



DeepView™ NIR Series spectral engine shown with example camera

BaySpec's all new **DeepView®** Fourier or Spectral-Domain (SD) OCT-800 Series Spectral Engine incorporates a high speed digital line scan camera with a robust **VPG<sup>®</sup>**-based Spectrograph simultaneously covering multiple wavelengths for precise and rapid optical coherence tomography measurements.

The **DeepView®** Spectral Engine provides convenience for researchers and OEM users assembling Fourier or spectral-domain optical coherence tomography (SD-OCT), white light interferometry (WLI) or VIS-NIR spectroscopy systems. This flat-field spectral analyzer design is based on highly efficient transmission **Volume Phase Grating (VPG<sup>®</sup>)** and mounts on an ultra-fast digital line scan camera. The spectral engine accepts single-mode fiber optic inputs and is customizable via grating inserts to match the spectral bandwidth and center wavelength of the users' light source.

The OCTS 800 Series spectral engine employs a highly efficient **Volume Phase Grating (VPG<sup>®</sup>)** as the spectral dispersion element and an ultra-sensitive CMOS detector array as the detection element, thereby providing high-speed parallel processing and continuous spectrum measurements. The signal is spectrally dispersed with the **VPG<sup>®</sup>**, and the diffracted field is focused onto the CMOS 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:

- ✓ Fourier or Spectral-Domain Optical Coherence Tomography (SD-OCT)
- ✓ High-speed SD-OCT for cancer detection
- ✓ High-resolution 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

### Key Features:

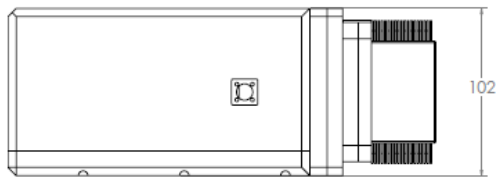
- ✓ Rugged and reliable spectrometer featuring no moving parts
- ✓ Highly-efficient, high-resolution **Volume-Phase Grating<sup>®</sup>**
- ✓ Flexible options for center wavelength and spectral bandwidth, selectable at time of order; contact factory for custom solutions and packaging different camera types.
- ✓ Grating and optical bench customizable for your light source and application
- ✓ Single-mode fiber coupled input
- ✓ Mounted on digital line scan camera; other input fiber options available



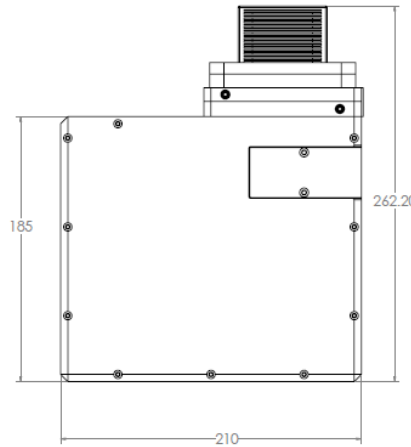
Parameter	Specification
<b>Optical</b>	
Image plane size <sup>1</sup>	26 mm wide
Optical spot size (single mode fiber)	10 µm across detector
Vertical positioning stability	≤5 µm over time
Alignment access	Tip and tilt Camera fine rotation to level spectrum with detector array
Aperture (f#)	f/4
Focal length (nominal)	100 mm
Single fiber input	to read 1 spectra
<b>Mechanical</b>	
Length x Width x Height:	185 x 210 x 102 mm <sup>3</sup> Height includes fiber mount and camera mounting plate Specifications are subject to change without notice
Weight:	< 900 g (spectrograph) < 220 g (camera)
Fiber optic interface	Keyed FC/APC (inquire about PM or alternate types)
Camera compatibility	AViiVA SM2 CL spL4096-140k other upon request
Focus adjustment	Available

<sup>1</sup>with single-mode fiber input (core diameter of 5 µm)

<sup>2</sup>Full alignment procedures shipped with spectrograph



Note: picture shows example camera only. All in mm.



### Ordering Information:

(grating options – ordering suffix<sup>3</sup>, other options by request)

	<b>-780-840-900</b>
Center wavelength (nm)	840
Bandwidth (nm) <sup>4</sup>	120
Wavelength range (nm)	780-900
Wavelength dispersion (nm <sub>avg</sub> /pixel) <sup>5</sup>	0.10
Stray light(% of peak 100 pixels away) <sup>6</sup>	0.1%

<sup>3</sup>Spectrometer model number is OCTS-XXX-YYY-ZZZ; Replace YYY with nominal center wavelength; replace XXX with starting wavelength; ZZZ for ending wavelength

<sup>4</sup>Over 20 mm image plane

<sup>5</sup>With 10 µm pixel pitch

<sup>6</sup>Test laser wavelengths used: 800 nm, as appropriate for grating option selected

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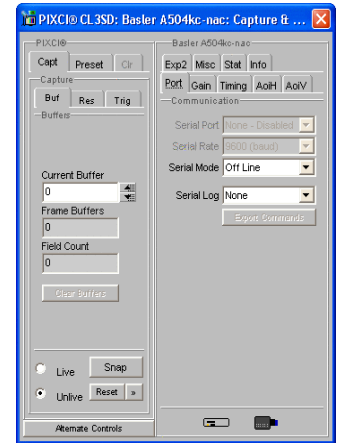


Image Processing Software included for ease of integration

### Consider using with:

- Fast Digital Line Scan Cameras, we can customize to any available model
- Mini-Wide Light Sources
- ASE Light Sources
- Fiber-optic Bundles & Accessories

