

Optical Sensing Analyzer | si725

Applications

- Measurements of fiber bragg grating (FBG) strain, temperature and other static measurements.
- Extrinsic Fabry-Perot (EFP) and long period Grating (LPG) for strain, temperature and pressure measurements.
- Development of fiber optic sensor packages and transducers.
- Full Spectrum Measurement capability for analysis of FBG, EFP and LPG sensor behavior and shape.
- On-board NIST traceable wavelength reference.

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.)
- Research (medical devices, military armor, chemical sensing, etc.)

Description

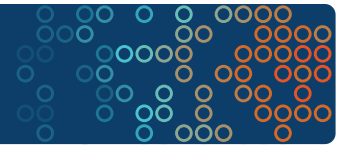
The Micron Optics si725 is a convenient, full-featured swept wavelength laser-based optical sensing instrument that is used for ultra-high accuracy, static applications. Its large touchscreen and built in ENLIGHT^{Pro} graphical user interface make it ideal for laboratory use. Its versatility allows measurements of Fiber Bragg Grating, Extrinsic Fabry-Perot, and Long Period Grating based sensors.

The “si” in the Micron Optics si725 interrogator name indicates that it is a “Sensing Instrument” (not an “sm”, or “Sensing Module”). The si platform uses an MOI optimized integrated ENLIGHT^{Pro} 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^{Pro} interface to the si through a touchscreen LCD, external keyboard/mouse/monitor, or Windows Remote Desktop connections.



si725 Laboratory Instrument

ENLIGHT^{Pro} 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^{Pro} 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^{Pro} easy to use. Learn more about ENLIGHT^{Pro} at: http://www.micronoptics.com/sensing_software.php.



Specifications **B**¹

	si725-500	si725-800
Optical Properties		
Number of Optical Channels	4	16
Scan Frequency	2 Hz	0.5 Hz
Wavelength Range	1510-1590 nm	
Wavelength Accuracy ²	1 pm	
Wavelength Stability ³	1 pm	
Wavelength Repeatability ⁴	0.5pm, 0.2 pm with 10 averages	
Dynamic Range ⁵	50 dB	40dB
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 ^{Pro} Sensing Analysis Software	
Interfaces	USB 2.0, Ethernet, 17" Touchscreen LCD	
Storage Capacity	Internal 100 GB HDD	
Ethernet Pass-through	Supports direct data acquisition from Optical Sensing Interrogator Core	

Mechanical, Environmental, Electrical Properties		
Dimensions; Weight	520 mm x 499 mm x 165 mm; 18.1 kg (40 lbs)	
Operating Temperature; Humidity	10° to 35°C; 20 to 80%, non-condensing	
Storage Temperature; Humidity	-20° to 60°C; 5 to 95%, non-condensing	
Input Voltage	7 - 36 VDC (100~240 VAC, 47~63Hz), AC/DC converter included	
Power Consumption at 12V	60 W typ, 75 max	

Notes:

1. Beta product. For 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.

