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Datasheet

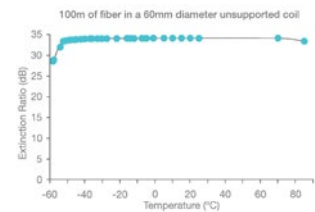
PM Gyro Fiber

Fibercore are the World's leading supplier of Polarization Maintaining (PM) fibers for Fiber Optic Gyroscopes (FOGs). By using 'Bow Tie' Stress Applying Parts (SAPs), stress can be efficiently focused across the core of the fiber, offering industry leading levels of birefringence to maintain high levels of Polarization Extinction Ratio (PER). By combining the high birefringence with Fibercore's optimized gyro fiber coating package, the World's highest performance levels can be achieved.

The PM gyro range of fibers offers Short Beat-Length (SB) variants for the highest PER levels, high Numerical Aperture (NA) fibers (HI) for reduced macro and micro bend losses in small coil diameters and Radiation Tolerant (RT) variants for space missions.

High Polarization Extinction from -55°C to +85°C

Performance is maintained over a wide temperature range. Under test conditions designed to simulate those encountered in a typical FOG coil. Extinction ratios of better than 30dB (h-parameter of $1 \times 10^{-5} \text{ m}^{-1}$) have been maintained down to -55°C, with extinction of over 28dB demonstrated right down to -60°C.



Advantages:

- 'Bow-Tie' design engineered to give superior birefringence
- The World's best selling Gyro fiber
- Optimized coating package for best PER performance over temperature
- Radiation tolerant designs for space applications
- High NA designs for reduced bend loss in small coil diameters

Typical applications:

- FOGs
- Current sensors
- Delay lines

Related Products:

- PM Coupler Fiber (HB-C)
- Standard PM Fiber (HB)
- Telecoms PM Fiber (HB-T)
- Polyimide Coated PM Fiber (HB-P)
- Erbium Doped Fiber IsoGain™

Product Variants:

- **HB800G-SB** Short beat-length PM Fiber for 830nm fiber optic gyroscopes
- **HB1500G-SB** Short beat-length PM fiber for 1550nm fiber optic gyroscopes
- **HB1500G-RT-SB** Short beat-length and radiation tolerant PM fiber for 1550nm fiber optic gyroscopes
- **HB800G** PM Fiber for 830nm fiber optic gyroscopes
- **HB1250G** PM Fiber for 1310nm fiber optic gyroscopes
- **HB1500G** PM Fiber for 1550nm fiber optic gyroscopes
- **HB1500G-RT** Radiation tolerant PM Fiber for 1550nm fiber optic gyroscopes
- **HB1500G-HI** High NA PM Fiber for 1550nm fiber optic gyroscopes with very low bend loss



Specifications

Short beat-length fiber

	HB800G-SB	HB1500G-SB	HB1500G-RT-SB
Operating Wavelength (nm)	810 - 1000		1520 - 1650
Cut-Off Wavelength (nm)	660 - 800		1360 - 1520
Numerical Aperture	0.14 - 0.18		0.19 - 0.21
Mode Field Diameter (μm)	3.7 - 5.0 @830nm		6.0 - 7.0 @1550nm
Attenuation (dB/km)	≤5 @830nm	≤1.5 @1550nm	≤2 @1550nm
Beat-Length (mm) @633nm		≤1.0	≤1.15
Proof Test (%)	1 (100 kpsi), 2 (200 kpsi) or greater upon request		
Cladding Diameter (μm)	80 ± 1		
Core Cladding Concentricity (μm)	≤1.0		
Coating Diameter (μm)	165 ± 5	155 ± 5	165 ± 5
Coating Type	Dual Layer Acrylate		
Operating Temperature (°C)	-55 to +85		

Standard gyro fiber

	HB800G	HB1250G	HB1500G	HB1500G-RT	HB1500G-HI
Operating Wavelength (nm)	810 - 1000	1280 - 1520		1520 - 1650	
Cut-Off Wavelength (nm)	660 - 800	1030 - 1270		1230 - 1520	1360 - 1520
Numerical Aperture	0.14 - 0.18				0.19 - 0.21
Mode Field Diameter (μm)	3.7 - 4.9 @830nm	5.8 - 7.8 @1310nm		6.9 - 9.3 @1550nm	6.0 - 6.9 @1550nm
Attenuation (dB/km)	≤5 @830nm	≤2 @1310nm		≤2 @1550nm	≤3 @1550nm
Beat-Length (mm) @633nm	≤1.5				
Proof Test (%)	1 (100 kpsi), 2 (200 kpsi) or greater upon request				
Cladding Diameter (μm)	80 ± 1				
Core Cladding Concentricity (μm)	≤1.0				
Coating Diameter (μm)	165 ± 5		170 ± 5		155 ± 5
Coating Type	Dual Layer Acrylate				
Operating Temperature (°C)	-55 to +85				

* SB - Short Beat-Length * RT - Radiation Tolerant * HI - High Index