

# Optical Sensing Analyzer | si720

## Applications

- Useful in the design and selection of fiber Bragg grating based sensors for strain, temperature, pressure, etc.
- High accuracy, resolution and full profile data provide comprehensive feedback on fiber Bragg grating and extinsic Fabry-Perot sensor capabilities.
- Both built-in and LabVIEW™ peak detection functions provide high resolution, high accuracy fiber Bragg grating center wavelength measurements.
- Full-spectrum measurements can be an effective aid in understanding how sensors' characteristics change under various physical conditions.
- Useful for analysis of a wide variety of passive optical sensors - FBGs, Fabry-Perot sensors, Long Period Gratings, etc.

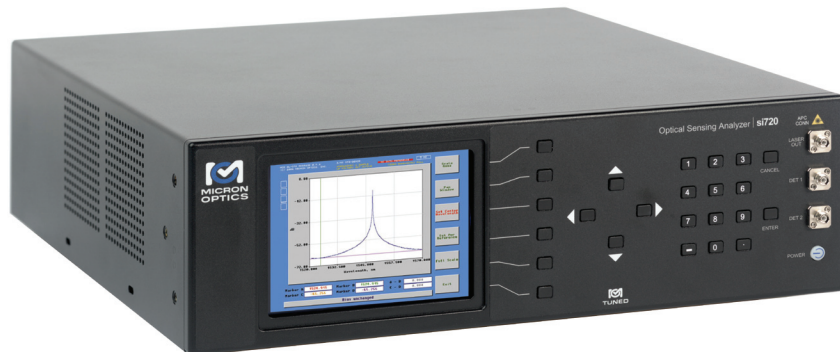
## Features

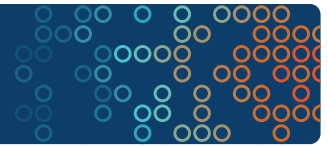
- Two input detection channels allow simultaneous monitoring of more than 100 sensors per channel
- Dual-detector design enables either input channel to measure FBGs in transmission or reflection
- Laser is continuously swept across a 80nm spectrum at user-selectable rates of 5.0 or 0.5 Hz
- Automatic calibration using an integrated NIST-traceable absolute wavelength reference
- Wavelength repeatability of 0.5pm and a wavelength accuracy of 1pm
- Built-in single board computer, display, and instrument control panel
- 5 Hz Data transfer to PC via USB/GPIB interface

## Description

The si720 is a high power, high accuracy, high resolution complement to the Micron Optics si425. It provides higher accuracy and repeatability than the si425 and can be used for a wide variety of fiber optic sensors.

The system provides users with a complete understanding of how the spectral shape of the fiber Bragg grating sensors react to varying physical conditions - rather than only reporting shifts in central wavelengths. This instrument is used both as the first step in the development of high-volume custom sensing systems and in long-term field measurements.





## Specifications

si720

### Optical Properties

Number of Optical Channels	2
Wavelength Range	1510-1590 nm
Wavelength Accuracy <sup>1</sup>	1 pm
Wavelength Repeatability <sup>2</sup>	0.05 pm at 0.5 Hz; 0.2 pm at 5 Hz
Dynamic Range <sup>3</sup>	>60 dB
Scan Frequency	5 Hz or 0.5 Hz
Optical Connectors	FC/APC (E2000 available)

### Mechanical Properties

Dimensions	134 mm x 432 mm x 451 mm
Weight	15.5 kg (34 lbs)
Color LCD Display	162 mm (Diagonal)

### Environmental Properties

Operating Temperature	0° to 50°C
Storage Temperature	- 5° to 55°C

### Electrical Properties

Input Voltage	100 VAC to 240 VAC, 50/60 Hz input (24 VDC available)
Interfaces	USB/GPIB

### Data Management

On-Board Firmware	Instrument control, GUI management
Remote Software	Full spectrum, peak detection and table view
LabVIEW™ Source Code	Allows for customization of remote software

### Options

8-16 Channel Expansion	Please see our 8 or 16 channel sm040 multiplexers
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#### Notes:

1. Measured at 1529 nm at 23°C. Accuracy is 2.5 pm (2σ) across entire wavelength range and operating temperature range.
2. Per NIST Technical Note 1297, 1994 Edition, Section D.1.1.2, definition of "repeatability [of results of measurements]"
3. Defined as laser launch power minus detection noise floor.