

BAYSPEC SuperGamut™ SWIR Imaging Spectrometer

Pervasive Spectroscopy

900nm to 1700nm Wavelength Range with Lens Assembly

Applications:

- Remote Sensing
- 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

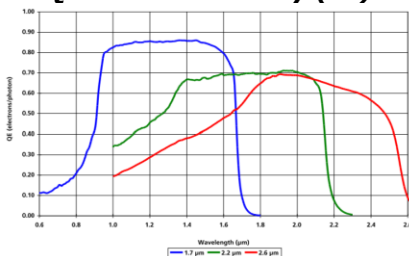
BaySpec's **SuperGamut™** series dispersive NIR spectral engines are designed to meet real-world challenges for best-in-class performance and long-term reliability. Benefiting from experience manufacturing high-volume optical channel performance monitoring devices for the telecommunications industry, BaySpec's NIR 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.

The **SuperGamut™** 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 fiber optic input or slit optics arrangement based on customer preferences. 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.

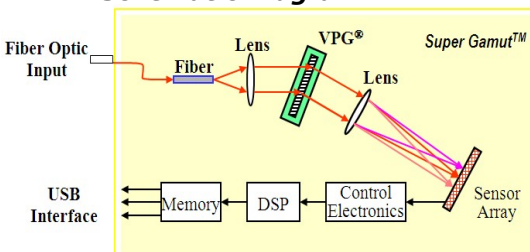
Key Features

- 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 900-1700 nm, customizable range

Quantum Efficiency (%)



Schematic Diagram:



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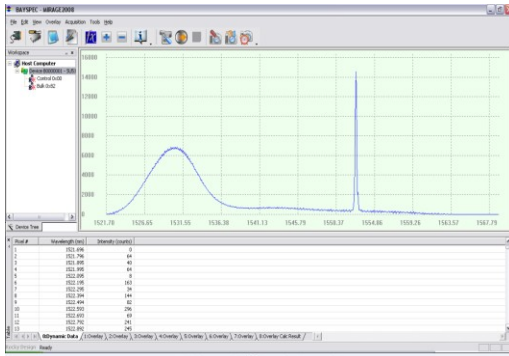
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Parameter	Specification
PERFORMANCE	
Wavelength Range	900-1700nm or any fraction of range customer specified
Resolution	5-20 nm, slit dependent
Signal / Noise	6000:1
Stray Light	0.05%
Wavelength Calibration	Factory Calibrated
Integration Time	20 μ s 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 / Fiber Optic	Slit: 25 μ m, 50 μ m, 100 μ m, or none Fiber optic: SMA, or custom design
DETECTOR SPECS	
Detector Array	25 μ m x 512 or 50 μ m x 256 Pixel
Quantum Efficiency @ λ pk Min.	70%
Response Non-uniformity	\pm 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:

NIRS- - - - -

Code	Type	Code	Starting λ	Code	Ending λ	Code	Slit Size	Code	Interface Type
SC	Standard	Please specify the starting wavelength i.e. :		Please specify the ending wavelength i.e. :		025	25 μ m	SMA905	SMA
DC	Deep Cooled	900	900 nm	1700	1700 nm	050	50 μ m	FC	FC
		1100	1100 nm	2200	2200 nm	100	100 μ m	Note: fiber sold separately	
		1250	1250 nm	2500	2500 nm	200	200 μ m		
		xxxx	customer specify	yyyy	customer specify				



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