

BaySpec's WaveCapture™ FBGA Interrogation Analyzer is an integrated spectral engine simultaneously covering multiple wavelengths for precise and rapid fiber bragg grating (FBG) sensor system measurements.

The device covers wide wavelength ranges 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 (serial communications also supported at lower speeds).

Applications:

- Real time fault detection and isolation in fiber optic sensing systems
- OEM module for portable handheld field test equipment

The WaveCapture™ FBGA Series 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. As an input, the device uses a tapped signal from the main data transmission link through a single mode fiber, then collimating it with a micro lens. The signal is spectrally dispersed with the VPG®, and the diffracted field is focused onto an InGaAs array detector. The control electronics read out the processed digital signal to extract required information. Both the raw data and the processed data are available to the host.

Key Features

Compliance:

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

- Wide wavelength range
- Ultra fast response time (up to 5kHz)
- Excellent wavelength repeatability and resolution
- Athermal design enabling battery-operated portable operation
- High reliability for use in harsh environment
- Compact, card-mountable design

Specifications	Data	Unit
Standard Wavelength Ranges*	Standard: 1525-1565 Extended: 1510-1590	nm
Wavelength Repeatability	± 5	pm
Wavelength Readout Resolution	1	pm
Minimum Detectable Wavelength Change	± 1	pm
Frequency response time (typ.)	Standard: ~5 Hz (RS232/USB1.1) Fast: ~5 kHz (USB2.0)	
Channel Input Power Range	-60 to -20 or specify	dBm
Power Resolution	0.1	dB
Size	96 x 68 x 15.8	mm ³
Interface	RS232 or USB (Fast board USB only)	
Operating Temperature	-5 to +70° C	
Software	GUI evaluation software included, DLL for development	

* Other wavelengths available upon request

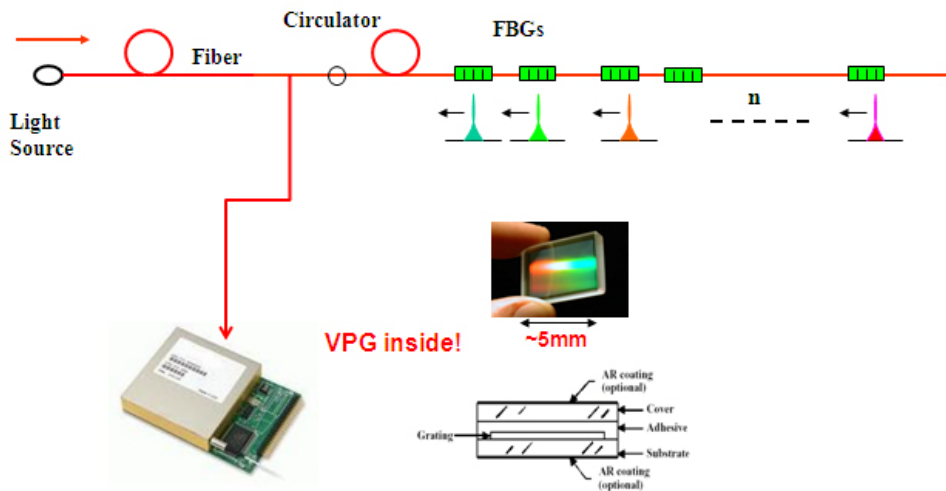
High Speed FBGA Interrogation Analyzer

WaveCapture™ FBGA Series



Functional Schematic

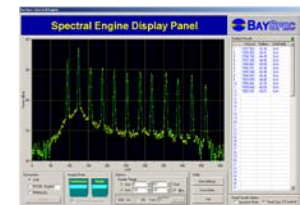
Fiber Bragg Grating (FBG) Sensing



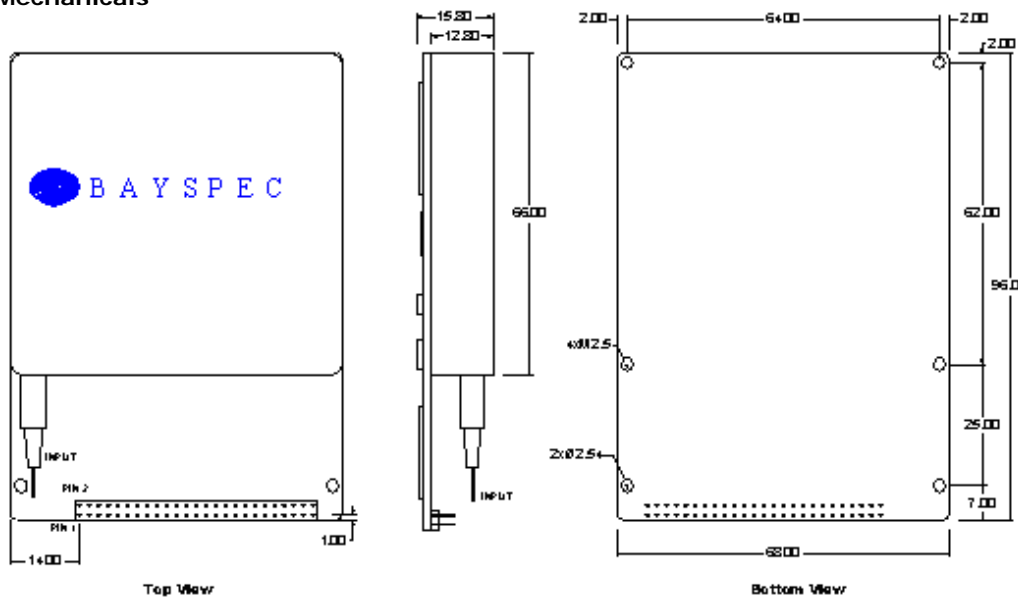
Key benefits:

- No moving parts
- Ultra reliable Volume Phase Grating (VPG®)
- Athermal (no TEC)
- Solid-state electronics
- Hermetically sealed

BaySpec Evaluation Software included for ease of integration.



Mechanicals



For more information, please contact BaySpec, Inc. at +1 (510)661-2008 or visit our website: www.bayspec.com

Ordering Information

Frequency Response	Starting Wavelength	Ending Wavelength	Code	Connector Type
Specify response time:	Specify the starting wavelength i.e. :	Specify the ending wavelength i.e. :	NC	No connector
S Standard (~5Hz)	1280 1280.00nm	1320 1320.00nm	FA	FC/APC
F Fast (~5kHz)	1525 1525.00nm	1565 1565.00nm	FP	FC/PC
	1510 1510.00nm	1590 1590.00nm	SA	SC/APC
	Or specify	Or specify	SP	SC/PC
			LA	LC/APC
			LP	LC/PC
			XY	TBD