

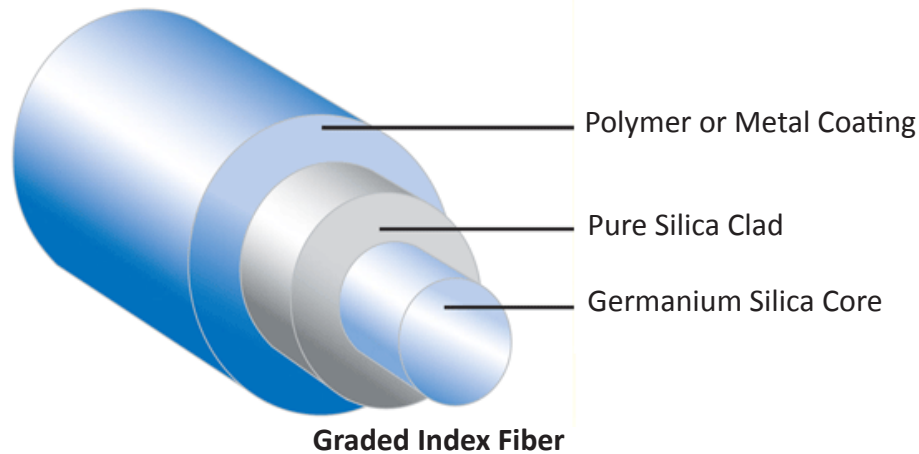
Anhydrous Graded Index (AGI™) Multimode Fiber

Fiber Type:
Graded Index
Multimode

Fiber

Construction:
Silica Core/
Silica Clad/
Polymer or Metal
Coated

Trade Name:
AGI™ Series
(850nm, 1300nm)



Fiberguide's AGI fibers feature a graded index profile instead of a step index profile. These fibers are primarily used in data transmission applications where more bandwidth is needed than step index fibers can offer. 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

- Graded Index Multimode
- Germanium Doped Fused Silica Core / Pure Fused Silica Cladding
- Core / Cladding Sizes:
50/125µm, 62.5/125µm
- Wavelengths: Optimized for 850 nm & 1300nm
- Numerical Aperture (NA): 50µm: 0.200;
62.5µm: 0.275

- 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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Fiber Type: Anhydrous Graded Index (AGI™) Silica Core/Silica Clad/ Polymer or Metal Coated
Wavelength: 850nm & 1300nm
Coatings: Acrylate & Polyimide

Fiber

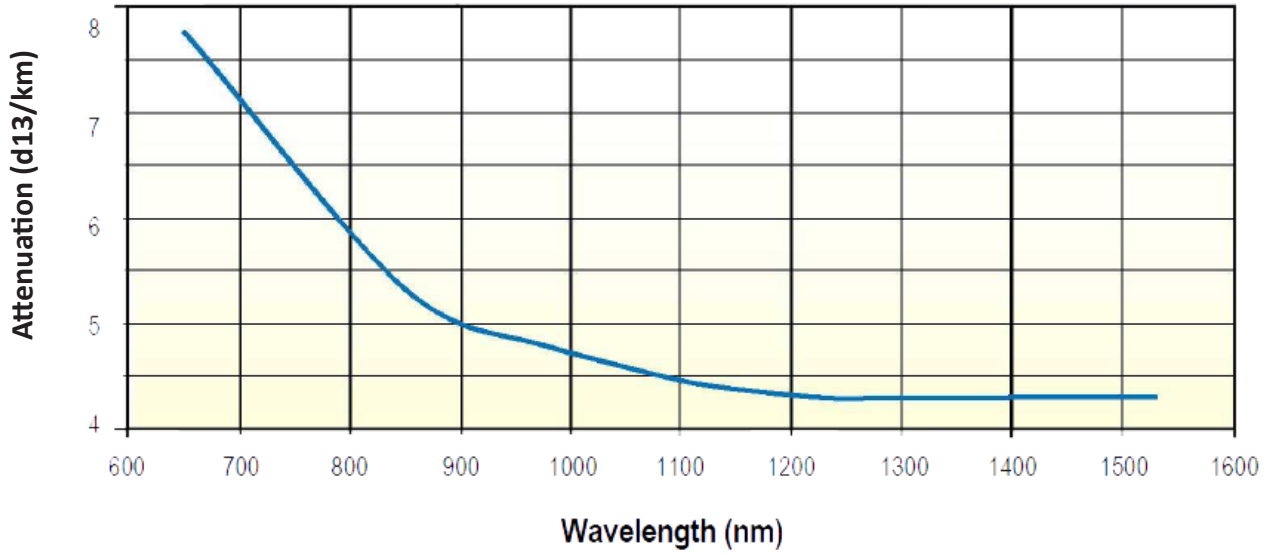
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Anhydrous Graded Index 50/125 Attenuation



