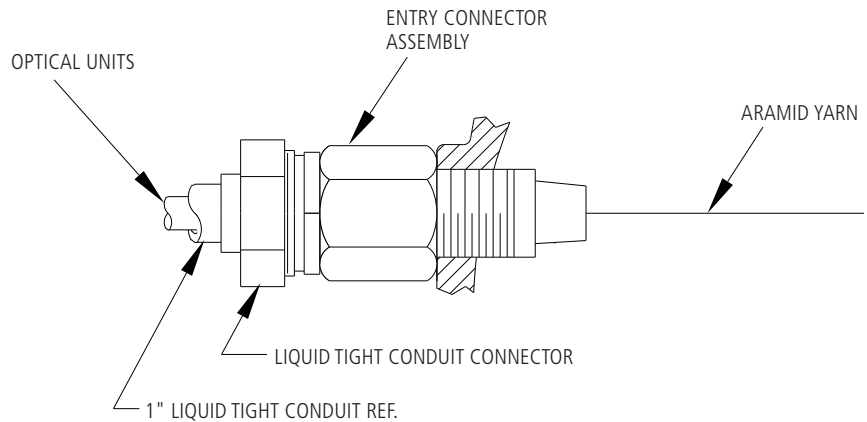
### Connector Kit for Isolator



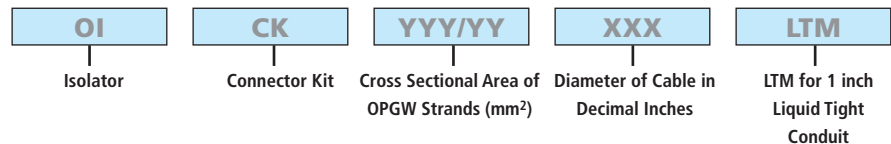
#### Ordering Information



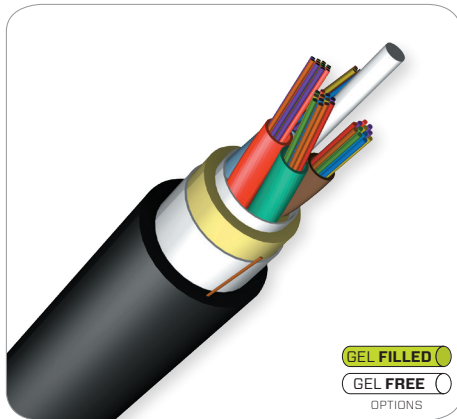
### Connector Kit for Isolator with Liquid Tight Conduit



#### Ordering Information







## 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.

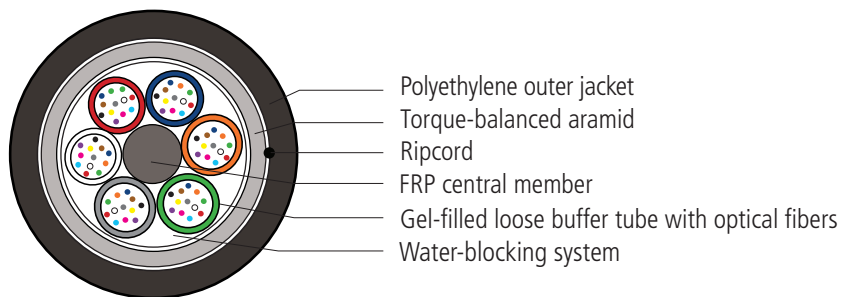
### Features

- 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.

continued  
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## Flex-Span® ADSS Fiber Optic Cable

NESC LIGHT @ 1.5% INSTALLATION SAG				
SPAN (ft)	AFL NO.	WEIGHT (lbs/ft)	DIAMETER (inches)	MRCL (lbs)
<b>48 FIBERS</b>				
700	AE048★W520AA4	0.049	0.382	698
1050	AE048★W520EA3	0.052	0.390	1089
<b>72 FIBERS</b>				
700	AE072★O620A08	0.080	0.484	913
1050	AE072★O620EA1	0.083	0.492	1338
<b>96 FIBERS</b>				
700	AE096★O620A08	0.082	0.484	913
1050	AE096★O620EA1	0.085	0.492	1338
<b>144 FIBERS</b>				
700	AE144★O620A08	0.085	0.484	913
1050	AE144★O620EA1	0.087	0.492	1338
<b>288 FIBERS</b>				
700	AE288★OC20EA0	0.185	0.732	1594
800	AE288★OC20EA3	0.187	0.736	1780

