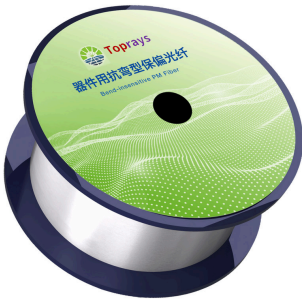


Bend-insensitive PM Fiber for Devices

Specification Datasheet · TopRays Optical Fiber

The bend-insensitive PM fiber for devices is a high-performance specialty fiber designed for high-density optical interconnects, miniaturized optical devices and bend-insensitive applications. It uses a mature and reliable Panda structure with symmetric, regular dual circular stress elements, offering high birefringence, excellent grindability, low transmission loss and good geometric consistency. Through a special waveguide structure and optimized stress elements, its bending performance is markedly improved, with bend radii down to 7.5 mm or 5 mm, ensuring very low bending loss and a stable polarization extinction ratio at small bend radii. The series covers the two mainstream telecom wavelengths of 1310 nm and 1550 nm, in two bend-performance grades: BIR7.5 and BIR5. The BIR7.5 type has a minimum bend radius of 7.5 mm, and the BIR5 type reduces it further to 5 mm, suiting miniaturized devices with limited layout space and high-density optical interconnects. With excellent bending-loss control and stable polarization retention, it supports the high-density upgrade of optical networks, data communication and data centers.



Features

- Excellent polarization-maintaining performance
- Excellent grindability
- Good consistency and uniformity
- Strict geometric tolerances
- Small bend radius (R7.5/R5 mm)
- Compliant with RoHS and REACH

Application Environment

- Miniaturized modulator and laser assemblies
- Miniaturized, highly integrated polarization-sensitive devices
- Bend-insensitive devices

Specifications

Optical Performance	PM1310- 125/250G-BIR7.5	PM1550- 125/250G-BIR7.5	PM1310- 125/250G-BIR5	PM1550- 125/250G-BIR5
Operating Wavelength (nm)	1310	1550	1310	1550
Cut-off Wavelength (nm)	1100 ~ 1260	1290 ~ 1500	1100 ~ 1260	1290 ~ 1500
Attenuation (dB/km)	≤2.0	≤2.0	≤2.0	≤2.0
Mode Field Diameter (μm)	7.8±0.5	9.0±0.5	7.8±0.5	9.0±0.5

Optical Performance	PM1310- 125/250G-BIR7.5	PM1550- 125/250G-BIR7.5	PM1310- 125/250G-BIR5	PM1550- 125/250G-BIR5
Beat Length (mm)	1.5 ~ 3.0	2.0 ~ 3.0	1.5 ~ 3.0	2.0 ~ 3.0
Bending Crosstalk (dB)	≤-30 @1310 nm (dia.15mm, 10turns)	≤-30 @1550 nm (dia.15mm, 10turns)	≤-30 @1310 nm (dia.10mm, 10turns)	≤-30 @1550 nm (dia.10mm, 10turns)
Macrobend Loss (dB)	≤0.1 @1310 nm (dia.15mm, 10turns)	≤0.1 @1550 nm (dia.15mm, 10turns)	≤0.1 @1310 nm (dia.10mm, 10turns)	≤0.1 @1550 nm (dia.10mm, 10turns)
Geometry & Material Specifications	PM1310-125/250G- BIR7.5	PM1550- 125/250G-BIR7.5	PM1310- 125/250G-BIR5	PM1550- 125/250G-BIR5
Cladding Diameter (μm)	125.0±1.0	125.0±1.0	125.0±1.0	125.0±1.0
Coating Diameter (μm)	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0
Core-Cladding Concentricity (μm)	≤0.5	≤0.5	≤0.5	≤0.5
Cladding Non-circularity (%)	≤1.0	≤1.0	≤1.0	≤1.0
Coating Structure	Dual-layer UV- curable acrylate resin			
Environmental & Mechanical Performance	PM1310- 125/250G-BIR7.5	PM1550- 125/250G-BIR7.5	PM1310- 125/250G-BIR5	PM1550- 125/250G-BIR5
Operating Temperature (°C)	-45 ~ +85	-45 ~ +85	-45 ~ +85	-45 ~ +85
Proof Test (kpsi)	200	200	200	200