



A Furukawa Company

AllWave® FLEX Max Optical Fiber - Bend Optimized

Outstanding Bend Performance for FTTH, Private Networks and Metro Applications



Applications

AllWave FLEX Max Fiber provides outstanding performance and design freedom for fiber management systems in:

- FTTH – Multi-dwelling Units (MDUs), in-building applications and drop cables
- Central office
- High power applications
- Closures
- At the customer premises

Features and Benefits

- Full spectrum fiber with a 40% increase in usable optical spectrum enables 18-channel CWDM support and much greater DWDM capacity
- Coiled into a 5 mm radius loop, fiber incurs losses of ≤ 0.10 dB @ 1550 nm and ≤ 0.25 dB @ 1625 nm
- Fully complies with ITU-T G.657 B3 and G.652.D standard recommendations
- Maintains extremely low bending loss across the entire optical spectrum
- Helps improve drop cable performance in extreme high-stress and low temperature environments
- Tight geometric control for very low splice loss and improved connector performance

Overview

AllWave FLEX Max Single-Mode Fiber offers outstanding bend performance to a 5 mm radius for demanding applications. Compatible to and compliant with the installed base of conventional G.652.D single-mode fibers, this fiber is specifically designed for any situation where very small bend diameters may be encountered.

Product Description

AllWave FLEX Max Fiber minimizes bending loss, especially in applications where fiber bend radius may be unmanaged. In challenging conditions, this fiber protects the network against excessive loss from inadvertent bends and from cable flexing, pulling and crushing. AllWave FLEX Max Fiber's bend performance also enables complex routing within even the most compact cabinet and enclosure designs.

The excellent macrobend performance of AllWave FLEX Max Fiber protects the fiber in high power applications such as those in central offices. This capability allows providers to reliably achieve significantly smaller bend diameters with up to 100 times lower loss than conventional single-mode fiber.

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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OFS Marketing Communications
 Doc ID: fiber-154 Date: 10/17

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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	up to 50.4 km

Optical Characteristics

Attenuation	Maximum
at 1310 nm	≤ 0.35 dB/km
at 1383 nm ¹	≤ 0.35 dB/km
at 1490 nm	≤ 0.24 dB/km
at 1550 nm	≤ 0.21 dB/km
at 1625 nm	≤ 0.23 dB/km

¹ After H₂ aging tests according to IEC 60793-2-50.

Attenuation vs. Wavelength²

Range (nm)	Reference (nm) λ	α
1285 – 1300	1310	0.03
1360 – 1480	1383	0.04
1525 – 1575	1550	0.02
1460 – 1625	1550	0.04

² 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	≤ 0.03 dB
	1625 nm	≤ 0.10 dB
1 turn on a 7.5 mm radius mandrel	1550 nm	≤ 0.05 dB
	1625 nm	≤ 0.15 dB
1 turn on a 5 mm radius mandrel	1550 nm	≤ 0.10 dB
	1625 nm	≤ 0.25 dB

Chromatic Dispersion

Zero Dispersion Wavelength (λ ₀)	1302 - 1322 nm
Zero Dispersion Slope (λ ₀)	≤ 0.092 ps/nm ² -km
Dispersion at 1550 nm	≤ 18 ps/nm km

Cut-off Wavelength (λ _{cc})	≤ 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	8.3 - 9.1 μm
at 1550 nm	9.2 - 10.4 μm

Polarization Mode Dispersion (PMD)³

Fiber PMD Link Design Value (LDV) ⁴	≤ 0.06 ps/√km
Maximum Individual Fiber	≤ 0.1 ps/√km

³ 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.

⁴ 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
Water Immersion (23 ± 2 °C)	≤ 0.05 dB/km