

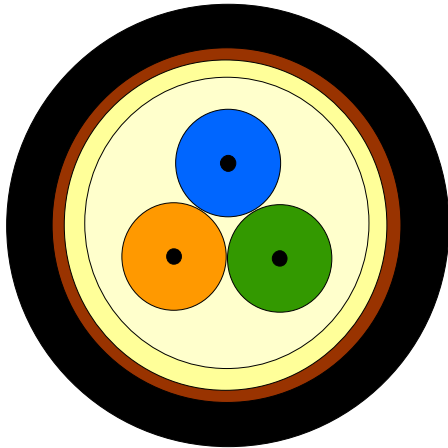
Optical Customer Drop Cable

All Dielectric Design

MiDia[®] Breeze 2FX Drop Cable



Issue February 2014
according to **OFS Generic Specification**



Application

Customer drop cable for blown and short distance pushed installation

Design

- Optical Fibres
- Core Element
- Tensile Strength Elements
- Low Friction Jacket

Features

- FTTx-Fibre: 200µm AllWave[®] FLEX Fibre G.657.A1 for small form factor
- All Dielectric Cable
- Easy Fibre Access
- Robust Low Friction Sheath
- Light Weight

Version illustrated is the 3 Fibre Cable

Identification

Fibre Colour Code:

1	Blue	2	Orange	3	Green
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Fillers will be natural coloured

Cable Diameter (nom.): 1.8 mm
Cable Weight (nom.): 3 kg/km

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Mechanical Properties and Environmental Behaviour

Tests according to IEC 60794

	Parameter	Requirement	Value
Tensile Performance: IEC 60794-1-2-E1A and E1B	Short term load, during installation	- No changes in attenuation before versus after load* - Max. fibre strain 0.50%	Load: 150 N
Crush Performance: IEC 60794-1-2-E3	Short term load	- No changes in attenuation before versus after load* - No damage**	Load: 500 N
Cable Bending: IEC 60794-1-2-E11	Handling fixed installed During installation (under load)	- No attenuation increase* - No changes in attenuation before versus after load*	Bend radius: 25 mm Bend radius: 50 mm
Fibre Unit Bending: IEC 60794-1-2-G1	Handling fixed installed	- No attenuation increase*	Bend radius: 20 mm
Temperatures: IEC 60794-1-2-F1	Operation Installation Storage/Shipping	- No attenuation increase*	-30 to +70°C - 5 to +40°C -40 to +70°C

*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.

**Mechanical damage – when examined visually without magnification, there shall be no evidence of damage to the sheath. The imprint of plates will not be considered as damage.

Shipping Information

Maximum Cable Length: 5000 m

At least ninety five (95) per cent of cables will be delivered in lengths as specified in the confirmed order within +5% and –0% tolerance. Not more than 5% of cables may be of lengths less than those specified in the confirmed order and with a maximum deviation of –10%.

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.

You can also visit our
website at <http://www.ofsoptics.com>.

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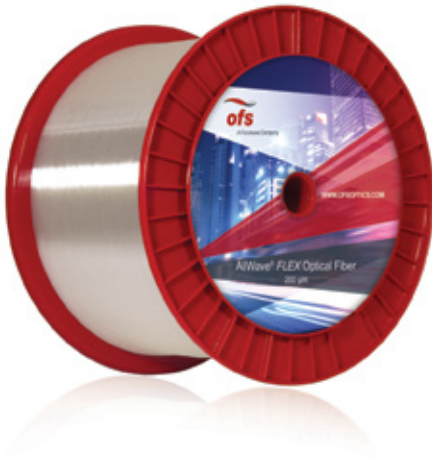
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A Furukawa Company

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

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-146
Date: 0917

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Product Specifications		200 μm AllWave FLEX Fiber	
Physical Characteristics			
Clad Diameter	125.0 \pm 0.7 μm		
Clad Non-Circularity	\leq 1 %		
Core/Clad Concentricity Error (Offset)	\leq 0.5 μm , < 0.2 μm typically		
Coating Diameter (Uncolored)	190 \pm 10 μm		
(Colored)	200 \pm 10 μm		
Coating-Clad Concentricity Error (Offset)	\leq 12 μm		
Tensile Proof Test (Other proof test levels available on request)	100 kpsi (0.69 GPa)		
Coating Strip Force	Range: \geq 0.5 N < 8.9 N		
Standard Reel Lengths	50.4 km		
Optical Characteristics			
Attenuation	Maximum	Typical	
at 1310 nm	\leq 0.35 dB/km	\leq 0.34 dB/km	
at 1385 nm	\leq 0.31 dB/km	\leq 0.28 dB/km	
at 1490 nm	\leq 0.24 dB/km	\leq 0.21 dB/km	
at 1550 nm	\leq 0.21 dB/km	\leq 0.19 dB/km	
at 1625 nm	\leq 0.24 dB/km	\leq 0.20 dB/km	
Attenuation vs. Wavelength Range (nm)	Reference (nm) λ	α	
	1310	0.03	
	1385	0.04	
	1550	0.02	
	1550	0.04	
	1550	0.04	
	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	\leq 0.05 dB		
Chromatic Dispersion			
Zero Dispersion Wavelength (λ_0)	1302 – 1322 nm		
Zero Dispersion Slope (S_0)	\leq 0.092 ps/nm ² -km		
Typical Dispersion Slope	0.088 ps/nm ² -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})	\leq 1260 nm		
Polarization Mode Dispersion (PMD) ¹			
Fiber PMD Link Design Value (LDV) ²	\leq 0.06 ps/ $\sqrt{\text{km}}$		
Maximum Individual Fiber	\leq 0.1 ps/ $\sqrt{\text{km}}$		
Typical Fiber LMC PMD	\leq 0.02 ps/ $\sqrt{\text{km}}$		
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.			
Environmental Characteristics (at 1310, 1550 & 1625 nm)			
Temperature Cycling (-60° + 85 °C)	\leq 0.05 dB/km		
High Temperature Aging (85 \pm 2 °C)	\leq 0.05 dB/km		
Temperature & Humidity Cycling (at -10 °C to +85 °C and 95% RH)	\leq 0.05 dB/km		
Water Immersion (23 \pm 2 °C)	\leq 0.05 dB/km		