SWIR Point Imaging Spectrometer

1200nm to 2500nm Wavelength Range with Lens Assembly

BaySpec's ***SWIR Point Imager*** dispersive spectral engine is designed to meet real-world challenges for best-in-class performance, long-term reliability, compact size and ultra-low power consumption. Benefiting from experience manufacturing high-volume optical channel performance monitoring devices for the telecommunications industry, BaySpec's SWIR spectral devices utilize low-cost field proven components. For the first time in instrumentation history an affordable, accurate and ruggedized spectral device is a reality.

This instrument 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 35mm lens for point imaging purposes. 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.

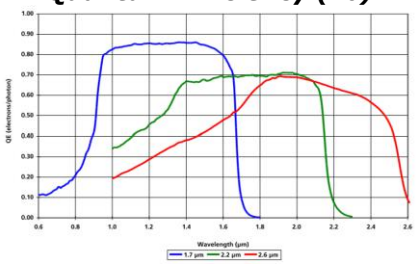
Applications:

- Pharmaceuticals
- Medical Diagnostics
- Agriculture
- Semiconductors
- Beverage & Brewery
- Cosmetics
- Explosives detection
- Counterfeit detection
- Water quality
- Food safety
- Petrochemical
- Law Enforcement
- Pulp & Paper
- Mining
- Oil Exploration
- Biomedical Research
- Homeland Security

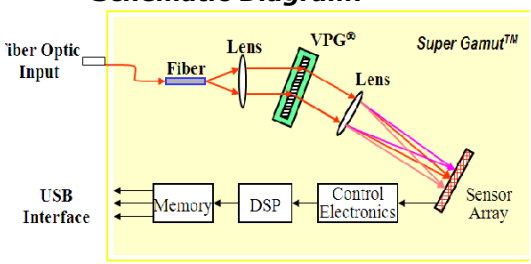
Key Features

- No moving parts reliability
- Lens Assembly for large field measurement
- Optimally cooled for low light detection
- Real-time spectral data acquisition with fast milli-sec response time
- Athermal design for ultra-low power consumption and improved reliability
- Outstanding optical throughput is achieved with VPG® and f/1.8 design
- Covers wavelength ranges from 1200-2500 nm
- Designed for field battery operation

Quantum Efficiency (%)



Schematic Diagram:



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BAYSPEC
Pervasive Spectroscopy

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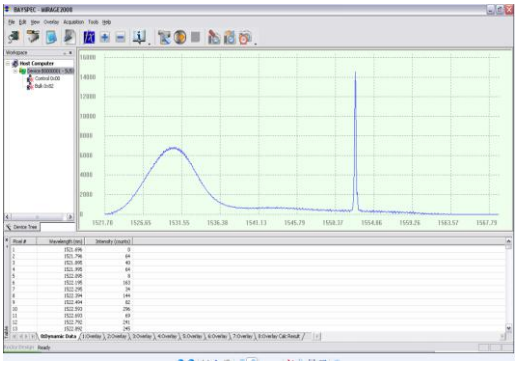
Parameter	Specification
PERFORMANCE	
Wavelength Range	1200-2500nm or any fraction of range customer specified
Resolution	5-20 nm, slit dependent
Signal / Noise	6000:1
Stray Light	0.05%
Wavelength Calibration	Factory Calibrated
Integration Time	20 µs to 30 seconds
Dimensions	322 (L) x 195 (W) x 110 (H) mm^3
Weight	2650 g
OPTICS	
f/ Number	f/2
Grating	Custom *Volume Phase Grating (VPG)*
Entrance Aperture Slit / Lens	Slit: 25µm, 50µm, 100µm, or none 35mm (22 degrees FOV)
DETECTOR SPECS	
Detector Array	25µm x 512 or 50µm x 256 Pixel
Quantum Efficiency @λpk Min.	70%
Response Non-uniformity	±10%
Dark Noise	10 counts RMS
A/D Converter	16bit
Power	1A @ 12V
COMPUTER	
Data Ports	USB 2.0
Trigger Modes	Software Controlled
Software	Windows 2000/XP or later

*specifications subject to change



"Spec 2020" Software

BaySpec's *"Spec 2020"* software included, a Windows-based package with flexible data acquisition, processing and output functionality

BaySpec SDK, a software development kit for new applications development and integration into to your host software systems.

Part Number Selection: SWIR-1200-2500-L

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