

Application Specific Optical Fibers for Sensors

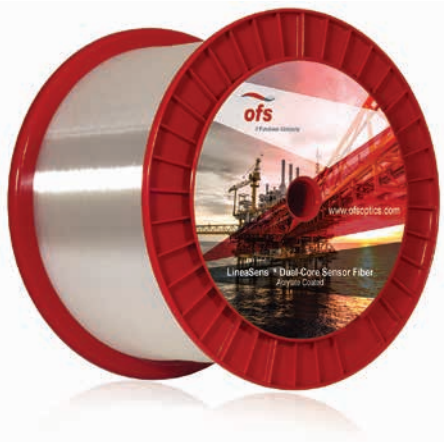


Features

- Numerous coating systems available
- Long length, Graded-Index multimode
- Pure core Single-mode optical fiber for use with Coherent Rayleigh (DAS) and Brillouin backscatter (DSS) systems.

Benefits

- Fiber performance and reliability tuned for the needs of various harsh environment applications.
- Ideal for systems using Raman backscatter (DTS) sensing method. Continuous lengths of carbon-coated fiber up to 12 km available.
- Inherently resistance to hydrogen ingress, available with or without carbon for enhanced long term mechanical reliability in harsh environments.



Overview

OFS responds to customer-based sensor technology needs with Application Specific Optical Fibers (ASOF's). Building upon our heritage of customized optical fiber design and production, we combine expertise in glass and coatings engineering with flexible manufacturing to match the demanding environmental challenges our customers face.

The technology and markets for sensor fibers are very broad. OFS specializes in optical fiber design and production tailored to the environment of specific applications. Our glass design and coating systems are purpose-built to satisfy harsh condition installations with long-term reliability. Whether you need a fully distributed intrinsic sensor fiber for oil and gas operations monitoring, a composite-ready fiber for aerospace structural health monitoring, a strain transducing cable design for pipeline operations, or a reduced diameter fiber for precision coil winding, OFS can help.

Fibers for Distributed Sensing

The following table describes several of our many optical fiber options for distributed sensing applications using Rayleigh, Raman and Brillouin techniques. Selection of fiber type is highly dependent

upon application characteristics. We encourage you to call with details of your applications. We will assist you in selecting an existing product or discuss a custom solution to meet your needs.

Product Specifications

Part Number	Product	Fiber Type	Coating Diameter	Coating	Temperature Range	Common Uses
F13469	GEO50	Graded-Index Multimode	155 µm	Carbon/PYROCOAT®	-65 to +300 °C	DTS
F18961-02	GEO50-SA	Graded-Index Multimode	250 µm	Carbon/Silicone/Acrylate	-45 to +160 °C	DTS
F25735	GEO50-ASP	Graded-Index Multimode	900 µm	Acrylate/Silicone/PEEK	-40 to +85 °C	DTS
F21976	GeoSil-SM	Pure core Single-mode	155 µm	PYROCOAT	-65 to +300 °C	DAS/DSS/DTS
F25738	GeoSil-SM	Pure core Single-mode	700 µm	Carbon/silicone/PEEK	-55 to +200 °C	DAS/DSS/DTS
F25739	GeoSil-SM	Pure core Single-mode	700 µm	Carbon/Silicone/PFA	-55 to +200 °C	DAS/DSS/DTS



A Furukawa Company

Application Specific Optical Fiber for Sensors

Coating Systems to Match Your Application

Beyond glass engineering, we provide expertise in coating of optical fibers by offering a wide variety of materials to protect fibers in environmental and installation-related challenges. Consult our team to learn more.

Coating Systems		
Material	Temperature Range	
PYROCOAT	-196 to +300 °C	A polyimide coating that results in a reduced diameter fiber that withstands high temperatures.
Silicone	-60 to +200 °C	A temperature resistant layer of soft material that resists chemicals, provides compressive relief, and is easy to grip
Silicone Acrylate	-65 to +130 °C	An easily stripped outer buffer for use up to 160 °C
PEEK	-55 to +240 °C	Excellent strength and stiffness, chemically resistant to acids, salts, and oils at high temperatures
PFA	-200 to +260 °C	Chemically resistant to acids, salts, and oils at high temperatures with good UV performance

Optical Fibers for Coil Applications

Many fiber optic sensors utilize tightly wound precision coils. Designing fibers that enable our customers to minimize coil package size while improving device reliability and splicing compatibility is a challenge we prepare for. The following table lists a few

fiber alternatives to consider for your coil applications. The table below highlights a few fibers designed for coiling applications in accelerometer, hydrophone, acoustic and current sensing devices.

Product Specifications							
Part Number	Fiber Type	Operating Wavelength	Coating Diameter	Cladding Diameter	Cutoff Wavelength	Coating	Temperature Range
Accutether® 80	Single-mode	1550 nm	160 µm	80 µm	< 1500 nm	Dual Acrylate	-40 to +85 °C
Accutether 125	Single-mode	1550 nm	245 µm	125 µm	≤ 1300 nm	Dual Acrylate	-40 to +85 °C
BF06159	Single-mode	1550 nm	130 µm	80 µm	≤ 1500 nm	Single Acrylate	-40 to +85 °C
BF06160	Single-mode	1310 nm	200 µm	125 µm	< 1300 nm	Single Acrylate	-40 to +85 °C

NOTE:

The listed operating temperature ranges are general guidelines. Consult with our Technical Sales department to determine the optimal coating and jacketing material for your specific application at 1.860.678.6636. For detailed product specifications please visit www.ofsoptics.com or contact us directly at 1.860.678.6636.



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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.