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 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 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
- SM400-SC
- SM1500SC(7/125)
- SM1500SC(7/125)P
- SM1500SC(9.125)
- SM1500SC(9/125)P

**Datasheet**

**VERSION:** MD23/1  
**RELEASE DATE:** 12 NOVEMBER 2013

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## Specifications

<table>
<thead>
<tr>
<th></th>
<th>SM300-SC</th>
<th>SM400-SC</th>
<th>SM1500SC(7/125)</th>
<th>SM1500SC(7/125)P</th>
<th>SM1500SC(9/125)</th>
<th>SM1500SC(9/125)P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Wavelength (nm)</strong></td>
<td>320 - 430</td>
<td>405 - 532</td>
<td>1550</td>
<td>1310 - 1550</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cut-Off Wavelength (nm)</strong></td>
<td>≤310</td>
<td>305 - 400</td>
<td>1400 - 1500</td>
<td>1190 - 1290</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Numerical Aperture</strong></td>
<td>0.12 - 0.14</td>
<td>0.17 - 0.19</td>
<td>0.13 - 0.15</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Mode Field Diameter (µm)</strong></td>
<td>2.0 - 2.4 @350nm</td>
<td>2.5 - 3.4 @480nm</td>
<td>6.7 - 7.6 @1550nm</td>
<td>8.3 - 9.6 @1550nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Attenuation (dB/km)</strong></td>
<td>≤70 @350nm</td>
<td>≤50 @430nm ≤50 @632nm</td>
<td>≤0.7 @1550nm</td>
<td>≤0.4 @1550nm ≤0.8 @1550nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proof Test (%)</strong></td>
<td>1, 2 or 3 (100, 200 or 300 kpsi)</td>
<td></td>
<td>1 or 2 (100 or 200 kpsi)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cladding Diameter (µm)</strong></td>
<td>125 ± 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Core Cladding Concentricity (µm)</strong></td>
<td>≤0.75</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Coating Diameter (µm)</strong></td>
<td>245 ± 15</td>
<td></td>
<td>145 ± 5</td>
<td>245 ± 15</td>
<td>145 ± 5</td>
<td></td>
</tr>
<tr>
<td><strong>Coating Type</strong></td>
<td>Dual Acrylate</td>
<td></td>
<td>Polymide</td>
<td>Dual Acrylate</td>
<td>Polymide</td>
<td></td>
</tr>
</tbody>
</table>

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