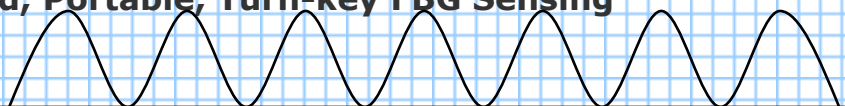




## **WaveCapture™ FBG Interrogator System**

### **Ruggedized, Portable, Turn-key FBG Sensing**



**BaySpec's WaveCapture™ FBGA System is an interrogation system with an integrated light source that monitoring multiple wavelengths distributed over 4 channels. Precise fiber bragg grating (FBG) sensor system measurements are achieved with high end of life (EOL) wavelength accuracy at high frequency response time.**

#### **Key benefits:**

- Ultra reliable Volume Phase Grating (VPG®)
- Low power consumption
- Battery operation
- All solid-state
- Hermetic sealing
- Lifetime calibration

#### **Applications:**

- Smart structures
- Strain measurements
- Perimeter sensing
- Aerospace vehicles
- Construction
- Oil & Gas down-hole drilling
- Electrical grid reliability
- Mining
- Medical devices
- Transportation
- Energy (Solar, Nuclear, Wind)

The device covers wide wavelength range and provides simultaneous measurements at very fast response rates and excellent wavelength resolution. High reliability (MIL STD 810F shock and vibration) is achieved through a rugged mechanical design with no moving parts. Periodic calibration is not required. High speed Input/Output (I/O) is achieved through the use of USB2.0 communications or Ethernet (serial communications also supported at lower speeds).

The WaveCapture™ FBGA System's core spectral engine employs a highly efficient Volume Phase Grating (VPG®) as the spectral dispersion element and an ultra sensitive InGaAs array detector as the detection element, thereby providing high-speed parallel processing and continuous spectrum measurements. The signal is spectrally dispersed with the VPG®, and the diffracted field is focused onto an InGaAs array detector.

#### **Key Features:**

- High reliability, no moving parts
- Ultra fast response time (up to 5 kHz)
- Excellent wavelength repeatability and resolution
- Low power consumption design enabling battery-operated operation
- High reliability for use in harsh environment
- Integrated broadband light source
- Up to 4 channels
- USB, Ethernet or RS232 interface

#### **Compliance:**

- Telcordia GR-63/1209/1221-CORE qualified
- MIL STD 810F

**Over 30,000 spectral engines of all types in the field. Contact BaySpec to discuss your OEM requirements.**



# WaveCapture™ FBG Interrogator System

## Ruggedized, Portable, Turn-key FBG Sensing

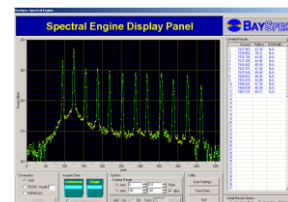


### Specifications:

Specification	Data
Channel Number	1 or 4 (with 1x4 Optical Switch)
Wavelength Range*	Standard: 1525-1565nm Extended: 1510-1590nm (*Other wavelength ranges upon request)
Internal Wavelength Reference (IRS)	Optional
Wavelength Repeatability	± 2pm (with IRS); ± 5pm (without IRS)
Wavelength Readout Resolution	1pm
Minimum Detectable Wavelength Change	± 1pm
Optical Interface	FC/APC connector (or Customer Specify)
Communication Interface	Standard: RS232 or USB1.1 Fast: USB2.0 or Ethernet
Frequency Response Time	Standard: 1 to 5 Hz (RS232/USB1.1) Fast: up to 5 kHz (USB2.0 or Ethernet)
SLED Light Source	> 15mW Output Power >40nm FWHM for Standard >80nm FWHM for Extended
Optical Circulator	Included
Operating Temperature Range	-10 to 55°C; 0 to 80%, non-condensing
Storage Temperature Range	-20 to 70°C; 0 to 95%, non-condensing
Software	GUI software included DLL for development
Power Supply	110 to 220V AC
Power Consumption	< 10W

\* Other wavelength ranges available upon request

### BaySpec Sense2020



**Sense2020** is included with BaySpec's FBG Systems providing an easy to use tool for data acquisition, computation, and analysis.

SDK and DLL support provided for OEM integration.

### Ordering information:



Front panel



Back panel

<b>SYS-FBG-</b>	<b>Frequency Response</b>	<b>Starting Wavelength</b>	<b>Ending Wavelength</b>	<b>Ch</b>	<b>Number</b>
	Specify response time:	Specify the starting wavelength i.e. :	Specify the ending wavelength i.e. :	1	1 Channel
	S Standard (~50Hz)	1280 1280nm	1320 1320nm	4	4 Channel
	F Fast (~5kHz)	1525 1525nm	1565 1565nm		
	IRS-S Std (~50Hz)	1510 1510nm	1590 1590nm		
	IRS-F Fast (~5kHz)				
	Or specify	Or specify	Or specify		