

## *High resolution spectrometers ideally suited for a broad range of FBG sensing applications*



The I-MON 256/512 USB Interrogation Monitors offer kHz spectrum monitoring of Fiber Bragg Grating (FBG) sensors. High spectrometer resolution combined with broad wavelength range provides high resolution interrogation monitors allowing measurement of a large number of FBG sensors. High sensitivity allows high resolution also at very low light levels.

USB interface and data acquisition software provides easy setup with a laptop, and the I-MON can act as a stand-alone monitor in combination with a customer-selected light source. Additionally the I-MON USB Interrogation Monitors offer straightforward integration with the customer's interrogation system control PCB and meet industrial qualification standards.



## **I-MON USB**

**Interrogation Monitors**

**for FBG sensor systems**

# I-MON USB Interrogation Monitors

Features
High measurement frequency
Broad Wavelength ranges
High resolution
Large dynamic range
Compact size
No moving parts

Applications
<b>Stand-alone Interrogation monitor and/or OEM Interrogation monitor modules:</b>
• Vibration analysis
• Temperatures measurements
• Pressure monitoring
• Strain measurements

## I-MON software

The I-MON USB comes with LabVIEW based software providing plug-and-play operation. Driver software packages and DLL files allow the user to develop own measurement applications for OEM integration.

## Operating principle

The Ibsen I-MON Interrogation Monitors build on patented\* Ibsen high-resolution spectrometer technology, utilizing Ibsen fused silica transmission gratings. The I-MON splits the wavelength spectrum spatially to allow for parallel processing of the

individual FBG sensor peaks. The FBG sensor peaks are measured by a diode array, and the embedded electronics provides USB interface.

\* US patents no.: 6,842,239 and 6,978,062

## Specifications

Parameter	I-MON 256 USB	I-MON 512 USB
Wavelength range	1525 - 1570 nm	1275 -1345 nm /1510 – 1595 nm
Max no. of FBG's and spacing	>37 at 1200 pm	>70 at 1000 pm/>70 at 1200 pm
Wavelength fit resolution	<0.5 pm	
Repeatability (over any pol state)	3 (5 max.) pm	
Wavelength linearity	5 (typ.) pm	
Wavelength drift	1 (3 max.) pm/ Degree C*	
Dynamic range	30 dB	
Input optical power range	-70 to -22 dBm	
Measurement frequency	6 kHz	3 kHz
Interface	USB 2.0	
Current consumption	<250 mA**	
Temperature range	0 – 50 Degree C	
Size	110 x 94 x 49 mm	

(\*) Note that by applying temperature control or temperature correction the wavelength accuracy over the entire temperature range can be improved.

(\*\*) USB buspower.

Specifications are subject to change without prior notice. Design and specifications can be modified to suit a range of customer requirements.