

# Elliptical-clad Polarization Maintaining Gyroscope & Sensor Fibers



Coherent's elliptical clad PM Gyroscope fibers have high birefringence and are designed for gyroscope and sensor applications. These fibers feature good bending performance and are optimized for either 850 nm or 1300 nm wavelength operation. The 850 nm optimized fiber has a 40  $\mu\text{m}$  clad diameter and the 1300 nm optimized fiber has an 80  $\mu\text{m}$  clad diameter. Both are ideally suited for applications requiring a small form factor.

## Typical Applications

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

## Features & Benefits

- High birefringence — Less gyroscope drift
- Bend insensitive — Smaller diameter coils possible
- Excellent crosstalk over temperature range — Ensures performance in harsh environments
- Nufern proprietary coating — Optimized for gyroscope applications

## Optical Specifications

|                       | PME850G-40/100-5  | PME1300G-80/170-5  |
|-----------------------|---|--|
| Operating Wavelength  | 810 – 870 nm  | 1290 – 1340 nm   |
| Core NA               | 0.180   | 0.180  |
| Mode Field Diameter   | 4.0 $\pm$ 0.5 $\mu\text{m}$ @ 850 nm                              | 6.0 $\pm$ 0.5 $\mu\text{m}$ @ 1300 nm                              |
| Cutoff                | 720 $\pm$ 60 nm   | 1230 $\pm$ 50 nm   |
| Core Attenuation      | $\leq$ 12.0 dB/km @ 820 nm  | $\leq$ 2.0 dB/km @ 1300 nm   |
| Beat Length           | $\leq$ 2.0 mm @ 850 nm  | $\leq$ 1.2 mm @ 633 nm   |
| H-Parameter           | $\leq$ 5.00000 $\times$ 10 <sup>-5</sup> m <sup>-1</sup> @ 850 nm | $\leq$ 3.00000 $\times$ 10 <sup>-5</sup> m <sup>-1</sup> @ 1300 nm |
| Normalized Cross Talk | $\leq$ -25.0 dB at 100 m @ 630 nm                                 | $\leq$ -25.0 dB at 100 m @ 1300 nm                                 |

## Geometrical & Mechanical Specifications

|                             |  |  |
|-----------------------------|--|--|
| Cladding Diameter           | 40.0 $\pm$ 1.0 $\mu\text{m}$             | 80.0 $\pm$ 1.0 $\mu\text{m}$             |
| Core Diameter               | 3.5 $\mu\text{m}$                        | 6.0 $\mu\text{m}$                        |
| Coating Diameter            | 100.0 $\pm$ 5.0 $\mu\text{m}$            | 170.0 $\pm$ 5.0 $\mu\text{m}$            |
| Core/Clad Offset            | $\leq$ 1.50 $\mu\text{m}$                | $\leq$ 2.00 $\mu\text{m}$                |
| Operating Temperature Range | -60 to 105 $^{\circ}\text{C}$            | -60 to 105 $^{\circ}\text{C}$            |
| Proof Test Level            | $\geq$ 100 kpsi (0.7 GN/m <sup>2</sup> ) | $\geq$ 100 kpsi (0.7 GN/m <sup>2</sup> ) |



Coating Requirements: UV cured dual acrylate coating

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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.

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