Panda Polarization-Maintaining Fiber for Fiber Optic Gyroscopes – PM1310-80-6.0/165 with 165?m Thin Coating

Product Overview

Fabricated via the Modified Chemical Vapor Deposition (MCVD) process, this panda-type PM fiber integrates two boron-doped stress-applying parts (SAPs) symmetrically positioned around a germanosilicate core to induce strong linear birefringence. The result is exceptional polarization maintenance with crosstalk ⩽ -25 dB per meter at 1310 nm, enabling high polarization extinction ratio (PER) in interferometric loops.

The fiber features a reduced 165 µm dual-layer acrylate coating—ideal for densely wound FOG sensing coils where space and mass are critical. Despite its thin coating, it maintains ⩾100 kpsi proof tension screening and excellent bending stability, ensuring mechanical robustness during coil winding and long-term operation in dynamic environments.

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 μm @1310 nm
Cut-off Wavelength	1100–1270 nm
Cladding Diameter	125 ± 1 μm
Coating Diameter	165 ± 5 μm
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 Low splicing loss with rotational alignment Excellent coil-winding compatibility Stable birefringence under thermal cycling

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Applications

- Fiber optic gyroscopes (FOGs) for aerospace, navigation, and stabilization systems
- Polarization-maintaining couplers and interferometers
- Laser diode pigtails requiring polarized output
- Fiber-based current and magnetic field sensors
- Test and measurement setups for polarization-dependent devices

Handling & Integration Notes

For optimal performance in FOG applications, maintain consistent winding tension and avoid sharp bends (10 mm radius). Use a rotational fusion splicer to align the slow axis (marked by SAP orientation) with adjacent components. The thin 165 µm coating reduces coil volume by ~30% compared to standard 245 µm fibers, but requires careful handling to prevent microcracking during stripping.