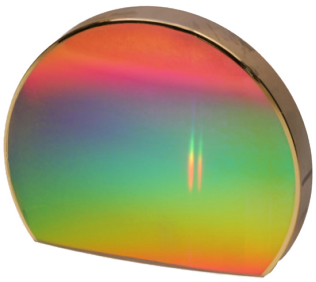
PRODUCT DATA SHEET

Raman Discovery™ 532 & 785



Headwall-manufactured diffraction gratings manage reflected light with exceptional precision and resolution.

- 1024 x 58 CCD array with 24 µm square pixels
- Minimal entrance image blur
- High SNR and throughput
- 'One Order' diffraction gratings
- 100% of diffracted light energy
- High diffraction efficiency

PRODUCT DATA SHEET

Raman Discovery™

Nominal Performance Guidelines based on:

- 50 µm core with 10 µm cladding input fiber image
- 1024 x 58 CCD array with 24 µm square pixels

	Raman Discovery 532	Raman Discovery 785
Spectral Range	3650 cm-1 (~ 540 – 660 nm)	2000 cm-1 (~ 785 – 931 nm)
Spectral FWHM Resolution	< 10 cm-1 (< 0.36 nm)	< 10 cm-1 (< 0.68 nm)
Spatial FWHM Resolution	3 pixels	
Spatial 20% of Peak FW Resolution	4 pixels	
Horizontal Row Deviation (spectral direction)	1 pixel	
Vertical Column Deviation (spatial direction)	1 pixel	

Headwall Photonics is the world's leading manufacturer of precision imaging spectrometers for OEM's and system integrators. Raman Discovery™ is a compact and light weight Raman spectrometer which produces minimal entrance image blur over the full CCD focal plane with exceptionally high signal-to-noise efficiency and throughput. At the heart of every Raman Discovery™ imaging spectrometer is a Headwall proprietary resonance-domain "One Order" convex diffraction grating.

Unlike typical multiple order gratings, these "One Order" gratings produce only one diffracted order which propagates the wavelength region of interest. You benefit by receiving one hundred percent of the diffracted light energy within this single dispersed order. The low amount of non-dispersed light is contained within zero order which is efficiently trapped. Spectrographs produced using these proprietary gratings exhibit very high diffraction efficiencies and are also void of any multiple diffracted order stray light.

The high performance imaging properties of Raman Discovery™ are able to faithfully reproduce micro-scale features entering the image plane as spectrally dispersed images. These are at the same spatial height on the exit focal plane and with remarkable accuracy. This high degree of imaging performance enables several key opportunities. First, no curvature of the input image height (entrance slit, or stack of fibers) means highest resolution is maintained.

Second, over the 3 mm-tall entrance aperture, you can arrange a wide assortment of individual fibers or bundles which contain signals from calibration light sources, excitation light sources, and several process monitoring points.

Finally, these signals can be delivered through single fiber, multiple fiber, and multi-channel fiber bundles. The highly resolved spectral and spatial content of each individual input feature will be dispersed across the CCD, and can be read out simultaneously.

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contact information
Headwall Photonics, Inc.
580 Main Street • Bolton, Massachusetts 01740
978-353-4100
information@headwallphotonics.com