

os3200

Optical Strain Gage

The os3200 is a small, non-metallic optical, epoxy-mounted strain gage based on fiber Bragg grating (FBG) technology.

The os3200 is based on fiber Bragg grating (FBG) technology. It has a self adhesive backing that holds the sensor body in place and protects the FBG while epoxy is injected. The epoxy encapsulates the FBG and bonds it to a structure's surface. Installation time is just a few minutes. Measurements can be taken after the epoxy cures in 24 hours at room temperature.

In side by side comparisons with foil strain gages, the os3200 is equally sensitive and accurate, while providing for greater strain range and 100 times more fatigue life. The os3200 strain gage is qualified for use in mild environments and delivers the many advantages inherent to all FBG based sensors.

This sensor can be used alone or in series as a part of an FBG sensor array. Installation and cabling for such arrays is much less expensive and cumbersome than comparable electronic gage networks. Multiple optical strain gages can be arranged in close proximity at 0, 45 and 90 degrees for strain rosette measurements. With each sensor, Micron Optics provides a Sensor Information Sheet listing the gage factor and calibration coefficients needed to convert wavelength information into engineering units. Micron Optics' ENLIGHT Sensing Software provides a utility to calculate and then record, display, and transmit data for large networks of sensors.



Key Features

Fast, simple, repeatable installation

Double ended design supports multiplexing of many sensors on one fiber.

Qualified to same rigorous standards used for comparable electronic gages.

Gage installation and protection achieved with same methods as conventional electronic gages.

Micron Optics' patented micro opto-mechanical technology.

Included in ENLIGHT's sensor templates - allows for quick and easy optical to mechanical conversions.

Applications

Structures (bridges, dams, tunnels, mines, buildings, oil platforms)

Energy (wind turbines, oil wells, pipelines, nuclear reactors, generators)

Transportation (railways, trains, roadways, specialty vehicles, cranes)

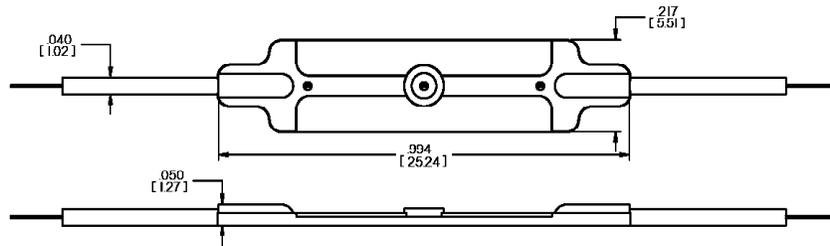
Marine vessels (hull, deck, cargo containers)

Aerospace (airframes, composite structures, wind tunnels, static and dynamic tests).

Homeland security (perimeter intrusion, heat detection, security gate monitoring)

Properties

Performance Properties	os3200
Strain Sensitivity ¹	~ 1.2 pm/με
Gage Length	10mm
Operating Temperature Range	-40 to 60° C
Strain Limits	± 5000 με
Maximum Drift ³	50 με
Physical Properties	
Dimensions (mm)	See Diagram Below
Weight	1.0 g
Carrier Material	Santoprene™
Cable type / length	1 m (± 10 cm), each end 1mm Fiberglass Braid
Fiber type	SMF 28-Compatible
Connectors	FC/APC Optional
Cable Bend Radius	≥ 17 mm
Fastening Methods ²	Epoxy
Optical Properties	
Peak Reflectivity (Rmax)	> 70%
FWHM (- 3 dB point)	0.25 nm (± .05 nm)
Isolation	> 15 dB (@ ± 0.4 nm around center wavelength)



Ordering Information

os3200-**www**-**1xx**-**1yy**

www	Wavelengths for (+/- 1nm) Standard - 1460 to 1620 nm in 4 nm intervals
xx	Termination type 1xx Cable 1, Length & Connector 1 1 m Standard, Cable Length UT Unterminated FC FC/APC Connector
yy	Termination type 1yy Cable 1, Length & Connector 1 1 m Standard, Cable Length UT Unterminated FC FC/APC Connector

Ordering Information Example

o3200-1552-1FC-1FC

Notes

1. Actual gage factor provided with gage.
2. Prolonged exposure to maximum temperature could reduce performance.
3. 40 temperature cycles -40 to 60° C.



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Specifications subject to change without notice.