

## Hyperspec® Extended VNIR imaging sensor for the 600nm to 1600nm spectral range

Headwall's Hyperspec® Extended VNIR imaging spectrometer specifically targets the spectral range of 600 nanometers to 1600 nanometers to uniquely offer high resolution spectral imaging capabilities for a wide range of in-line manufacturing and remote sensing applications.

The award-winning, Hyperspec® imaging spectrometer family is built on a totally reflective concentric, f/2.0 optical design and optimized for imaging in harsh environments. All Hyperspec® instruments are based on Headwall's patented aberration-corrected, imaging design which feature the company's "original", high efficiency holographic diffraction gratings.

In order to minimize stray light and aberrations, transmissive optical components are not used within the imaging spectrometer. This platform is further enhanced by a telecentric optical input design which enables superior spectral and spatial imaging.

The Hyperspec® Extended VNIR imaging spectrometer is available in two configurations - as a lens-based imager or as a multi-channel/multi-point spectrometer; each model providing different capabilities to support application requirements such as frame rates, dynamic range, region of interest binning, price, and more.

The Hyperspec® Extended VNIR sensor is also available with the Hyperspec® Starter Kit, the Hyperspec® Reflectance/Fluorescence System, and in pan/tilt configurations for stationary deployment.

## Application-Specific Solutions For Critical Environments



### Applications:

- Food safety & quality
- LCD/display quality control
- Process monitoring
- Pharmaceutical manufacturing
- Photovoltaic manufacturing
- Semiconductor inspection
- Remote sensing & analysis
- Waste recycling & sorting

### Key Benefits:

- Broad spectral range
- Superb imaging performance
- Exceptional spectral & spatial resolution
- Ideal for low light, low signal applications
- Accurate, consistent spectral measurement
- Compact with very wide field of view
- Extremely high signal-to-noise
- Low scatter or stray light
- Rugged design for durability & stability
- Cost effective deployment

### Hyperspec™ Extended VNIR

Wavelength Range (nm)	600-1600
Aperture	F/2.0
Dispersion per Pixel	5.0 nm
Slit Width (Interchangeable) Optional - 12, 16, 40, 60, 100	25µm
Slit Length	18 mm
Spectral Resolution (25µ slit)	6-7 nm
Spectral Bands	200
Spatial Bands	640
Aberration-corrected (smile)	Yes
Aberration-corrected (keystone)	Yes
Stray Light	< 0.02%

### Detector & Electronics

Detector	VIS-InGaAs
Dynamic Range	68 db
Frame Rates (fps)	109+ (Full Frame)
Pixel Pitch (microns)	25
Read A/D	14 bit
Binning	No
Region of Interest	Yes
Camera Control Interface	CameraLink™ USB 2.0

### Environmental & Mechanical

Operational Temperature	-10° C - 40° C
Storage	-10° C - 60° C
Relative Humidity	Non-Condensing
Weight	~8.2 lbs/3.7 kg

By bridging the traditional boundaries between the traditional VNIR (400 to 1000 nm) and NIR (900 to 1700) spectral regions, the fully integrated Hyperspec™ Extended VNIR spectral imaging sensor offers a unique solution to address this critical spectral region.

**Headwall Photonics is the leading designer and manufacturer of imaging spectrometers.**

Hyperspectral Sensors	Spectral Range
Hyperspec® VIS	380 - 825 nm
Hyperspec® VNIR	400 - 1000 nm
Hyperspec® Extended VNIR	600 - 1600 nm
Hyperspec® NIR	900 - 1700 nm
Hyperspec® SWIR	1000 - 2500 nm
High Efficiency Hyperspec® NIR	900 - 1700 nm
High Efficiency Hyperspec® SWIR	1000 - 2500 nm

*Information on UV, MWIR, and LWIR Hyperspec® sensors are available upon request.*

### Raman Imaging Instruments

Raman Explorer™ 266 nm  
Raman Explorer™ 532 nm  
Raman Explorer™ 642 nm  
Raman Explorer™ 785nm  
Raman Explorer™ 830 nm  
Raman Explorer™ 1064 nm



Visit [www.HeadwallPhotonics.com](http://www.HeadwallPhotonics.com) for more information on end-user and OEM spectral imaging solutions.

### About Headwall Photonics:

Headwall Photonics is the leading designer and manufacturer of imaging spectrometers and spectral instrumentation for industrial, commercial, and government markets. Headwall's high performance spectrometers, spectral engines, and holographic diffraction gratings have been selected by OEM and end-user customers around the world for use in critical application environments. As a pioneer in the development of innovative spectrographs and imaging spectrometers based on optical technologies, Headwall enjoys a market leadership position through the design and manufacture of patented spectral instrumentation that is customized for application-specific performance. Headwall Photonics was formed in 2003 as the result of a management buy-out from Agilent Technologies. For more information please call 978.353.4100 or email us at [Information@HeadwallPhotonics.com](mailto:Information@HeadwallPhotonics.com).



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