



High Accuracy FBG Analyzer

WaveCapture™ FBGA-IRS-Series



Standard package



Thin package

BaySpec's *WaveCapture*™ FBGA-IRS is a spectral engine with an internal reference source that interrogates multiple wavelengths for precise fiber bragg grating (FBG) sensor system measurements requiring high end of life (EOL) wavelength accuracy at high frequency response time.

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 (serial communications also supported at lower speeds).

The *WaveCapture*™ FBGA-IRS 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.

Applications:

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

Key Features:

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

Compliance:

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

Specifications	Data	Unit
Standard Wavelength Range*	Standard: 1525-1565 Extended: 1510-1590	nm
Wavelength Repeatability	± 2	pm
Wavelength Readout Resolution	1	pm
Minimum Detectable Wavelength Change	± 1	pm
Frequency response time	Standard: ~5 Hz (RS232/USB1.1) Fast: ~5 kHz (USB2.0)	
IRS	Internal Reference Source (Integrated)	Yes
Channel Input Power Range	-60 to -20 or specify	dBm
Power Resolution	0.1	dB
Size	113.5 x 84 x 47.5 or 148 x 142 x 29.1	mm ³
Interface	RS232 or USB (Fast board USB only)	
Operating Temperature	0-70° C	
Software	GUI evaluation software included DLL for development	

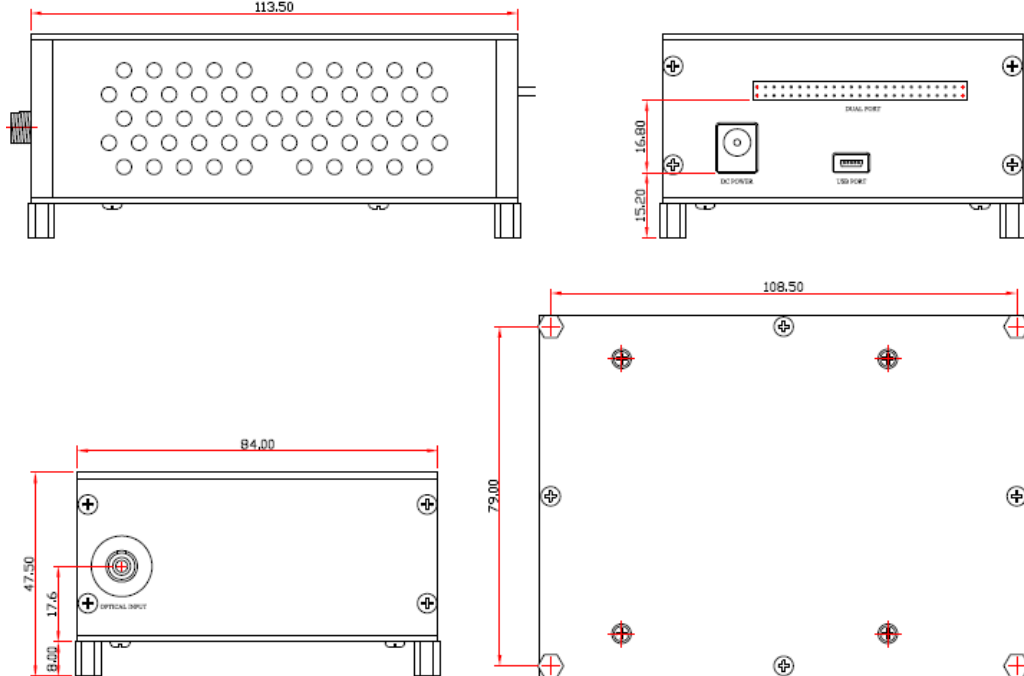
* Other wavelength ranges available upon request

High Accuracy FBG Interrogation Analyzer

WaveCapture™ FBGA-IRS Series



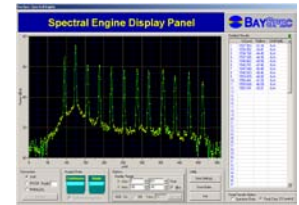
Mechanicals: (113.5 x 84 x 47.5 mm³)



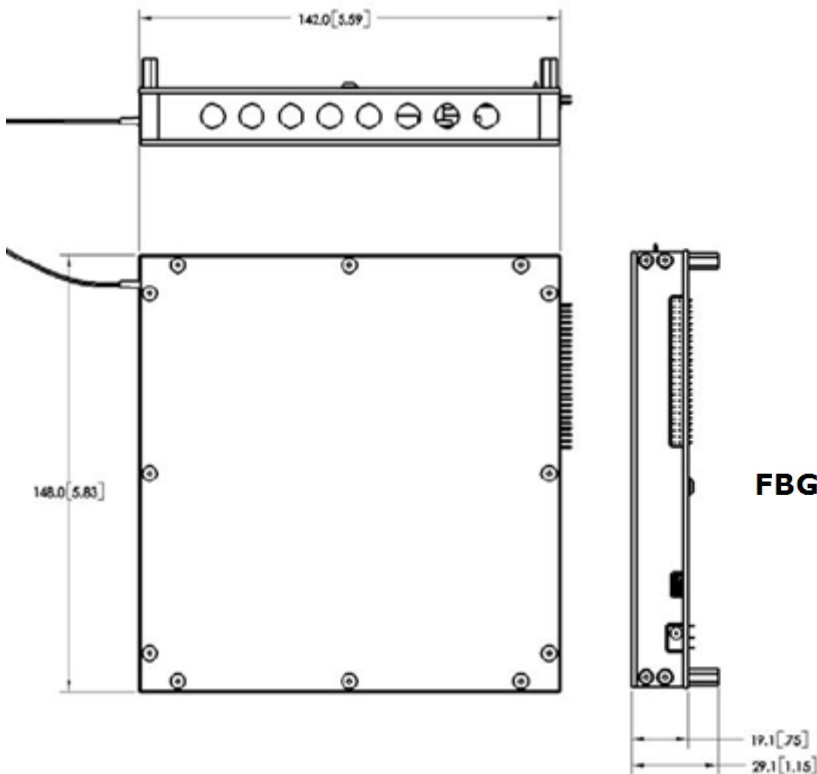
Key benefits:

- Ultra reliable Volume Phase Grating (VPG®)
- Athermal (no TEC)
- Battery operation
- Solid-state electronics
- Hermetic sealing
- Lifetime calibration

BaySpec Evaluation Software included for ease of integration.



Mechanicals: (148 x 142 x 29.1 mm³)



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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
			SP	SC/PC
			LA	LC/APC
			LP	LC/PC
			XY	TBD

Note: standard length 1.0m