

1300 nm PM Gyroscope & Sensor Fibers



Nufern's 1300 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 Nufern'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 pigtailling
- 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

Operating Wavelength
Core NA
Mode Field Diameter
Cutoff
Core Attenuation
Beat Length
H-Parameter
Normalized Cross Talk

PM1300G-80/135-2HP

1280 – 1340 nm
0.180
 $6.0 \pm 0.5 \mu\text{m}$ @ 1300 nm
 $1210 \pm 60 \text{ nm}$
 $\leq 1.5 \text{ dB/km}$ @ 1300 nm
 $\leq 1.2 \text{ mm}$ @ 633 nm
 $\leq 3.00000 \times 10^{-5} \text{ m}^{-1}$ @ 1300 nm
 $\leq -25.0 \text{ dB}$ at 100 m @ 1300 nm

PM1300G-80/170-5

1280 – 1340 nm
0.180
 $6.0 \pm 0.5 \mu\text{m}$ @ 1300 nm
 $1210 \pm 60 \text{ nm}$
 $\leq 2.0 \text{ dB/km}$ @ 1300 nm
 $\leq 1.2 \text{ mm}$ @ 633 nm
 $\leq 3.00000 \times 10^{-5} \text{ m}^{-1}$ @ 1300 nm
 $\leq -25.0 \text{ dB}$ at 100 m @ 1300 nm

PM1300G-80/170-2HP

1280 – 1340 nm
0.180
 $6.0 \pm 0.5 \mu\text{m}$ @ 1300 nm
 $1210 \pm 60 \text{ nm}$
 $\leq 1.5 \text{ dB/km}$ @ 1300 nm
 $\leq 1.2 \text{ mm}$ @ 633 nm
 $\leq 3.00000 \times 10^{-5} \text{ m}^{-1}$ @ 1300 nm
 $\leq -25.0 \text{ dB}$ at 100 m @ 1300 nm

Geometrical & Mechanical Specifications

Cladding Diameter
Core Diameter
Coating Diameter
Coating Concentricity
Core/Clad Offset
Coating Material
Operating Temperature Range
Storage Temperature
Proof Test Level

$80.0 \pm 1.0 \mu\text{m}$
 $5.0 \mu\text{m}$
 $135.0 \pm 2.0 \mu\text{m}$
 $< 5.0 \mu\text{m}$
 $\leq 0.50 \mu\text{m}$
NuCOAT-LTg
-60 to 105 °C
-65 to 105 °C
 $\geq 100 \text{ kpsi}$ (0.7 GN/m²)

$80.0 \pm 1.0 \mu\text{m}$
 $5.0 \mu\text{m}$
 $170.0 \pm 5.0 \mu\text{m}$
 $< 5.0 \mu\text{m}$
 $\leq 0.50 \mu\text{m}$
UV Cured, Dual Acrylate
-60 to 105 °C
-65 to 105 °C
 $\geq 100 \text{ kpsi}$ (0.7 GN/m²)

$80.0 \pm 1.0 \mu\text{m}$
 $5.0 \mu\text{m}$
 $170.0 \pm 2.0 \mu\text{m}$
 $< 5.0 \mu\text{m}$
 $\leq 0.50 \mu\text{m}$
NuCOAT-LTg
-60 to 105 °C
-65 to 105 °C
 $\geq 100 \text{ kpsi}$ (0.7 GN/m²)

HP versions with NuCOAT-LTg exclusively



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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 Nufern can assist with your requirements.

