

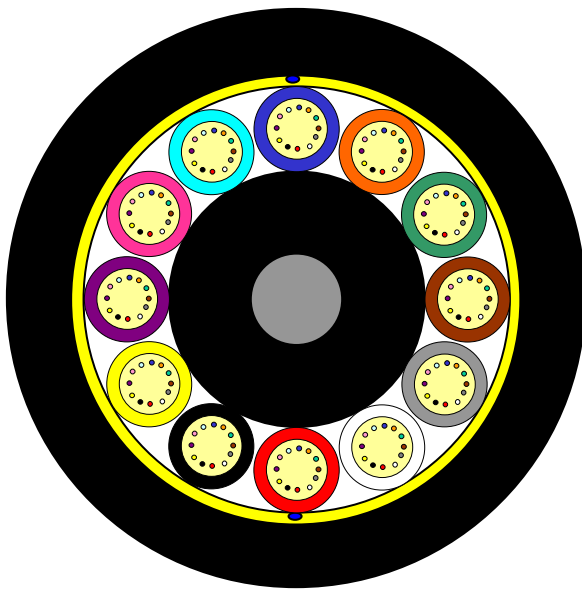
# All-Dielectric, Self Supporting (ADSS) Aerial Loose Tube Fiber Optic Cable

Dry core design

## PowerGuide® SkyLight



Issue August 2022  
according to **OFS Generic Specification**



### Application

Optimized for Aerial- and Duct Installation with fiber counts up to 144 fibers

### Design

- Optical fibers
- Gel-filled buffer tubes
- Non-metallic central member
- Water blocking threads
- Non-metallic aramid strength elements
- Ripcords
- Outer HDPE-jacket

### Benefits

- Excellent, cost- effective option for short aerial cable spans
- Outstanding optical performance, durability and field reliability
- Fast, one-step installation for valuable time and cost savings
- Small cable diameter and bend radius for easy deployment in aerial- to- underground installation
- Easily strippable sheath for quick, convenient cable preparation

**Version illustrated is the 144 Fiber 12 Element Cable**

Fiber Count	Tubes	Core Design	Outer Diameter [mm]	Cable Weight [kg/km]	AT-Code**
132	11 (12F)	1+12 (1 Filler*)	15.0	180	AT-[ ][ ]17UT-132-CNGA
144	12 (12F)	1+12	15.0	180	AT-[ ][ ]17UT-144-CNGA

This table shows nominal diameter and weight values which may differ in shipments.

\*Fillers are natural colored. \*\*Please refer to the OFS AT- Code. The blanks specify the fiber type.

## Identification

**Tube and Fiber Color Code :**

1	Blue	2	Orange	3	Green	4	Brown	5	Grey	6	White
7	Red	8	Black	9	Yellow	10	Violet	11	Pink	12	Aqua

Alternative tube and fiber color code available on request.

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### Sheath Marking:

**OFS OPTICAL ADSS CABLE [ID] [MM/YYYY] [Handset Sign] xxxF [Meter Marking]**

*Alternative sheath printing available on request.*

*In case of order the exact sheath printing text will be clarified with the customer.*

### Shipping Information

Cable Length	Drum Dimensions (approx.)		Shipping Weight (calc.)	
	Diameter(battened)	Width	Without lagging	With lagging
2 Km	1450 mm	790 mm	470 kg	510 kg
4 Km	1600 mm	1055 mm	850 kg	910 kg
6 Km	1750 mm	1055 mm	1230 kg	1290 kg
8 Km	2050 mm	1100 mm	1620 kg	1700 kg

*The shipping information are given for one-way reels. Reusable reels are available on request.*

### Temperatures

IEC 60794-1-22-F1	Operation	-40°C to +70°C
	Installation	-15°C to +60°C
	Storage/Shipping	-40°C to +70°C

### Sag and Tension Calculation AT-[ ][ ]17UT-xxx-CNGA

Conditions	NESC Light Loading	NESC Medium Loading	NESC Heavy Loading
Ice Thickness	0 mm	6.4 mm	12.7 mm
Wind Pressure	431 N/m <sup>2</sup> (95.5 km/h)	192 N/m <sup>2</sup> (63.6 km/h)	192 N/m <sup>2</sup> (63.6 km/h)
Low Temperature	- 1 °C	- 9.4 °C	- 17.8 °C
Safety Factor	0.73 N/m	2.92 N/m	4.38 N/m
Tension @ Maximum Span for 1,0 % Installation Sag			
Maximum Span	150 m	100 m	70 m
MRCL (Maximum Rated Cable Load)	5600 N	5600 N	5600 N
MIT (Maximum Installation Tension)	3200 N	2250 N	1400 N
Installation Temperature	23 °C	23 °C	23 °C
Cable Modulus	659.4 kg/mm <sup>2</sup>	659.4 kg/mm <sup>2</sup>	659.4 kg/mm <sup>2</sup>
CTE (C-1)	2.00E- 05	2.00E- 05	2.00E- 05

