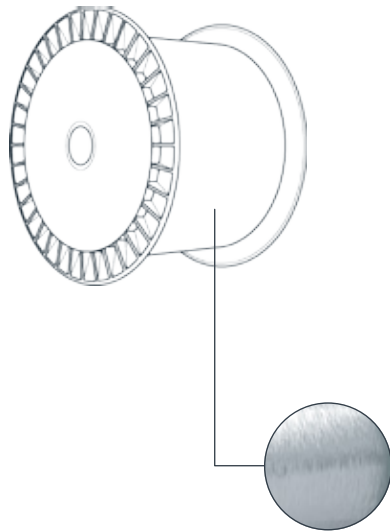


LineaSens[®] Proprietary, Hydrogen Insensitive Core Graded-Index Multimode 50 μ m Optical Fiber

Carbon/Silicone/PFA Coating System:
Part Number F80401

CARBON/SILICONE/PFA



Features

Improved Waveguide Resists
Hydrogen Darkening

Graded-Index 50/125 Fiber
Structure

Carbon/Silicone/PFA Coating
System

Benefits

Minimizes permanent losses due
to hydrogen ingress in harsh
conditions

Compatible with most commercially
available Distributed Temperature
Sensing (DTS) interrogators; can also
be fusion spliced to similar hydrogen
insensitive core optical fiber, and
traditional lead-in optical fibers

Fatigue resistant glass structure
with low friction outer coating
resists chemicals, abrasion and
water absorption and is easy to
mechanically strip

Product Description

This optical fiber is designed for distributed temperature sensing and communications in applications where hydrogen diffusion is a concern, and at elevated temperatures for long duration exposure. The waveguide features a proprietary, hydrogen insensitive core structure to minimize the effects of hydrogen darkening, and also features a triple-layer coating system. The innermost layer is a thin carbon layer that reduces stress-fatigue by ensuring that no water can attack the surface of the silica cladding. A secondary layer of enhanced silicone dampens attenuation-inducing compressive forces and is easily strippable while the tertiary layer of PFA provides excellent chemical and abrasion resistance and low water absorption. This combination is suitable for long-term use up to 200 °C (~ up to 20 years, performance and reliability will vary depending on installation environment. Consult OFS for guidance). In addition, this fiber structure is ideal for low temperature and cryogenic applications, operating indefinitely at low temperatures.

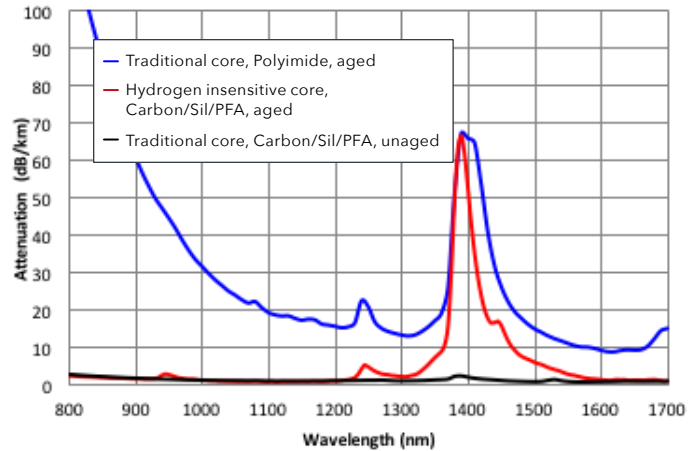
**LineaSens® Proprietary, Hydrogen Insensitive Core
GI MM 50 Optical Fiber (Carbon/Silicone/PFA Coating)**

Specifications

Item Number	F80401	
Description	GEO50-H Geophysical Graded-Index Optical Fiber - Hydrogen Resistant, Carbon/Silicone/PFA	
Type	Multimode Graded-Index	
Numerical Aperture	0.20	
Attenuation	@ 850 nm	≤ 4.0 dB/km
	@ 1300 nm	≤ 2.0 dB/km
Bandwidth	OFL @ 850 nm	≥ 400 Mhz-km
	OFL @ 1300 nm	≥ 400 Mhz-km
Core Diameter	50 ± 3 μm	
Clad Diameter	125 ± 1 μm	
Cladding Non-Circularity	≤ 2.0%	
Core Non-Circularity	≤ 5.0%	
Hermetic Carbon Layer	~ 300 to 400 Å	
Primary Coating Diameter	450 ± 30 μm	
Secondary Coating Diameter	700 ± 50 μm	
Operating Temperature	-55 to +200 °C	
Short Term Excursions (24 Hours)	Up to 410 °C	
Coating Material	Carbon/PYROCOAT® Silicone/PFA	
Short-Term Bend Radius (Mechanical)	≥ 4 mm	
Long-Term Bend Radius (Mechanical)	≥ 4 mm	
Proof Test Level	200 kpsi (1.38 Gpa)	
* NOTE: Hydrogen diffusion performance curve on right		

**Proprietary, Hydrogen Insensitive Core
Optical Fibers - Lower Sensitivity to H₂**

Aging Condition: 5% H₂/95% N₂, 1500 psi, 200 °C, 10 days



Hydrogen Ingression Performance

Hydrogen Concentration	Partial Pressure (PSI)	Temperature (°C)	Duration (Days)	H ₂ Induced Loss @ 1060 nm
5%	1,500	200	10	< 0.1 dB/km

For additional information please contact your sales representative.

You can also visit our website at www.ofsoptics.com or call 1-888-fiberhelp (1-888-342-3743) USA or 1-770-798-5555 outside the USA.

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