Fiber Optics

FIBERCORE

LASER COMPONENTS

VERSION: MD43/4
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Graded Index Multimode Pure Silica Core Fiber

These germanium free, 50µm core, graded index fibers provide excellent performance in hydrogen rich or radiation environments. Their unique glass chemistry, combined with high temperature acrylate, polyimide and carbon coatings ensures the fibers provide excellent hydrogen resistance in high temperature harsh environments.

These fibers are designed to withstand harsh environments, such as high temperature, high pressure, moisture, chemicals and radiation. Applications in oil and gas downhole temperature sensing, pressure monitoring, data transmission, offshore oil and gas asset monitoring, Enhanced Oil Recovery (EOR) including Steam Assisted Gravity Drainage (SAGD) techniques and borehole seismic sensing can benefit by using these fibers.

Fibercore has developed a unique carbon coating, which offers significant barriers against hydrogen, moisture and acid ingression. The carbon coating also increases the lifetime of a fiber under tight and sharp bends, protecting the fiber from water/moisture induced microcracking at the glass surface. The carbon coating with high temperature acrylate offers the maximum performance up to a temperature of 150°C and up to 300°C with polyimide coating.

Advantages:

- High temperature operation
- Hydrogen resistance
- Radiation resistance
- Grad index profile
- High bandwidth

Typical applications:

- Distributed Temperature Sensing (DTS)
- Pipeline monitoring
- Fire detection systems
- Production/injection monitoring

Related Products:

- Graded Index Multimode Fiber

Product Variants:

• **GIMMSC(50/125)P**	Graded index multimode pure silica core fiber with 50µm core, 125µm cladding with polyimide coating
• **GIMMSC(50/125)HT**	Graded index multimode pure silica core fiber with 50µm core, 125µm cladding with high temperature acrylate coating
• **GIMMSC(50/125)CP**	Graded index multimode pure silica core fiber with 50µm core, 125µm cladding with carbon and polyimide coatings
• **GIMMSC(50/125)CHT**	Graded index multimode pure silica core fiber with 50µm core, 125µm cladding with carbon and high temperature acrylate coatings

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

Specifications

	GIMMSC(50/125)HT	GIMMSC(50/125)CHT	GIMMSC(50/125)P	GIMMSC(50/125)CP *
Operating Wavelength (nm)	600 - 1750			
Numerical Aperture	0.18 - 0.22			
Attenuation (dB/km)	≤3.0 @850nm ≤1.2 @1300nm			
Proof Test (%)	1 or 2 (100 or 200 kpsi)			
Bandwidth (MHz.km)	300/300 @850/1300nm			
Cladding Diameter (µm)	125 ± 1	125 ± 2	125 ± 1	125 ± 2
Core Cladding Concentricity (µm)	≤2.0			
Core Diameter (µm) nominal	50			
Coating Diameter (µm)	245 ± 15		155 ± 5	
Coating Type	High Temperature Acrylate	Carbon High Temperature Acrylate	Polyimide	Carbon Polyimide
Operating Temperature (°C)	-50 to +150		-50 to +300	

* High Bandwidth / High NA variants available.

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