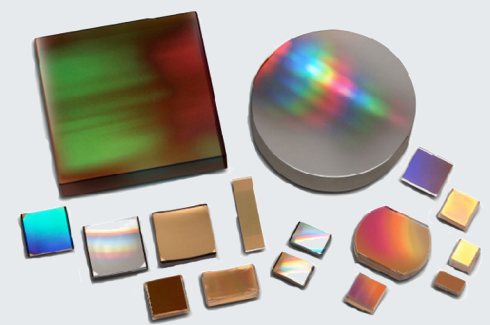


Headwall’s core technology is the design and fabrication of aberration-corrected holographic diffraction gratings, which deliver exceptionally low stray light and application-specific performance.

Headwall’s diffraction gratings are all-original components, meaning that they are all 1st generation Master grating quality. Proprietary manufacturing processes guarantee that every grating is the same as the first prototype. Aberration-corrected concave gratings can be optimized for the Deep UV through the Far Infrared and can be purchased as components, mechanically integrated spectral engines, or fully tested OEM spectral instruments. Custom grating designs are optimized for flat field spectral imaging to specific cost and size targets. Aberration-corrected gratings enable small form-factor handheld field instruments that are temperature insensitive. By engaging customers in a collaborative manner, Headwall delivers outstanding application-specific performance that helps customers achieve higher performance and lower cost. ISO-9001:2008 certification and a focus on vertically-integrated manufacturing positions Headwall as a valued partner for OEMs worldwide.

Application areas for aberration-corrected gratings and spectral engines include: UV, VIS, NIR, IR, absorption spectroscopy, fluorescence spectroscopy, Raman spectroscopy, CARS spectroscopy, and more. Headwall produces in-plane and out-of-plane aberration-corrected gratings, single- and dual-beam spectrometers, and hyperspectral and Raman imaging systems. System architectures can be fiber-matched and self-referencing, and innovative double monochrometers are available to minimize stray light. For lower-resolution applications without aberration-corrected requirements, Headwall also offers Rowland grating designs.

Application-Specific Solutions For Critical Environments



Applications:

Absorption Spectroscopy	Document verification
	Industry process monitoring
	Phenotyping in plant genomics
Fluorescence Spectroscopy	Life science/genomics studies
	Adulterant identification
	Pathogen detection in agriculture
Raman Spectroscopy	Structure elucidation
	Stand-off detection
	Aqueous solutions analysis
Emission Spectroscopy	Arc/Spark analysis
	Semiconductor fabrication
	Plasma/combustion studies

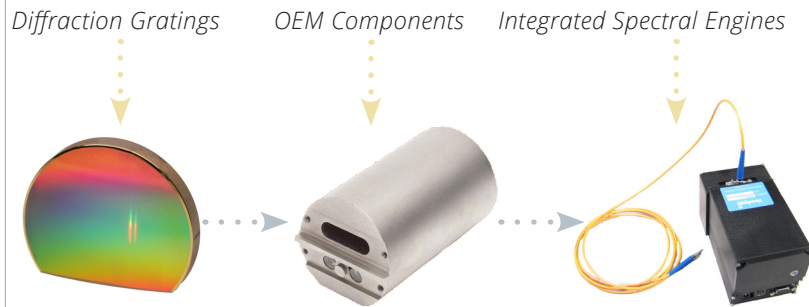
Key Benefits:

Low stray light; high resolution.
Application-specific designs, from gratings to full OEM spectral instruments.
Simplified optical designs reduce size, complexity and cost.
Fiber-matched designs available.
All-original manufacturing guarantees product uniformity.
Rapid path from design/prototype to production.
Temperature survivability: > 80°C (up to 150°C upon request).

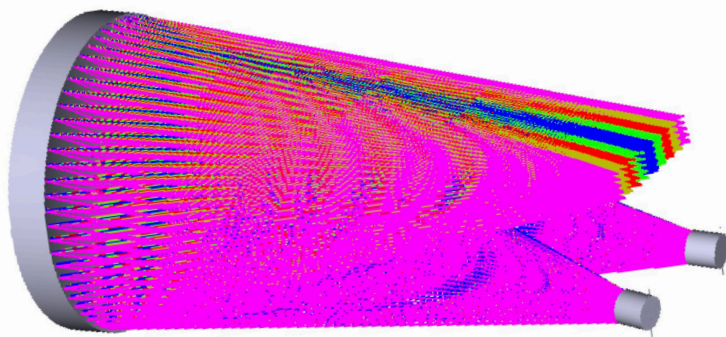
As a vertically-integrated manufacturer, Headwall leads the spectral imaging industry with its unmatched knowhow and advanced production capabilities. Headwall manufactures original diffraction gratings and novel spectral engines for OEM applications across a wide range of industries. One of Headwall's core strengths is working collaboratively with customers to achieve designs that are optimized for manufacturability, reliability, and cost-effectiveness.

The Headwall Advantage

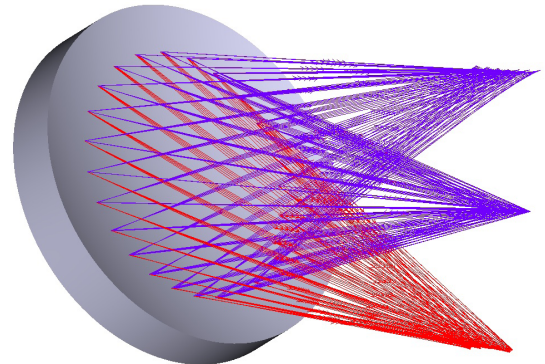
- Low stray light
- Aberration-corrected
- High-efficiency
- High spatial resolution
- High spectral resolution
- High temperature survivability



Dual input/single detector designs for true real-time dual-beam measurements.



Innovative dual detector designs multiplex data collection, reducing sampling times within small form factor, handheld instruments.



Grating designs on planar, concave, and convex surfaces.



Custom OEM spectrometers delivered by Headwall are aligned, calibrated, and tested for seamless integration into a wide range of applications.



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.

Information in this document is subject to change without notice. Headwall Photonics, Inc. reserves the right to change or improve its products and specifications and to make changes in content without obligation to notify any person or organization of such changes or improvements. The Hyperspec® name (and all its derivations) is a registered Trademark of Headwall Photonics, Inc.

