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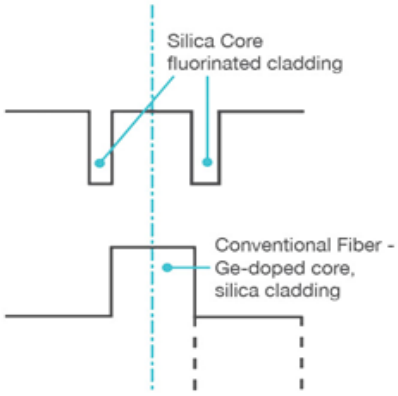
Pure Silica Core SM Fiber



Fibercore's Pure Silica Core SM fibers (SM-SC) are designed for high performance in demanding applications. The SM1500SC(9/125) and SM1500SC(9/125)P are designed for use in Hydrogen-rich environments where the pure silica core resists the effects of Hydrogen darkening. The SM300-SC and SM400-SC are designed for Ultra-Violet (UV) and visible wavelength transmission. The silica core prevents photodarkening effects, which are normally associated with Germanium doped fibers.

Fluorinated, depressed cladding design (see the image to the right) allows the core to be made from pure silica without the need for Germanium doping.

The SM1500SC(9/125)P is designed specifically for down hole Oil & Gas applications. The fiber is engineered to resist the effects of Hydrogen ingress and when used with the high performance Polyimide coating, ensures the fiber is suitable for high temperature down hole applications.

Advantages:

- Reduced Hydrogen darkening
- Reduced UV induced photodarkening
- Polyimide varient for high temperature Oil & Gas applications
- Radiation tolerant core design
- Low attenuation 1550nm variants for long length sensors and communication

Typical applications:

- Oil & Gas Distributed Sensors
- Biomedical Illumination
- Microscopy
- Sensing in Radiation Environments
- Low Attenuation Telecoms Transmission

Related Products:

- SM Fiber for Visible Through to Near IR (SM)
- Polyimide Coated SM Fiber (SM-P)
- High Temperature Acrylate Coated Fiber (SM-HT)
- Multi-Mode (MM125)

Product Variants:

• **SM300-SC**	Pure silica core fiber for transmitting long UV (UV-A) wavelengths without photodarkening
• **SM400-SC**	Non-photodarkening fiber for transmission of violet, blue and green wavelengths
• **SM1500SC(7/125)**	Pure silica core, bend insensitive fiber
• **SM1500SC(7/125)P**	Pure silica core, bend insensitive, Polyimide coated fiber for high temperature applications
• **SM1500SC(9.125)**	Very low attenuation, pure silica core fiber for 1550nm transmission
• **SM1500SC(9/125)P**	Polyimide coated, Hydrogen darkening resistant pure silica core fiber for high temperature and Hydrogen rich environments

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Specifications

	SM300-SC	SM400-SC	SM1500SC(7/125)	SM1500SC(7/125)P	SM1500SC(9/125)	SM1500SC(9/125)P
Operating Wavelength (nm)	320 - 430	405 - 532	1550		1310 - 1550	
Cut-Off Wavelength (nm)	≤310	305 - 400	1400 - 1500		1190 - 1290	
Numerical Aperture	0.12 - 0.14		0.17 - 0.19		0.13 - 0.15	
Mode Field Diameter (μm)	2.0 - 2.4 @350nm	2.5 - 3.4 @480nm	6.7 - 7.6 @1550nm		8.3 - 9.6 @1550nm	
Attenuation (dB/km)	≤70 @350 nm	≤50 @430nm ≤30 @532nm	≤0.7 @1550nm		≤0.4 @1550nm	≤0.8 @1550nm
Proof Test (%)	1, 2 or 3 (100, 200 or 300 kpsi)			1 or 2 (100 or 200 kpsi)		
Cladding Diameter (μm)	125 ± 1					
Core Cladding Concentricity (μm)	≤0.75					
Coating Diameter (μm)	245 ± 15			145 ± 5	245 ± 15	145 ± 5
Coating Type	Dual Acrylate			Polyimide	Dual Acrylate	Polyimide

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