

BaySpec's all new *DeepView™* Fourier or Spectral-Domain OCT Spectral Engine is a 1024 pixel InGaAs line scan camera with an integrated *VPG®*-based Spectrograph simultaneously covering multiple wavelengths for precise and rapid optical coherence tomography measurements.

The *DeepView™* Spectrometer provides convenience for researchers and OEM users assembling spectral-domain optical coherence tomography (SD-OCT), white light interferometry (WLI) or NIR spectroscopy systems. This flat-field spectral analyzer design is based on highly efficient transmission *Volume Phase Grating (VPG®)* and mounted with a digital line scan camera covering wide wavelength ranges in the important near infrared range. The spectral engine accepts fiber optic inputs and is customizable to match any spectral bandwidth and center wavelength of the users' light source.

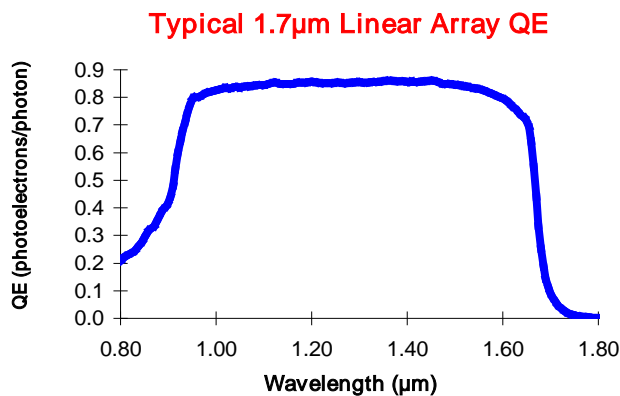
**Applications:**

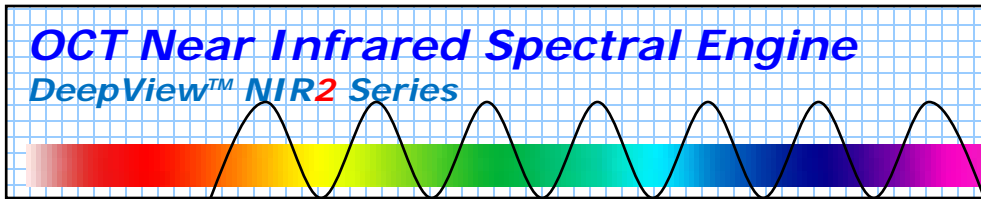
- High-speed spectral OCT for cancer detection in the biologically interested wave bands of 0.8-2.2  $\mu\text{m}$  range
- High-resolution NIR spectral OCT in retinal diagnostics and measurements in ophthalmology
- Spectral OCT guidance on implant and surgery
- High speed and fast turn-around Spectral OCT assessment of surgical outcome
- Catheter/Endoscopic SD OCT image guided diagnostics, image-guided surgery, and image-guided therapy
- In vivo and in vitro general medical diagnostics and imaging
- In vivo and in vitro operation room and surgical procedure Quality Assurance
- Non-invasive skin cancer and skin disease diagnostics and detection
- Industrial applications such as non-destructive testing

The OCTS NIR Series spectral engine employs a highly efficient *Volume Phase Grating (VPG®)* as the spectral dispersion element and an ultra sensitive 1024 pixel InGaAs array detector as the detection element, thereby providing high-speed parallel processing and continuous spectrum measurements. 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:**

- Rugged and reliable spectrometer featuring **no moving parts**
- Highly-efficient, high-resolution *Volume-Phase Grating®*
- Flexible options for center wavelength and spectral bandwidth, selectable at time of order; contact factory for custom solutions and packaging with NIR camera.
- Grating and optical bench customizable for your light source and application
- Single-mode fiber coupled input ; other input fiber options available
- Alignment to SUI digital line scan camera for optimal performance
- Easy to use GUI-based software for capturing and manipulating data





**Specifications:**

Optical:	Data
Image plane size <sup>1</sup>	26 mm wide
Optical spot size (single mode fiber)	25 μm diameter
Aperture (f#)	f/4
Focal length (nominal)	100 mm

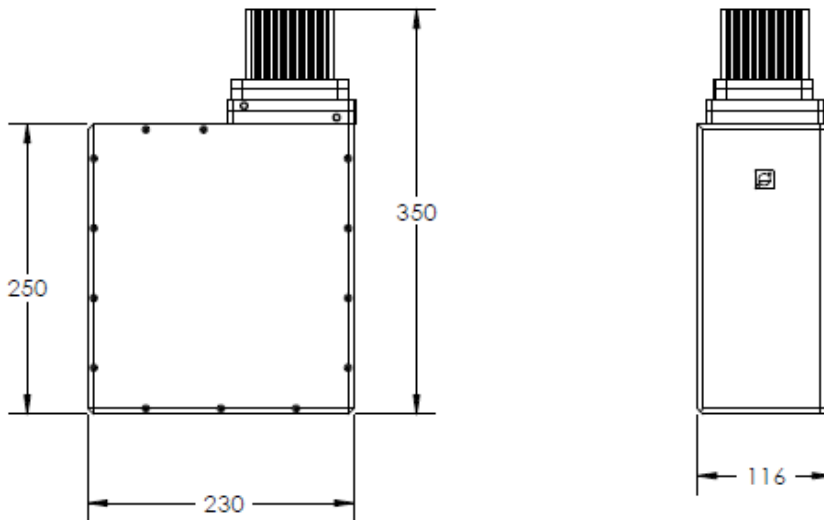
<sup>1</sup>with single-mode fiber input (core diameter of 9 μm)

Mechanical:	Data
Length x Width x Height:	350 x 230 x 116 mm <sup>3</sup> Height includes fiber mount and camera mounting plate*
Weight:	<800g (spectrograph-only) <1400g (spectrograph + flange + camera)
Fiber optic interface	Keyed FC/APC (inquire about PM or alternate types)
Camera mount	Optional
Camera compatibility	SU1024LDH2-1.7RT-0500/LC, inquire on other types
Focus adjustment	Available with or without (shown with below)

**Key design benefits:**

- No moving parts
- High Throughput Volume Phase Grating (VPG<sup>®</sup>)
- Factory aligned
- Solid-state electronics
- Compact size
- Flexibility in wavelength choice

Goodrich SUI Image Analysis software free with each camera purchase



\*Example shown. Specifications are subject to change based on the final spectrograph specifications

**Ordering Information:** (grating options – ordering suffix<sup>2</sup>, other options by request)

	-1280-1310-1340
Center wavelength (nm)	1310
Bandwidth (nm) <sup>3</sup>	60 or custom
Wavelength range (nm)	1280 (0px) – 1340 (~1024px)
Wavelength dispersion (nm <sub>avg</sub> /pixel) <sup>4</sup>	0.05
Wavelength dispersion (nm <sub>avg</sub> /mm)	1.95
Stray light(% of peak 100 pixels away <sup>5</sup> )	0.1%



<sup>2</sup>Spectrometer model number is OCTS-XXXX-YYYY-ZZZZ; replace XXXX with starting bandwidth; Replace YYYY with nominal center wavelength; replace ZZZZ with ending bandwidth.

<sup>3</sup>Over 25.6 mm image plane

<sup>4</sup>With 25 μm pixel pitch

<sup>5</sup>Test laser wavelengths used: 1064 nm, 1310nm, or 1550nm as appropriate for grating option selected