

## Hyperspec® Pan & Tilt spectral imagers provide a stationary platform for hyperspectral scanning of scenes and areas of interest

Headwall's high performance Hyperspec® Pan & Tilt sensor platforms offer users the ability to conduct hyperspectral imaging from a stationary platform. As a "push broom" imaging technology, traditional hyperspectral applications were either airborne deployments or utilized with moving webs of product or samples. Headwall's hyperspectral pan & tilt solutions enable a range of new remote sensing and military/defense applications where the Hyperspec® imaging sensors are placed in stationary positions to scan a scene or area of interest.

The Hyperspec® Pan & Tilt sensor configurations encompass very small pan-tilt units that provide accurate real-time positioning of the hyperspectral imaging spectrometer. The hyperspectral pan-tilt unit can be fully weatherized, offers continuous pan rotation, internal wiring for payload signals, and is designed for harsh environments in fixed and mobile applications.

Hyperspec® Pan & Tilt sensor configurations include an optimized Hyperspec® imaging spectrometer, motorized pan-tilt control unit, and integrated Hyperspec® software for platform control and hyperspectral data management. The pan-tilt units are available in single shelf or dual shelf configurations for mounting other sensors such as LIDAR and thermal cameras. These Hyperspec® configurations provide:

- Compact form factor
- Precise control of position, speed, and acceleration
- 360° continuous option with pass-through for sensor/antenna signals
- Rugged, outdoor packaging for harsh environments

With many years of successful hyperspectral deployment experience, Headwall engineers have selected proven, reliable hardware components which maximize the performance of the Hyperspec® VIS, Hyperspec® VNIR, Hyperspec® Extended VNIR, Hyperspec® NIR, Hyperspec® SWIR, and Micro-Hyperspec™ imaging sensors.

## Application-Specific Solutions For Critical Environments



### Applications:

- Agriculture research & crop management
- Civil & environmental engineering
- Environmental analysis & monitoring
- Food safety & inspection
- Medical & health sciences
- Military & defense stationary sensing
- Perimeter monitoring & surveillance
- Remote sensing
- Waste recycling & sorting

### Key Benefits:

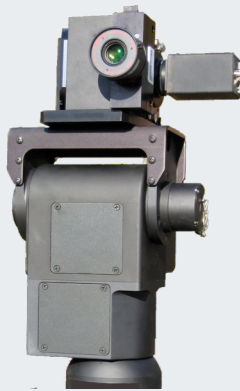
- Integration with stationary sensor platforms
- Continuous operation & scene scanning
- Cost effective deployment
- Ease of set-up, ease of use
- Flexibility to quickly modify configurations
- Rapid development of spectral libraries
- Display & render of hyperspectral scene images

The Hyperspec® Pan & Tilt instruments are available as fully integrated systems and include:

- High performance, aberration-corrected Hyperspec® imaging spectrometer
- Hyperspec® software for sensor control and the creation & management of hyperspectral data
- Motorized, rugged pan & tilt unit (single or dual shelf) with mounting hardware
- Optional - Ruggedized laptop with integrated GPS

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, the use of 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.



Optimized for every application, Hyperspec® imaging spectrometers offer industry leading spectral imaging performance.

### 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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