WAVEGUIDE TECHNOLOGIES

UV-Vis & Vis-IR

Gold Coated - Step Index Multimode Optical Fibers

○ ENGINEERING ○ DESIGN ○ MANUFACTURING

Description

Gold coated step index multimode optical fibers are designed to operate in the UV-VIS and VIS-IR wavelength window. The fiber is supplied with a 99.99% 24kt Gold protective coating, capable of withstanding extreme temperatures and environments. Electrically conductive this type of coating provides the user with the ability to connectorize directly to the coating, resulting in a hermetically sealed assembly. Gold coatings offer excellent protection over a wider temperature range than conventional coatings. Combined with an excellent stress corrosion susceptibility parameter, it offers improved mechanical protection to the optical fiber when used in the most challenging harsh environments. Step index multimode optical fibers are quality tested in accordance with the Telecommunications Industry Association (TIA) and Fiber Optic Test Procedures (FOTP). These fibers can also be tested to MIL-SPEC standards when necessary.

Principal Features

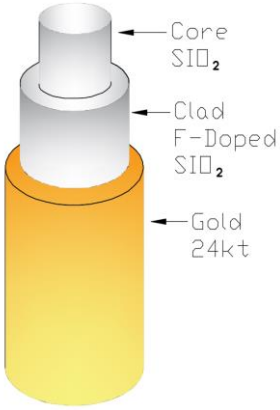
- High Operating temperature
- Sterilizable
- Radio Opaque
- Chemical corrosion resistance
- Non-oxidizing
- Radiation resistant
- Cryogenic operating temperature
- Solderable directly to connectors
- Non-contaminating

Specifications

Physical Characteristics	UV-Vis	Vis-IR
Core Composition	Pure Fused Silica	Pure Fused Silica
Clad Composition	Fluorine Doped SiO_2	Fluorine Doped SiO_2
Core/Clad Offset	≤ 1% of φ Core	≤ 1% of φ Core
Coating Composition	99.99% 24kt Gold	99.99% 24kt Gold
Core Hydroxy (OH) Content	1200 ppm (High OH)	0. 7ppm (Low OH)
Clad/Core ratios	1.1, 1.2, 1.4, and 2.5	1.1, 1.2, 1.4, and 2.5

Optical Characteristics		
Wavelength Range	200-1200nm	400-2400nm
Numerical Apertures	0.22 ± 0.02	0.22 ± 0.02
Typical Attenuation @ 850nm	≤ 14 dB/Km	≤ 12 dB/Km
Index of Refraction @ 850nm	1.45250	1.45250

