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# SMFR7 Low Bending Loss Optical Fiber

Low macrobending sensitive single mode fiber
Standard: ITU-T G.657 class B

The POFC SMFR7 Fiber is a full-spectrum single-mode fiber with much improved macro-bending performance compared to conventional single-mode fibers. This SMFR7 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 B.

## Macro-bending Loss:

- 1 turns around a mandrel of 15 mm diameter
  ≦ 0.05 dB @ 1550 nm
  ≦ 0.1 dB @ 1625 nm
- 1 turn around a mandrel of 10 mm diameter
  ≦ 0.5 dB @ 1550 nm
  ≦ 1.0 dB @ 1625 nm

## Features / Benefits:

| | |
|---|---|
| ✓ Low macro-bending loss, fully compliant with standard ITU-T G.657 class B | ● Save Space and money to improve smaller bending radius of fiber storage and field installation.<br>● Bend optimized design for tight, low loss bend application, such as FTTH and enterprise network application. |

## Applications

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

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## Optical Specifications

### Attenuation

| Wavelength (nm) | Max. Value |
|---|---|
| 1310 | ≦ 0.40 dB/km |
| 1385* | ≦ 0.40 dB/km |
| 1550 | ≦ 0.23 dB/km |
| 1625 | ≦ 0.25 dB/km |
| 1260 – 1330 | ≦ 0.47 dB/km |
| 1525 – 1575 | ≦ 0.27 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 |
|---|---|---|---|
| 1 | 7.5 | 1550 | ≦ 0.05 dB |
| 1 | 7.5 | 1625 | ≦ 0.1 dB |
| 1 | 5 | 1550 | ≦ 0.5 dB |
| 1 | 5 | 1625 | ≦ 1.0 dB |

### Mode Field Diameter

| Wavelength (nm) | MFD (um) |
|---|---|
| 1310 | 7.0 ± 0.4 μm |
| 1550 | 8.0 ± 0.5 μm |

### Cutoff Wavelength

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

### Polarization Mode Dispersion

## Backscatter Characteristics

### Group Index of Refraction

| Wavelength (nm) | Index |
|---|---|
| 1310 | 1.47 |
| 1550 | 1.47 |

| | |
|---|---|
| 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 |

### 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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