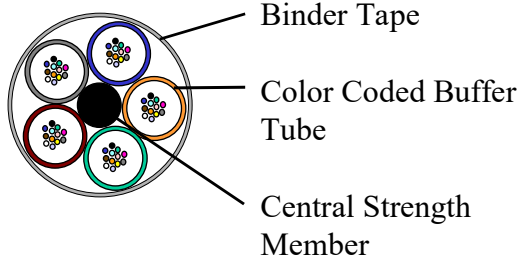


Specification DNA-31686 Flex-Span® ADSS Fiber Optic Cable

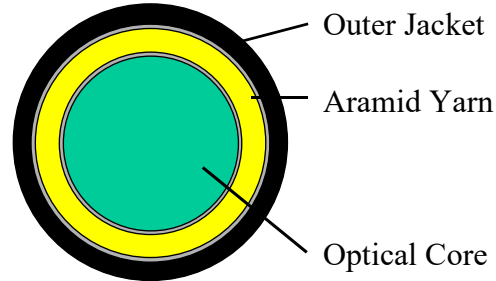


Additional Resources

Representative 5 unit Fiber Optic Core



Representative AFL Flex-Span® Fiber Optic Cable



AE0489C520EA2 48 Single-mode

Sag / Tension Performance

Sag / Tension Performance											
Span Length (ft)		700									
Condition	Wind (mi/hr)	Radial Ice (inches)	Add'l Load (lbs/ft)	Input Data			Resultant Data				
				Vert. (ft)	Horiz. (ft)	Vector (ft)	Vert. (ft)	Horiz. (ft)	Vector (ft)	Tension (lbs)	
Installation	---	---	---	10.5	---	---	10.50	---	10.5	360	
Ice Alone	---	---	---	---	---	---	---	---	---	---	
Wind Alone	---	---	---	---	---	---	---	---	---	---	
Ice and Wind	---	---	---	---	---	---	---	---	---	---	
NESC Medium	40.0	0.25	0.2	---	---	---	24.16	28.1	37.0	1,026	
Other	---	---	---	---	---	---	---	---	---	---	

Standard NESC / CSA condition based on Ice Density of 57 lbs/ft³

Standards

Designed and Manufactured in accordance with the following:

Fiber	▪ <i>Single-mode Fiber: ITU-T G.652D/G.657.A1</i>
Cable	▪ <i>IEEE 1222</i>
Color Code	▪ <i>ANSI/EIA 359-A, TIA 598-D, IEC 60304</i>

Specification DNA-31686

Mechanical / Physical Details			
Approximate Cable Diameter		11.0 mm	0.433 in
Approximate Cable Weight		92 kg/km	0.062 lbs/ft
Maximum Rated Cable Load (MRCL)		482 kg	1,062 lbs
Approximate Cable Breaking Strength		587 kg	1,294 lbs
Minimum Bending Radius	Static	17 cm	7 in
	Dynamic	22 cm	9 in
Coefficient of Linear Expansion		1.91E-05 1/°C	1.06E-05 1/°F
Cable Modulus	Initial	4.52 kN/mm ²	655.7 kpsi
	Final	4.88 kN/mm ²	707.1 kpsi
	10 Year	3.77 kN/mm ²	546.4 kpsi
Environmental Temperature Recommendations			
	Storage	-50 to +70 °C	-58 to +158 °F
	Operation	-40 to +70 °C	-40 to +158 °F
	Installation	-30 to +70 °C	-22 to +158 °F

Optical Details			
Attenuation Characteristics for Single-mode fibers			
<u>Max Individual</u>	0.35 dB/km	1310 nm	0.25 dB/km 1550 nm

60 Fiber ADSS Core (5 - 12 fiber buffer tubes)			Fiber Count
Unit	Fiber Type		
Blue	Single-mode fibers		12
Orange	Single-mode fibers		12
Green	Single-mode fibers		12
Brown	Single-mode fibers		12
	Filler		N/A
Total Fiber Count			48

Standard Fiber Color Code

Fiber No.	1	2	3	4	5	6	7	8	9	10	11	12
Color	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

- 1) Designs with more than 12 fibers per tube will use the standard color code and binders for identification of the fibers.
- 2) Designs with mixed fiber types will have multimode or NZDS fibers in the first tube(s) followed by single-mode fibers in the last tube(s).

