



## I-MON Interrogation Monitor

For FBG sensor systems

Ideally suited for a broad range of applications in FBG sensor interrogation systems through a unique combination of very fast measurement frequency, low power consumption and compact size

The I-MON Interrogation Monitors offer real-time spectrum monitoring of Fiber Bragg grating (FBG) sensors. Very high measurement frequency allows kHz full spectrum readout and the compact size and low power consumption reduce operational costs for customers for whom space and power savings are important.

The I-MON Interrogation Monitors offer straightforward integration and meet industrial qualification standards. The compact size and simple electronics interface makes the I-MON Interrogation Monitors ideal for direct mounting on the customer's interrogation system control PCB.

Features
kHz measurement frequency
Compact size
Low power consumption
No moving parts
Environmentally stable fused silica gratings

Applications
OEM Interrogation monitor modules:
- Vibration analysis
- Temperature measurements
- Pressure monitoring
- Strain measurements

## I-MON Evaluation Package

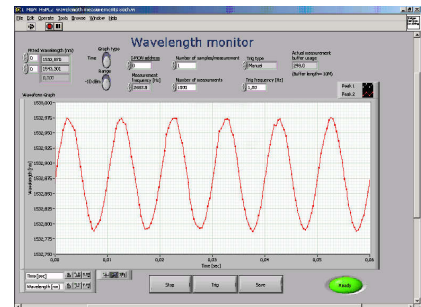
The Ibsen I-MON Interrogation Monitor is available as an Evaluation Kit including evaluation board, test software, data acquisition board and cable providing plug-and-play operation.

## Operation Principle

The Ibsen I-MON Interrogation Monitor is based on the Ibsen diffractor technology platform. Ibsen diffractor technology combines fused silica diffraction gratings and patent pending optical designs. The Ibsen 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 customized diode array, and the embedded electronics provides digital data read-out.

## Measurement Example



High-speed wavelength tracking.

## Specifications

Parameter	Unit	I-MON 80
Maximum number of FBG sensors		26
Minimum FBG spacing	pm / GHz	1200 / 150
Wavelength range	nm	1529 - 1561
Resolution (-20 dBm input power) <sup>(*)</sup>	pm	1
Repeatability (over any pol. state)	pm	5 (10 max)
Wavelength drift <sup>(**)</sup>	pm / °C	1 (2 max)
Dynamic range	dB	30
Input optical power range	dBm	- 50 to -10
Measurement frequency	Hz	2500
Electrical interface	11 pin, clocked serial data readout	
Power consumption	W	< 0.25
Size (LxWxD)	mm	70 x 46 x 18
Weight	g	150
Operating temperature	°C	0 to 70
Storage temperature	°C	-40 to 85

<sup>(\*)</sup> At input power levels at -30 dBm and -40 dBm the resolution is typically 5 pm and 8 pm, respectively.  
<sup>(\*\*)</sup> Note that by applying temperature control or temperature correction the wavelength accuracy over the entire operating temperature range can be improved to ± 10 pm.

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

## About Ibsen Photonics

Ibsen Photonics is building its portfolio of Diffractor based spectrometer modules on more than 10 years' experience in diffractive optics. Ibsen Photonics also has a leading position within holographic Phase masks that increase manufacturability of fiber Bragg gratings, DFB lasers and integrated optics for leading telecommunication companies worldwide.

Ibsen Photonics welcomes partnerships with original equipment manufacturers based on the Ibsen Diffractor technology platform. Ibsen is backed by leading venture companies.