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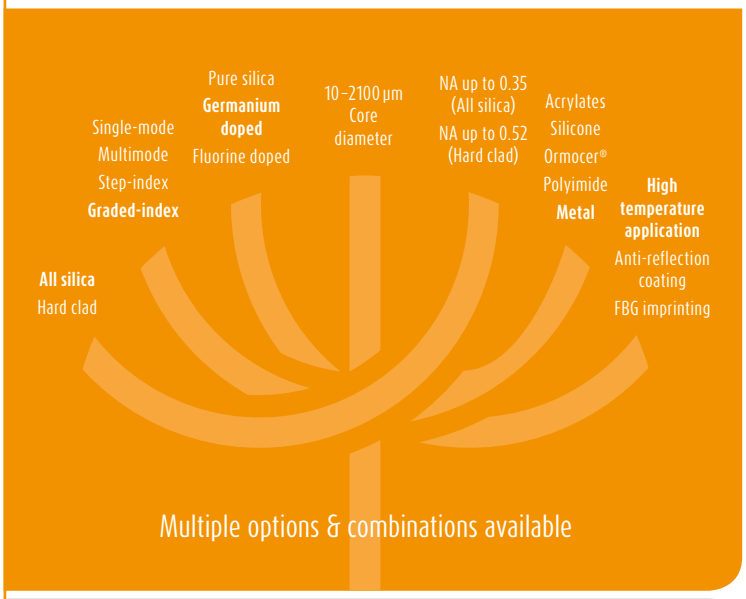

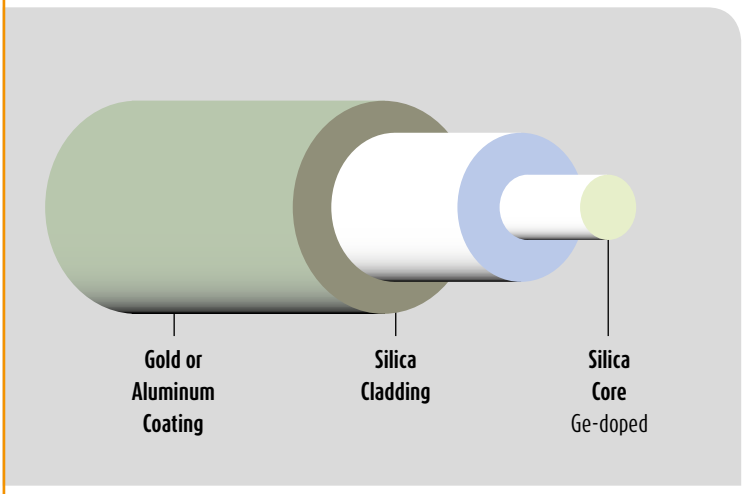

Graded Index Multimode Fibers Metal Coated Series: Gold/Aluminum

Germanium doped fused silica graded index multimode fibers, for data communication at the optical wavelengths 850 nm and/or 1300 nm.

The metalized optical fiber is supplied with either 24 kt Gold or Aluminum coatings. As an electric conductor, these types of coatings provide the user with the ability to terminate the fiber directly onto the coating, supporting hermetically sealed assemblies. Gold and Aluminum coated fibers are capable of withstanding extreme temperatures and harsh environments. The manufacturing process utilized in the production of these fibers result in low stress corrosion susceptibility, and thus offering improved mechanical protection to the optical fiber when used in the most challenging harsh environments. All metal coated graded index fibers are 100 % quality tested to Heracle's stringent test procedures in accordance with the Telecommunications Industry Association (TIA/EIA) and international Fiber Optic Test Procedures (FOTP). Specific custom tests to verify application requirements are available.

Fiber name	Wavelength	Core [µm] ± 2 %	Cladding [µm] ± 2 %	Coating	Coating [µm] ± 10 %
GGI 50/125 IRMG 155	VIS/IR	50	125	Gold	155
GGI 62.5/125 IRMG 155	VIS/IR	50	125	Gold	155
GGI 50/125 IRMA 175	UV/VIS	50	125	Alu	175
GGI 62.5/125 IRMA 175	UV/VIS	50	125	Alu	175

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

Meeting the need of our customer

Heracle is focused on development and manufacturing of custom specialty optical fibers required for sophisticated applications serving the industrial, medical and optical sensor markets. In addition to a wealth of product, system and marketing experience in the fiber optics industry, the Heracle team and network is well versed in:
Preform design and manufacturing, optical fiber drawing and coating technologies, characterization of optical and mechanical fiber parameters, best practices and international standards.

