

GRAND-EOS™ HYPERSPSPECTRAL CAMERA



Macro-imaging modality



Micro-imaging modality

TECHNICAL SPECIFICATIONS

Spectral Range	400 - 1620 nm	
Spectral Resolution	VNIR < 2.5 nm (400 - 1000 nm)	SWIR < 4 nm (900 - 1700 nm)
Spatial Resolution (with 10 X microscope objective)	< 7.5 µm	< 12 µm
Camera	Front-illuminated interline CCD camera	InGaAs camera deep-cooled at -80°C
Wavelength tuning speed	60 ms stabilization time for 2 nm step	60 ms stabilization time for 5 nm step
Wavelength Absolute Accuracy	< 0.3 nm	< 0.6 nm
Visualisation Camera	Monochrome or Color XMP camera - 2/3" 5.1M Progressive Color CMOS - 2448 x 2048 pixels	
Sample Holder	XY Manual translation stage (50 mm travel)	
Preprocessing	Image stabilization, spatial filtering, statical tools, spectrum extraction, data normalization, spectral calibration	
Hyperspectral Data Format	HDF5, FITS	
Single Image Data Format	HDF5, FITS, PNG, TIFF, JPG	
Spectrum Data Format	HDF5, CSV, PNG, TIFF, JPG	
Acquisition	PhySpec™ control and analysis software	
Operating system	Windows 7 (64 bits)	
Option	C++ SDK plugin interface included	
Macro-imaging modality		
Field of view	Optimized from 20 x 20 mm to 160 x 160 mm	
Lens	16mm focal length VIS-NIR-SWIR objective (transmittance >90% between 400 - 1700 nm)	
Micro-imaging modality		
Microscope	Upright or Inverted	
Objectives	5x, 10x (<i>other magnifications available upon request</i>)	
Illumination	Broadband and monochromatic illumination available via light guide	
Excitation	532 nm, 660 nm, 785 nm, or 808 nm lasers <i>Other wavelengths available upon request</i>	

GRAND-EOS combines a hyperspectral microscopy system with a hyperspectral wide-field imaging platform, giving access to micro and macro modalities with both VNIR (400-1000 nm) and SWIR (900-1700 nm) spectral ranges. This imaging platform takes advantage Photon etc's patented filtering technology based on volume Bragg grating providing a non-polarized wavelength selection with high throughput and efficiency. This filtering method allows imaging of large field-of-view, scanning through a user defined wavelength range. Using a megapixel sensor, the acquisition of filtered images provides spectral information from million of points at the surface of the sample. The versatility of GRAND-EOS as well as its high spatial and spectral resolution makes it an ideal tool for both fundamental research or industrial applications.

APPLICATION EXAMPLES:

- » Photovoltaic characterization
- » Forensic
- » Mineral analysis
- » Food and plants sorting

HYPERSPPECTRAL IMAGING & SPECTROSCOPIC INSTRUMENTS

Photon etc. offers state-of-the-art optical analysis solutions. Its filtering patented technology based on Bragg gratings is dominantly used in its hyperspectral imaging platforms and to create widely tunable filter covering both the visible and near-infrared spectral range. From solar cells to live cells, its fast hyperspectral imaging systems provide solutions to the most challenging industrial problems, and give researchers access to the latest innovations in optical and photonic instrumentation. In addition to its recognized hyperspectral microscopy and wide-field systems, Photon etc. has developed unique near infrared cameras specifically adapted to industrial applications. As pioneers in hyperspectral imaging and filtering, Photon etc. is driven by its clients' desires to surpass limitations in measurement and analysis.

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