

**Fiber Type:**  
Single Mode

**Fiber**

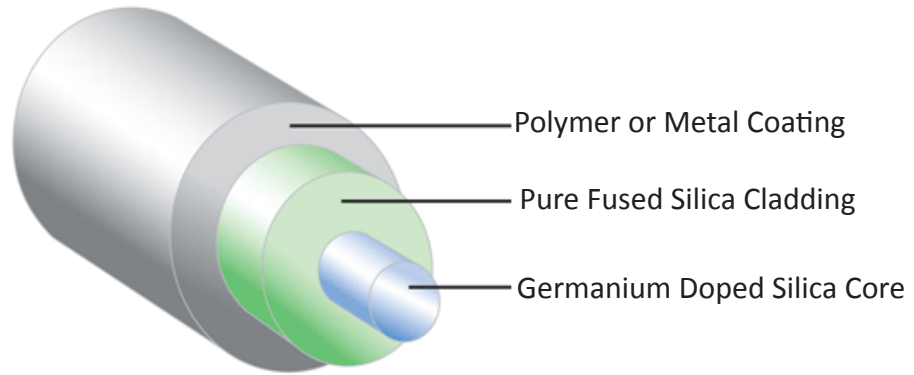
**Construction:**

Silica Core/  
Silica Clad/  
Polymer or Metal  
Coated

**Trade Name:**

ASI™ 633 Series  
(633nm – 680nm)

ASI™ 1500 Series  
(1310nm)



**Single Mode Fiber**

Fiberguide's Single Mode Fibers are used in data transmission applications as well as photonics applications where a single optical path, or mode, is desired. These fibers are available with Acrylate coatings and also high performance Polyimide, Aluminum, and Gold coatings that allow them to exceed the temperature performance levels of standard fibers.

**FIBER SPECIFICATIONS**

- Single Mode
- Germanium Doped Fused Silica Core / Pure Fused Silica Cladding
- Mode Field Diameter / Cladding Sizes:  
4.3/125µm, 9.0/125µm
- Wavelengths: 4.3/125µm: 633nm – 680nm / 9.0/125µm: 1310nm
- Numerical Aperture (NA): 0.12
- Recommended Bend Radius:
  - o Short Term: 100 X Clad Diameter
  - o Long Term: 200 X Clad DiameterPlease note that these figures represent best practice recommendations. In applications where tighter bends are required, Fiberguide can assist you in estimating what impact they may have on fiber reliability.
- 100% Proof Test Using 4-Axis Bend Method

**APPLICATIONS**

- Data Communications
- Laser Systems
- Medical Applications
- Oil & Gas Down-Hole Sensing
- Photonic Devices
- Optical Sensor Systems

# Anhydrous Silica (ASI™) Single Mode Fiber

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Single Mode

**Fiber**

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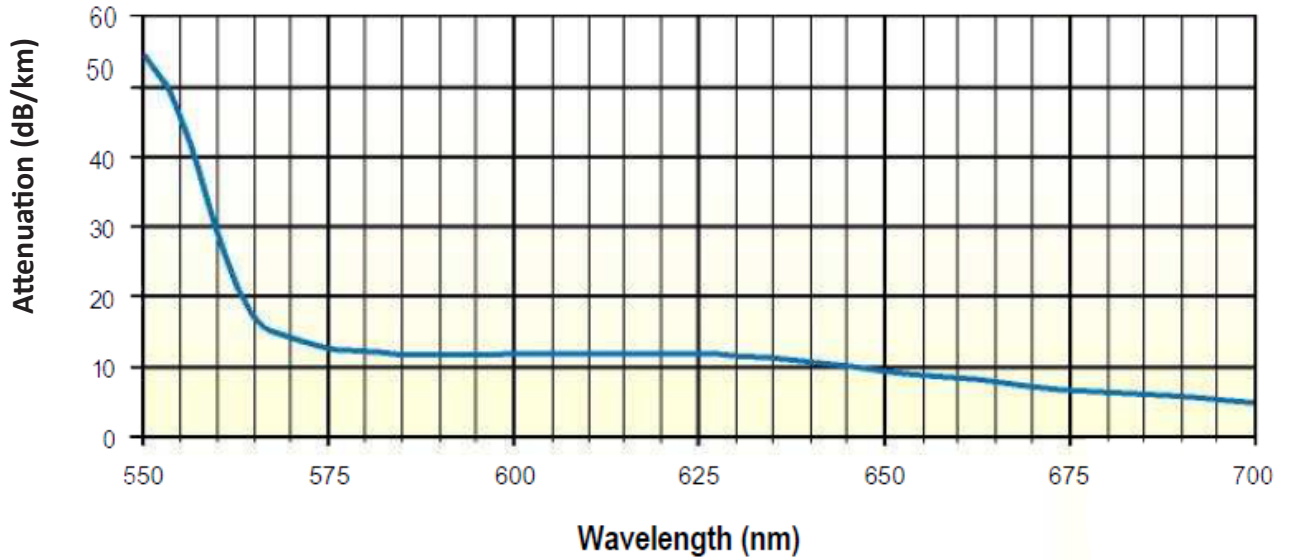
ASI™ 1500 Series  
(1310nm)

