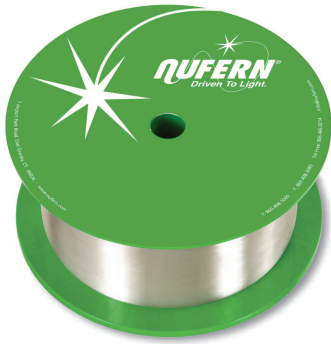


# Polarization Maintaining Gyroscope & Sensor Fibers



Nufern's 80  $\mu\text{m}$  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  
 $\leq 5$  dB/km @ 820 nm  
 $4.5 \pm 0.5$   $\mu\text{m}$  @ 850 nm  
 $720 \pm 60$  nm  
 $\leq -25$  dB at 100 m  
 $\leq 3 \times 10^{-5}$   $\text{m}^{-1}$   
 $\leq 1.2$  mm @ 633 nm

## PM1300G-80

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

## PM1550G-80

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

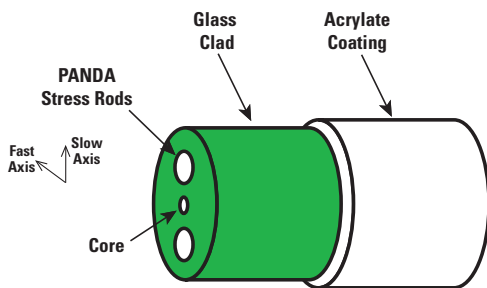
## Geometrical & Mechanical Specifications

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

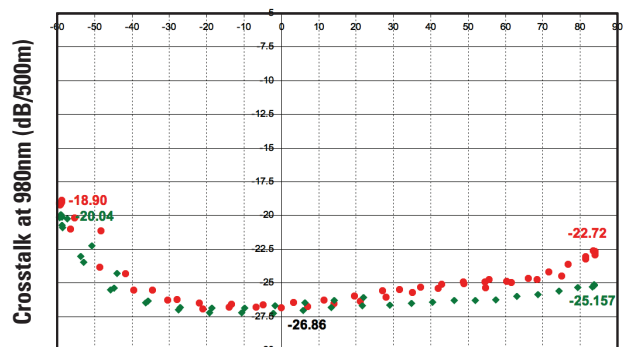
$80 \pm 1$   $\mu\text{m}$   
 $170 \pm 5$   $\mu\text{m}$   
 $< 0.5$   $\mu\text{m}$   
 $\leq 5$   $\mu\text{m}$   
UV Cured, Dual Acrylate  
- 60 to + 105°C  
- 65 to + 105°C  
 $\geq 100$  kpsi (0.7 GN/m<sup>2</sup>)

$80 \pm 1$   $\mu\text{m}$   
 $170 \pm 5$   $\mu\text{m}$   
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Crosstalk of Nufern PM850G-80 fiber as a function of Temperature  
(500 meters, helically wound, 10 grams tension on an aluminum 40 mm spool)



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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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