

Hyperspec® VNIR imaging sensor for the 380nm to 1000 nm spectral range

Headwall's Hyperspec® VNIR integrated hyperspectral sensors offer outstanding hyperspectral imaging performance in the visible-near-infrared (VNIR) range of 380-1000nm. Application areas for Hyperspec VNIR include remote sensing (UAVs, aircraft and satellites), advanced process vision, and medical.

Hyperspec® VNIR is built on a totally reflective concentric, f/2.0 optical design that includes aberration-corrected imaging in a passively athermalized, lightweight design that is optimized for harsh environments. Three versions of Hyperspec VNIR are available: The N Series provides 1004 spatial bands and 775 spectral bands (Base CameraLink connectivity). The A-Series provides 1004/837 with Base CameraLink connectivity, and the E-Series offers 1600/953 with Full CameraLink.

Headwall's imaging sensors minimize stray light and aberrations by eliminating transmissive optical components such as prisms. In addition to airborne applications, Hyperspec® VNIR sensors are also suited for laboratory-based Hyperspec Starter Kits and in pan/tilt configurations for stationary deployment.

Application-Specific Solutions For Critical Environments

**Applications:**

- Machine vision
- Moving webs of product
- Color measurement
- Pulp & paper
- Textile production
- Food safety & quality
- LCD/display quality control
- Microscopy & health sciences
- Multi-channel/multi-point spectroscopy
- Process control of biomass/biofuels
- Remote sensing & analysis
- Military, defense & homeland security
- Waste recycling & sorting

Key Benefits:

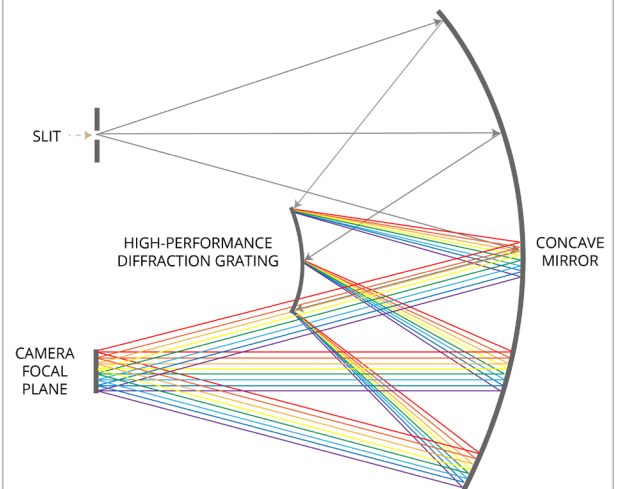
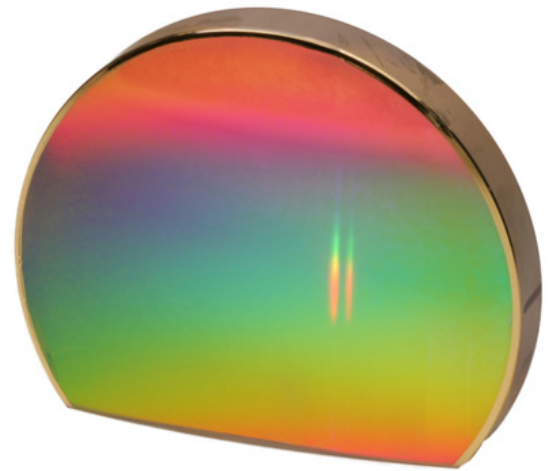
- Superb imaging performance
- Exceptional spectral & spatial resolution
- Ideal for low light, low signal applications
- Accurate, consistent spectral measurement
- Compact with very wide field of view
- Extremely high signal-to-noise
- Low scatter or stray light
- Rugged design for durability & stability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

Hyperspec® VNIR

SERIES:	N	A	E
Wavelength Range (nm)	380-1000		
Aperture	F/2.0		
Entrance Slit Width	25 µm		
Dispersion/Pixel (nm/pixel)	0.8	0.7	
FWHM Slit Image	2.5 nm		
Slit Length	12 mm		
Spectral Bands	775	837	923
Spatial Bands	1004	1004	1600
Smile - Aberration-corrected	Yes		
Keystone - Aberration-corrected	Yes		
FPA Detector	EMCCD	CCD	sCMOS
Max. Frame Rate (Hz)	90		100
Pixel Pitch (microns)	8.0	7.4	6.5
Camera Control Interface	Base CameraLink		Full CameraLink
Weight (lb / g)	8.16 / 3,700	6.13 / 2,781	7.69 / 3,488
Max. Power (W)	18	6.6	13.2

All-Reflective Concentric Imager

Headwall's hyperspectral sensors deliver aberration-corrected imaging characterized by high spatial and spectral resolution, a wide field of view, and very high signal throughput. Headwall's own application-specific diffraction gratings are fundamental to these key specifications, which are crucial for airborne hyperspectral sensors. Headwall's all-reflective, concentric sensor design is robust and thermally stable.



About Headwall Photonics: Headwall 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 advanced, patented optics technology, Headwall enjoys a market-leading position through the design and manufacture of spectral instrumentation that is customized for application-specific performance.

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