NESC MEDIUM @ 1.5% INSTALLATION SAG				
SPAN (ft)	AFL NO.	WEIGHT (lbs/ft)	DIAMETER (inches)	MRCL (lbs)
<b>48 FIBERS</b>				
500	AE048★W520AA4	0.049	0.382	698
700	AE048★W520EA3	0.052	0.390	1089
<b>72 FIBERS</b>				
500	AE072★O620A08	0.080	0.484	913
700	AE072★O620EA1	0.083	0.492	1338
<b>96 FIBERS</b>				
500	AE096★O620A08	0.082	0.484	913
700	AE096★O620EA1	0.085	0.492	1338
<b>144 FIBERS</b>				
500	AE144★O620A08	0.085	0.484	913
700	AE144★O620EA1	0.087	0.492	1338
<b>288 FIBERS</b>				
500	AE288★OC20EA0	0.185	0.732	1594
700	AE288★OC20EA3	0.187	0.736	1780

NESC HEAVY @ 1.5% INSTALLATION SAG				
SPAN (ft)	AFL NO.	WEIGHT (lbs/ft)	DIAMETER (inches)	MRCL (lbs)
<b>48 FIBERS</b>				
300	AE048★W520AA4	0.049	0.382	698
450	AE048★W520EA3	0.052	0.390	1089
<b>72 FIBERS</b>				
300	AE072★O620A08	0.080	0.484	913
450	AE072★O620EA1	0.083	0.492	1338
<b>96 FIBERS</b>				
300	AE096★O620A08	0.082	0.484	913
450	AE096★O620EA1	0.085	0.492	1338
<b>144 FIBERS</b>				
300	AE144★O620A08	0.085	0.484	913
450	AE144★O620EA1	0.087	0.492	1338
<b>288 FIBERS</b>				
300	AE288★OC20EA0	0.185	0.732	1594
450	AE288★OC20EA3	0.187	0.736	1780

NOTE: Diameter and weight subject to change without notice.

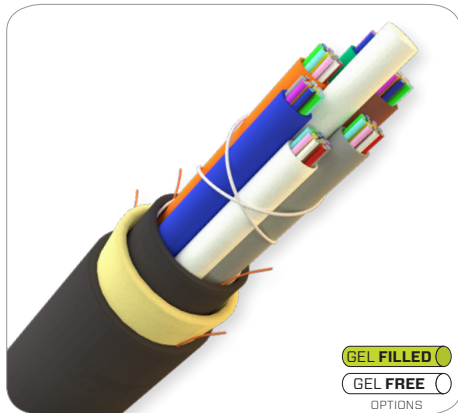
★ Fiber Types – Replace asterisk (★) in AFL number with number corresponding to desired fiber type below.

9 = Single-mode

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

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

L = 50/125 μm multimode Laser-Link™ 300



**GEL FILLED**

**GEL FREE**

OPTIONS

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

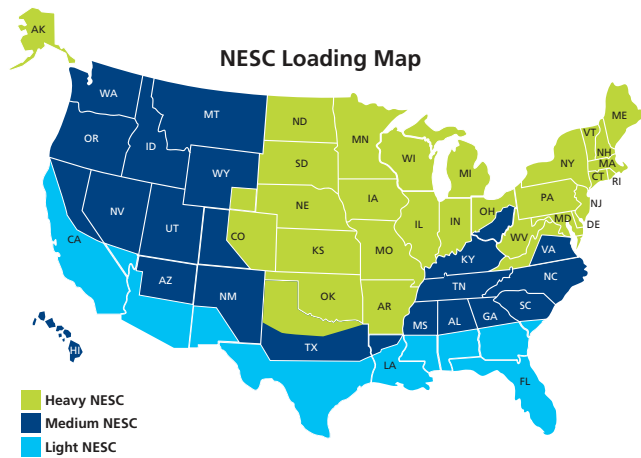
AFL-ADSS® (All-Dielectric Self-Supporting) fiber optic cable is designed for outside plant aerial transmission and distribution environments. As its name indicates, there are no metallic components and the cable does not require a support or messenger wire. These attributes allow the cable to be installed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

