

The Starter Kit for the Extended VNIR range (550-1650nm) provides everything needed for high performance imaging and sample scanning: Illumination kit, full software control, gantry, and moving web. Combine the kit with any Hyperspec imaging sensor to collect hyperspectral data on documents, biological samples, forensic evidence, and much more. Headwall's high-performance Extended VNIR spectrometers include a VIS/NIR objective lens optimized for the Extended VNIR range.

The Starter Kits can be deployed almost anywhere hyperspectral imaging is needed - in the field or in the laboratory. Headwall's fully reflective, patented Extended VNIR spectrometer design eliminates image aberrations while offering high resolution with a wide field of view. This represents a major advantage in the Extended VNIR spectral range of 550-1650nm where spectral and spatial imaging performance is a critical success factor.



High Quantum-Efficiency (QE) detection electronics and 100% fill-factor means high signal-to-noise characteristics which maximizes sensitivity and dynamic range. A design-optimized objective lens comes with each Starter Kit, providing excellent chromatic compensation and imaging results over

the 550nm-1650nm spectral range. The 25mm focal-length lens provided with the Starter Kit has been optimized for high resolution of Extended VNIR wavelengths. Stable lighting for sample illumination for the Starter Kit is provided by a Tungsten Halogen light source covering 550-1650nm.

Optional for every Starter Kit is Headwall's Hyperspectral Data Processing Unit (HDPU), which contains a powerful GPU in addition to a high-speed CPU to deliver extremely fast capture, transfer and processing of the hyperspectral image data. The HDPU also comes with Headwall's Hyperspec® image-analysis and display software that allows the user to export the data in industry-standard file formats.



Key Benefits:

- Instantly scan sample materials & display hyperspectral results
- Determine spectral band differentiators
- Increased user productivity
- Cost-effective deployment
- Simple to set up, simple to use
- Flexibility to quickly modify configurations
- Quickly run multiple experiments
- Rapid development of spectral libraries

Key Features:

- Adjustable Hyperspec® mounting stage and gantry includes base plate, tower, and sensor mounting hardware
- Precision DC Servo linear stage and controller with 100mm travel distance (optional 250mm travel available)
- Lighting includes adjustable light line and light guide, 50mm wide standard/200mm optional
- Hyperspec® software manages hyperspectral data
- Optional darkening enclosure and high-speed Hyperspectral Data Processing Unit

Application-Specific Solutions For Critical Environments



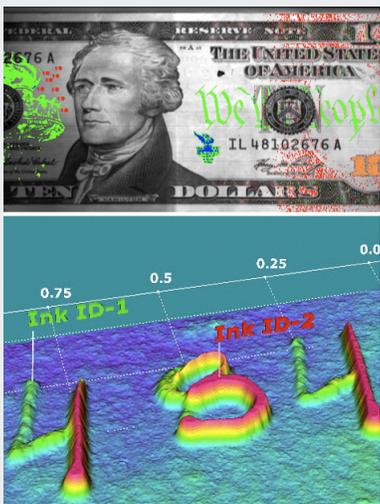
An enclosure can be added to the Extended VNIR Starter Kit to eliminate the effects of ambient or other light sources.



Headwall's Hyperspec Data Processing Unit (HDPUs) comprises a high-performance CPU and GPU combination plus high-capacity storage to provide instantaneous management of hyper-spectral image data



Quartz Tungsten Hologen (QTH) light sources covering the 500-1700nm range.



Headwall's spectrometers provide a highly resolved means of determining the spectral makeup of any reflective material, including documents, currency, food products, and more.

Image courtesy of Science GL

Extended VNIR Starter Kit

Performance Guideline Table (S1 series)

Spectral Region	550-1650nm
F-Number	f/2
Spectral Resolution	5-7 nm
Spectral Bands	226
Spatial Bands	320
Stray Light	5×10^{-3}
Frame Rate	100 fps
Camera Control	CameraLink

Optical Characteristics for 25mm focal length lens

Focal length	25 mm
f stop	f/2
Minimum Object Distance	25 cm
Image Format	11.5 mm
Usable Spectral Range	400 nm to 1700 nm
Optical Design	Multi-element, synthetic fused silica



Headwall's Extended VNIR covering 550nm - 1650nm spectral range

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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