The Raman Explorer & Raman Discovery are high-efficiency, high-performance Raman imaging spectrometers designed for use in harsh environments.

Headwall Photonics has developed a family of Raman spectrometers that are best-in-class for a wide range of high-performance applications. The Raman Explorer™ provides high optical efficiency and throughput with a minimum of optical noise. High spatial resolution comes from a tall entrance slit that affords optimized signal collection with minimal image distortion and channel cross-talk. The spectrometers also have the ability to process separate calibration and radiometric reference channels. The Raman Explorer™ also covers the full Raman spectral range and has no moving parts, which combine to offer very high spectral resolution. Initially designed for space-based applications, the very compact and rugged Raman Explorer has been successfully deployed in harsh environments ranging from the factory floor to deep-sea exploration submersibles. Laser excitations for Raman Explorer range from 248nm up to 1064nm (see table on reverse for exact configurations).

The Explorer and Discovery Raman imaging instruments are based on Headwall’s patented, aberration-corrected retro-reflective designs featuring exceptionally high signal-to-noise across the entire Raman bandwidth which eliminates keystone and smile image degradation. The innovative optical designs of the Raman Explorer and Raman Discovery products feature a very short focal length with f/2.4 optical throughput thus allowing for a very compact, high performance instrument.

The Raman Discovery™ is an affordable, hand-held solution for Raman applications where multi-channel Raman imaging measurements are key differentiators. It is a very portable unit designed for harsh, mission-critical environments. High optical efficiency, high spectral/spatial resolution, and a large entrance aperture with minimal image distortion are key advantages of the Raman Discovery. Laser excitations include 785nm and 532nm.

Application-Specific Solutions For Critical Environments

Applications:
- Chemical/biological threat assessment
- Explosives & chemical identification
- Forensics
- Pharmaceuticals
- Plastics & recycling
- Raw material identification & verification
- Mineral analysis
- Process Analytical Technology
- Microscopy
- Spatially-offset Raman

Key Benefits:
- Superb imaging performance
- Exceptional spectral & spatial resolution
- 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
### Raman Imaging Instruments

- Raman Explorer™ 248 nm
- Raman Explorer™ 532 nm
- Raman Explorer™ 532/685 nm dual excitation
- Raman Explorer™ 632.8 nm
- Raman Explorer™ 785 nm
- Raman Explorer™ 830 nm
- Raman Explorer™ 1064 nm
- Raman Discovery™ 532 nm
- Raman Discovery™ 785 nm

### Key Advantages of Raman Imaging
- High Signal-to-Noise
- Exceptional bandshape & resolution
- Requires shorter exposure time

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### Hyperspectral Sensors

<table>
<thead>
<tr>
<th>Hyperspectral Sensors</th>
<th>Spectral Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperspec UV</td>
<td>250 - 600 nm</td>
</tr>
<tr>
<td>Hyperspec® VIS</td>
<td>380 - 825 nm</td>
</tr>
<tr>
<td>Hyperspec® VNIR</td>
<td>380 - 1000 nm</td>
</tr>
<tr>
<td>Hyperspec® Extended VNIR</td>
<td>550 - 1700 nm</td>
</tr>
<tr>
<td>Hyperspec® NIR</td>
<td>900 - 1700 nm</td>
</tr>
<tr>
<td>Hyperspec® SWIR</td>
<td>1000 - 2500 nm</td>
</tr>
<tr>
<td>Micro Hyperspec® VNIR</td>
<td>380 - 1000 nm</td>
</tr>
<tr>
<td>Micro Hyperspec® NIR</td>
<td>900 - 1700 nm</td>
</tr>
</tbody>
</table>

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### About Headwall Photonics:

Headwall Photonics is the leading designer and manufacturer of spectral imaging instruments.

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

Visit www.HeadwallPhotonics.com for more information on end-user and OEM spectral imaging solutions.