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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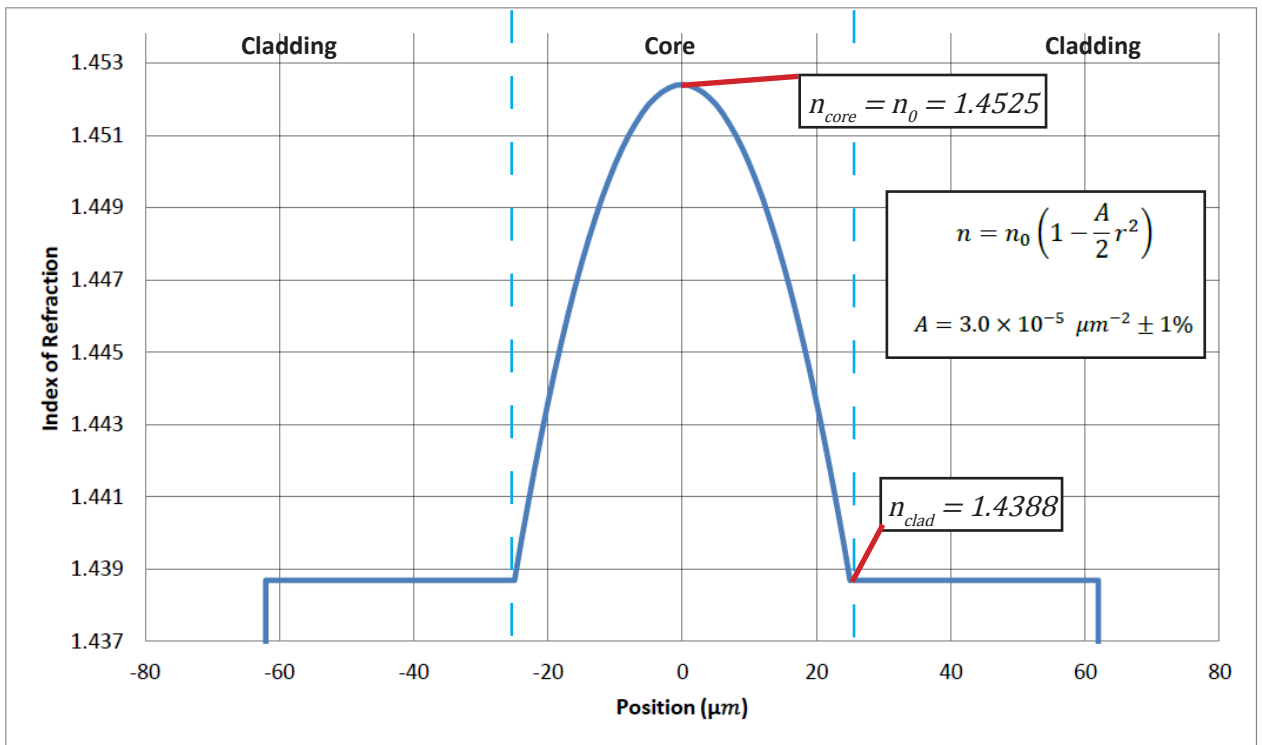
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| Fiber Specifications | | |
|-----------------------------------|-------------|--------------|
| | AGI 50/125 | AGI 62.5/125 |
| Core/Clad Concentricity | ≤ 1.0μm | ≤ 1.0μm |
| Cladding Non-Circularity | ≤ 1% | ≤ 1% |
| Attenuation @ 850μm | ≤ 2.7dB/km | ≤ 3.0dB/km |
| Attenuation @ 1300μm | ≤ 0.8dB/km | ≤ 0.8dB/km |
| Bandwidth-Length Product @ 850μm | ≥ 200MHz-km | ≥ 500MHz-km |
| Bandwidth-Length Product @ 1300μm | ≥ 500MHz-km | ≥ 500MHz-km |

