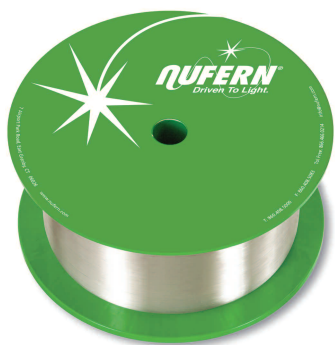


Polarization Maintaining Gyroscope & Sensor Fibers



Nufern's 80 μm 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 this family to operate for extended periods of time on low earth orbits, near and deep space, and in applications where risk of exposure to man-made radiation is great. The Panda-style configuration is preferred over bow-tie or elliptical clad designs because of its advantages in process scalability (for its cost impact) and product uniformity. These fibers are available for operation at 850, 1300 and 1550 nm wavelengths.

Typical Applications

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

Features and Benefits:

- PANDA-style PM — Superior performance, intrinsically good radiation performance
- Extremely high birefringence — Less gyroscope drift
- Exceptionally tight dimensional control — Uniform, deterministic gyroscope coil performance
- Bend insensitive — Smaller diameter coils possible
- Excellent crosstalk stability over temperature range — Minimize Shupe (insensitive to temperature drift) effects

Optical Specifications

Operating Wavelength (nominal)
Attenuation
Mode Field Diameter
Second Mode Cut-Off
Normalized Cross Talk (nominal)
H-Parameter (nominal)
Beat Length

PM850G-80

810 – 870 nm
 ≤ 5 dB/km @ 820 nm
 4.5 ± 0.5 μm @ 850 nm
 720 ± 60 nm
 ≤ -25 dB at 100 m
 $\leq 3 \times 10^{-5}$ m^{-1}
 ≤ 1.2 mm @ 633 nm

PM1300G-80

1280 - 1340 nm
 ≤ 2 dB/km @ 1300 nm
 6.0 ± 0.5 μm @ 1300 nm
 1210 ± 60 nm
 ≤ -25 dB at 100 m
 $\leq 3 \times 10^{-5}$ m^{-1}
 ≤ 1.2 mm @ 633 nm

PM1550G-80

1520 - 1620 nm
 ≤ 2 dB/km @ 1550 nm
 6.3 ± 0.5 μm @ 1550 nm
 1460 ± 60 nm
 ≤ -25 dB at 100 m
 $\leq 3 \times 10^{-5}$ m^{-1}
 ≤ 1.2 mm @ 633 nm

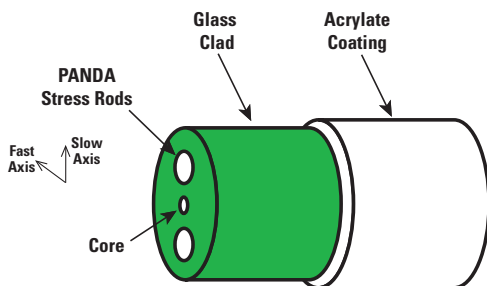
Geometrical & Mechanical Specifications

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

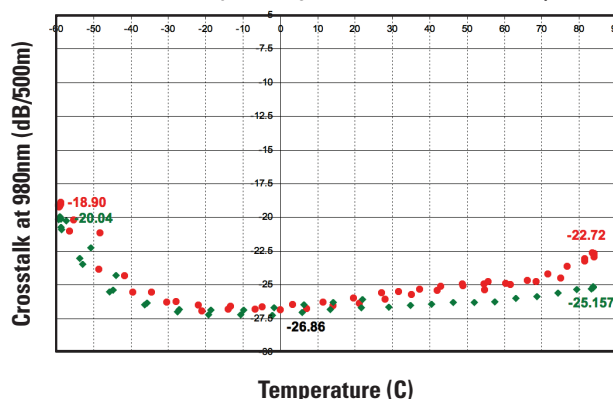
80 ± 1 μm
 170 ± 5 μm
 < 0.5 μm
 ≤ 5 μm
UV Cured, Dual Acrylate
- 60 to + 105°C
- 65 to + 105°C
 ≥ 100 kpsi (0.7 GN/m²)

80 ± 1 μm
 170 ± 5 μm
 < 0.5 μm
 ≤ 5 μm
UV Cured, Dual Acrylate
- 60 to + 105°C
- 65 to + 105°C
 ≥ 100 kpsi (0.7 GN/m²)

80 ± 1 μm
 170 ± 5 μm
 < 0.5 μm
 ≤ 5 μm
UV Cured, Dual Acrylate
- 60 to + 105°C
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 ≥ 100 kpsi (0.7 GN/m²)



Crosstalk of Nufern PM850G-80 fiber as a function of Temperature
(500 meters, helically wound, 10 grams tension on an aluminum 40 mm spool)



7 Airport Park Road, East Granby, CT 06026 • 860.408.5000 • Toll-free 866.466.0214 • Fax 860.844.0210 E-mail info @ nufern.com • www.nufern.com

Standard specifications and design parameters are listed above. 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.



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