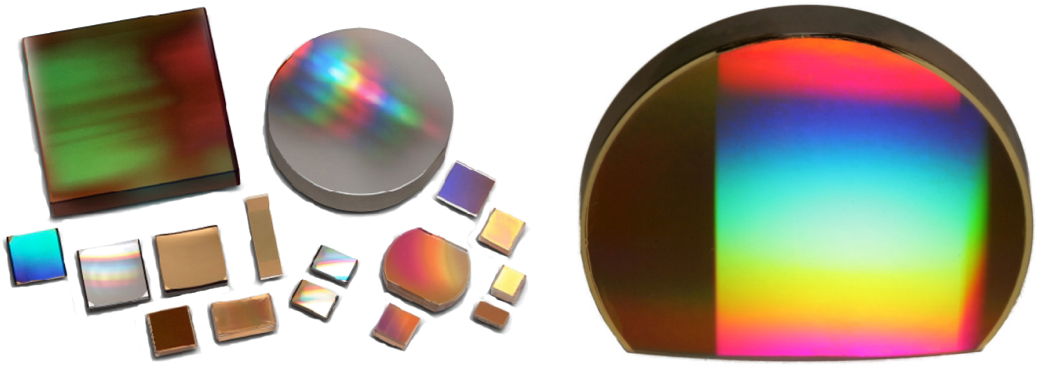
HOLOGRAPHIX®
A Headwall® Group Company

DATA SHEET

Sinusoidal Gratings



THE HEADWALL ADVANTAGE

- Over 40 years of experience
- In-house optical design services
- Aberration-corrected designs maximize edge-to-edge performance
- Product optimization
- High-volume production capacity
- Work with you from prototype to volume
- ISO 9001:2015 certified

DEVELOPMENT PROCESS

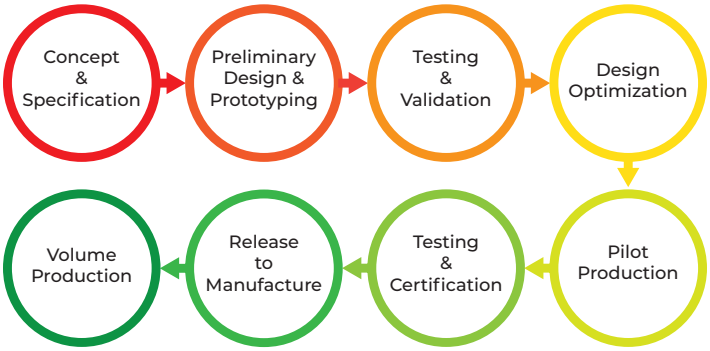
We have decades of experience taking a concept from idea to design, prototyping, validation, optimization, verification, and to mass production. We are with you all the way as a trusted hyperspectral imaging OEM partner with thousands of OEM products in the field and on the benchtop.

WHEN SUPERIOR PERFORMANCE & RELIABILITY ARE REQUIRED

Headwall-manufactured gratings, spectrographs, and spectrometers maximize the quality of UV-VIS-NIR analysis. Each grating is an original piece. These master-quality gratings feature superior spectral and spatial resolution and extremely low scatter, meeting the demands of your high-performance instrument. We have decades of experience producing gratings and spectral engines for ourselves and for our customers.

The addition of Holographix™, industry leader in the replication process for a variety of products requiring the highest levels of quality adds a new capability. For over two decades, Holographix has focused on micro- and nano-structure replication of high-performance, custom-designed photonic solutions for the life sciences, semiconductor, aerospace and defense, and metrology markets.

Headwall will work with you at each stage of the OEM product development process, from concept & specification, to prototyping, testing, and to volume production. Our applications and engineering resources are there to help you meet your needs on time and on budget. Our 20,000 sq. ft. ISO-certified facility delivers consistent quality at high volumes.



