Fiber Optics

FIBERCORE

LASER COMPONENTS

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PM Coupler Fiber

For fabricating HiBi fused taper Couplers

Fibercore's PM Coupler Fiber (HB-C) is specifically designed to optimize the performance of PM fused taper couplers. Through optimization of the 'Bow-Tie' design, the Stress Applying Parts (SAPs) are engineered to minimize interaction between the mode field and the stress applying parts within the tapered region.

For the fiber laser and sensor industry, using wavelengths around 1060nm, Fibercore offers two variants of fiber: HB1000C(6/125) with a 6µm Mode Field Diameter (MFD) and HB1000C(10/125) with a 10µm MFD. The larger MFD variant gives significant benefits in power handling capabilities and higher non-linear thresholds.

For applications requiring small package sizes, for example, the Fiber Optic Gyroscopes (FOGs), the HB800C and HB1500C are bend insensitive fibers with their cladding diameter optimized for high mechanical reliability in small coil diameters.

PM Coupler fiber end face diagram

Advantages:

- Optimized 'Bow-Ties' for manufacture of fused taper couplers
- High performance thermal stability
- Very low attenuation after fused taper coupling process
- High PER after fused taper manufacturing

Typical applications:

- Fiber optic gyroscope PM couplers
- Fiber laser PM couplers
- Quarter wave plates

Related Products:

- PM Couplers
- Telecoms PM Fiber (HB-T)
- Standard PM Fiber (HB)

Product Variants:

- **HB800C** PM coupler fiber with an 80µm cladding diameter, for use around 830nm
- **HB1000C(6/125)** PM coupler fiber with a 125µm cladding diameter, for use around 1060nm
- **HB1000C(10/125)** PM coupler fiber with a 125µm cladding diameter, for use around 1060nm
- **HB1500C** PM coupler fiber with an 80µm cladding diameter, for use around 1550nm

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Specifications

	HB800C	HB1000C(6/125)	HB1000C(10/125)	HB1500C
Operating Wavelength (nm)	810 - 1000	1030 - 1350		1510 - 1650
Cut-Off Wavelength (nm)	680 - 780	950 - 1020		1350 - 1500
Numerical Aperture	0.14 - 0.18	0.13 - 0.15	0.08 - 0.10	0.14 - 0.18
Mode Field Diameter (µm)	3.7 - 4.9	5.8 - 6.8	8.7 - 11.0	7.0 - 9.3
Attenuation (dB/km)	≤5.0 @830nm	≤3.0 @1064nm		≤2.0 @1550nm
Beat-Length (mm) @633nm	≤3.0	≤2.0		≤3.0
Proof Test (%)	1, 2 or 3 (100, 200 or 300 kpsi)			
Cladding Diameter (µm)	80 ± 1	125 ± 1		80 ± 1
Core Cladding Concentricity (µm)	≤1.0			
Coating Diameter (µm)	170 ± 5	245 ± 7		170 ± 5
Operating Temperature (°C)	-55 to +85			

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