Index of Refraction for 50 μm/125 μm at 850nm



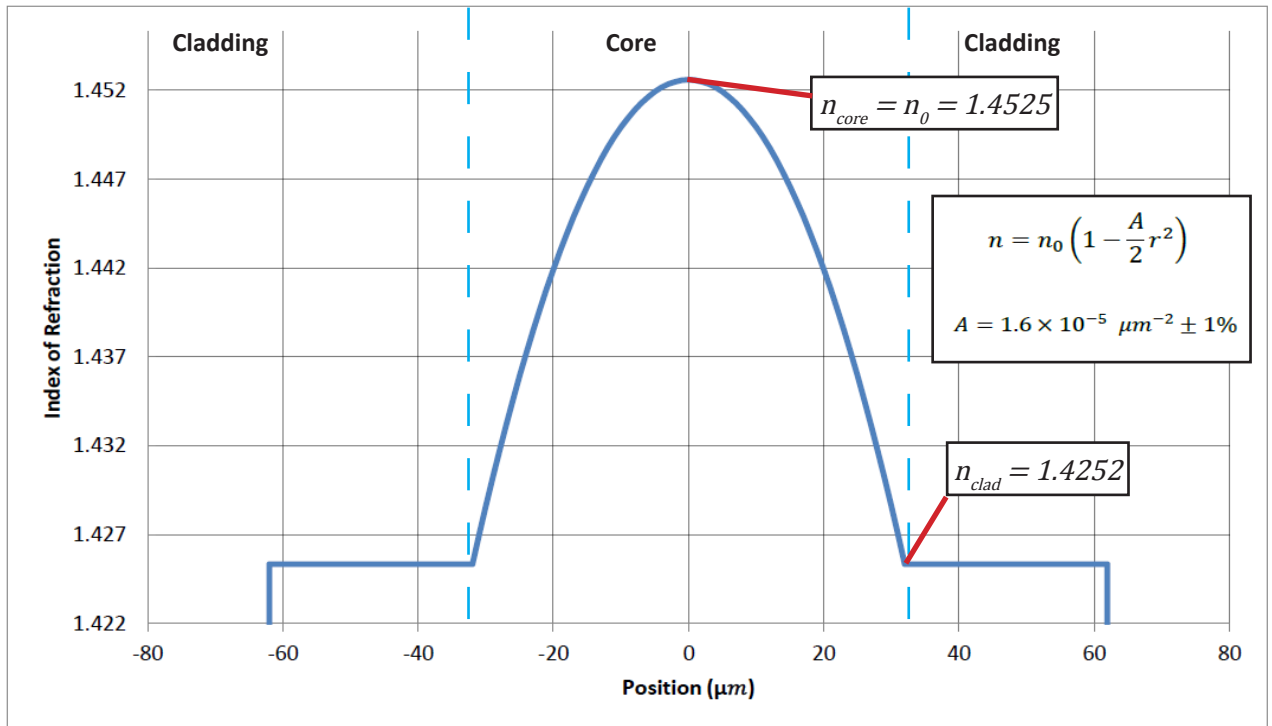
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Index of Refraction for 62.5 μm/125 μm at 850nm



