



Data Sheet

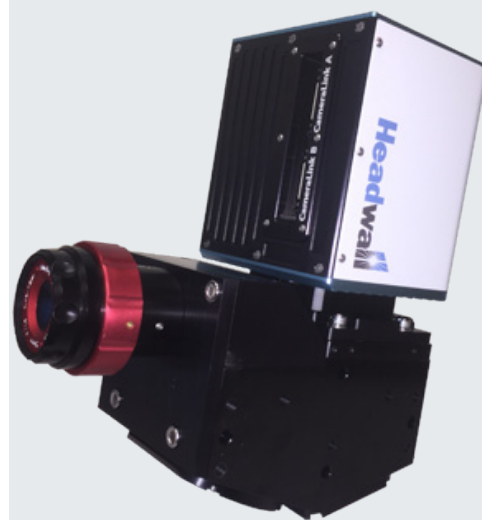
High Efficiency Hyperspec® SWIR Hyperspectral Imaging Spectrometer

High-Efficiency Hyperspec® SWIR imaging sensor for the 900nm to 2500nm spectral range

Headwall's High-Efficiency Hyperspec® SWIR hyperspectral sensors offer peak diffraction efficiency of greater than 90% in the shortwave infrared range of 900-2500nm. Application areas for Hyperspec SWIR include remote sensing (UAVs, aircraft and satellites), advanced process vision, and medical.

High-Efficiency Hyperspec® SWIR is built on a totally reflective concentric, f/2.4 optical design that includes aberration-corrected imaging in a lightweight design that is optimized for harsh environments. It provides 384 Spatial bands, 166 Spectral bands, and both Base CameraLink and RS232 connectivity.

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



Applications:

- Military, defense & homeland security
- Airborne surveillance/reconnaissance
- Border patrol & base security
- Food safety & inspection
- Machine vision
- Microscopy & health sciences
- Process monitoring & control
- Remote sensing & analysis
- Small satellite environmental analysis
- Waste recycling & sorting

Key Benefits:

- Superb imaging performance
- Athermalized for harsh environments
- High 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

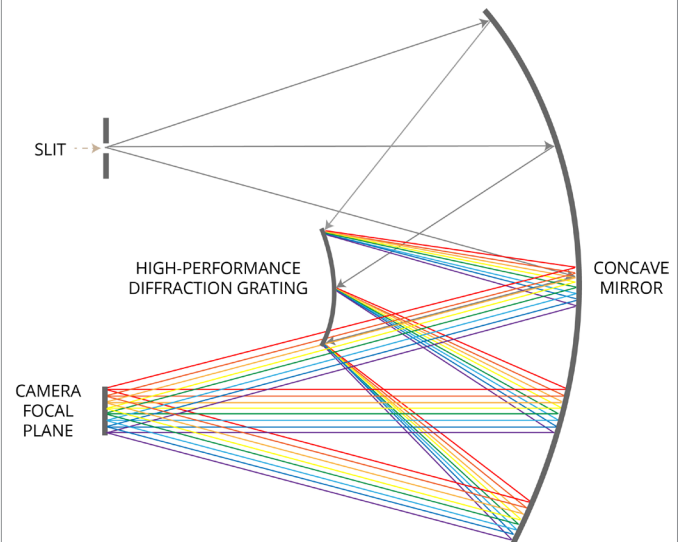
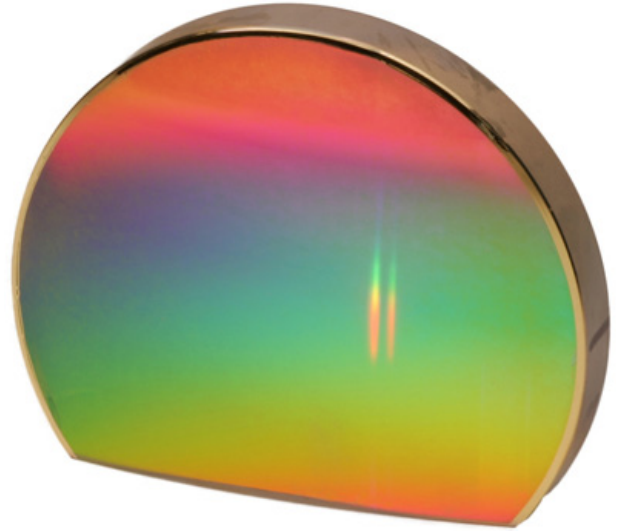
Application-Specific Solutions For Critical Environments

High Efficiency Hyperspec® SWIR

Wavelength Range (nm)	900-2500
Aperture	F/2.4
Entrance Slit Width	30 µm
Dispersion/Pixel (nm/pixel)	9.6
FWHM Slit Image	12.0 nm
Slit Length	16 mm
Spectral Resolution	19 nm
Spectral Bands	166
Spatial Bands	384
Smile - Aberration-corrected	Yes
Keystone - Aberration-corrected	Yes
Detector	Stirling-cooled MCT
Max. Frame Rate (Hz)	450
Pixel Pitch	24 µm
Read A/D	16-Bit
Camera Control Interface	Base CameraLink and RS232
Weight (lb / kg)	9.6 / 4.4
Max. Power (W)	14.4

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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