

FBG Interrogators

Description




Fibre Bragg Gratings (FBG) lie at the heart of Fibre Optic Sensing (FOS) technology for Structural Healthy Monitoring (SHM) of buildings and infrastructures. The monitoring units have been designed for interrogating FBG sensors. The system is qualified for long-term permanent strain or temperature monitoring of structures as well as for measuring of vibration.

To enhance the customers flexibility, single sensor units are available that measure single FBG sensor as well as cascaded sensor units that measure FBG arrays.

Options

- All interrogators consist of several modules that can be easily combined with each other, providing an optimal flexibility regarding custom requirements.
- Fully developed software, displaying strain/temperature, storing data, supporting time shift and trigger mode
- Improved accuracy by using a built-in reference FBG or external calibrators
- Stand alone units, externally controlled units and ruggedly cased field units with independent power supply can be provided

Specifications

Model	Interrogators for Single FBG Sensor	Interrogators for Cascaded FBG Sensors
	<ul style="list-style-type: none"> • Stand-alone interrogator with internal PC AWE-M1-PC • Standard interrogator AWE-M1-RS or A • Field interrogator in Pelican™ case AWE-M1-RS/S or A/S 	<ul style="list-style-type: none"> • Stand-alone interrogator with internal PC AWE-CCD-PC • Standard interrogator AWE-CCD-USB or LAN • Field interrogator in Pelican™ case AWE-CCD-RS/S or A/S
		 
Wavelength Range	1540 to 1560 nm*	1532 to 1568 nm (35 ~ 40 nm)* 800 ~ 850 nm (50 nm)
No. of Channels	1, 2, 4, 8	1, 2, 4, 8
Max No. of Sensors/Channel	1	16, 32, 64
Min Sensor Spacing	-	>2 x sensor bandwidth
Scan Frequency	Max 5000 Hz (PC) Max 500 Hz (RS 232) Max 5000 Hz (analogue)	66 Hz USB / 200 Hz LAN
Wavelength Accuracy	±10 pm	± 2.5 pm
Resolution	Wavelength	1 pm
	Strain#	0.8 µstrain
	Temperature#	0.1 °C
Precision	Wavelength	±5 pm
	Strain#	±4 µstrain
	Temperature#	±0.5 °C
Stability (10hrs)	±2 pm	
Processor (only internal PC)	Windows/Intel/20GB HDD/USB	
Interface	USB/RS232/analogue/LCD/VGA/LAN/Tel (TCP/IP remote access)	
Optical Connector	FC/APC, SC/APC, E2000*	
Power	110 / 220 VAC or 12 VDC	
Dimensions	176 x 362 x 424 mm* 168 x 275 x 325 mm 180 x 275 x 280 mm	
Operational Temperature	0 to 50 °C*	
Weight	15, 6, 3 kg	

* Can be customised

At 1.2 pm/µstrain; at 11pm/µstrain

Specifications subjected to change