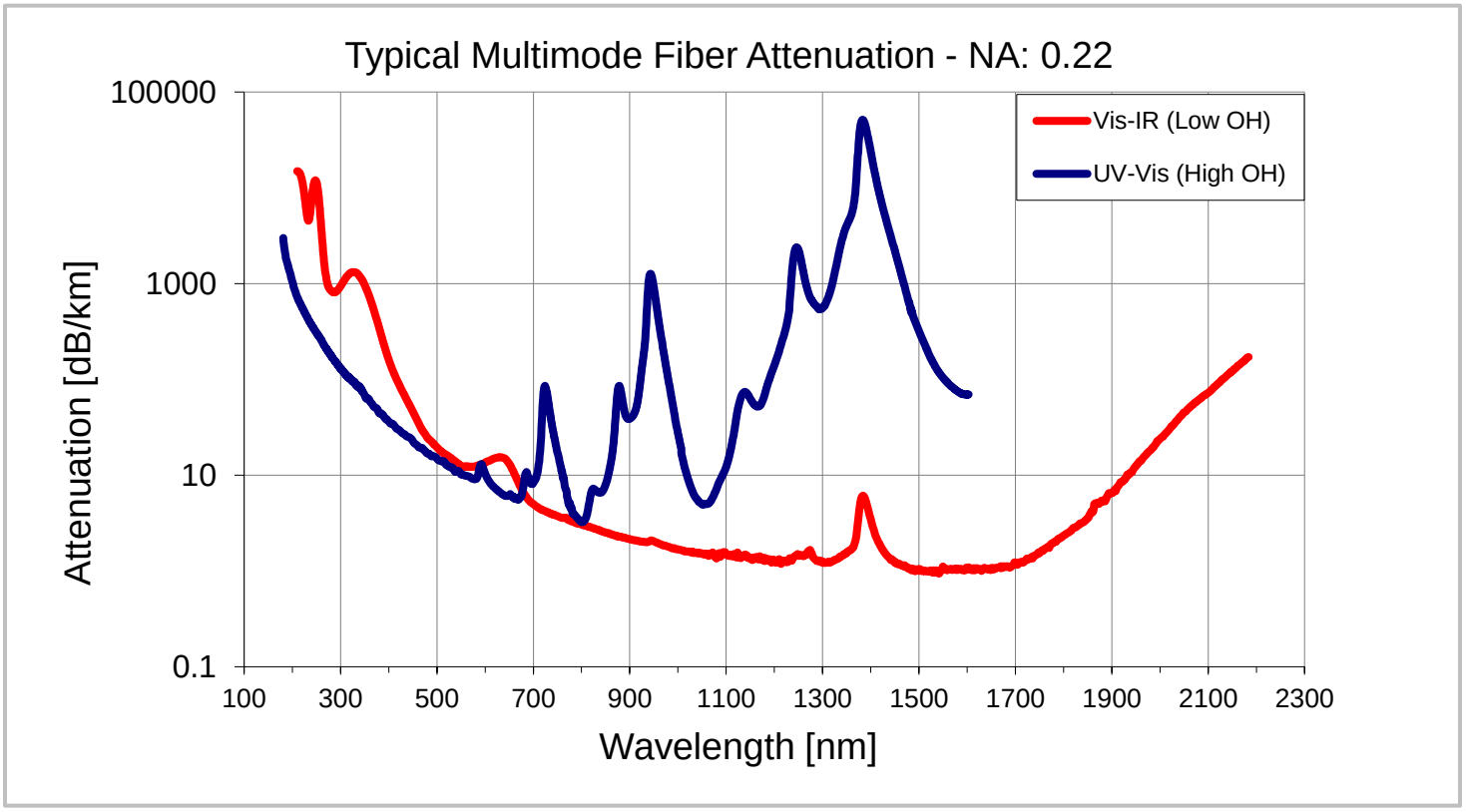
Mechanical Characteristics		
Proof Test Level	≥ 100Kpsi	≥ 100Kpsi
Median Tensile Strength	≥ 3.3GPa	≥ 3.3GPa
Corrosion Parameter	≥ 50	≥ 50
Young's Modulus	71.7 GPa	71.7 GPa
Operating Temperature Range	−269°C to 700°C	−269°C to 700°C
Bend Radius Short Term	200X fiber radius	200X fiber radius
Bend radius Long Term	400X fiber radius	400X fiber radius



Applications

Gold Coated Step Index Multimode Optical Fibers are typically used in a variety of challenging applications such as: High temperature sensing, Down-hole sensing, Corrosive environments, High radiation environments, Turbine and jet engine monitoring, High power laser delivery systems, High vacuum devices, Aircraft, Missile, and Spacecraft sensing and measurement.

Spectral Attenuation



Tables Below Reflect Standard Gold Coated Fiber Geometries

Visible to IR Transmission (400-2400nm) Low OH			
Product Type	ϕ Core (µm) ± 2%	ϕ Clad (µm) ± 2%	ϕ Jacket (µm) ± 10%
Vis-IR 050/125/155G	50	125	155
Vis-IR 050/125/160G	50	125	160
Vis-IR 105/125/160G	105	125	160
Vis-IR 200/220/255G	200	220	255
Vis-IR 200/220/260G	200	220	260
Vis-IR 300/330/385G	300	330	380
Vis-IR 400/440/515G	400	440	510

UV to Visible Transmission (200-1200nm) High OH			
Product Type	ϕ Core (µm) ± 2%	ϕ Clad (µm) ± 2%	ϕ Jacket (µm) ± 10%
UV-Vis 050/125/155G	50	125	155
UV-Vis 050/125/160G	50	125	160
UV-Vis 105/125/160G	105	125	160
UV-Vis 200/220/255G	200	220	255
UV-Vis 200/220/260G	200	220	260
UV-Vis 300/330/385G	300	330	380
UV-Vis 400/440/515G	400	440	510

Note:
The items listed in these tables are standard configurations. Other configurations are available on special request.