



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

A low-cost, rugged FBG interrogator designed specifically for applications that exhibit slow changes in strain, temperature or pressure. W4 has been designed to meet the need for affordable sensing technology demanded by emerging volume markets. W4 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. A 19" EIA/IEC rack mounted variant of each W4 instrument is also available.



Specifications	W4-2	W4-5	W4-7
Optical / Measurement			
Wavelength Range	1520 – 1570 nm	1510 – 1590 nm	1510 – 1590 nm ³
Number of Optical Channels ^{1,2}	1	4	4
Typical Number of Sensors per Channel	25	40	40 @ 5 Hz
Typical Sensor Spacing	> 2 x sensor bandwidth		
Scan Frequency ¹	1 Hz ⁴	1 Hz ⁴	5 Hz ³
Dynamic Range	40 dB ¹	50 dB	30 dB
Accuracy	10 µm	1 pm	2.5 pm
Stability	5 pm	1 pm	2.5 pm
Repeatability ⁵	0.5 pm per sample (improves with averaging)		
Optical Connector	FC/APC		
Mechanical			
Dimensions	114 mm x 234 mm x 132 mm		
Weight	2 kg		
Environmental			
Operating Temperature	0° to 50° C		
Operating Humidity	0 to 80%, non-condensing		
Electrical			
Processor	LINUX PC		
Interface ⁶	Ethernet (TCP-IP)		
Input Voltage	+5 VDC (12 or 24VDC converters available)		
AC/DC Converter	Included (100-240 VAC, 47-63 Hz)		
Power Consumption	20 W typical, 30 W max		

¹ Denotes features that can be upgraded after or at time of sale

² Up to 4 integrated optical channels, increased to 8 or 16 using a channel expansion module

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

⁴ 2 Hz scan rate available

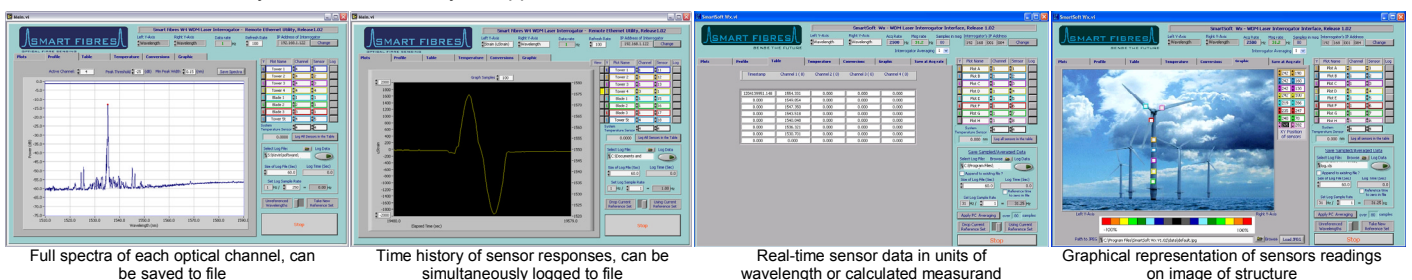
⁵ Per NIST technical note 1297, 1994 edition, section D.1.1.2

⁶ Wireless Ethernet communication (802.11b) available with PDA kit (USB adaptor, PDA and software)

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.