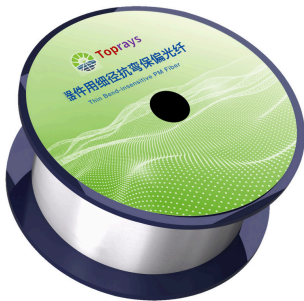


Thin-diameter Bend-insensitive PM Fiber

Specification Datasheet · TopRays Optical Fiber

The thin-diameter bend-insensitive PM fiber for devices is a specialty fiber designed for next-generation ultra-compact optical modules, high-density optical interconnects and space-constrained optoelectronic devices. 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 a bend radius down to 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, with an 80 μ m cladding / 165 μ m coating diameter, which reduces the cross-sectional area by nearly 60% compared with conventional 125 μ m cladding fiber. Its smaller geometry meets the increasingly stringent requirements on fiber volume and routing space in the evolution of optical modules, supporting the miniaturization and high-density trend of future optoelectronic devices and providing a flexible, efficient optical transmission medium for capacity upgrades in data centers and high-speed interconnection of AI computing clusters.



Features

- Excellent polarization-maintaining performance
- Excellent grindability
- Good consistency and uniformity
- Strict geometric tolerances
- Small bend radius (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	PM1310-80/165G-BIR5	PM1550-80/165G-BIR5
Operating Wavelength (nm)	1310	1550
Cut-off Wavelength (nm)	1100 ~ 1260	1290 ~ 1500
Attenuation (dB/km)	≤2.0	≤2.0

Optical Performance	PM1310-80/165G-BIR5	PM1550-80/165G-BIR5
Mode Field Diameter (μm)	7.4±0.5	8.6±0.5
Beat Length (mm)	1.5 ~ 3.0	2.0 ~ 3.0
Bending Crosstalk (dB)	≤-30 @1310 nm (dia.10mm, 10turns)	≤-30 @1550 nm (dia.10mm, 10turns)
Macrobend Loss (dB)	≤0.1 @1310 nm (dia.10mm, 10turns)	≤0.1 @1550 nm (dia.10mm, 10turns)
Geometry & Material Specifications	PM1310-80/165G-BIR5	PM1550-80/165G-BIR5
Cladding Diameter (μm)	80.0±0.5	80.0±0.5
Coating Diameter (μm)	165.0±5.0	165.0±5.0
Core-Cladding Concentricity (μm)	≤0.5	≤0.5
Cladding Non-circularity (%)	≤1.0	≤1.0
Coating Structure	Dual-layer UV-curable acrylate resin	
Environmental & Mechanical Performance	PM1310-80/165G-BIR5	PM1550-80/165G-BIR5
Operating Temperature (°C)	-45 ~ +85	-45 ~ +85
Proof Test (kpsi)	100	100