



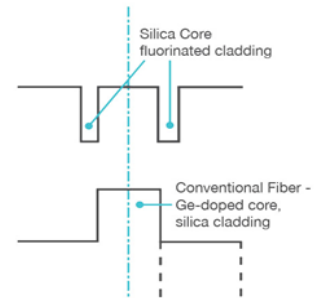
VERSION: MD23/5
RELEASE DATE: 03 JANUARY 2018

Datasheet

Pure Silica Core SM Fiber

Fibercore's Pure Silica Core SM fibers (SM-SC) are designed for high performance in demanding applications. The SM1250SC(9/125) and SM1500SC variants 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.



Coating Order Guide

Dual Layer Acrylate = No order code
Polyimide = P
Carbon High Temperature = CHT
Carbon Polyimide = CP

Order Code Example

SM1250SC(9/125) with Carbon High Temperature coating: SM1250SC(9/125)CHT

Advantages:

- Reduced hydrogen darkening
- Reduced UV induced photodarkening
- Polyimide variant 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 and hydrogen environments
- Low attenuation telecoms transmission

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
- **SM1250SC(10/125)** Very low attenuation, pure silica core fiber for 1550nm transmission
- **SM1500SC(7/80)** Pure silica core, bend insensitive fiber
- **SM1500SC(7/125)** Pure silica core, bend insensitive fiber

Related Products:

- SM Fiber for Visible RGB Through to Near IR (SM)
- Polyimide Coated SM Fiber (SM-P)
- High Temperature Acrylate Coated SM Fiber (SM-HT)
- Coreless End Cap Fiber (MM125)



Specifications

	SM300-SC	SM400-SC	SM1250SC(10/125)*	SM1500SC(7/80)	SM1500SC(7/125)
Operating Wavelength (nm)	320 - 430	405 - 532	1260 - 1650	1520 - 1650	
Cut-Off Wavelength (nm)					
Dual Layer Acrylate	≤310	≤400	1190 - 1330	1350 - 1520	
Polyimide (P)	-	-	-	1350 - 1520	
Numerical Aperture	0.12 - 0.14		0.11 - 0.14	0.17 - 0.19	
Mode Field Diameter (μm)	2.0 - 2.4 @350nm	2.5 - 3.4 @480nm	9.2 - 10.8 @1550nm	6.7 - 7.6 @1550nm	
Attenuation (dB/km)					
Dual Layer Acrylate	≤70 @350nm	≤50 @430nm ≤30 @532nm	≤0.8 @1310nm ≤0.8 @1550nm	≤0.8 @1550nm	≤0.8 @1550nm
Polyimide (P)	-	-	≤0.8 @1310nm ≤0.8 @1550nm	≤0.8 @1550nm	≤0.7 @1550nm
Carbon High Temperature (CHT)	-	-	≤0.8 @1310nm ≤0.8 @1550nm	-	-
Carbon Polyimide (CP)	-	-	≤0.8 @1310nm ≤0.8 @1550nm	-	-
Proof Test (%)	1 or 2 (100 or 200 kpsi)				
Cladding Diameter (μm)	125 ± 1		125 ± 2	80 ± 1	125 ± 2
Core Cladding Concentricity (μm)	≤0.75		≤1	≤0.75	
Coating Diameter (μm)					
Dual Layer Acrylate	245 ± 15			170 ± 5	245 ± 7
P	-	-	155 ± 5	105 ± 5	155 ± 5
CP	-	-	155 ± 5	-	155 ± 5
CHT	-	-	245 ± 15	-	245 ± 15
Coating Type	Dual Layer Acrylate		Dual Layer Acrylate P*, CHT, CP	Dual Layer Acrylate P	Dual Layer Acrylate P, CHT, CP
Operating Temperature (°C)					
Dual Layer Acrylate	-55 to +85				
P	-	-	-55 to +300		
CP	-	-	-55 to +300	-	-55 to +300
CHT	-	-	-55 to +150	-	-55 to +150

* Special polyimide, for strip and recoat FBGs, available.