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Datasheet

Dual Band Carbon Coated SM Fiber

These fibers are designed to withstand harsh environments such as high temperature, high pressure, moisture and chemical. Applications such as oil and gas downhole temperature sensing, pressure monitoring and data transmission, offshore oil and gas asset monitoring, Enhanced Oil Recovery (EOR) (especially Steam Assisted Gravity Drainage (SAGD) techniques) and borehole seismic can benefit by using these fibers.

The Distributed Temperature Sensing (DTS) technique uses these specialty fibers to monitor and profile a downhole well in extreme harsh conditions. Fibercore has developed a unique carbon coating, which offers significant barriers against hydrogen, moisture and acid ingress of up to 150°C and 300°C. The carbon coating also increases the lifetime of a fiber under tight and sharp bends, protecting the fiber from water/moisture attack/(micro cracking) to the fiber glass surface.

High temperature acrylate coated fiber has all the benefits of standard acrylate coated types, such as easy stripping and mechanical protection, while providing an extended temperature rating. It is easily stripped with standard tools and has a robust and durable coating that is rated to 150°C and 300°C.

Advantages:

- Hermetically coated
- High operating temperatures, up to 150°C and 300°C
- Low attenuation
- Excellent core cladding concentricity
- Hydrogen resistant

Typical applications:

- Distributed Temperature Sensors (DTS)
- Distributed Acoustic Sensors (DAS)
- Distributed Strain Sensors (DSS)

Product Variants:

- **SM1250(10.4/125)CHT** Single-mode fiber designed for use at 1550nm with carbon and high temperature acrylate coating
- **SM1250(10.4/125)CP** Single-mode fiber designed for use at 1550nm with carbon and polyimide coating



Specifications

	SM1250(10.4/125)CHT	SM1250(10.4/125)CP
Operating Wavelength (nm)	1260 - 1650	
Cut-Off Wavelength (nm)	1190 - 1330	
Numerical Aperture	0.11 - 0.14	
Mode Field Diameter (μm)	9.6 - 11.2	
Attenuation (dB/km)	<0.6 @1310nm <0.4 @1550nm	<0.7 @1310nm <0.6 @1550nm
Proof Test (%)	1 or 2 (100 or 200 kpsi)	
Cladding Diameter (μm)	125 ± 2	
Core Cladding Concentricity (μm)	≤1.0	
Coating Diameter (μm)	245 ± 15	155 ± 5
Coating Type	Carbon High Temperature Acrylate	Carbon Polyimide
Operating Temperature (°C)	-55 to +150	-55 to +300