

Anhydrous Silica (ASI™) Single Mode Fiber

Fiber Type:
Single Mode

Fiber

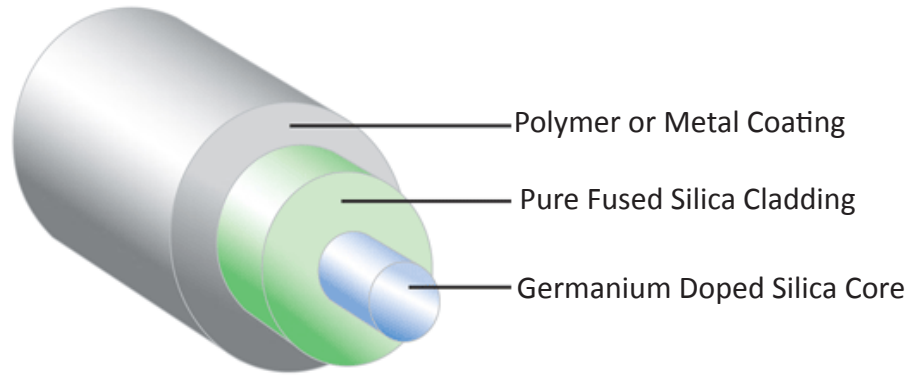
Construction:

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 Diameter
- Please 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

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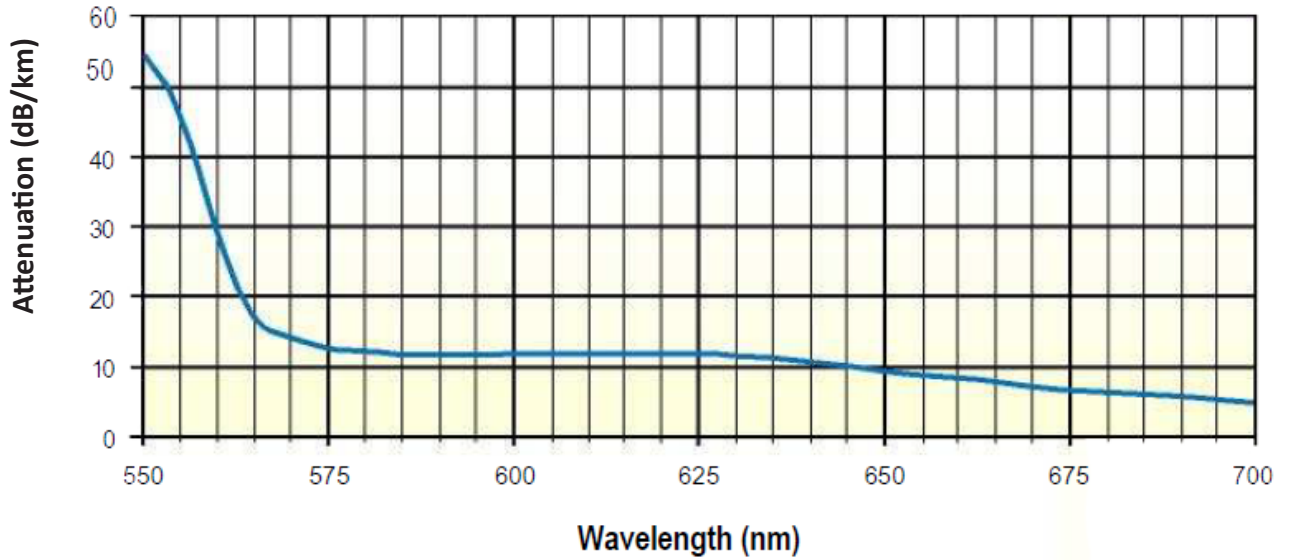
ASI™ 1500 Series
(1310nm)

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

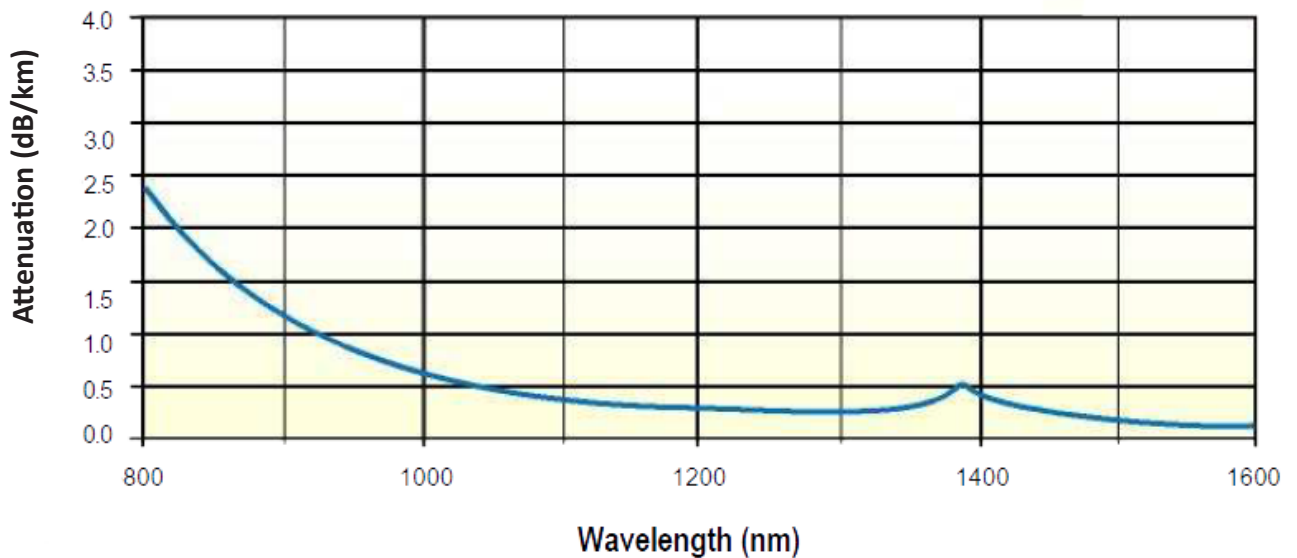
Wavelength: 4.3/125µm: 633nm - 680nm, 9.0/125µm: 1310nm

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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| 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 ²)*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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Acrylate Coating

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

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Wavelength:

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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 | | | | |
| 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) |
| ASI4.3/125/175A | 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 | | | | |
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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) |
| ASI4.3/125/155G | 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 |