The indicated refractive profiles are indicative of a nearly parabolic refractive index. Light in a such a medium undergoes sinusoidal motion as a function of travel distance along the fiber. One period of travel in a graded index medium is commonly called the “pitch length.” The constant “A” is the parabolic constant, and used to determine lens pitch length for collimation, imaging, and fiber coupling. It is also used to determine the impact a graded index lens has on Gaussian beams. The pitch length is determined from “A”; quarter pitch graded index lenses are used for imaging and collimating of small, single mode fibers; full pitch graded index sections are used as fiber to fiber coupling.

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Acrylate Coating

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

Fiber Type: Anhydrous Graded Index (AGI™) Multimode

Wavelength: Optimized for 850nm & 1300nm

Numerical Aperture (NA):

50µm: 0.200 ± 0.02 (Full acceptance Angle 23.6°)

62.5µm: 0.275 ± 0.02 (Full acceptance Angle 33.4°)

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) |
|------------------|--------------------|------------------------|-----------------------|--|
| AGI50/125/250Y | 50 ± 2 | 125 + 1/-3 | 250 ± 12.5 | ≥ 13/25 |
| AGI62.5/125/250Y | 62.5 ± 2 | 125 + 1/-3 | 250 ± 12.5 | ≥ 13/25 |

Thermocoat Coating (Polyimide)

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

Fiber Type: Anhydrous Graded Index (AGI™) Multimode

Wavelength: Optimized for 850nm & 1300nm

Numerical Aperture (NA):

50µm: 0.200 ± 0.02 (Full acceptance Angle 23.6°)

62.5µm: 0.275 ± 0.02 (Full acceptance Angle 33.4°)

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) |
|------------------|--------------------|------------------------|-----------------------|--|
| AGI50/125/145T | 50 ± 2 | 125 + 1/-3 | 145 ± 12.5 | ≥ 13/25 |
| AGI62.5/125/145T | 62.5 ± 2 | 125 + 1/-3 | 145 ± 12.5 | ≥ 13/25 |

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| Aluminum Coating | | | | |
|--|--------------------|------------------------|-----------------------|--|
| Temperature: -269°C to +400°C / -452°F to + 752°F | | | | |
| Fiber Type: Anhydrous Graded Index (AGI™) Multimode | | | | |
| Wavelength: Optimized for 850nm & 1300nm | | | | |
| Numerical Aperture (NA): | | | | |
| 50µm: 0.200 ± 0.02 (Full acceptance Angle 23.6°) | | | | |
| 62.5µm: 0.275 ± 0.02 (Full acceptance Angle 33.4°) | | | | |
| 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) |
| AGI50/125/175A | 50 ± 2 | 125 + 1/-3 | 175 ± 18 | ≥ 13/25 |
| AGI62.5/125/175A | 62.5 ± 2 | 125 + 1/-3 | 175 ± 18 | ≥ 13/25 |

| Gold Coating | | | | |
|--|--------------------|------------------------|-----------------------|--|
| Temperature: -269°C to +700°C / -452°F to + 1292°F | | | | |
| Fiber Type: Anhydrous Graded Index (AGI™) Multimode | | | | |
| Wavelength: Optimized for 850nm & 1300nm | | | | |
| Numerical Aperture (NA): | | | | |
| 50µm: 0.200 ± 0.02 (Full acceptance Angle 23.6°) | | | | |
| 62.5µm: 0.275 ± 0.02 (Full acceptance Angle 33.4°) | | | | |
| 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) |
| AGI50/125/155G | 50 ± 2 | 125 + 1/-3 | 155 ± 16 | ≥ 13/25 |
| AGI62.5/125/155G | 62.5 ± 2 | 125 + 1/-3 | 155 ± 16 | ≥ 13/25 |