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### Recommended hardware for spans up to 150m

#### PLP:

##### **Dead End Assembly:**

FIBERLIGN® Dielectric Dead-end for ADSS, 2872007C1E1, Max. Tension: 2500 lbs. (1135 kg)

##### **Fixed Tangent Support:**

FIBERLIGN® Aluminum Support for ADSS, 4450102

##### **Suspended Support:**

FIBERLIGN® Aluminum Suspension for ADSS, 4450202

##### **Slack Storage Devices:**

FIBERLIGN® In-Span Storage System, FIS12A

##### **Down Lead Cushion:**

FIBERLIGN® Downlead Cushion for ADSS, 8003043

##### **Vibration Dampers:**

FIBERLIGN® Dielectric Damper for ADSS Cable, 50509862

#### Telenco:

##### **Dead End Assembly:**

TELENCO® GSDE AR Helical dead-ends with armor rods Model GSDE AR 1420 (PN 7645)

##### **Suspension Support:**

TELENCO® DSAL Mobile suspension clamp Model DSAL1450 (PN 09570)

##### **Vibration Dampers:**

TELENCO® Vibration damper VIB Model VIB143 (PN 09138)

### Pertinent installation information

**Maximum rated cable load (MRCL)**

**5.6 kN**

**Bending Performance: (IEC 60794-1-21-E11)**

**Handling fixed installed - No attenuation increase\***

**Bend radius: 140 mm**

**During installation (under Load) - No changes in attenuation before versus after load**

**Bend radius: 280 mm**

\*No changes in attenuation means that any changes in measurement value, either positive or negative within the uncertainty of measurement shall be ignored. The total uncertainty of measurement shall be less than or equal to 0.05 dB.

### When to use hardware

#### **Dead End Assembly**

- Used whenever a cable should not slip
  - Cable start and end points
  - Where line angles exceed 20°
  - Road, river, railroad crossings
  - Closure locations
- Different types available dependent upon cable design and application
- Most attachment hardware is used with 5/8" pole line hardware



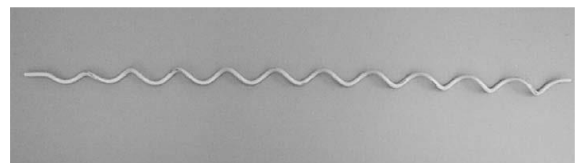
#### **Tangent and Suspension Supports**

- Typically used in small line angle (<20°, depending on type) situations
- Provides vertical support, not designed to support cable tension
- Multiple types depending span length and application
- Allows cable slippage during imbalanced load situations



#### **Vibration Dampers**

- ADSS cables can experience Aeolian vibration under certain circumstances
- Circumstances conducive to Aeolian vibration
- Laminar wind flow, Wide open spaces, Light winds, High tensions
- Vibration dampers minimize the effects of this vibration



# All-Dielectric, Self Supporting (ADSS) Aerial Loose Tube Fiber Optic Cable

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### Installation document references

**IP 014 PowerGuide® Installation**

**IP 014A PowerGuide® ADSS CABLE Installation Guideline Distribution Line Applications**

**IP 006 PowerGuide® Sheath Removal**

**IP 017 PowerGuide® Hardware Installation**

**AN-101 Maximum Rated Cable Loads & Minimum Bending Diameter**

**AN-203 Space Potential Calculation for PowerGuide® ADSS Cable**

Installation documents available upon request.