The company is located in Jena, Germany, and provides customers worldwide with a personal bridge to the innovation and breakthroughs of the optical fiber industry across the globe.

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Specialty optical fiber solutions

Physical Characteristics	50/125/155 Gold	62.5/125/155 Gold	50/125/175 Alu	62.5/125/175 Alu
Core material:	Ge-doped silica	Ge-doped silica	Ge-doped silica	Ge-doped silica
Core diameter:	50 µm +/- 2 %	62.5 µm +/- 2 %	50 µm +/- 2 %	62.5 µm +/- 2 %
Core non-circularity:	≤ 6 %	≤ 6 %	≤ 6 %	≤ 6 %
Cladding diameter:	125 µm +/- 2 %	125 µm +/- 2 %	125 µm +/- 2 %	125 µm +/- 2 %
Cladding non-circularity:	≤ 2 %	≤ 2 %	≤ 2 %	≤ 2 %
Coating diameter:	155 µm +/- 10 %	155 µm +/- 10 %	175 µm +/- 10 %	175 µm +/- 10 %
Coating non-circularity:	≤ 6 %	≤ 6 %	≤ 6 %	≤ 6 %

Optical Characteristics	50/125/155 Gold	62.5/125/155 Gold	50/125/175 Alu	62.5/125/175 Alu
Wavelength range:	800 – 1600 nm	800 – 1600 nm	800 – 1600 nm	800 – 1600 nm
Numerical aperture:	0.20 +/- 0.02	0.27 +/- 0.02	0.20 +/- 0.02	0.27+/- 0.02
Attenuation @ 850 nm:	≤ 18 dB/km	≤ 18 dB/km	≤ 24 dB/km	≤ 24 dB/km
Attenuation @ 1300 nm:	≤ 16 dB/km	≤ 16 dB/km	≤ 20 dB/km	≤ 20 dB/km
Index of refraction @ 850 nm:	1.481	1.491	1.481	1.491
Index of refraction @ 1300 nm:	1.476	1.486	1.476	1.486
Bandwidth @ 850 nm:	≥ 500 MHz.km	≥ 160 MHz.km	≥ 500 MHz.km	≥ 160 MHz.km
Bandwidth @ 1300 nm:	≥ 500 MHz.km	≥ 400 MHz.km	≥ 500 MHz.km	≥ 400 MHz.km

Mechanical Characteristics	50/125/155 Gold	62.5/125/155 Gold	50/125/175 Alu	62.5/125/175 Alu
Proof test level:	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi
Median tensile strength:	≥ 3.3 GPa	≥ 3.3 GPa	≥ 5.3 GPa	≥ 5.3 GPa
Corrosion parameter:	≥ 50	≥ 50	≥ 100	≥ 100
Young's modulus:	71.7 GPa	71.7 GPa	71.7 GPa	71.7 GPa
Operating temp. range:	-269° C to 650° C	-269° C to 650° C	-269° C to 400° C	-269° C to 400° C
Bend radius short term:	200x fiber radius	200x fiber radius	200x fiber radius	200x fiber radius
Bend radius long term:	400x fiber radius	400x fiber radius	400x fiber radius	400x fiber radius

Applications

Metal coated graded index optical fibers are typically used under extreme conditions such as:

- Aircraft, missile, rocket, turbine & jet engine monitoring
- Radiation, caustic & corrosive environments
- Material fatigue sensing applications
- High power laser delivery systems
- Ultra high vacuum applications
- Semiconductor manufacturing

Features

- Wide operating temperature range
- Hermetic & sterilizable
- Directly solderable for vacuum feedthroughs & laser diode pigtailing
- Radiation resistant
- Low outgassing
- Resistant to organic solvents