

Polarizing Fiber: Bow-Tie Style

T-HB1550Z

Description

T-HB1550Z polarizing fiber delivers high polarization extinction ratios and broad, stable operating windows for demanding applications. The HB1550Z, with bow-tie geometry, boasts extreme birefringence with polarization beat lengths approaching 2.5 mm and can provide 100 nm of practical, usable bandwidth. Thus, this fiber allows for a wide variety of packaging and sourcing options: cabled or coiled, narrow linewidth laser or broadband ASE source.

Coiling our HB1550Z PZ fiber to smaller diameters will result in a narrowing of the polarization window and a shift in center wavelength to shorter wavelengths. Coiling the PZ fiber can result in a better polarization extinction ratio, though can lead to greater loss. If loss is too high, the coil is too tight; conversely if the polarization extinction ratio is too low, the coil is not tight enough. For performance stability, it is recommended to use 4 - 10 m of fiber. However, due to the high birefringence of the PZ fiber, the polarization window will still be broad; giving the user a wide variety of packaging and deployment options.

Specifications

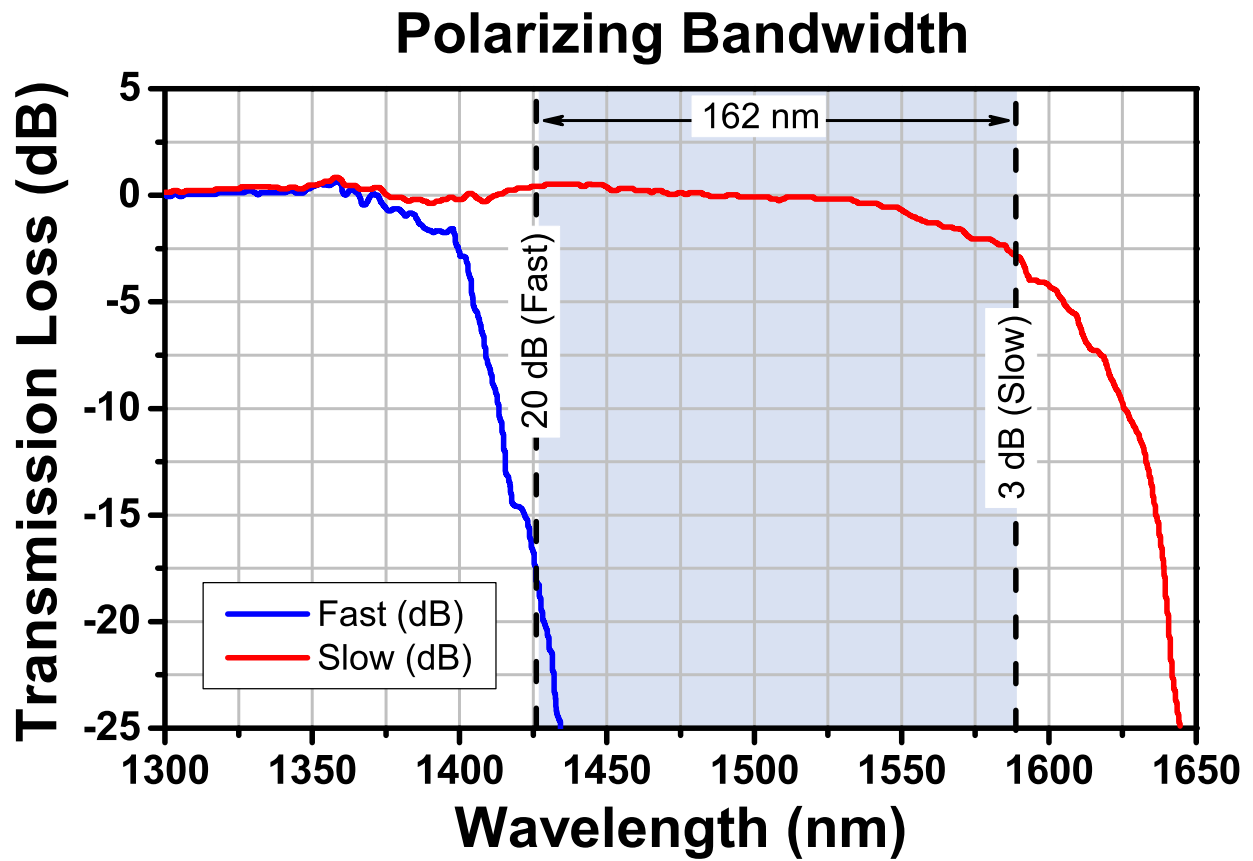
Geometrical & Mechanical	
Cladding Diameter	125 ± 1 μm
Coating Diameter	245 ± 15 μm
Core-Cladding Concentricity	≤1 μm
Coating Material	Dual Acrylate
Operating Temperature	-40 to 85 °C
Proof Test Level (1.4 GN/m ²)	100 kpsi (1%)



Optical	
Numerical Aperture	0.9 - 0.11
Attenuation	≤0.02 dB/m @ 1550 nm
Operating Wavelength ^a	1550 nm
Cutoff Wavelength ^b	1150 nm
20 dB Fast Edge ^a	≤1500 nm
3 dB Slow Edge ^a	≥1600 nm
Mode Field Diameter (Nominal)	10.0 - 12.5 μm @ 1550 nm
Beat Length	≤2.5 mm @ 1550 nm

- Typical polarizing performance with deployment conditions of 5 m length in 89 mm (3.5") diameter coils. Bandwidth may be increased depending on deployment conditions (See figure below)
- Strongly dependent upon fiber deployment condition

Performance Plots



This data was obtained with a 5 m sample of HB1550Z coiled to a diameter of 60 mm.