

SMFR15 Low Bending Loss Optical Fiber

Low macrobending sensitive single mode fiber
Standard: ITU-T G.657 class A and ITU-T G.652D

The POFC SMFR15 Fiber is a full-spectrum single-mode fiber with much improved macro-bending performance compared to conventional single-mode fibers. This SMFR15 fiber is ideal for Fiber-to-the-Home (FTTH), enterprise networks or any application where the small bend diameters are required. The fiber fully complies with the new standards ITU-T G.657 class A and is backward compatible with all ITU-T G.652D fiber used in current optical network.

Macro-bending Loss:

- 10 turns around a mandrel of 30 mm diameter
 - ≤ 0.03 dB @ 1550 nm
 - ≤ 0.2 dB @ 1625 nm
- 1 turn around a mandrel of 20 mm diameter
 - ≤ 0.3 dB @ 1550 nm
 - ≤ 1.0 dB @ 1625 nm

Features / Benefits:

<ul style="list-style-type: none"> ✓ Low macro-bending loss, fully compliant with standard ITU-T G.657 class A 	<ul style="list-style-type: none"> ● Save Space and money to improve smaller bending radius of fiber storage and field installation. ● Bend optimized design for tight, low loss bend application, such as FTTH and enterprise network application.
<ul style="list-style-type: none"> ✓ Fully compliant with conventional ITU-T G.652D single-mode fiber. 	<ul style="list-style-type: none"> ● The SMFR15 can be spliced with the same setting of the fusion splice program as applied for conventional single mode fiber. ● Good splice loss with conventional G.652 fiber

Applications

- Drop Cable, and Low Bending Loss Patch Cords
- FTTH Splitter

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Optical Specifications

Attenuation

Wavelength (nm)	Max. Value
1310	≤ 0.35 dB/km
1385*	≤ 0.31 dB/km
1550	≤ 0.21 dB/km
1625	≤ 0.23 dB/km
1260 – 1330	≤ 0.42 dB/km
1525 – 1575	≤ 0.25 dB/km

*Attenuation values at this wavelength represent post-hydrogen aging performance

Attenuation with Bending

Number of Turns	Mandrel Radius (mm)	Wavelength (nm)	Induced Attenuation
10	15	1550	≤ 0.03 dB
10	15	1625	≤ 0.2 dB
1	10	1550	≤ 0.3 dB
1	10	1625	≤ 1.0 dB

Mode Field Diameter

Wavelength (nm)	MFD (μm)
1310	8.6 ± 0.4 μm
1550	9.7 ± 0.5 μm

Cutoff Wavelength

Fiber Cut-Off Wavelength: 1150~1330 nm
 Cable Cut-Off Wavelength: < 1260 nm

Dispersion

Wavelength (nm)	Dispersion Value
1285-1330	≤ 3.1 ps/(nm·km)
1550	≤ 18 ps/(nm·km)

Zero Dispersion Wavelength: 1300~1324 nm
 Zero Dispersion Slope ≤ 0.092 ps/(nm²·km)

Polarization Mode Dispersion

PMD ≤ 0.2 ps/ $\sqrt{\text{km}}$

Backscatter Characteristics

Group Index of Refraction

Wavelength (nm)	Index
1310	1.467
1550	1.468

Attenuation Directional Uniformity ≤ 0.03 dB/km

Attenuation Uniformity ≤ 0.05 dB

Physical Characteristics

Glass Geometry

Fiber Curl	≥ 4 m
Cladding Diameter	125 ± 0.7 μm
Core/Clad Concentricity	≤ 0.5 μm
Cladding Non-Circularity	≤ 1.0 %

Coating Geometry

Coating Diameter	245 ± 5 μm
Clad/Coat Concentricity	≤ 6 μm

Mechanical Specifications

Average Coating Strip Force	≥ 105 g
Peak Coating Strip Force	≥ 140 g
Proof Test	100 Kpsi
Dynamic Tensile Strength (0.5 meter gauge length)	Median ≥ 4.5 GPa (650 kpsi)
Dynamic fatigue	$n_d > 20$
Length	2.2~25.2 km

Environmental Specifications

Environment Test	Condition	dB/km**
Temperature cycling	-60°C to +85°C	≤ 0.05
Water immersion	20°C, 30 days	≤ 0.05
Damp Heat	85°C, 85%R.H., 30 days	≤ 0.05

** Induced Attenuation at 1310, 1550 nm (dB/km)

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