



- Lifetime Calibration
- NIST Traceable Accuracy
- Compact Size
- Full Spectrum Information

The W4-R is an industrial grade FBG interrogator designed for applications that exhibit slow changes in strain, temperature or pressure. W4-R has been designed to meet the need for affordable sensing technology demanded by emerging volume markets. W4-R requires a continuous power supply. For interrogating sensors at sites where mains electricity is not available, we recommend the portable [W4-P](#) battery powered unit.

Specifications	W4-R2	W4-R5	W4-R7
Optical / Measurement			
Wavelength Range	1520 – 1570 nm	1510 – 1590 nm	1510 – 1590 nm ³
Number of Optical Channels	1	4	16
Typical Number of Sensors per Channel	25	40	40
Typical Sensor Spacing	> 2 x sensor bandwidth		
Scan Frequency	1 Hz	2 Hz	0.5 Hz
Accuracy ¹	10 µm	1 pm	1 pm
Stability ²	5 pm	1 pm	1 pm
Dynamic Range ³	40 dB	50 dB	40 dB
Repeatability ⁴	0.5 pm at 1 Hz, 0.2 pm at 0.1 Hz		1 pm at 0.5 Hz
Optical Connector	FC/APC		
Mechanical			
Dimensions	435 mm x 442 mm x 45 mm		
Weight	4.1 kg		
Environmental			
Operating Temperature	0° to 50° C		
Operating Humidity	0 to 80%, non-condensing		
Electrical			
Processor	PC XP or Linux		
Interface	Ethernet (TCP-IP)		
Input Voltage	+7 36 VDC (12 or 24VDC converters available)		
AC/DC Converter	Included (100-240 VAC, 47-63 Hz)		
Power Consumption	20 W typical, 30 W max		
Options			
Scan Frequency ⁵	2, 5, or 10 Hz		

¹ Per NIST Technical Note 1297, 1994 Edition, Section D.1.1.1, definition of 'accuracy of measurement'.

² Captures effects of long term use over full operating temperature of the instrument.

³ Defined as laser launch power minus detection noise floor.

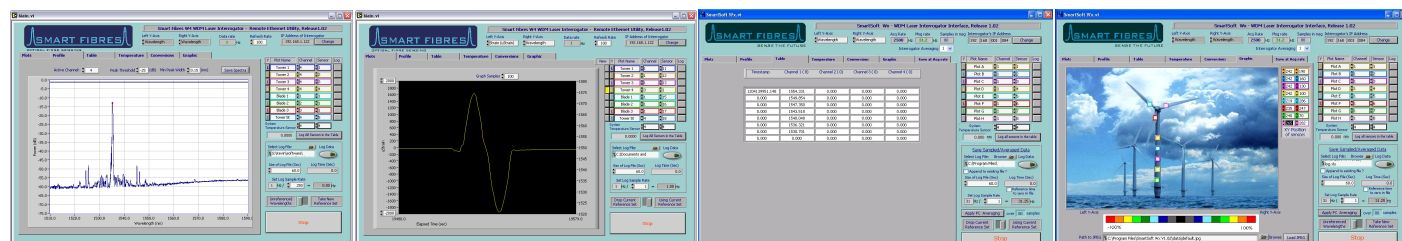
⁴ Per NIST technical note 1297, 1994 edition, section D.1.1.2, definition of 'repeatability [of results of measurement]'.

⁵ 10 Hz scan rate available with 1528 - 1568 nm range

Specifications are subject to change without notice

SmartSoft Remote Utility

Our SmartSoft suite of LabView based applications is supplied with every W4 interrogator. It's an easy to use utility that will provide you with up to date information in a variety of formats to suite your application needs.



Full spectra of each optical channel, can be saved to file

Time history of sensor responses, can be simultaneously logged to file

Real-time sensor data in units of wavelength or calculated measurand

Graphical representation of sensors readings on image of structure

Details of our Standard W4 SmartSoft Utility can be [downloaded](#) from our website. Customised SmartSoft functions can be provided on request.