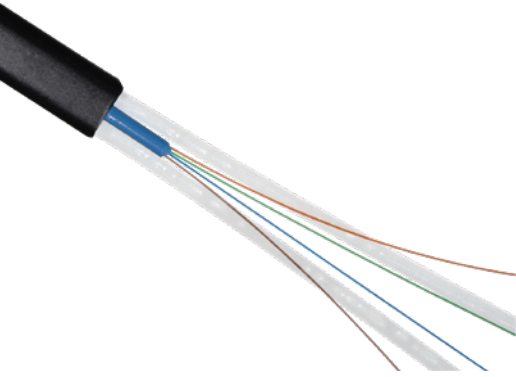




A Furukawa Company

Mini LT Flat Drop Fiber Optic Cable

Compact and Easy-to-Locate Fiber Optic Cable for the Last Link in Your FTTx Network

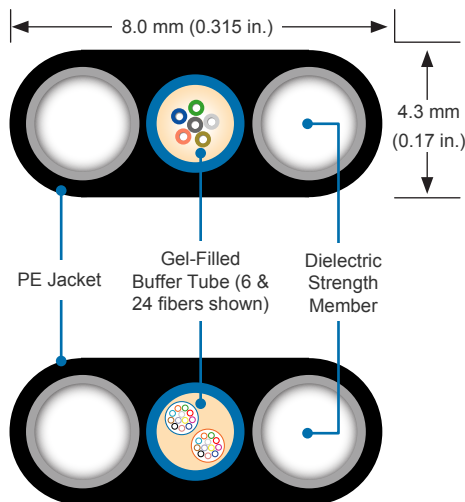


Mini LT Flat Drop Fiber Optic Cable



Diamond/Sachs Drop Wire Clamp
(Aluminum 1-2 pair, serrated shim)

Mini LT Flat Drop Fiber Optic Cable
Cross-Section



Features and Benefits

- Compact, easy-to-access design allows for streamlined installation and handling
- Suitable for self-supporting aerial, direct buried, and duct FTTx drop installations
- Compatible with industry-standard wedge clamps and closure strain reliefs
- Excellent tensile strength and crush resistance
- Optimized for optical fiber counts of 1, 2, 4, 6, 12, and 24 for minimizing deployment costs
- All-dielectric construction eliminates the need for bonding or grounding
- 300 pound Maximum Rated Cable Load (MRCL)
- Standard availability with AllWave® Zero Water Peak (ZWP) Single-Mode Optical Fiber, TrueWave® RS Low Water Peak (LWP) Single-Mode Optical Fiber, and Multimode Optical Fiber
- AllWave FLEX ZWP Optical Fiber available as an option
- RDUP (formerly RUS) listed and compliant with ANSI/ICEA, Telcordia, and IEC specifications for reliable performance

Product Description

The Mini LT Flat Drop Cable offers a compact and lightweight yet durable, self-supporting fiber optic design in an easily accessible construction.

To construct the cable, up to 12 optical fibers are placed in a 2.0 mm gel-filled buffer tube (a 3.0 mm buffer tube for 24-fiber cable) to create a flexible and easy-to-access core. Next, two fiberglass rods are placed diametrically opposite on either side of the fiber core, providing excellent crush resistance and tensile strength during installation and over the lifetime of the cable. The strength member rods and fiber core are then encapsulated in a durable polyethylene (PE) jacket to create a flat cable cross-section and provide added protection to the cable core.

Why The Mini LT Flat Drop Cable?

The small, lightweight Mini LT Flat Drop Cable offers an ideal solution for the smaller fiber counts that are needed in the final sections of an optical network, particularly in a fiber-to-the-premise (FTTx) installation. The buffer tube fiber core allows easy access in a flexible design that is easy to handle and install.

The rugged, flat construction of the Mini LT Cable is specifically designed for self-supporting aerial deployments and is fully compatible with the type of aerial hardware shown on the reverse page, allowing faster, lower cost installations. The superior crush resistance and durability of the Mini LT Cable make it robust enough for below-grade installations in ducts or open trenches.

The all-dielectric Mini LT Flat Drop Cable helps to save money by eliminating the need for expensive bonding or grounding.

