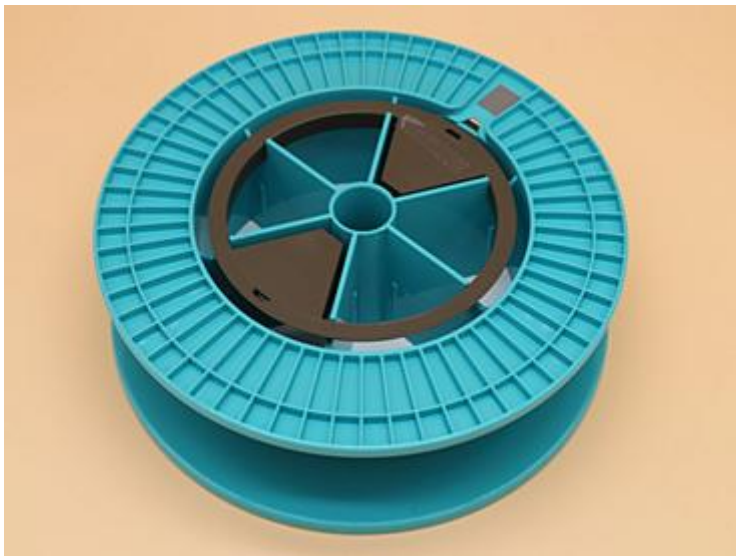
532nm Short-wavelength PM optical fiber



Product Description

Idealphotonics' Panda and Bowtie single-mode polarization-maintaining (PM) optical fibers are named according to the type of stress rod used. The stress rod is aligned with the fiber core, and the applied stress generates birefringence within the core, maintaining polarization. The Panda-type stress rod is cylindrical, while the Bowtie-type uses a trapezoidal prism stress rod, as shown in the diagram above. Generally, these two types of fibers can be used interchangeably. Panda-type fibers have long been used in the communications field because the cylindrical stress rod is easier to maintain uniformity over long distances during production. Polarization-maintaining (PM) fibers are designed to provide the highest level of polarization maintenance for wavelengths from 488nm to over 1550nm. These fibers can be used in interferometric sensors, modulators, delay lines, spectroscopy, and biomedical applications. We use "Bowtie" stress-applying components (SAP) to induce birefringence in the fiber core. These efficient SAP designs can generate very high birefringence without excessive stress, thus effectively controlling the polarization orientation throughout the fiber system. The Bowtie PM fiber core has high-expansion, boron-doped glass regions on both sides, which shrink

more than the surrounding silica. The resulting tension creates birefringence (producing two different refractive indices: a higher refractive index parallel to the applied stress and a lower refractive index perpendicular to the stress). Fibercore's "Bowtie" design generates more birefringence than any other stress application design. This is because it is based on two opposing wedges, which is the simplest and most effective way to apply stress to a point.

● Part Number

HB450

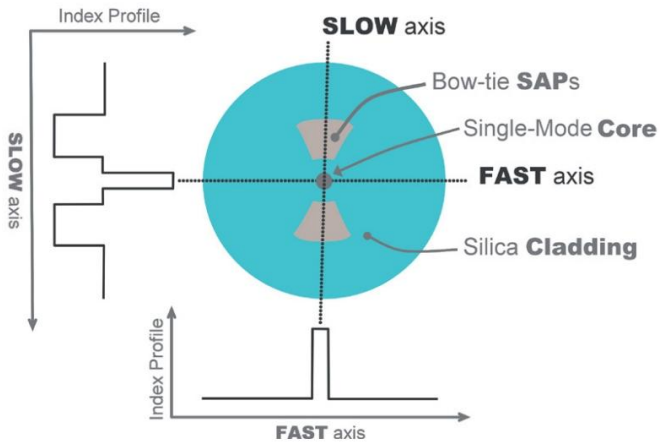
● Product features

Seven standard wavelengths, from 488nm to 1650nm、 Max. birefringence – Min. Stress、 Excellent polarization-maintaining ability with high birefringence、 Short beat length、 Strong polarization extinction ratio (PER) retention、 Wide wavelength range

● Application area

Interferometric sensors、 Diode tail fibers、 Coherent beam transmission、 Modulators、 Delay lines、 Spectroscopy、 Biomedical sensors、 Optical Coherence Tomography (OCT)

Parameters



Typical bow-tie HiBi fiber geometry

Typical Butterfly HiBi fiber geometry.

HB450	PM fibers for wavelengths above 450nm
HB600	PM fibers for wavelengths above 600nm
HB750	PM fibers for wavelengths above 750nm
HB800	PM fibers for wavelengths above 800nm
HB1000	PM fibers for wavelengths above 1020nm
HB1250	PM fibers for wavelengths above 1270nm
HB1500	PM fibers for wavelengths above 1520nm

	HB450	HB600	HB750	HB800	HB1000	HB1250	HB1500
Working wavelength (nm)	488-633	633-780	780-830	830-1060	1060-1300	1300-1550	1520-1650
Cutoff wavelength (nm)	350-470	500-600	610-750	600-800	840-1020	1030-1270	1230-1520
Numerical aperture	0. 10-0. 13	0. 14-0. 18	0. 14-0. 18	0. 14-0. 18	0. 14-0. 18	0. 14-0. 18	0. 14-0. 18
Mode field diameter (μm)	3.0-4. 1 @488nm	2.8-3.7 @633nm	3.5-4.6 @780nm	3.7-4.9 @830nm	4.8-6.3 @ 1060nm	5.8-7.9 @ 1310nm	7.0-9.2 @ 1550nm
Attenuation (dB/km)	≤ 100 @ 488nm	≤ 15 @633nm	≤ 8 @780nm	≤ 5 @830nm	≤ 3 @ 1060 nm	≤ 2 @ 1310	≤ 2 @ 1550 nm
Beat-length (mm) @633nm	≤2.0	≤2.0	≤2.0	≤2.0	≤2.0	≤2.0	≤2.0
Proof test (%)	1（100kpsi）	1（100kpsi）	1（100kpsi）	1（100kpsi）	1（100kpsi）	1（100kpsi）	1（100kpsi）
Cladding diameter (μm)	125±1	125±1	125±1	125±1	125±1	125±1	125±1

Core-cladding concentricity (μm)	≤0.75	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0	≤ 1.0
Coating diameter (μm)	245±7	245±7	245±7	245±7	245±7	245±7	245±7
Coating type*	Double-layer acrylic ester	Double-layer acrylic ester	Double-layer acrylic ester	Double-layer acrylic ester	Double-layer acrylic ester	Double-layer acrylic ester	Double-layer acrylic ester
Operating temperature (℃)	-55 to +85	-55 to +85	-55 to +85	-55 to +85	-55 to +85	-55 to +85	-55 to +85