

# HB-T

## High Performance / Low Cost - Designed for 21<sup>st</sup> Century Telecoms

The introduction of the fiber amplifier (EDFA) and resultant increased use of externally-modulated lasers has generated a substantial demand for a PM fiber that combines telecommunications compatibility with low cost. HB-T uses 'Bow-Tie' stress-applying-parts (SAPs) to create birefringence in the core – just like Fibercore's HB and HB-G fibers that dominate the Fiber Sensor Industry, with more than 25,000 km in use Worldwide. This exceptional volume, unmatched by any other PM fiber type, has been made possible by the high-yielding preform manufacturing technologies developed by Fibercore over its 25 year history

## Full Telecoms Compatibility for Laser and Chip Pigtailling, Depolarizers, EDFA Pump Multiplexing...

HB-T is mode-matched to standard 'telecoms' fiber. The result of this is that splice losses of less than 0.1dB can be achieved routinely, with extinction ratios of better than -32dB. Similarly, HB-T's geometric precision makes it ideally suited for 45° splices across PM axes for depolarizers. HB1250T, HB1480T and HB1500T are available with a 400µm dual-layer acrylate buffer for enhanced ruggedness. HB980T and HB1480T have been designed specifically for the polarization multiplexing of EDFA pump diodes. All Fibercore PM fibers are designed, and tested to exceed all relevant Telcordia™ standards.

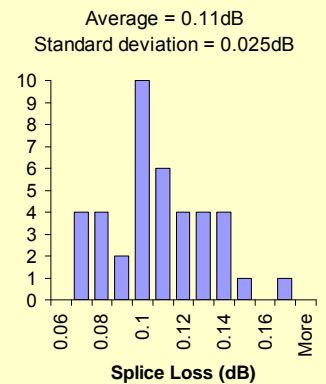
## Polarization Maintaining Fiber for Telecoms Applications

### All Telecoms Operating Wavelengths

980nm, 1310nm, 1480nm and 1550nm

### Sub 0.1 dB Splice Losses with > 32 dB PER

Excellent mode compatibility and core-clad concentricity ensure low loss splices even to PANDA or elliptical jacket PM fibers



*Excellent splice yield with HB1500T to PANDA or Elliptical Jacket fibers*

### Ideal for Depolarizer Fabrication

High geometric precision facilitates low-loss 45° splices across PM axes

### Excellent PM Performance and Spliceability

'Bow-Tie' SAPs maximize birefringence whilst minimizing internal stress within the fiber by 'focusing' stress efficiently to the core – providing optimum H-parameter with good cleave-quality and fusion-splice yields

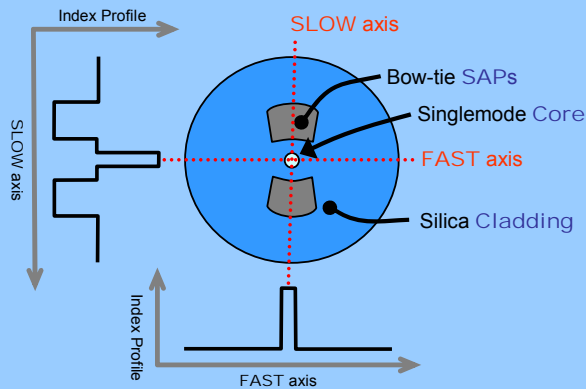
### Rugged and Easy to Handle

245 µm dual-layer acrylate coating provides excellent ruggedness, optical mode stripping and simple mechanical or chemical removal. Optional 400 µm package increases ruggedness further.

### 'Bow Tie' PM fiber

The core is flanked by areas of high-expansion, boron-doped glass that shrink-back more than the surrounding silica as the fiber is drawn and freeze the core in tension. This tension induces birefringence (ie it creates two different indices of refraction: a higher index parallel and a lower index perpendicular to the applied stress). In essence, this phenomenon is very similar to that which creates visible interference fringes when transparent plastics are stressed, except that in silica the effect is highly controlled and its magnitude is at least an order of magnitude lower than may be achieved in a plastic.

Fibercore Limited's 'Bow-Tie' design is capable of creating more birefringence than any other stressed design simply because it is based on two opposing wedges – the simplest and most efficient means of applying stress to a point.



### Full Compatibility

Standard, 125  $\mu\text{m}$  glass diameter compatible with a broad range of standard telecoms fibers, tools and components

## Specifications

	HB980T	HB1250T (245)	HB1250T (400)	HB1480T (245)	HB1480T (400)	HB1500T (245)	HB1500T (400)
Design Wavelength <sup>1</sup> (nm)	980	1310		1480		1550	
Cut-off Wavelength (nm)	870 - 970	1100 - 1290		1290 - 1450		1290 - 1540	
Numerical Aperture	0.13 – 0.15	0.11 – 0.13					
Mode Field Diameter <sup>2</sup> ( $\mu\text{m}$ ) (nominal)	6.0	9.0		10.1		10.5	
Attenuation <sup>3</sup> (dB/km)	< 3	< 2					
Beat Length <sup>4</sup> (mm)	$\leq 2.0$						
Proof Test (%)	1 or 2 (100 kpsi or 200 kpsi)						
Fiber Diameter ( $\mu\text{m}$ )	$125 \pm 1$						
Core-Cladding Concentricity ( $\mu\text{m}$ )	$\leq 0.6$						
Coating Type	Dual-layer Acrylate						
Coating Diameter ( $\mu\text{m}$ )	$245 \pm 5\%$	$245 \pm 5\%$	$400 \pm 5\%$	$245 \pm 5\%$	$400 \pm 5\%$	$245 \pm 5\%$	$400 \pm 5\%$

**Notes:**

<sup>1</sup> Measured at 633 nm