Mini LT Flat Drop Fiber Optic Cable	
Specifications	
Fiber Count	1, 2, 4, 6, 12, and 24
Cable Dimensions	0.17 in. x 0.315 in. (4.3 mm x 8.0 mm)
Weight - lb/kft (kgm/km)	21 (32)
Performance Standard (all cables)	
Tested per Applicable Requirements of ANSI/ICEA S-110-717	
Handling (all cables)	
Minimum Bend Radius, with Load	6 in. (15 cm)
Minimum Bend Radius, with No Load	3 in. (7.5 cm)
Minimum Bend Radius, Storage Coils	6 in. (15 cm)
Rated Installation Load	300 lbf (1335 N)
Maximum Long Term Load	90 lbf (405 N)
Temperature	Installation: -22 °F to 140 °F (-30 °C to 60 °C)
	Operation: -40 °F to 158 °F (-40 °C to 70 °C)
	Storage: -40 °F to 167 °F (-40 °C to 75 °C)

* **NOTE:** OD = Outer Diameter of Cable

Fiber Type ²							
Single-Mode Optical Fiber	Fiber (S1)	Fiber (S2)	Fiber (SF)	Fiber Standards	Wavelengths (nm)	Typical* Attenuation (dB/km)	Maximum Cable on Reel Attenuation (dB/km)
AllWave® ZWP Optical Fiber	3	B	E	G.652.D	1310/1385/1550	-	0.35/0.31/0.25
AllWave+ ZWP Optical Fiber	3	C	E	G.652.D/G.657.A1	1310/1385/1550	-	0.35/0.31/0.25
AllWave FLEX ZWP Optical Fiber	5	B	E	G.652.D/G.657.A1	1310/1385/1550	-	0.35/0.31/0.25
AllWave Low Loss Optical Fiber	3	A	E	G.652.D	1310/1385/1550	0.33/0.31/0.19	0.35/0.31/0.22
AllWave One Optical Fiber	3	F	E	G.652.D/G.657.A1	1310/1385/1550	0.33/0.31/0.19	0.35/0.31/0.22
Multimode Optical Fiber							
62.5 µm Optical Fiber*	R	U	9	OM1 62.5 µm	850/1300	-	3.4/1.0
LaserWave® FLEX 300 Optical Fiber*	L	F	2	OM3 50 µm	850/1300	-	2.4/0.7
LaserWave FLEX 550 Optical Fiber*	L	H	2	OM4 50 µm	850/1300	-	2.4/0.7

* Not available for 24-fiber cables

Mini LT Flat Drop Fiber Optic Cable Ordering Information

Example: **AT-3BE8T7X-NNN**¹

Part Number: **AT- S1 S2 SF S3 S4 S5 S6 - NNN**¹

S1 = Fiber Selection See S1 Fiber Table above	S3 = Sheath Construction 8 = All Central Core Products	S5 = Sheath Design 7 = Flat Drop
S2 = Fiber Transmission Performance See S2 Fiber Table above	Cable Core Design	S6 = Central Core - Oversheath X = No Oversheath
SF = Fiber Type² See SF Fiber Table above	S4 = T = Gel-Filled 2.0 mm Buffer Tube (3.0 mm Buffer Tube for 24-Fiber Cable)	NNN = Fiber Count 001, 002, 004, 006, 012, or 024

¹ Part Number shown is for a Mini LT Flat Drop Cable with standard AllWave ZWP attenuation and standard cable print. Maximum AllWave ZWP attenuation:

0.35/0.31/0.27/0.25/0.27 dB/km @ 1310/1385/1490/1550/1625 nm Standard Print, example for Mini LT Flat Drop Cable:

OFS OPTICAL CABLE AT-3BE8T7X-NNN [MM-YY] (UL) US TYPE OFNR [HANDSET SYMBOL] [NNN] F [SERIAL #]

² Contact OFS Order Management for information on other cable variations, including additional fiber types, attenuation, and custom cable print.

³ Contact your OFS Customer Care Representative on the positioning of ribbon requirements if TeraWave Fiber is being ordered.

NOTE: For more information regarding typical attenuation as well as attenuation parameters on Link Design Value (LDV) (Maximum end-to-end attenuation over a concatenated span), please see OFS Application Note AN-111 which can be downloaded at www.ofsoptics.com or contact your OFS representative.

For additional information please contact your sales representative.

You can also visit our website at 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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AllWave® + Fibre

Zero Water Peak



A Furukawa Company

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

Overview

AllWave®+ Zero Water Peak (ZWP) Single-Mode Optical Fibre improves performance for optical transmission systems operating over any part of the entire wavelength range from 1260 nm to 1625 nm compared with conventional single-mode fibre. AllWave+ Fibre offers the exceptional performance of our AllWave Fibre specifications along with a 40% smaller minimum bend radius, a 50% lower bend loss and a 33% improved polarization mode dispersion (PMD) link design value. AllWave+ Fibre intermixes seamlessly with the installed base of single-mode fibres with a nominal mode field diameter of 9.2 μm .