### Features

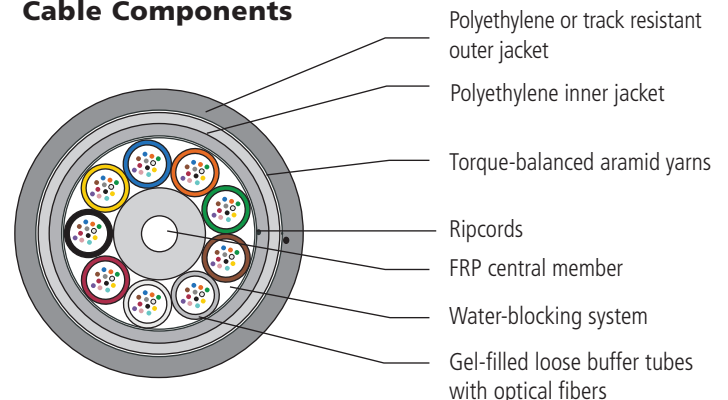
- Up to 432 fibers in cable
  - Gel-Free Buffer Tube options available – up to 216 fibers
- Designs capable of span lengths up to 3500 ft.
- Double jacket designs provide additional protection to the fibers for longer span lengths and higher strength requirements
- Track-resistant outer jacket available 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> 012 to 432	<b>Buffer Tubes</b> Gel-Filled Gel-Free <sup>2</sup>	<b>Span Length</b> <sup>3</sup> 0100 to 2500	<b>Unit of Measure</b> F = Feet M = Meters	<b>NESL Loading Condition</b> <sup>4</sup> L = Light M = Medium H = Heavy	<b>Fiber Code</b> 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	<b>Line Voltage</b> 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 NESL 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.

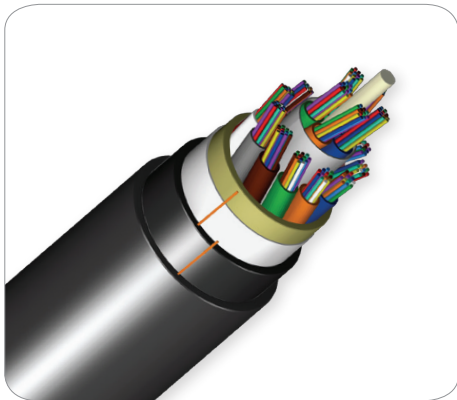
## Temperature Specifications

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.



## 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

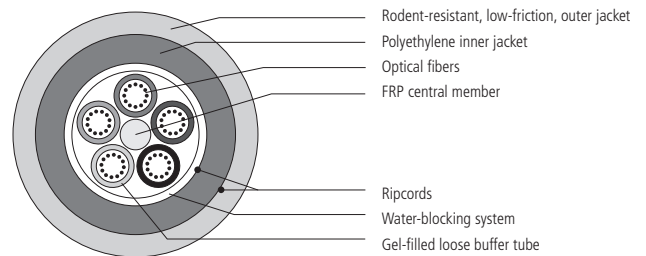
- Direct Buried
- Long Haul Networking
- Building Interconnections (Campus LAN)
- Steam-tunnel Substreet Drainage Networks
- Airport (FAA-E-2761c, Type B)

### 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
(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 Lugging	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.

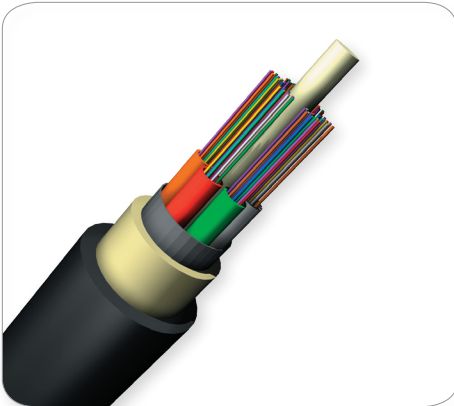
### Qualifications

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.