Installation and Handling Recommendations

Installation and cable preparation procedures are outlined in the AFL documents listed below. Contact AFL to request copies.

Recommended Installation Procedures for All-Dielectric, Self-Supporting (ADSS) Fiber Optic Cable

AFL-ADSS® Fiber Optic Cable Installation Video

Installation Instructions for Installing All-Dielectric, Self-Supporting (ADSS) in an AFL Splice Enclosure

Fiber Optic Cable Receiving, Handling and Storage.

Specification DNA-31686

Quick Reference Installation Notes

Approximate Cable Diameter	11.00 mm	0.433 in
Maximum Stringing Tension (at tensioner)*	117 kg	259 lbs
Minimum Bull Wheel Diameter	77 cm	31 in
Stringing Sheave Diameter**	44 cm	18 in
Minimum Bending Radius		
Cable		
Static (No load)	17 cm	7 in
Dynamic (under tension)	22 cm	9 in
Fiber		
After Installation (Static)	3.8 cm	1.5 in
Plastic Buffer Tube		
After Installation (Static)	8 cm	3 in

* - The stringing tension is always measured at the tensioner side. In general the maximum stringing tension should be a half of the maximum sagging tension and never should exceed 20% RBS of the ADSS Cable.

** - The value indicated is for the first and last structures of the pull and is based on 40 times the diameter of the ADSS cable. Smaller diameters can be used at tangent structures. Reference AFL's installation instructions for more details.

Reference AFL's "Recommended Installation Procedures for All-Dielectric, Self-Supporting (ADSS) Fiber Optic Cable" for detailed installation instructions.

Shipping Reels

Reel Type	FL	TR	DR	OW	Tare (kgs)	FL	TR	DR	OW	Tare (lbs)	Capacity	
	(cm)					(in)					(meters)	(feet)
Wood	147	81	71	97	200	58	32	28	38	441	6,950	22,800
Wood	168	91	91	107	260	66	36	36	42	573	7,000	22,960
Wood	183	91	91	107	300	72	36	36	42	662	7,000	22,960
Wood	213	86	89	104	385	84	34	35	41	849	7,000	22,960
Steel	152	81	81	97	156	60	32	32	38	344	6,840	22,440
Steel	183	91	102	107	245	72	36	40	42	540	7,000	22,960
Steel	213	114	107	130	351	84	45	42	51	774	7,000	22,960

FL - Flange Diameter; TR - Inside Traverse Width; DR - Drum Diameter; OW - Outside Overall Width

Minimum Arbor Hole Diameter: Wood: 3-1/8in (7.9cm)

Steel: 3-1/4in (8.2cm)

Maximum lengths shown are the longest lengths that AFL offers. Longer lengths may be possible.

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:

- 6000m – 7000m ~ 15% of reels
- 4500m – 6000m ~ 55% of reels
- 2500m – 4500m ~ 25% of reels
- <2500m ~ 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. Reference AFL's "Fiber Optic Cable Receiving, Handling and Storage" document for additional information.

Reel dimensions are typical and subject to availability at the time of shipment.

Specification DNA-31686

The Screen Inputs for ADSS cables in PLS Cad

Cable Data			
Name:			
Description:	AFL ADSS DNA-31686 AE0489C520EA2		
Cross section area (in ²)	0.1473	Unit weight (lbs/ft)	0.062
Outside diameter (in)	0.433	Ultimate Tension (lbs)	1,294
Temperature at which data below were obtained	(deg F)		70

Outer strands	Final modulus of elasticity (psi/100)	7,071
	Thermal expansion coeff. (/100 deg F)	1.06E-03

Generate Coefficients

Polynomial coefficients (all strain in %)

	A0	A1 (psi/100)	A2	A3	A4
Stress-strain		6,557			
Creep		5,464			

Core strands	Final modulus of elasticity (psi/100)	
(if different from outer strands)	Thermal expansion coeff. (/100 deg F)	

Polynomial coefficients (all strain in %)

	A0	A1 (psi/100)	A2	A3	A4
Stress-strain					
Creep					