

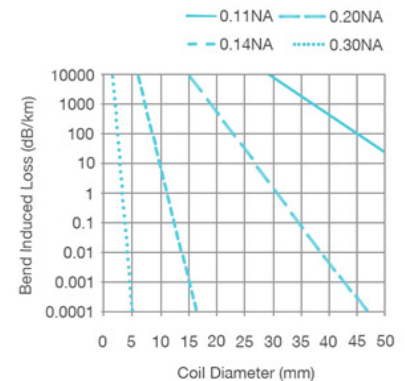
POLYIMIDE COATED SM FIBER



Fibercore's range of polyimide coated, bend-insensitive Single-Mode (SM) fibers are specifically designed for use in harsh environments. The fibers target micro-seismic 'fracking' sensors, distributed temperature and pressure sensors used in Oil & Gas exploration and process optimization. These fibers are also an excellent choice for embedded Fiber Bragg Grating (FBG) strain and temperature sensor applications.

Polyimide is a high performance polymer, which can withstand short-term temperatures as high as 400°C and continuous temperatures of 300°C, allowing the fiber to survive in high temperature wells and thermally cured embedding processes.

The fibers are available in a range of Numerical Apertures (NAs) from 0.13NA up to 0.31NA. Low NA fibers are designed for low attenuation applications where long lengths of fiber are used in a straight deployment state, for example in Distributed Temperature Sensing (DTS) systems. High NA fibers allow dramatically reduced bend losses for coiled deployment states, for example in coiled seismic/acoustic sensors.



FEATURES

Advantages

- Engineered for high temperature applications up to +300°C
- High NA variants for extremely low macro and micro bend losses
- Reduced cladding options for high reliability coils and reduced package volume
- Photosensitive core designs for FBG inscription

Typical Applications:

- Downhole sensors
- Geophones
- DTS, Distributed Acoustic Sensing (DAS), Distributed Strain Sensing (DSS) and Distributed Pressure Sensing (DPS)
- Embedded sensors
- Fiber Bragg Gratings (FBGs)
- Biomedical in vivo sensors
- High temperature sensors

Product Variants

- SM1250(10.4/125)P
SM fiber for use at 1310nm & 1550nm with polyimide
- SM1500(4.2/125)P
Bend insensitive & highly photosensitive high temp fiber for coiled & FBG sensors in high temperatures
- SM1500(6.4/125)P
Highly Ge doped fiber for applications up to +300°C
- SM1500(7.8/125)P
High temperature bridging fiber for use up to +300°C
- SM1500(9/125)P
Polyimide coated transmission and distributed sensing fiber
- SM1500(4.2/50)P
Bend insensitive polyimide fiber for high reliability mini coils
- SM1500(4.2/80)P
High temperature bend insensitive & photosensitive fiber for embedded & coiled sensors
- SM1500(5.3/80)P
Bend insensitive fiber for micro-acoustic 'fracking sensors'
- SM1500(6.4/80)P
Reduced cladding diameter coiled sensor fiber for micro-acoustic 'fracking sensors'
- SM1500(7.8/80)P
'Bridging fiber' for reduced splice losses between sensor fibers and telecoms fibers

To find out more visit fibercore.com

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POLYIMIDE COATED SM FIBER

SPECIFICATIONS

	SM1250 (10.4/125)P *	SM1500 (4.2/125)P	SM1500 (6.4/125)P	SM1500 (7.8/125)P	SM1500 (9/125)P
Operating Wavelength (nm)	1260 - 1650	1520 - 1650			
Cut-Off Wavelength (nm)	1190 - 1330	1350 - 1520			1300 - 1500
Numerical Aperture	0.11 - 0.14	0.29 - 0.31	0.19 - 0.21	0.15 - 0.17	0.13 - 0.15
Mode Field Diameter (μm)	9.6 - 11.2 @1550nm	4.0 - 4.5 @1550nm	6.0 - 6.8 @1550nm	7.4 - 8.6 @1550nm	8.5 - 9.9 @1550nm
Attenuation (dB/km)	≤0.7 @1310nm ≤0.6 @1550nm	≤2.5 @1550nm	≤0.75 @1550nm	≤0.7 @1550nm	≤0.6 @1550nm
Proof Test (%)	1 or 2 (100 or 200 kpsi)				
Cladding Diameter (μm)	125 ± 2				
Core Cladding Concentricity (μm)	≤0.75	≤0.5	≤0.75		≤0.4
Coating Diameter (μm)	155 ± 5				
Coating Type	Polyimide				
Operating Temperature (°C)	-55 to +300				

* Special easier to strip polyimide coating available for window stripping, for applications such as FBGs.

Specifications continued on next page.

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SPECIFICATIONS CONTINUED

	SM1500 (4.2/50)P	SM1500 (4.2/80)P	SM1500 (5.3/80)P *	SM1500 (6.4/80)P *	SM1500 (7.8/80)P
Operating Wavelength (nm)	1520 - 1650				
Cut-Off Wavelength (nm)	1350 - 1520				
Numerical Aperture	0.29 - 0.31		0.23 - 0.25	0.19 - 0.21	0.15 - 0.17
Mode Field Diameter (μm)	4.0 - 4.5 @1550nm		5.0 - 5.6 @1550nm	6.0 - 6.8 @1550nm	7.4 - 8.6 @1550nm
Attenuation (dB/km)	≤3.0 @1550nm	≤2.5 @1550nm	≤1.5 @1550nm	≤0.75 @1550nm	≤0.7 @1550nm
Proof Test (%)	1 or 2 (100 or 200 kpsi)				
Cladding Diameter (μm)	50 ± 2	80 ± 2			
Core Cladding Concentricity (μm)	≤1.0	≤0.5			≤0.75
Coating Diameter (μm)	71 ± 5	102 ± 5			
Coating Type	Polyimide				
Operating Temperature (°C)	-55 to +300				

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RELATED PRODUCTS

- SM Fiber for Visible RGB Through to Near IR
- High Temperature Acrylate Coated SM Fiber
- Pure Silica Core SM Fiber
- Photosensitive Fiber

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