## 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

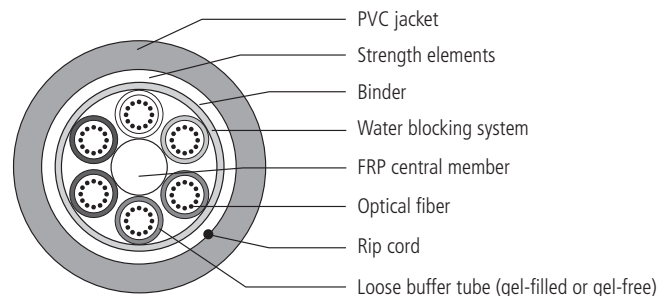
- Underground Duct
- Long Haul Networking
- Building Interconnections (Campus LAN)
- Trunking Lines Direct to Telecommunications Closet
- Local Loop
- Intrabuilding Backbones
- Distance Learning

### 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	
					lbs (N)		inches (cm)	
			inches (mm)	lbs/1,000 ft (kg/km)	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.**

## Reel and Packaging Information

Fiber Optic Cable

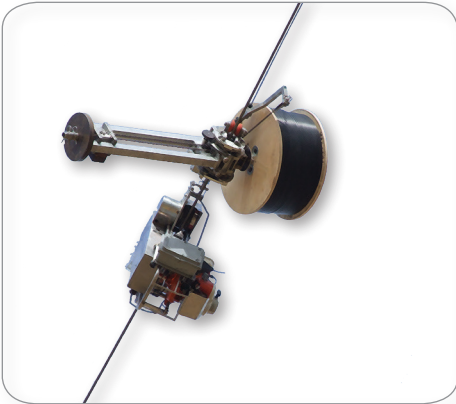
REEL TYPE	FL	TR	DR	OW	TARE	FL	TR	DR	OW	TARE
	(cm)				(kgs)	(in)				(lbs)
Wood	147	81	71	97	196	58	32	28	38	434
Wood	168	91	91	107	260	66	36	36	42	574
Wood	183	91	91	107	300	72	36	36	42	661
Wood	213	86	89	104	384	84	34	35	41	847
Steel	152	81	81	97	156	60	32	32	38	345
Steel	183	91	102	107	245	72	36	40	42	540
Steel	213	114	107	130	350	84	45	42	51	773

- **FL** - Flange Diameter; **TR** - Inside Traverse Width; **DR** - Drum Diameter; **OW** - Outside Overall Width
- Arbor Hole Diameter:
  - Wood: 3-1/8 in (7.9 cm)
  - Steel: 3 in (7.6 cm)
- Ordered lengths should include a distribution of lengths, i.e., all reels cannot be ordered at the maximum.
 

A typical reel length distribution is as follows:

  - 6000 m – 7000 m ~ 15% of reels
  - 4500 m – 6000 m ~ 55% of reels
  - 2500 m – 4500 m ~ 25% of reels
  - < 2500 m ~ 5% of reels
- Wood reels with flex-wrap covering are standard. Non-returnable steel reels and/or wood lagging are available upon request.
 

Additional reel sizes may be available upon request.
- Steel reels are recommended for long term storage (>4 months). Reference AFL’s “Fiber Optic Cable Receiving, Handling and Storage” document for additional information.



## SkyWrap®

Successfully installed worldwide since 1982, SkyWrap is a fiber optic cable helically applied on ground wires or phase conductors. A specially designed spinning machine is used to wrap the cable under controlled conditions. This system offers a complete communication link designed and engineered for high-voltage environments at low cost.

SkyWrap is the ideal solution when access to the overhead line is problematic due to environment or terrain. The installation equipment is lightweight, easy to handle and quick to install. When power outages are hard to coordinate SkyWrap can be installed on ground wire while the phase conductors remain live, or on phase conductors with single circuit outage.

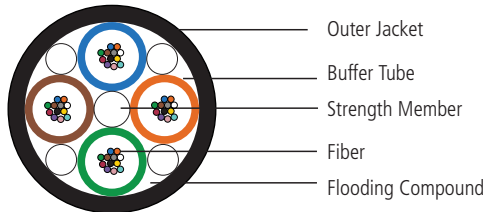
### Features

- Suitable for use on distribution lines
- Gel-filled buffer tubes are S-Z stranded for easy mid-span access
- Design details listed below for span lengths up to 457 metres and fiber counts up to 144
- Requires the use of formed wire dead ends single circuit outage on phase
- Complete lifetime turn-key solutions
- Over 30 years installation experience

