



SM Fiber

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Datasheet

High Temperature Acrylate Coated Fiber

Fibercore's high temperature acrylate coated Single-Mode (SM) fibers are designed for continuous use at +150°C. The fibers are available with different Numerical Aperture (NA) ranges to give various levels of macro and micro bend losses and Mode Field Diameters (MFDs) to give the optimum choice depending on the application.

The SM1500(9/125)HT is primarily designed as a low attenuation fiber for use as a transmission fiber or as a distributed sensor for Distributed Temperature Sensing (DTS), Distributed Pressure Sensing (DPS), Distributed Strain Sensing (DSS) and Distributed Acoustic Sensing (DAS) applications. The higher cut-off wavelength than standard telecoms fibers allows this fiber to offer improved bend losses over standard single-mode fibers.

The 6.4 μ m and 7.8 μ m MFD variants are designed to give very low macro and micro bend losses, higher backscattering coefficients for Raman, Rayleigh and Brillouin sensor systems and better splice compatibility to high NA, small MFD sensor coil fibers to allow use as a "bridging fiber" often used in acoustic sensors.

Advantages:

- Engineered for high temperature applications up to +150°C
- Easy to strip high temperature acrylate coating
- High NA variants for extremely low macro and micro bend losses
- Reduced cladding options for high reliability coils and reduced package volume

Typical applications:

- Geophones
- DTS, DAS, DSS and DPS
- Embedded Sensors
- Fiber Bragg Gratings (FBGs)
- Current Sensors

Related Products:

- SM Fiber for Visible Through to Near IR (SM)
- Polyimide Coated SM Fiber (SM-P)
- Pure Silica Core SM Fiber (SM-SC)
- Photosensitive Fibers (PS)

Product Variants:

- **SM1500(5.3/80)HT** Bend insensitive fiber for high temperature environments
- **SM1500(6.4/80)HT** Reduced diameter, bend insensitive fiber for tightly coiled applications in temperatures up to +150°C
- **SM1500(6.4/125)HT** Bend insensitive fiber for distributed sensors in high temperature environments
- **SM1500(7.8/125)HT** Bridging fiber to reduce splice losses between high temperature bend insensitive fibers and telecoms fibers
- **SM1500(9/125)HT** Telecoms style, low attenuation, large MFD fiber with specialty high temperature acrylate coating



Specifications

	SM1500(5.3/80)HT	SM1500(6.4/80)HT	SM1500(6.4/125)HT	SM1500(7.8/125)HT	SM1500(9/125)HT
Operating Wavelength (nm)	1550				
Cut-Off Wavelength (nm)	1350 – 1520				
Numerical Aperture	0.23 - 0.25	0.19 – 0.21		0.15 – 0.17	0.13 – 0.15
Mode Field Diameter (µm)	5.0 - 5.6 @1550nm	6.0 – 6.8 @1550nm		7.3 – 8.3 @1550nm	8.5 – 9.9 @1550nm
Attenuation (dB/km)	≤1.5	≤0.5		≤0.4	≤0.35
Proof Test (%)	1, 2 or 3 (100, 200 or 300 kpsi)				
Cladding Diameter (µm)	80 ± 2	80 ± 1	125 ± 1		
Core Cladding Concentricity (µm)	≤0.75				
Coating Diameter (µm)	170 ± 10		245 ± 15		
Coating Type	High Temperature Acrylate				
Maximum Temperature (°C)	150 Long Term				

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