Product Description

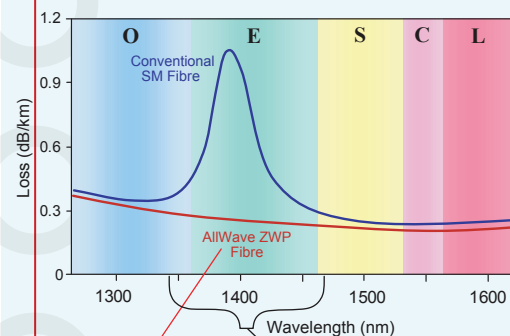
AllWave+ Fibre is a combination ITU-T G.652.D and G.657.A1 compliant fibre ideally designed for use in backhaul, metropolitan, and FTTX networks. Developed and manufactured by OFS, AllWave+ Fibre provides low and stable loss performance in the 1360 – 1460 nm E-band; plus it offers reduced bending loss to improve performance for applications operating in the bend-sensitive 1460 – 1625 nm S, C, and L bands. Its bending performance is far superior to the G.652.D Recommendation and compliant to the G.657.A1 Recommendation, supporting a minimum bend radius of 10 mm and lower bend loss than conventional single-mode fibres. This low bending loss provides improved performance and service reliability and helps to reduce the size of cables and terminals for lower cost installations. AllWave+ Fibre also has the same 9.2 micron mode field (light carrying) diameter of the installed base of single-mode fibres, such as AllWave Fibre, which enables seamless splicing, testing, and faster network turn-up.

With a composition of high purity synthetic silica throughout both the core and cladding, AllWave+ Fibre has stable and permanent low loss and mechanical reliability. OFS' patented ZWP fibre manufacturing process, which eliminates the hydrogen-aging defects, provides a 50% increase in usable spectrum compared to G.652.A and G.652.B fibre. What's more, its ultra-low PMD enables speed and distance upgrades. AllWave+ Fibre offers dramatically improved performance in almost every characteristic over conventional single-mode fibre and is fully backward compatible to any G.652 compliant single-mode fibre.

Features/Benefits:

- Low optical loss across the entire spectrum from 1260 – 1625 nm
- Lower bending loss for improved performance and service reliability, and to help reduce the size of cables and terminals
- A 9.2 micron nominal mode field diameter to facilitate splicing and testing
- Geometric control at the industry's tightest level for ultra-low splice loss and improved connector performance
- Low, stable loss performance in the 1360 – 1460 nm E-band, enabling 16-channel CWDM, DWDM, and FTTX support on a single fibre
- Comprised of high purity synthetic silica for long-term attenuation stability and mechanical reliability
- Ultra-low fibre PMD allows for speed and distance upgrades

Compatible with Conventional Single-Mode Fibre, but with More Available Spectrum



AllWave ZWP Fibre has lower & stable loss throughout by removing the water peak defect

AllWave ZWP Fibre has over 100 nm MORE spectrum

AllWave ZWP Fibre provides up to 22.5% lower attenuation and longer range compared to "enhanced" or Low Water Peak (LWP) fibres

Applications

AllWave+ Fibre provides outstanding cable performance and design freedom for fibre management systems in:

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

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For additional information please contact your sales representative.

You can also visit our website at: www.ofsoptics.com/ofsfiber or call 1-888-fiberhelp (from inside the USA). For regional assistance, contact the global location closest to you.



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Use less paper



Doc ID: fiber-159-A4 Publish Date: 0214

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 (Natural)	235 - 245 µm
Coating-Clad Concentricity Error (Offset)	≤ 12 µm
Tensile Proof Test (<i>Other proof test levels available on request</i>)	100 kpsi (0.69 GPa)
Coating Strip Force	Range: 1.0 N ≤ CSF ≤ 9.0 N
Standard Reel Lengths	Up to 50.4 km (31.3 miles)

Optical Characteristics

Attenuation	Maximum	Typical
at 1310 nm	≤ 0.34 dB/km	≤ 0.32 dB/km
at 1385 nm	≤ 0.31 dB/km	≤ 0.28 dB/km
at 1490 nm	≤ 0.24 dB/km	≤ 0.21 dB/km
at 1550 nm	≤ 0.21 dB/km	≤ 0.19 dB/km
at 1625 nm	≤ 0.24 dB/km	≤ 0.20 dB/km

Attenuation vs. Wavelength

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

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	≤ 1.50 dB
10 turns on a 15 mm radius mandrel	1550 nm	≤ 0.25 dB
	1625 nm	≤ 1.00 dB
100 turns on a 30 mm radius mandrel	1550 nm	≤ 0.03 dB
	1625 nm	≤ 0.03 dB

Chromatic Dispersion

Zero Dispersion Wavelength (λ ₀)	1300 – 1322 nm
Zero Dispersion Slope (S ₀)	≤ 0.090 ps/nm ² -km
Typical Dispersion Slope	0.087 ps/nm ² -km

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

Cut-off Wavelength (λ_{cc})

	≤ 1260 nm
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Polarization Mode Dispersion (PMD)¹

Fibre PMD Link Design Value (LDV) ²	< 0.04 ps/√km
Maximum Individual Fibre	< 0.1 ps/√km
Typical Fibre LMC PMD	< 0.02 ps/√km

¹ As measured with low mode coupling (LMC) technique in fibre form, value may change when cabled. Check with your cable manufacturer for specific PMD limits in cable form.

² 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