1310nm Polarization-Maintaining Fiber with 165?m Industrial Coating – PMW-1310-80-6.0/165 for Laser Pigtails and Coupler Fabrication

Product Overview

Built on a robust MCVD platform, this fiber incorporates boron-doped stress-applying parts (SAPs) symmetrically positioned around a germanosilicate core to generate high linear birefringence. It achieves exceptional polarization crosstalk of ⩽ -35 dB over 2 meters—translating to a polarization extinction ratio (PER) >25 dB in practical device assemblies—ensuring signal fidelity in polarization-sensitive systems.

The fiber features a reinforced 165 μm dual-layer acrylate coating, providing enhanced mechanical durability during grinding, polishing, and taper-pulling processes common in pigtail and micro-optic fabrication. Despite its ruggedized design, it maintains low attenuation (⩽0.8 dB/km) and excellent geometric uniformity, enabling consistent rotational splicing and high yield in automated production lines.

Technical Specifications

Brand Name	Winner
Model Number	PMW-1310-80-6.0/165

Fiber Type	Panda 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	⩽ -35 dB per 2 meters @1310 nm
Bow (Shoot Length)	⩽ 3.0 mm per meter
Tension Screening Level	⩾100 kpsi

Key Advantages	Superior grindability and surface finish for connector ferrule integration Excellent taper-pulling consistency for mode-field adapters or sensors High thermal and mechanical stability across industrial operating conditions Low splicing loss (0.15 dB) with axis-aligned fusion splicers

Applications

- Pigtailed laser diodes requiring polarized output in telecom and sensing
- Polarization-maintaining fiber couplers and splitters for interferometric systems
- Optical isolators, circulators, and modulators with polarization control
- Tapered fiber sensors and nonlinear photonics devices
- Test and calibration standards for polarization-dependent loss (PDL) measurement

Processing Recommendations

For optimal PER retention, align the slow axis (marked by SAP orientation) during splicing using a rotational fusion splicer. The 165 µm thick coating provides excellent resistance to abrasion during polishing and facilitates secure epoxy bonding in metalized packages. Ideal for high-reliability industrial and defense-grade optical subassemblies where long-term polarization stability is non-

negotiable.