

# FiberSensing

bringing light to measurement

FS2100RM | FS2200RM • RACK-MOUNTABLE BraggMETER  
MULTIPURPOSE MEASUREMENT UNIT FOR FBG SENSORS

## BraggMETER

- : high performance laser scanning
- : NIST traceable wavelength reference
- : real-time operating system
- : designed for 24/7 operation
- : up to 4 parallel optical channels
- : full control through SCPI commands
- : self data logging
- : scheduled acquisition with sleep mode
- : compatibility with iLog



FiberSensing Rack-Mountable BraggMETER measurement unit is specifically designed to interrogate FBG sensors in industrial environments. It employs proven continuous swept laser scanning technology to measure the absolute Bragg wavelength.

### BraggMETER

FiberSensing Rack-Mountable measurement units meet the growing demand and versatility needed for field deployments in Civil, Aeronautics and Energy applications.

The BraggMETER measurement unit includes a NIST traceable wavelength reference that provides continuous calibration to ensure system accuracy over long term operation. The high dynamic range and output power allow high resolution to be attained even for long fiber leads and lossy connections.

### INDUSTRIAL MODULARITY

FS2100RM | FS2200RM measurement units are designed for 24/7 operation on standard 19" racks. The real-time operating system makes them the perfect measurement tool for industrial applications. Available with 1 or 4 parallel optical channels and a broadband tuning range, these units allow the simultaneous interrogation of more than fifty sensors. With the use of a PC, the FS2100RM | FS2200RM measurement units can also be combined with FiberSensing external multiplexing modules. It is, therefore, possible to further expand the FBG based sensing network without the need of extra measurement units.

### REMOTE CONTROL

FiberSensing Rack-Mountable BraggMETER measurement units have Ethernet interface, which allows their remote connection to any standard PC through TCP/IP. The units can be fully controlled using SCPI commands (ASCII textual strings). With this

functionality, it is possible to program an acquisition schedule that includes sleep mode for power budget optimization. The PC can then be disconnected, since the unit provides self data logging through internal memory.

Optionally, the standard GUI application for FiberSensing's measurement units (iLog FS9100) can be installed on the remote PC. This easy-to-use software interface features built-in datalogger functions such as automated sampling, archiving and transmitting. A high-performance local database manages both multiple sensor network configurations and large datasets. Acquired data can also be exported as Excel™ compatible files to several analysis tools. Configuring sensors with iLog is easy and straightforward. Each FiberSensing sensor is provided with a configuration file, allowing its characteristics to be automatically inserted, so measurements can start immediately after plugging the sensor.

### ORDERING INFORMATION

FS2100RM – Industrial BraggMETER

**p/n**

002 110 001 120

FS2200RM – Industrial BraggMETER

**p/n**

002 210 001 420

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■ ■ ■ ■ measurement units

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### SPECIFICATIONS

Wavelength Measurement	
operating range	100 nm (1500 to 1600 nm)
resolution	1.0 pm
absolute accuracy	2.0 pm
repeatability	1.0 pm
sensors per fiber	25 (maximum recommended) <sup>1</sup>
optical channels	FS2100RM: 1 FS2200RM: 4 (in parallel)
sample rate	1 S/s
dynamic range	40 dB
Laser Source	
optical output power	FS2100RM: 0 dBm FS2200RM: -3 dBm (quad)
linewidth	500 MHz
optical isolation	> 70 dB

<sup>1</sup>considering sensor wavelengths equally spaced over the operating range and maximum measurement range of  $\pm 2$  nm per sensor

Inputs / Outputs	
optical connectors	FC/APC
communication interface	Ethernet (TCP/IP)
Control	
commands	SCPI (ASCII textual strings) <sup>2</sup>
Environmental	
operation temperature	0 to 50° C
relative humidity	< 90% at 40° C
Mechanical	
dimensions	400x480x84 (mm)
mounting	19" rack mountable (2U)
enclosure	aluminum
weight	2,5 kg
Power	
voltage	100-240 VAC 50-60 Hz
consumption	normal operation 40 W sleep mode 1.5 W

<sup>2</sup>standard Commands for Programmable Instruments

Specifications may change without notice

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