

1550 nm PM Gyroscope & Sensor Fibers



Coherent's 1550 nm PANDA-style PM Gyroscope fibers have extremely high birefringence and exceptionally tight dimensional specifications, critical for manufacturing high precision, high-performance gyro-coils. High consistency and extreme end-to-end control of optical properties provide particular advantage in this application by reducing fiber generated signal artifacts. The intrinsically high level of radiation resistance allows operation for extended periods of time on low earth orbits, near and deep space, and applications where exposure to man-made radiation is expected. The Panda-style configuration is preferred over bow-tie or elliptical clad designs because of its advantages in process scalability and product uniformity. These fibers are offered in industry standard specifications and Coherent's high performance (HP) versions optimized for exceptional splicability and offering the tightest tolerance specifications available.

Typical Applications

- Fiber optic gyroscopes (FOGs)
- Fiber optic voltage and current sensors
- Laser pigtailed
- Small form factor couplers
- Specialty sensors

Features & Benefits

- PANDA-style PM — Superior performance, intrinsically good radiation performance
- Extremely high birefringence — Less gyroscope drift
- Bend insensitive — Smaller diameter coils possible
- Excellent crosstalk stability over temperature range — Minimize Shupe (insensitive to temperature drift) effects
- HP version with best specifications available — Improved repeatability, coil winding accuracy, and splicability

Optical Specifications

	PM1550G-80/135-2HP	PM1550G-80/170-5	PM1550G-80/170-2HP
Operating Wavelength	1520 – 1620 nm	1520 – 1620 nm	1520 – 1620 nm
Core NA	0.190	0.190	0.190
Mode Field Diameter	6.3 ± 0.5 μm @ 1550 nm	6.3 ± 0.5 μm @ 1550 nm	6.3 ± 0.5 μm @ 1550 nm
Cutoff	1460 ± 60 nm	1460 ± 60 nm	1460 ± 60 nm
Core Attenuation	≤ 1.0 dB/km @ 1550 nm	≤ 2.0 dB/km @ 1550 nm	≤ 1.0 dB/km @ 1550 nm
Beat Length	≤ 1.2 mm @ 633 nm	≤ 1.2 mm @ 633 nm	≤ 1.2 mm @ 633 nm
H-Parameter	≤ 3.00000 × 10 ⁻⁵ m ⁻¹ @ 1500 nm	≤ 3.00000 × 10 ⁻⁵ m ⁻¹ @ 1500 nm	≤ 3.00000 × 10 ⁻⁵ m ⁻¹ @ 1500 nm
Normalized Cross Talk	≤ - 25.0 dB at 100 m @ 1550 nm	≤ - 25.0 dB at 100 m @ 1550 nm	≤ - 25.0 dB at 100 m @ 1550 nm

Geometrical & Mechanical Specifications

	PM1550G-80/135-2HP	PM1550G-80/170-5	PM1550G-80/170-2HP
Cladding Diameter	80.0 ± 1.0 μm	80.0 ± 1.0 μm	80.0 ± 1.0 μm
Core Diameter	6.0 μm	6.0 μm	6.0 μm
Coating Diameter	135.0 ± 2.0 μm	170.0 ± 5.0 μm	170.0 ± 2.0 μm
Coating Concentricity	< 5.0 μm	< 5.0 μm	< 5.0 μm
Core/Clad Offset	≤ 0.50 μm	≤ 0.50 μm	≤ 0.50 μm
Coating Material	Low Tg Acrylate	Acrylate	Low Tg Acrylate
Operating Temperature Range	-60 to 105 °C	-60 to 105 °C	-60 to 105 °C
Storage Temperature	-65 to 105 °C	-65 to 105 °C	-65 to 105 °C
Proof Test Level	≥ 100 kpsi (0.7 GN/m ²)	≥ 100 kpsi (0.7 GN/m ²)	≥ 100 kpsi (0.7 GN/m ²)



HP versions with NuCOAT-LTg exclusively

Nufern • 7 Airport Park Road, East Granby, CT 06026 • 860.408.5000 • Toll-free 866.466.0214 • Fax 860.844.0210 • Email: tech.sales@coherent.com
www.coherent.com ; www.shop.coherent.com • Coherent products are manufactured under an ISO 9001:2008 certified quality management system.



Custom developed fiber (FUD) specifications are subject to change without notice. Other configurations such as alternative form factors, optimized cut-off and UV cured color coating may be available. Let us know how Coherent can assist with your requirements.

NU0188- 11/12/2020