

# Optical Sensing Interrogator | si325

## Features

- Full Spectrum Measurement capability.
- High-power, low-noise swept laser scanning.
- On-board NIST traceable wavelength reference.
- Large sensor capacity.
- Intuitive user interface via touch screen.
- On-board data display and storage.
- Battery power supply for field operation.

## Where are Micron Optics Instruments Deployed?

- Civil structures/civionics (bridges, dams, tunnels, buildings, etc.)
- Energy (wind turbines, pipelines, nuclear reactors, etc.)
- Aerospace vehicles (composite structures, wind tunnels, dynamic tests, etc.)
- Oil & gas (well reservoir management, platform structural health monitoring, etc.)
- Marine vessels (hull, mast, rudder, submarine pressure tests, etc.)
- Transportation (railways, roadways, etc.)
- Homeland security (perimeter intrusion, shipping container integrity, etc.)
- And others such as medical devices, military armor, chemical sensing, etc.

## Description

The si325 Optical Sensing Interrogator meets the growing demand for measuring static strain, pressure and temperature in remote civil, downhole oil, and pipeline applications where both high accuracy and portability are required. The accurate, rugged and portable si325 combines autonomous battery operation with Micron Optics' robust, high-power, low-noise swept laser source.

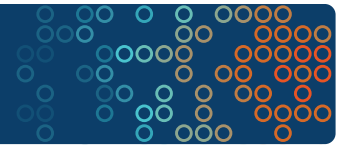
The "si" in the Micron Optics si325 interrogator name indicates that it is a "Sensing Instrument" (not an "sm", or "Sensing Module"). The si platform uses an MOI optimized integrated ENLIGHT<sup>Pro</sup> environment built upon Windows XP Embedded technology. This facilitates on-board management of all x25 optical core settings, data acquisition, sensor calibration, data visualization, and data storage. Users of Integrated ENLIGHT<sup>Pro</sup> interface to the si through a touchscreen LCD, external keyboard/mouse/monitor, or Windows Remote Desktop connections.



si325 Portable Instrument

ENLIGHT<sup>Pro</sup> Sensing Analysis Software is included with Micron Optics sensing interrogator systems and provides a single suite of tools for data acquisition, computation, and analysis of optical sensor networks. ENLIGHT<sup>Pro</sup> combines the useful features of traditional sensor software with the specific needs of the optical sensor system, making it easy to optimize optical properties during the design and implementation phase of an optical sensor system. Intuitive data display and additional graphing and data visualization features make ENLIGHT<sup>Pro</sup> easy to use. Learn more about ENLIGHT<sup>Pro</sup> at: [http://www.micronoptics.com/sensing\\_software.php](http://www.micronoptics.com/sensing_software.php).

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## Specifications <sup>B</sup> 1

si325-300

si325-500

### Optical Properties

Number of Optical Channels	1	4
Scan Frequency	1 Hz	
Wavelength Range	1510-1590 nm	
Wavelength Accuracy <sup>2</sup>	1 pm	
Wavelength Stability <sup>3</sup>	1 pm	
Wavelength Repeatability <sup>4</sup>	0.5 pm, 0.2pm with 10 averages	
Dynamic Range <sup>5</sup>	50 dB	
Full Spectrum Measurement	Included	
Internal Peak Detection Mode	Included	
Optical Connectors	FC/APC	

### Data Processing Capabilities

Operating Environment	Integrated MOI ENLIGHT Environment (based on XP Embedded)	
Enhanced Data Management	ENLIGHT <sup>Pro</sup> Sensing Analysis Software	
Interfaces	12.1" Color Touchscreen GUI, Ethernet, USB	
Ethernet Pass-through	Supports direct data acquisition from Optical Sensing Interrogator Core	

### Mechanical, Environmental, Electrical Properties

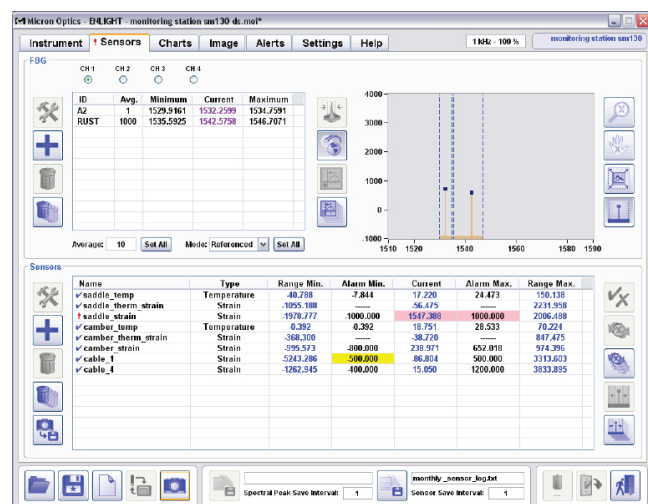
Dimensions; Weight	360 mm x 275 mm x 100 mm; 7.3 kg (16 lbs)	
Operating Temperature; Humidity	0° to 50°C; 0 to 80%, non-condensing	
Storage Temperature; Humidity	-20° to 70° C; 0 to 95%, non-condensing	
Input Voltage	9-18 VDC, AC/DC Converter Included	
Power Consumption	90 W (run time approx. 3.5 hours on a full charge)	

Notes:

1. Beta product. For more details see [www.micronoptics.com/product\\_designation.php](http://www.micronoptics.com/product_designation.php).
2. Per NIST Technical Note 1297, 1994 Edition, Section D.1.1.1, definition of "accuracy of measurement".
3. Captures effects of long term use over full operating temperature range of the instrument.
4. Per NIST Technical Note 1297, 1994 Edition, Section D.1.1.2, definition of "repeatability [of results of measurements]".
5. Defined as laser launch power minus detection noise floor.



View structure status.



Define sensor gage factor and ranges.



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