### Benefits

- Quick, cost effective installation
- Utilise existing power line infrastructure
- Use where access is limited (e.g. mountains and river crossings)
- Use for both ground wires and phase conductors
- Live line installations on ground wire or single circuit outage on phase

### Cable Components



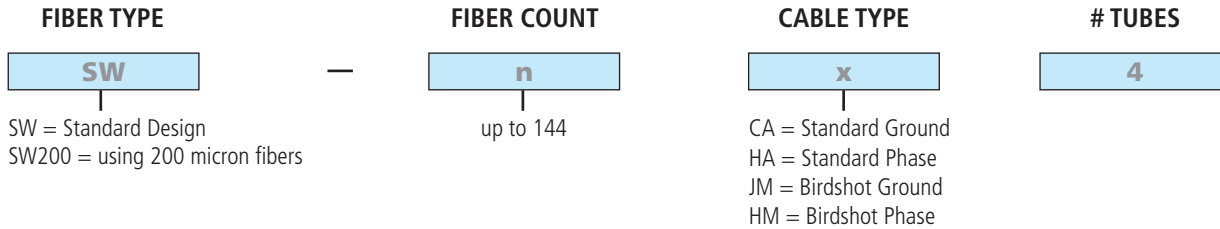
### Temperature Specifications

TEMPERATURE RANGE	
OPERATING	-40°C to +85°C
STORAGE	-40°C to +50°C
INSTALLATION	-20°C to +50°C

*continued*  
→

# SkyWrap®

## Part Number



## SkyWrap Ordering Information

ITEM NUMBER	FIBER COUNT	CABLE O.D.	WEIGHT	LENGTH PER REEL	CASSETTE LENGTH
		mm	km/kg	m	m
<b>STANDARD GROUND WIRE</b>					
SW-nCA4	04 - 24	6.4	36	2,440	4,880
SW-nCA4	26 - 48	6.6	39	2,295	4,590
SW-nCA4	50 - 96	8.0	59	1,562	3,124
<b>BIRDSHOT RESISTANT GROUND WIRE</b>					
SW-nJM4	04 - 24	7.3	46	1,826	3,652
SW-nJM4	26 - 48	7.5	50	1,730	3,460
SW-nJM4	50 - 96	8.9	71	1,228	2,456
SW200-nJM4	100-144	8.7	55	1,285	2,570
<b>STANDARD PHASE CONDUCTOR</b>					
SW-nHA4	04 - 24	7.3	55	1,914	3,828
SW-nHA4	26 - 48	7.5	59	1,813	3,626
SW-nHA4	50 - 96	8.9	82	1,288	2,576
<b>BIRDSHOT RESISTANT PHASE CONDUCTOR</b>					
SW-nHM4	04 - 24	8.0	61	1,594	3,188
SW-nHM4	26 - 48	8.2	65	1,517	3,034
SW-nHM4	50 - 96	9.6	89	1,107	2,214
SW200-nHM4	100-144	9.4	81	1,154	2,308

Note: Diameter and weight subject to change without notice

## Installation Equipment Information

PARAMETER	VALUE
Typical Weight (includes cable and balance weight)	250 kg
Min-Max Radius of Rotation	0.87 - 1.45 m
Wrapping Speed	5 km per hour

## Installation Hardware

A full range of hardware and accessories are available as part of the SkyWrap solution. Many different options are available to suit individual structure types and environmental conditions. Please contact AFL for more information.

Fiber Optic Cable



### AccessWrap™

AccessWrap provides a quick, cost effective and sustainable solution to taking fibre optic connections the 'last mile' on distribution power lines.

Based on proven SkyWrap® technology, cable is wrapped around the existing overhead powerline infrastructure with minimal disruption to service and no modification requirements to structures. The cable can be wrapped on phase conductors of 6 kV to 50 kV and is designed to withstand the aggressive environments of aerial applications in any climate.

AFL provides a complete solution from line surveys, installation planning to supply of cable, installation equipment and project management. AFL can also offer after sales service support packages to suit specific requirements.