**Fiber Type:** Anhydrous Silica (ASI™) Silica Core/Silica Clad/ Polymer or Metal Coated

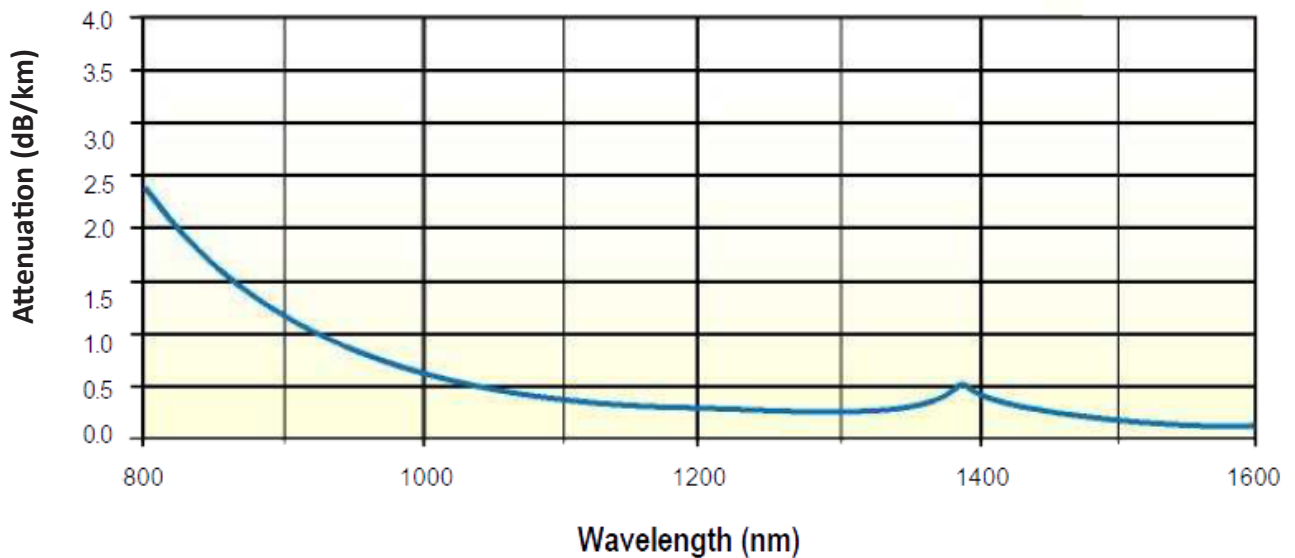
**Wavelength:** 4.3/125µm: 633nm - 680nm, 9.0/125µm: 1310nm

**Coating:** Acrylate & Polyimide

**ASI™ 633 Attenuation**



**ASI™ 1500 Attenuation**



Note: Fiberguide's metalized coatings increase the attenuation of the fiber. The values/charts in this document are for polymer coated fibers only. Please contact us for specifics.

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ASI™ 1500 Series  
(1310nm)

| Fiber Specifications       |               |                                  |
|----------------------------|---------------|----------------------------------|
|                            | ASI 633       | ASI 1500                         |
| Design Wavelength          | 633nm - 680nm | 1310nm                           |
| Cutoff Wavelength          | 500nm-600nm   | ≤ 1260nm                         |
| Core/Clad Concentricity    | ≤ 1.0μm       | ≤ 1.0μm                          |
| Cladding Non-Circularity   | ≤ 1%          | ≤ 1%                             |
| Zero Dispersion Wavelength | N/A           | 1310nm                           |
| Zero Dispersion Slope      | N/A           | ≤ .092(ps/nm <sup>2</sup> )*km   |
| Dispersion Coefficient     | N/A           | 1285nm - 1330nm ≤ 2.8 (ps/nm)*km |

| Index of Refraction (IOR) @ 633 nm   |          |                          |
|--|----------|--------------------------|
| Fiber Type   | Layer    | Numerical Aperature (NA) |
|  |          | 0.12                     |
| Anhydrous Silica (ASI™) Silica Core/Silica Clad/ Polymer or Metal Coated - Single Mode | Core     | 1.449                    |
|  | Cladding | 1.444                    |

