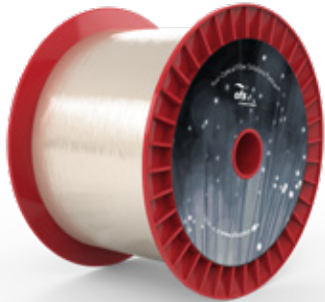




## DataSens™

A New Benchmark in Precision Sensing and Reliable Data Transmission



### Overview

DataSens™ Engineered Optical Fiber is designed to bring high environmental sensitivity to Distributed Fiber Optic Sensing (DFOS) systems. DataSens transmits more information about environmental conditions, such as nearby vibrations, than non-engineered fiber. That information, which would be lost in the noise of a standard fiber, gives intelligent sensing systems more high quality data they can use to monitor, maintain, and predict.

While the performance is enhanced, the installation is standard: DataSens is splice compatible with normal single mode, G.657.A1 or G.652.D compliant, fiber. It is bend insensitive. It uses familiar telecommunications coatings that already have decades of proven performance protecting against attenuation. DataSens is easy to install and incorporate. That means your system can listen carefully in the places you need to, by selectively adding DataSens near high value targets. Or splice DataSens at the end of the reach for standard fiber and extend out your sensing network by kilometers.

The high sensitivity of engineered fiber comes from increasing the Rayleigh backscatter. Higher backscatter means more local environmental conditions can be clearly transmitted back to the system interrogator. High backscatter can create unacceptably high attenuation loss in other engineered fibers, making them limited in how long a length they can support. Some engineered fibers need to create a space between the areas of increased backscatter of up to several feet to manage that loss. As a result, some DFOS systems need to be carefully matched to the spacing of the installed fiber, locking in the interrogation system to that spacing. In the rapidly changing world of DFOS, if later a different interrogator or backscatter spacing is needed, the whole fiber infrastructure must be replaced, all because of a compromise between system sensitivity and loss.

DataSens needs no compromise. DataSens has less than 0.3dB/km for most enhancement levels. And uses smooth, continuous Rayleigh enhancement, without long spacing. That's a fiber that can keep up with all the technology changes that a DFOS system will face during its installed life.

DataSens just makes sense for your system.

### Applications

Infrastructure location tracking

Infrastructure structural monitoring

Rail car health and position monitoring

Perimeter sensing (above/below ground)

Subsea threat sensing

Equipment vibration sensing

Pipeline monitoring



Product Specifications	
Product Description	DataSens™
<b>Physical Characteristics</b>	
Cladding Diameter	125.0 ± 1.0 µm
Clad Non-Circularity	≤ 0.7 %
Core/Clad Offset	≤ 0.5 µm
Coating/Buffer Diameter (Uncolored)	242 ± 5.0 µm
Coating Material	Acrylate
Clad-Coating Concentricity Error	≤ 12 µm
<b>Optical Characteristics</b>	
Cable Cutoff Wavelength	1260 ± 50 nm
Mode Field Diameter @ 1310 nm	8.6 ± 0.4 µm
Mode Field Diameter @ 1550 nm	9.9 ± 0.5 µm
Attenuation @ 1310 nm	≤ 0.4 dB/km
Attenuation @ 1550 nm	≤ 0.3 dB/km
Group Refractive Index @ 1310 nm	1.467
Group Refractive Index @ 1550 nm	1.468
<b>Sensing Characteristics</b>	
Center Wavelength	1550 ± 1.0nm
Bandwidth	12 nm
Rayleigh Enhancement	14 - 18 dB
<b>Mechanical and Environmental</b>	
Operating Temperature (Continuous)	-60 to 85 °C
Proof Test Level	100 kpsi
Order by Part Number	8000300-1550-15-12

**NOTE:** Various Rayleigh Enhancement levels available upon request. Product Maturity is classified as Development Prototype.

**For additional information please contact your sales representative.**

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



Copyright © 2025 OFS Fitel, LLC.  
All rights reserved, printed in USA.

OFS Marketing Communications  
Date: 09/24

For a full list of our certifications, visit our website.



DataSens is a trademark of OFS Fitel, LLC. OFS reserves the right to make changes to the prices and product(s) described in this document at any time without notice. This document is for informational purposes only and is not intended to modify or supplement any OFS warranties or specifications relating to any of its products or services.