



1310nm Panda Polarization-Maintaining Fiber with 165µm Robust Coating – PM1310-80-6.0/165 for High-Stability Fiber Optic Gyroscopes

Product Overview

Fabricated via the Modified Chemical Vapor Deposition (MCVD) process, this fiber integrates precisely positioned boron-doped stress-applying parts (SAPs) that generate strong linear birefringence, effectively locking the polarization state along the slow axis. With polarization crosstalk of ≤ -25 dB per meter at 1310 nm, it minimizes polarization fading and suppresses FOG bias drift over temperature and time—key requirements for tactical-grade and navigation-grade inertial systems.

The fiber features a reinforced 165 µm dual acrylate coating, significantly enhancing resistance to microbending and mechanical abrasion during coil winding, potting, and thermal cycling. This ruggedized design ensures consistent performance in harsh operational environments while maintaining compatibility with standard rotational fusion splicers for low-loss (0.2 dB), high-extinction-ratio (>20 dB) pigtailed.

Technical Specifications

Brand Name	Winner
Model Number	PM1310-80-6.0/165



Fiber Type	Panda-Type Polarization-Maintaining Single-Mode Fiber
Operating Wavelength	1310 nm
Attenuation	≤ 0.8 dB/km @1310 nm
Mode Field Diameter	6.0 ± 0.5 μ m @1310 nm
Cut-off Wavelength	1100–1270 nm
Cladding Diameter	125 ± 1 μ m
Coating Diameter	165 ± 5 μ m
Polarization Crosstalk	≤ -25 dB per meter @1310 nm
Bow (Shoot Length)	≤ 3.0 mm per meter
Tension Screening Level	≥ 100 kpsi
Manufacturing Process	Modified Chemical Vapor Deposition (MCVD)



Key Performance	High geometric uniformity for consistent coil winding Excellent bending stability down to 15 mm radius Low splicing loss with axis-aligned fusion splicers Stable beat length under thermal shock (-55°C to +125°C)
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Applications

- Navigation-grade and tactical-grade fiber optic gyroscopes (FOGs)
- Polarization-maintaining couplers for interferometric sensors
- Laser diode pigtails requiring stable linear polarization output
- Fiber-based current and acoustic sensors with polarization sensitivity
- Test platforms for photonic integrated circuits (PICs) requiring polarized input

Integration Guidance

For optimal FOG performance, wind coils with controlled tension and align the slow axis (indicated by SAP orientation) throughout the entire optical path. The 165 µm thick coating provides superior protection during epoxy potting and thermal cycling, reducing long-term stress-induced birefringence variations. Ideal for applications demanding decades of operational stability in extreme environments.