Optical Sensing Interrogator | si325

Applications

- Full Spectrum Measurements of fiber Bragg grating (FBG), extrinsic Fabry-Perot , long period grating (LPG), and other optical sensor components.
- Continuous lifetime health monitoring of bridges, dams, buildings, tunnels, ships, aircraft, trains, and other complex structures.
- Development of fiber optic sensors and transducers.

Features

- High accuracy absolute measurements of strain, temperature, pressure and other static sensors.
- On-board NIST traceable wavelength reference.
- Wide wavelength swept laser supporting more sensors per channel.
- Integrated ENLIGHT eases configuration, data acquisition, and on-board data storage.
- Intuitive touch screen user interface (for easy configuration and visualization of monitoring application).
- Internal battery power supply for portable operation.

Deployment

- Civil structures (bridges, dams, tunnels, mines, buildings).
- Oil & gas (well reservoir management, platform structural health, pipeline condition).
- Marine vessels (hull, mast, rudder, deck, cargo containers).
- Homeland security (perimeter intrusion, heat detection, security gate monitoring).

Description

The si325 is a full-featured, battery powered, portable static optical sensor interrogation instrument, powered by Integrated ENLIGHT and featuring local data storage and a bright 12.1" touch screen LCD. The si325 is ideally suited for remote civil, down hole oil, and pipeline applications where high accuracy strain, pressure, and temperature measurements and portability are required.

The si325 Optical Sensing Interrogator is built upon the Micron Optics x25 optical interrogator core, featuring a high power, low noise swept wavelength laser, realized with Micron Optics patented Fiber Fabry-Perot Tunable Filter technology. The x25 interrogator core employs full spectral scanning and data acquisition, providing measurements with high absolute accuracy, flexible software post-processing, and high dynamic range performance. x25 based interrogators support continuous on-board NIST traceable wavelength reference components and are ideally suited to measure many different optical sensor types, including FBGs, long period gratings, extrinsic Fabry-Perot sensors, and many others. Well over half of the fiber optic sensors deployed today are measured with instrumentation that uses Micron Optics technology.

The Micron Optics "si - Sensing Instrument" platform features an optimized Integrated ENLIGHT environment built on Windows XP Embedded technology. In contrast with the "sm – Sensing Module" platform, Sensing Instruments support on-board management of all optical interrogator core configuration, data acquisition, sensor calibration, data visualization, and data storage tasks. Users of Integrated ENLIGHT interface to the Sensing Instruments through a touch screen LCD, external keyboard/mouse/monitor, or Windows Remote Desktop connections.

si325 Portable Instrument

ENLIGHT combines the useful features of traditional sensor software with the specific tools needed to optimize optical properties during the design, implementation, and operations phases of an optical sensor system. Tables, graphs, and additional data visualization features make ENLIGHT easy to use. Learn more about ENLIGHT at http://www.micronoptics.com/sensing_software.php.

TUNED Products displaying the "Micron Optics Tuned" logo include Micron Optics tunable technologies insuring high quality and performance.

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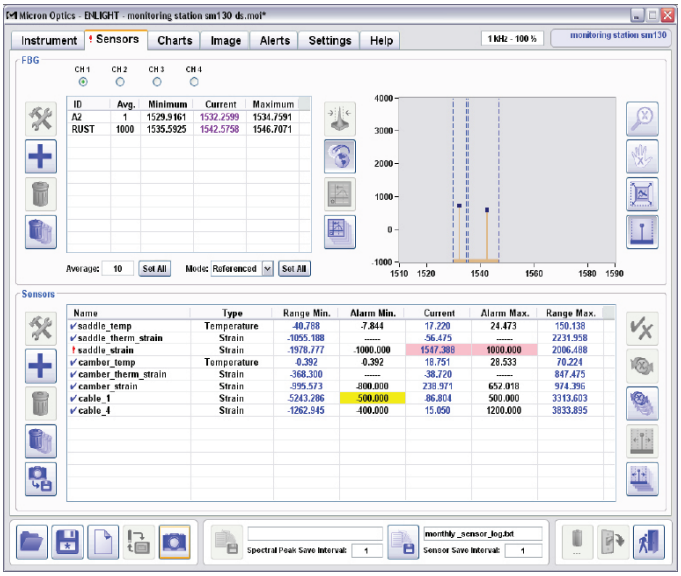
Specifications [1]	si325-300	si325-500
Optical Properties		
Number of Optical Channels	1	4
Scan Frequency	1 Hz	
Wavelength Range	1510-1590 nm	
Wavelength Accuracy [2]	1 pm	
Wavelength Stability [3]	1 pm	
Wavelength Repeatability [4]	0.5 pm at 1 Hz, 0.2pm at 0.1 Hz	
Dynamic Range [5]	50 dB	
Full Spectrum Measurement	Included	
Internal Peak Detection Mode	Included	
Optical Connectors	FC/APC	
Data Processing Capabilities		
Operating Environment	Integrated ENLIGHT Environment (based on XP Embedded)	
Enhanced Data Management	ENLIGHT Sensing Analysis Software	
Interfaces	12.1" Color Touchscreen GUI, Ethernet, USB	
Ethernet Pass-through	Supports direct data acquisition by user PC 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.
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.



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