

Hyperspectral imaging is an invaluable analytical technique for life sciences and biotechnology applications, whether used as a traditional high performance spectral imaging instrument or deployed as a multi-channel spectroscopy system.

Readily integrated into a laboratory setting, Headwall's Hyperspec® instrument offers researchers access to accurate, calibrated, and repeatable spectral analysis. When utilized as a multi-channel spectrometer, high-throughput screening experiments can be conducted where high spectral resolution, spatial differentiation, and channel separation are all critical parameters.

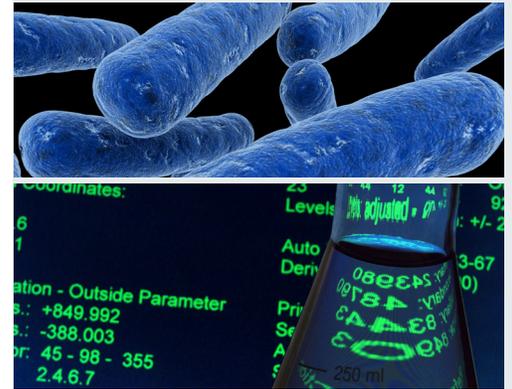
Optimized for high-throughput screening, the Hyperspec instruments are fully-capable of processing at very high speeds based on selected spectral bands or wavelengths of interest.

For life science and biotechnology research, Headwall offers the Hyperspec® Starter Kit – a system comprising a Hyperspec® sensor, image rendering software, sample illumination, a moving stage, and a mounting gantry.

Key advantages of hyperspectral imaging for laboratory researchers include:

- For material classification, derive the spectral signature for every channel within the micro-well plate or for every pixel within the spatial field of view
- Color render the hyperspectral image based on an established library of known spectral signatures
- For high throughput screening, generate wavelength-specific criteria for high speed analytical control throughout the discovery and experimentation process

Headwall's Hyperspec® multi-channel spectrometer imaging systems are available for attachment to microscopes through C-mount hardware or as integrated microscopy systems complete with application-specific software through Headwall's application partners.



Hyperspec Starter Kit

- Fluorescence
- High Throughput Screening
- Laboratory R & D
- Multi-Channel Spectroscopy
- Nanobead & Quantum Dot Analysis

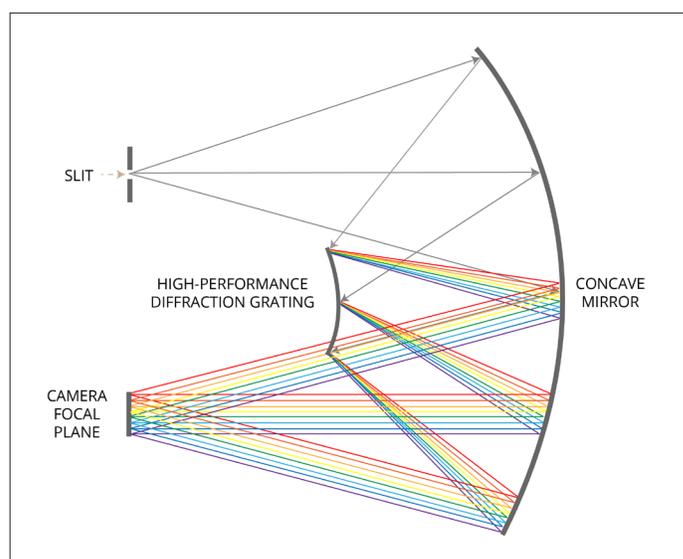
Headwall is the world's leading manufacturer of hyperspectral imagers (Hyperspec®) for a wide range of industries including remote sensing, advanced machine vision, precision agriculture, and others. The Company also manufactures OEM spectrographs and spectral engines that are exceptionally precise with respect to high spectral and spatial resolution and signal throughput.

The core technology fundamental to these products is the holographic diffraction grating, which Headwall manufactures to exacting dimensions and tolerances and to customer specification. This allows for small and rugged

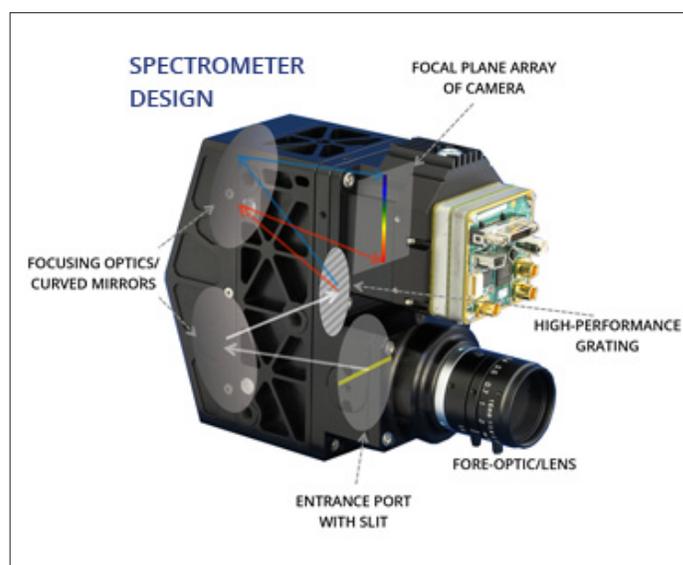
optical imaging instruments that deliver aberration-corrected performance and a very wide field-of-view. Used in Headwall's *concentric-style* imagers along with mirrors, the designs are simple yet elegant and feature no moving parts.

In addition to hyperspectral, Headwall also manufactures Raman imaging instruments that are available in a wide range of laser excitation wavelengths. Raman Explorer and Raman Discovery are very well suited for chemical imaging applications as well as biotechnology and medical applications.

Hyperspectral Ranges	
UV-VIS	250-825nm
VNIR	380-1000nm
Extended VNIR	550-1700nm
NIR	900-1700nm
SWIR	950-2500nm
MWIR*	3-5 microns
LWIR*	8-12 microns
*MWIR and LWIR available upon request	



Raman Explorer	
248nm	single input
355nm	single input
532nm	single input
532nm/658nm	dual input
642nm	single input
785nm	single input
785nm	dual input
830nm	single input
Raman Discovery	
532nm	dual input



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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