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(1310nm)

### Acrylate Coating

Temperature: -40°C to +85°C / -40°F to + 185°F

**Fiber Type:** Anhydrous Silica (ASI™) - Single Mode

#### Wavelength:

ASI 633 (4.3/125μm): 633nm - 680nm

ASI 1500 (9.0/125μm): 1310nm

#### Numerical Aperture (NA):

Standard: 0.12 ± 0.02 (Full Acceptance Angle 14°)

**Proof Test:** 100 KPSI 4-Axis Bend Test

| Product Code    | Core Diameter (μm) | Cladding Diameter (μm) | Coating Diameter (μm) | Bend Radius Short Term/ Long Term (mm) |
|-----------------|--------------------|------------------------|-----------------------|--|
| ASI4.3/125/250Y | 4.3 ± 0.3          | 125 + 1/-3             | 250 ± 12.5            | ≥ 13/25                                |
| ASI9.0/125/250Y | 9.0 ± 0.5          | 125 + 1/-3             | 250 ± 12.5            | ≥ 13/25                                |

### Thermocoat Coating (Polyimide)

Temperature: -190°C to +350°C / -310°F to + 662°F

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#### Wavelength:

ASI 633 (4.3/125μm): 633nm - 680nm

ASI 1500 (9.0/125μm): 1310nm

#### Numerical Aperture (NA):

Standard: 0.12 ± 0.02 (Full Acceptance Angle 14°)

**Proof Test:** 50 KPSI 4-Axis Bend Test

| Product Code    | Core Diameter (μm) | Cladding Diameter (μm) | Coating Diameter (μm) | Bend Radius Short Term/ Long Term (mm) |
|-----------------|--------------------|------------------------|-----------------------|--|
| ASI4.3/125/145T | 4.3 ± 0.3          | 125 + 1/-3             | 145 ± 5               | ≥ 13/25                                |
| ASI9.0/125/145T | 9.0 ± 0.5          | 125 + 1/-3             | 145 ± 5               | ≥ 13/25                                |

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(1310nm)

| Aluminum Coating   |                    |                        |                       |  |
|--|--------------------|------------------------|-----------------------|--|
| Temperature: -269°C to +400°C / -452°F to + 752°F  |                    |                        |                       |  |
| <b>Fiber Type:</b> Anhydrous Silica (ASI™) - Single Mode                                 |                    |                        |                       |  |
| <b>Wavelength:</b><br>ASI 633 (4.3/125µm): 633nm - 680nm<br>ASI 1500 (9.0/125µm): 1310nm |                    |                        |                       |  |
| <b>Numerical Aperture (NA):</b><br>Standard: 0.12 ± 0.02 (Full Acceptance Angle 14°)     |                    |                        |                       |  |
| <b>Proof Test:</b> 100 KPSI 4-Axis Bend Test   |                    |                        |                       |  |
| Product Code   | Core Diameter (µm) | Cladding Diameter (µm) | Coating Diameter (µm) | Bend Radius Short Term/ Long Term (mm) |
| ASI4.3/125/175A  | 4.3 ± 0.3          | 125 + 1/-3             | 175 ± 18              | ≥ 13/25                                |
| ASI9.0/125/175A  | 9.0 ± 0.5          | 125 + 1/-3             | 175 ± 18              | ≥ 13/25                                |

| Gold Coating   |                    |                        |                       |  |
|--|--------------------|------------------------|-----------------------|--|
| Temperature: -269°C to +700°C / -452°F to + 1292°F                                       |                    |                        |                       |  |
| <b>Fiber Type:</b> Anhydrous Silica (ASI™) - Single Mode                                 |                    |                        |                       |  |
| <b>Wavelength:</b><br>ASI 633 (4.3/125µm): 633nm - 680nm<br>ASI 1500 (9.0/125µm): 1310nm |                    |                        |                       |  |
| <b>Numerical Aperture (NA):</b><br>Standard: 0.12 ± 0.02 (Full Acceptance Angle 14°)     |                    |                        |                       |  |
| <b>Proof Test:</b> 50 KPSI 4-Axis Bend Test  |                    |                        |                       |  |
| Product Code   | Core Diameter (µm) | Cladding Diameter (µm) | Coating Diameter (µm) | Bend Radius Short Term/ Long Term (mm) |
| ASI4.3/125/155G  | 4.3 ± 0.3          | 125 + 1/-3             | 155 ± 16              | ≥ 13/25                                |
| ASI9.0/125/155G  | 9.0 ± 0.5          | 125 + 1/-3             | 155 ± 16              | ≥ 13/25                                |