### PowerGuide SkyLight Cable Ordering Information

Example: AT-3BE17UT-NNN<sup>1</sup>-CNGA

Part Number: AT-S1 S2 SF S3 S4 S5 S6 - NNN - CNGA		
	Fiber <sup>2</sup>	Sheath Core Fiber Count Custom <sup>3</sup>
<b>S1= Fiber Selection</b> 3= 1310/1550 nm (AllWave® ZWP Fiber) 1310/1550 nm (AllWave® + ZWP Fiber) 5= 1310/1550 nm (AllWave® FLEX ZWP Fiber) 7= 1310/1550 nm (AllWave® FLEX + ZWP Fiber)	<b>S2= Fiber Transmission Performance</b> <b>B=</b> 0.35/0.31/0.27/0.25/0.27 dB/km @ 1310/1385/1490/1550/1625 nm (AllWave® ZWP Fiber) <b>E=</b> 0.36/0.31/0.27/0.25/0.27 dB/km @ 1310/1385/1490/1550/1625 nm (AllWave® FLEX ZWP Fiber) (AllWave® FLEX + ZWP Fiber) <b>C=</b> 0.35/0.31/0.27/0.25/0.27 dB/km @ 1310/1385/1490/1550/1625 nm (AllWave® + ZWP Fiber)	<b>SF= Fiber Type</b> E= AllWave® ZWP Single Mode  <b>S3= Sheath Construction</b> 1= All-Dielectric single jacket  <b>S4= Tensile Load</b> 7= ADSS
<b>S5= Core Type</b> U= Dry Core Loose Tube	<b>S6= Fibers per Tube</b> 6= 6 Fibers 8= 8 Fibers N= 10 Fibers T= 12 Fibers	<b>NNN= Fiber Count</b>

<sup>1</sup> Part Number shown is for PowerGuide ADSS Cable with 250 µm Single Mode AllWave ZWP Fibers with maximum attenuation: 0.35/0.31/0.27/0.25/0.27 dB/km @ 1310/1385/1490/1550/1625 nm .

<sup>2</sup> Contact OFS sales representative for information on other cable variations, including additional fiber types, composite cables and attenuation.

<sup>3</sup> Consult with us regarding your application, span lengths and loading conditions to complete the custom design and part number of your complete sheath strengths system.

The information is believed to be accurate at time of issue.

OFS reserves the right to improve, enhance and modify the features and specifications of OFS products without prior notification.

Please ensure you have the latest version of the data sheet.

This data sheet is property of OFS.

For additional information please contact your sales representative.

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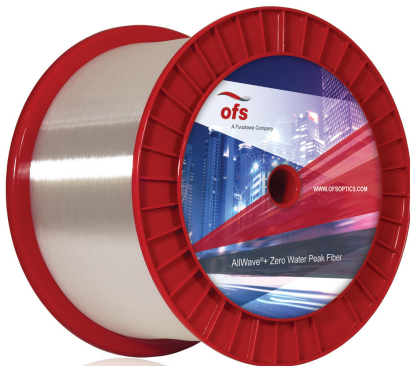




A Furukawa Company

# AllWave® + Fiber - Zero Water Peak

The industry's first zero water peak single-mode fiber for reliable full-spectrum performance + enhanced bend performance



## Applications

AllWave+ Fiber provides outstanding cable performance and design freedom for fiber management systems in:

- FTTX
- Local access
- Mobile backhaul
- Metro access
- Metro edge
- Campus backbones
- Long haul

## Features and Benefits

- Low optical loss across the entire 1260-1625 nm spectrum
- 50% greater usable spectrum than conventional single-mode fiber
- Reduced bend loss across the bend-sensitive 1460-1625 nm S, C and L Bands
- Industry's tightest geometric control for ultra-low splice loss and improved connector performance
- High purity synthetic silica for long-term attenuation stability and mechanical reliability
- Ultra-low fiber PMD for speed and distance upgrades

## Overview

When compared to conventional single-mode fiber, AllWave+ Zero Water Peak (ZWP) Single-Mode Fiber dramatically improves performance across the 1260 nm – 1625 nm spectrum. This fiber offers all the benefits of AllWave Fiber plus a 40% smaller minimum bend radius, a 50% lower bend loss and a 33% improved polarization mode dispersion (PMD) link design value.

## Product Description

A combination ITU-T G.652.D and G.657.A1 compliant fiber, AllWave+ Fiber delivers low and stable loss in the 1360 nm -1460 nm E-band, enabling 16-channel CWDM, DWDM and FTTX support on a single fiber. In addition, this fiber's bend performance far exceeds G.652.D and complies with G.657.A1, supporting a minimum bend radius of 10 mm and lower bend loss than conventional single-mode fibers.

While this low bend loss improves performance and reliability, it also helps to lower installation costs by allowing the use of smaller cables and terminals. AllWave+ Fiber has the same 9.2 micron mode field diameter as and is fully backward compatible with the installed base of G.652 single-mode fiber for seamless splicing, testing and faster network turn-up.