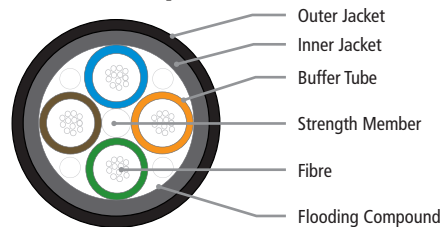
#### Features

- Quick, cost effective installation
- Fibre counts up to 48, multiple fibre types available
- Zero fibre strain under all service conditions
- Minimal environmental impact
- Installation equipment weight and size is specially designed for installation on short span, compact conductors of up to 50kV
- Specially designed accessories supplied
- Lightweight in-line splice case
- Phase-To-Ground insulators
- Compact pole mounted splice case

#### Benefits

- Utilise existing power line infrastructure to minimise capital investment
- Minimise or eliminate deferred cost related to electrical infrastructure investment
- Alleviate problems of land access and areas of difficult terrain
- Extend fibre networks to remote LTE equipment in the roll out of mobile 5G
- Connectivity where terrain and line of sight issues make wireless less reliable
- Extend customer reach for FTTx applications particularly in rural and remote areas
- Integration as part of Smart Metering technology

#### Cable Components



#### Temperature Specifications

TEMPERATURE RANGE	
INSTALLATION	-1 0°C to +50°C
OPERATION	-40°C to +85°C
STORAGE	-20°C to +50°C

*continued*  
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## AccessWrap™

### Part Number

**FIBRE TYPE**

**SW**

SW = using 250 micron fibres  
SW200 = using 200 micron fibres

**FIBRE COUNT**

**n**

up to 48

**CABLE TYPE**

**x**

HC = AccessWrap Cable

**# TUBES**

**4**

### AccessWrap Ordering Information

ITEM NUMBER	FIBRE COUNT	CABLE O.D.	WEIGHT	LENGTH PER REEL	CASSETTE LENGTH
		mm	km/kg	m	m
SW-nHC4	06 - 12	5.6	30	871	1,742
SW-nHC4	13 - 24	6.2	36	700	1,400
SW200-nHC4	25 - 48	6.2	36	700	1,400

Note: Diameter and weight subject to change without notice

### Installation Equipment Information

PARAMETER	VALUE
Typical Weight (includes cable and balance weight)	45 kg
Min-Max Radius of Rotation	0.5 m
Wrapping Speed	Up to 5 km per hour

### Installation Hardware

A full range of hardware and accessories are available as part of the AccessWrap solution. Many different options are available to suit individual structure types and environmental conditions. Please contact AFL for more information.

Please Contact your AFL Sales Rep for information about any of our other products or services.

## TEST AND INSPECTION

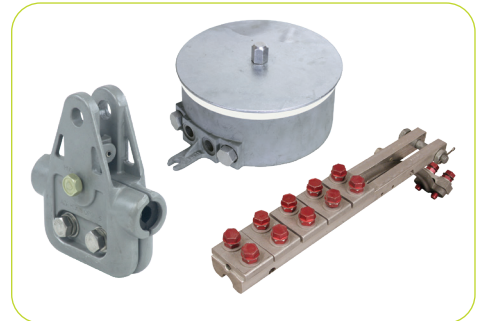


FlexScan® OTDR and FOCIS Flex Fiber Optic Connector System



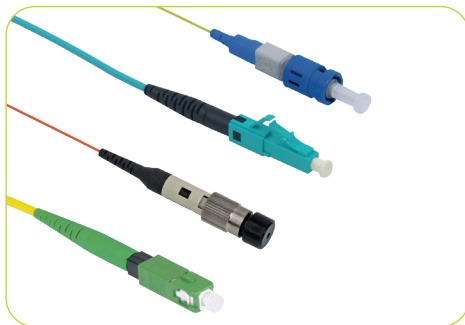
SMLP5-5 Optical Loss Test Kit

## FIBER OPTIC CABLE ACCESSORIES

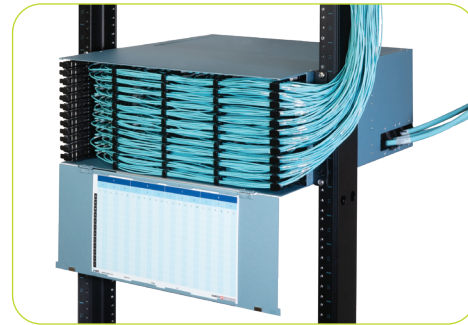


OPGW Suspension, SB01 Splice Enclosure, Bolted Dead End

## FIBER INSIDE PLANT



FUSEConnect® Connectors



ASCEND® 4RU



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