



Application

Customer drop cable for blown and short distance pushed installation into micro ducts

Design

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

Features

- All Dielectric Cable
- Dry Water Blocking Technology
- Easy Fibre Access
- Robust Low Friction Sheath
- Light Weight

Version illustrated is the 12 Fibre Cable

Fibre Count
2
4
6
8
12

Sheath Marking (Inkjet)

OFS MIDIABREEZE OPTICAL CABLE [ID] [MM/YYYY] xxF AW FLEX [Meter Marking]

Alternative Sheath printing available on request

For 2 and 4 fibers:

Cable Diameter (nom.): 2.4 mm
Cable Weight (nom.): 4 kg/km

For 6 and 8 fibers:

Cable Diameter (nom.): 2.5 mm
Cable Weight (nom.): 5 kg/km

For 12 fibers:

Cable Diameter (nom.): 2.6 mm
Cable Weight (nom.): 6 kg/km

Identification

Fibre Colour Code:

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

Mechanical Properties and Environmental Behaviour

Tests according to EN 187105 and IEC 60794

	Parameter	Requirement	Value
Tensile Performance: EN 187105-5.5.4 IEC 60794-1-2-E1A and E1B	Short term load, during installation	- No changes in attenuation before versus after load* - Max. fibre strain 0.40%	Load: 100 N
Crush Performance: EN 187105-5.5.3 IEC 60794-1-2-E3	Short term load	- No changes in attenuation before versus after load* - No damage**	Load: 500 N
Bending Performance: EN 187105-5.5.1 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: 70 mm Bend radius: 140 mm
Temperatures: EN 187105-5.6.1 IEC 60794-1-2-F1	Operation Installation Storage/Shipping	- No attenuation increase*	-40 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.

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For additional information please contact your sales representative.

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A Furukawa Company

AllWave® *FLEX* Fiber - Zero Water Peak

A New Standard in Optimized Bend Performance and Reliable Low Loss Transmission



Applications

AllWave *FLEX* ZWP Fiber provides outstanding bend performance and design freedom for fiber management systems in:

- FTTH
- The central office
- High power applications
- Analog video
- Microcables
- Drop cables
- Closures
- Field management/storage apparatus located throughout the network
- At the customer premises
- Any application with transmission speeds of 40 Gb/s and beyond

Features and Benefits

- Improved bend performance saves space, time and money even for L-Band wavelengths up to 1625 nm
- ZWP Fiber for 50% increase in usable optical spectrum enables 16-channel CWDM and DWDM support
- Coiled into a 10 mm radius loop, fiber incurs loss of < 0.5 dB @ 1625 nm and < 0.2 dB @ 1550 nm
- Easier to install, handle and store in space-constrained applications
- Tight geometry for very low splice loss and improved connector performance

Overview

AllWave *FLEX* Zero Water Peak (ZWP) Single-Mode Fiber is the first ZWP G.652.D fiber to offer optimized bend performance for any application where small bend diameters may occur. Fully compliant with ITU-T G.657.A, AllWave *FLEX* ZWP Fiber is completely compatible with all conventional single-mode fibers.

Product Description

While AllWave *FLEX* ZWP Fiber retains all the benefits of AllWave ZWP Fiber, it also maintains very low bending loss across the full 1260 nm – 1625 nm wavelength spectrum while also ensuring long-term fiber strength and reliability. In fact, this fiber offers five times better bend performance than conventional single-mode and Leading Low Water Peak (LWP) fibers.

The macrobending and microbending loss improvements of AllWave *FLEX* ZWP Fiber help (1) facilitate more compact cabinet and enclosure designs with more intricate routing; (2) protect against loss from inadvertent fiber bends; and (3) reduce potential damage from cable pulling and flexing. This bend-optimized fiber also helps to improve cable performance in demanding high-stress and low temperature environments with twice the microbend protection of conventional single-mode fibers.

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

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)	242 ± 5 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	≤ 0.35 dB/km	≤ 0.33 dB/km
at 1385 nm	≤ 0.35 dB/km	≤ 0.27 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	≤ 0.23 dB/km	≤ 0.20 dB/km

Attenuation vs. Wavelength¹

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

¹ 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	≤ 0.2 dB
	1625 nm	≤ 0.5 dB
10 turns on a 15 mm radius mandrel	1550 nm	≤ 0.2 dB
	1625 nm	≤ 0.5 dB
100 turns on a 25 mm radius mandrel	1550 nm	≤ 0.01 dB
	1625 nm	≤ 0.05 dB

Chromatic Dispersion

Zero Dispersion Wavelength (λ ₀)	1302 - 1322 nm
Zero Dispersion Slope (S ₀)	≤ 0.090 ps/nm ² -km
Typical Dispersion Slope	0.087 ps/nm ² -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	8.5 - 9.3 μm
at 1550 nm	9.4 - 10.4 μm (typical)

Polarization Mode Dispersion (PMD)³

Fiber PMD Link Design Value (LDV) ⁴	< 0.06 ps/√km
Maximum Individual Fiber	< 0.1 ps/√km
Typical Fiber LMC PMD	< 0.02 ps/√km

² 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.

³ 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 95% RH)	≤ 0.05 dB/km
Water Immersion (23 ± 2 °C)	≤ 0.05 dB/km
Dynamic Fatigue Stress Corrosion Parameter	(nd) ≥ 20