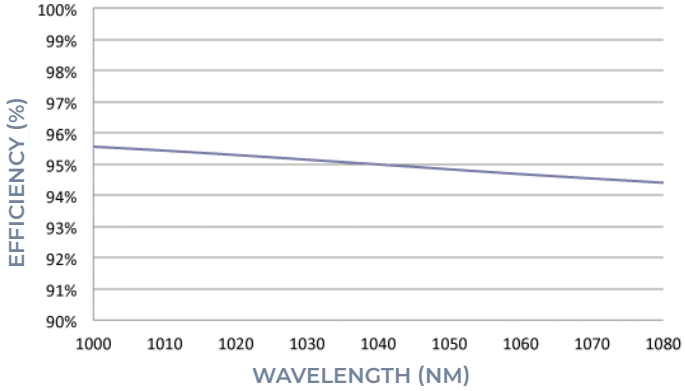
DATASHEET

GRATING DESIGN WORKSHEET

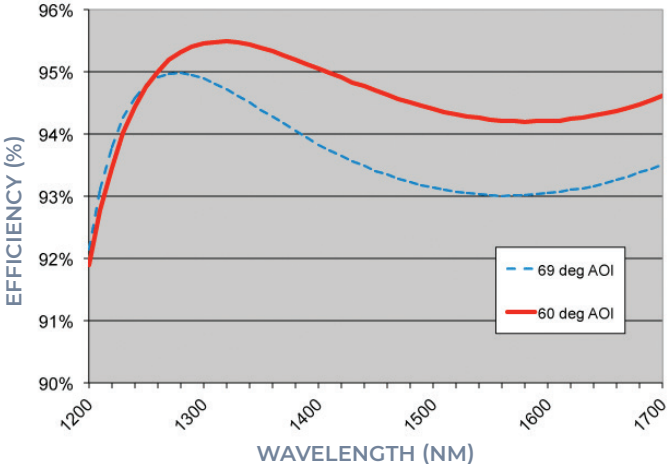
For rapid prototyping and delivery, please have these requirements defined in your specification:

Design: Planar, Rowland Circle; Aberration-Corrected; Concave or Convex	
Application: Spectroscopy, Hyperspectral Imaging, LPDL, Low Loss, Rowland Circle, Littman Metcalf, Laser Pulse Compression, Low Stray Light	
Spectral range in nanometers (nm)	
Dimensions and tolerances	
Material of construction	
Clear aperture (yes or no)	
Peak or Blaze wavelength (nm)	
Angle of Incidence (deg)	
Efficiency requirements (%)	

YTTERBIUM LASER PULSE COMPRESSION GRATINGS



EFFICIENCY V. WAVELENGTH 900GR/MM AOI 60-69 DEG. 1200-1700NM



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HOLOGRAPHIC GRATINGS
Spectrographs and Spectrometers

PRODUCTION CAPABILITIES	
Original master-quality diffraction gratings	Typical Dimensions (dia.) in mm: 10-90 typical
Holgraphic designs; Rowland Circle designs	Typical Dimensions (length x height x thickness) in mm: Length 10-75; Height 6-40; Thickness 2-15
Diamond-turned aluminum grating designs	Spectral range (nm): 160 to 10,000
Geometries: Planar, Concave, Convex	Groove Frequency Range: 50 to 3600+gr/mm
Aberration-corrected concave and convex	Angle of Incidence: 0 to 85 degrees
Custom peaked or blazed wavelength	Substrate: Black glass; ULE; BK7; Fused Silica; Ohara Clear Ceram; Zerodur
Groove profile adjustments	Wavefront Accuracy: 0.25λ PV / 0.1 λRMS or better
Customized S & P polarization adjustments	Stray Light Specification: 10^{-3} to 10^{-4} (Based on a spectrometer measurement)
Types: Low-Loss; Littman-Metcalf; Low Polarization Dependent Loss (LPDL); Cross; Pulse Compression; High Angle of Incidence; Low Stray Light	

Headwall's production and testing capabilities are focused on master-quality holographic diffraction gratings for a wide range of OEM optical applications. Gratings are produced to exacting tolerances and specifications, yielding very high and uniform optical performance in high-volume situations. Technical collaboration with Headwall results in compressed time-to-delivery for OEMs. And our rapid prototyping capability assures that customer specifications are met.

HOLOGRAPHIX®
holographix.com

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