

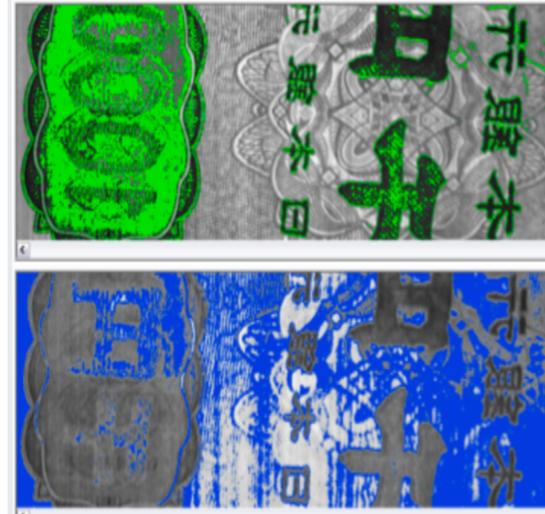
Hyperspectral imaging, also known as chemical sensing, affords forensic scientists unique advantages in terms of noninvasive analysis of crime scenes, evidence, or other objects of interest. Once limited to the laboratory, Headwall's Hyperspec™ imaging technology is small enough and portable to be utilized in a wide range of environments from crime scenes to lab benches. The utilization of high efficiency diffraction optics enables the selection of optimized hyperspectral imagers covering broad spectral regions.

The Hyperspec™ sensors are configured with either scene scanning capability (pan & tilt systems) or available as integrated instruments for sample analysis and image rendering in a forensic laboratory.

Since no preparation of the sample or forensic evidence is necessary, this non-destructive spectral technique is invaluable for a wide range of forensic science applications. Within the field of view of the Hyperspec™ sensor, hyperspectral imaging simultaneously yields precise information for all wavelengths across the complete spectral range of the sensor. With the creation of the hyperspectral datacube, a data set that includes all of the spatial and spectral information within the field of view, forensic teams are able to more thoroughly evaluate documents and other crime scene evidence that will greatly enhance knowledge of the spectral composition and uniqueness of these samples.

Key advantages of hyperspectral imaging for forensic scientists include:

- Derive the precise spectral signature for every point within the field of view for material classification
- Color render the image within the field of view based on an established library of known spectral signatures
- Evaluate evidence, forensic samples, or documents for spectral tags
- Pan a crime scene for spectral evidence while maintaining spatial information



Crime Scene Investigation

Counterfeit Detection

Document Analysis & Verification

Latent Print Analysis

Materials Investigation

Headwall's 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 gratings or diamond-turned diffraction gratings. To achieve very low stray light and high signal-to-noise performance, no prism or transmissive optics are used within the spectrometer.

Headwall Photonics offers the broadest range of spectral imaging instrumentation for demanding applications.

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
Micro-Hyperspec™ VNIR	400 - 1000 nm
Micro-Hyperspec™ NIR	900 - 1700 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™ 260 nm
- Raman Explorer™ 532 nm
- Raman Explorer™ 785nm
- Raman Explorer™ 830 nm
- Raman Explorer™ 1064 nm
- Raman Discovery™ 532 nm
- Raman Discovery™ 785 nm



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.

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