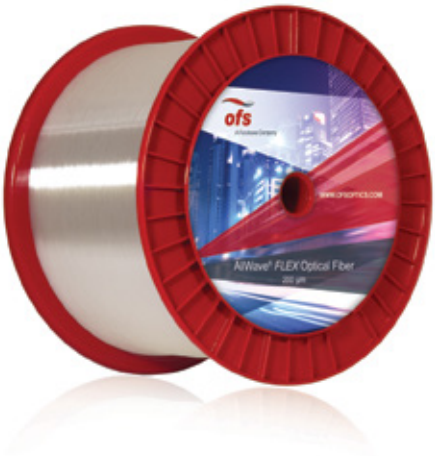
A Furukawa Company

AllWave® *FLEX* 200 µm Fiber

Reliable Bend-Optimized Performance for Smaller Diameter, Higher Density Cable Applications



Features and Benefits

- Bend optimized design for tight, low loss bends without risking fiber strength and long-term reliability
- 36% less area than conventional 250 µm coated fiber enabling smaller diameter cables and a greater number of fibers per tube
- Ideally suited for high fiber count cables and microcables where cable diameter needs to be minimized
- Zero Water Peak fiber provides a 50% increase in usable optical spectrum, enabling 16-channel CWDM and DWDM support
- Proof-tested to 100 kpsi to improve long term reliability and simplify cabling
- Ultra-low Polarization Mode Dispersion (PMD) enables speed and distance upgrades

Applications

- FTTx
- High count fiber cables
- High power applications
- Microcables
- Closures
- At the customer premises
- Any application with transmission speeds of 40 Gb/s and beyond

Overview

OFS offers AllWave *FLEX* Bend-Optimized Single-Mode Optical Fiber with a 200 µm coating diameter for use in cables with higher fiber counts per tube and in microcables where cable diameters must be minimized. The fibers offer all the other performance advantages and 30-year reliability of standard AllWave *FLEX* products.

Product Description

AllWave *FLEX* 200 µm Optical Fiber supports higher density and lower diameter cables, providing outstanding macrobend and microbend performance for Access, Fiber-to-the-Home (FTTH), enterprise networks, or any application where small bend diameters may be encountered. This G.657.A1 fiber maintains very low bending loss across the full usable spectrum of wavelengths from 1260 to 1625 nm. It can be coiled into a 20 mm diameter loop with < 0.5 dB incurred loss at 1625 nm and < 0.2 dB incurred loss at 1550 nm – five times better bending performance than conventional single-mode and leading LWP fibers.

Outstanding Macrobend Performance

- **100 turns on a 25 mm radius mandrel**
  < 0.01 dB @ 1550 nm
  < 0.05 dB @ 1625 nm
- **10 turns on a 15 mm radius mandrel**
  < 0.2 dB @ 1550 nm
  < 0.5 dB @ 1625 nm
- **1 turn on a 10 mm radius mandrel**
  < 0.2 dB @ 1550 nm
  < 0.5 dB @ 1625 nm

200 µm AllWave® *FLEX* 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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Product Specifications	200 µm AllWave *FLEX* Fiber	
Physical Characteristics		
Clad Diameter	125.0 ± 0.7 µm	
Clad Non-Circularity	≤ 1 %	
Core/Clad Concentricity Error (Offset)	≤ 0.5 µm, < 0.2 µm typically	
Coating Diameter (Uncolored) (Colored)	190 ± 10 µm 200 ± 10 µm	
Coating-Clad Concentricity Error (Offset)	≤ 12 µm	
Tensile Proof Test (Other proof test levels available on request)	100 kpsi (0.69 GPa)	
Coating Strip Force	Range: ≥ 0.5 N < 8.9 N	
Standard Reel Lengths	50.4 km	
Optical Characteristics		
Attenuation	Maximum	Typical
at 1310 nm	≤ 0.35 dB/km	≤ 0.34 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	Reference (nm) λ	α
Range (nm)		
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 attentuation of the reference wavelength (λ) by more than the value α.		
Attenuation Uniformity / Point Discontinuities at 1310 nm and 1550 nm	≤ 0.05 dB	
Chromatic Dispersion		
Zero Dispersion Wavelength (λ_0)	1302 – 1322 nm	
Zero Dispersion Slope (S_0)	≤ 0.092 ps/nm²-km	
Typical Dispersion Slope	0.088 ps/nm²-km	
Group Refractive Index		
at 1310 nm	1.467	
at 1550 nm	1.468	
Mode Field Diameter		
at 1310 nm	8.5 - 9.3 µm	
at 1550 nm	9.4 - 10.4 µm (typical)	
Cut-off Wavelength (λ_{CC})	≤ 1260 nm	
Polarization Mode Dispersion (PMD)[1]		
Fiber PMD Link Design Value (LDV)[2]	≤ 0.06 ps/√km	
Maximum Individual Fiber	≤ 0.1 ps/√km	
Typical Fiber LMC PMD	≤ 0.02 ps/√km	
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 95% RH)	≤ 0.05 dB/km	
Water Immersion (23 ± 2 °C)	≤ 0.05 dB/km	

[1] 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.

[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.