For additional information please contact your sales representative.

You can also visit our website at [www.ofsoptics.com](http://www.ofsoptics.com) or call 1-888-fiberhelp (1-888-342-3743) USA or 1-770-798-5555 outside the USA.

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Doc ID: fiber-159 Date: 04/16

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## Product Specifications

### Physical Characteristics

Clad Diameter	125.0 ± 0.7 μm
Clad Non-Circularity	≤ 0.7 %
Core/Clad Concentricity Error (Offset)	≤ 0.5 μm, < 0.2 μm typically
Coating Diameter (Uncolored)	237 - 247 μm
Coating-Clad Concentricity Error (Offset)	≤ 12 μm
Tensile Proof Test	100 kpsi (0.69 GPa)
Coating Strip Force	Range: 1.0 N ≤ CSF ≤ 8.9 N
Standard Reel Lengths	50.4 km (31.3 miles)

### Optical Characteristics

Attenuation	Maximum	Typical
at 1310 nm	≤ 0.34 dB/km	≤ 0.33 dB/km
at 1385 nm	≤ 0.31 dB/km	≤ 0.27 dB/km
at 1490 nm	≤ 0.24 dB/km	≤ 0.21 dB/km
at 1550 nm	≤ 0.20 dB/km	≤ 0.19 dB/km
at 1625 nm	≤ 0.24 dB/km	≤ 0.20 dB/km

### Attenuation vs. Wavelength<sup>1</sup>

Range (nm)	Reference (nm) λ	α
1285 – 1330	1310	0.03
1360 – 1480	1385	0.04
1525 – 1575	1550	0.02
1460 – 1625	1550	0.04

<sup>1</sup> The attenuation in a given wavelength range does not exceed the attenuation of the reference wavelength (λ) by more than the value α.

Attenuation Uniformity / Point Discontinuities at 1310 nm and 1550 nm	≤ 0.05 dB
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### Macrobending Attenuation:

The maximum attenuation with bending does not exceed the specified values under the following deployment conditions:

Deployment Condition	Wavelength	Induced Attenuation
1 turn on a 10 mm radius mandrel	1550 nm	≤ 0.75 dB
	1625 nm	≤ 1.5 dB
10 turns on a 15 mm radius mandrel	1550 nm	≤ 0.25 dB
	1625 nm	≤ 1.0 dB
100 turns on 30 mm radius mandrel	1550 nm	≤ 0.03 dB
	1625 nm	≤ 0.03 dB

### Chromatic Dispersion

Zero Dispersion Wavelength (λ <sub>0</sub> )	1302 - 1322 nm
Zero Dispersion Slope (S <sub>0</sub> )	≤ 0.090 ps/nm <sup>2</sup> -km
Typical Dispersion Slope	0.087 ps/nm <sup>2</sup> -km

Cut-off Wavelength (λ <sub>cc</sub> )	≤ 1260 nm
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### Group Refractive Index

at 1310 nm	1.467
at 1550 nm	1.468

### Mode Field Diameter

at 1310 nm	9.2 ± 0.4 μm
at 1550 nm	10.4 ± 0.5 μm (typical)

### Polarization Mode Dispersion (PMD)<sup>3</sup>

Fiber PMD Link Design Value (LDV) <sup>4</sup>	≤ 0.04 ps/√km
Maximum Individual Fiber	≤ 0.1 ps/√km
Typical Fiber LMC PMD	≤ 0.02 ps/√km

<sup>2</sup> As measured with low mode coupling (LMC) technique in fiber form, value may change when cabled. Check with your cable manufacturer for specific PMD limits in cable form.

<sup>3</sup> The PMD Link Design Value complies with IEC 60794-3, September 2001 (N = 20, Q = 0.01%). Details are described in IEC 61282-3 TR Ed 2, October 2006.

### Environmental Characteristics (at 1310, 1550 & 1625 nm)

Temperature Cycling (-60 + 85 °C)	≤ 0.05 dB/km
High Temperature Aging (85 ± 2 °C)	≤ 0.05 dB/km
Temperature & Humidity Cycling (at -10 °C to +85 °C and 85 to ~98% RH)	≤ 0.05 dB/km
Water Immersion (23 ± 2 °C)	≤ 0.05 dB/km
Dynamic Fatigue Stress Corrosion Parameter	(n <sub>d</sub> ) ≥ 20