

200mm f.l. Vacuum Monochromator

The 234/302 is a 200 mm focal length, vacuum compatible, aberration corrected monochromator with f/4.5 aperture. It has 0.1 nm fwhm spectral resolution with 1200 g/mm grating. Its precision slits are micrometer adjustable from 0.01 to 3 mm. The 234/302 features a wavelength counter, and manually operable sine drive providing years of accurate and reproducible wavelength positioning. The scan controller provides computer/software control. The high performance masterpiece diffraction gratings provide excellent performance from the extreme ultraviolet to the UV.



Use the 234/302 monochromator for any deep UV or vacuum ultraviolet application. The compact housing is easily adapted to most experiments. Microchannel plate and CCD adapters are available. Combined with one of our vacuum UV light sources it also makes a great UV tunable source.

Aberration Corrected | Gratings rotate about apex | Precision Drive | Optional Dual Ports, Turret

Optical Design	Aberration Corrected Seya-Namioka
Angle of Incidence	32 degrees
Focal Length	200 mm
f/no.	4.5
Wavelength Range	refer to grating of interest for range
Wavelength Accuracy	+/- 0.10 nm (with 1200 g/mm grating)
Wavelength Reproducibility	+/- 0.05 nm (with 1200 g/mm grating)
Grating Size	40 x 45 mm (single kinematic grating holder, turret optional)
Slits	Continuously variable micrometer actuated width 0.01 to 3 mm. Settable height.
Vacuum	High vacuum 10E-6 torr standard, UHV optional
Focal Plane	25 mm microchannel plate or direct detection CCD

Ordering Information

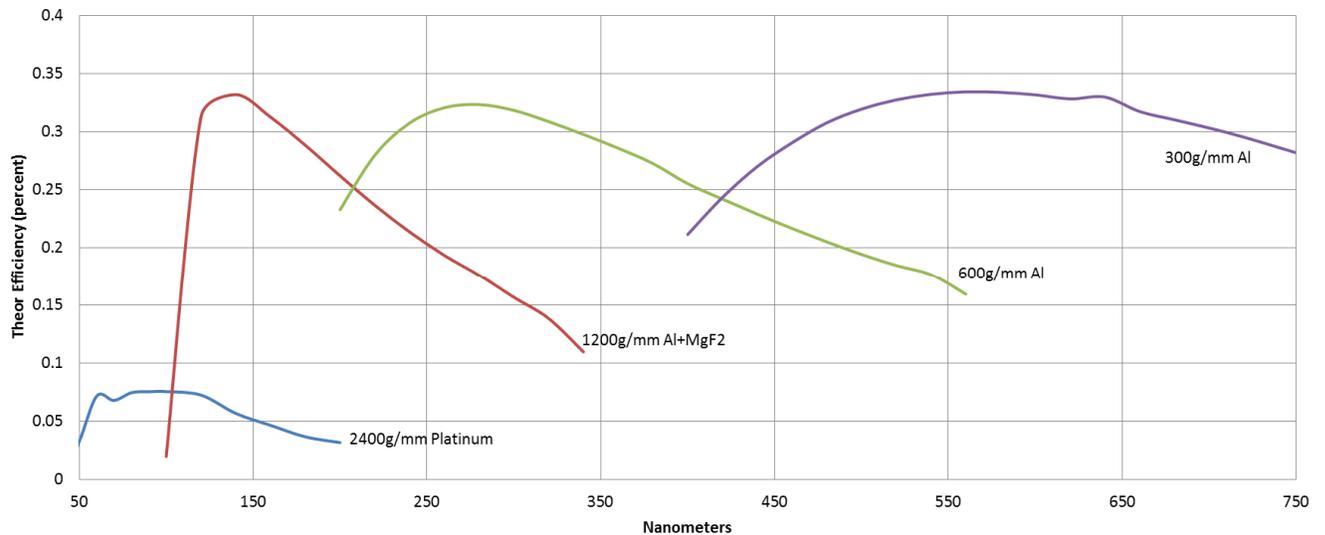
Part Number: 8183-0302-0 = Model 234/302 Aberration Corrected Vacuum Monochromator, 200mm, f/4.5, adjustable entrance and exit slits (requires scan controller and software)

Performance with different gratings

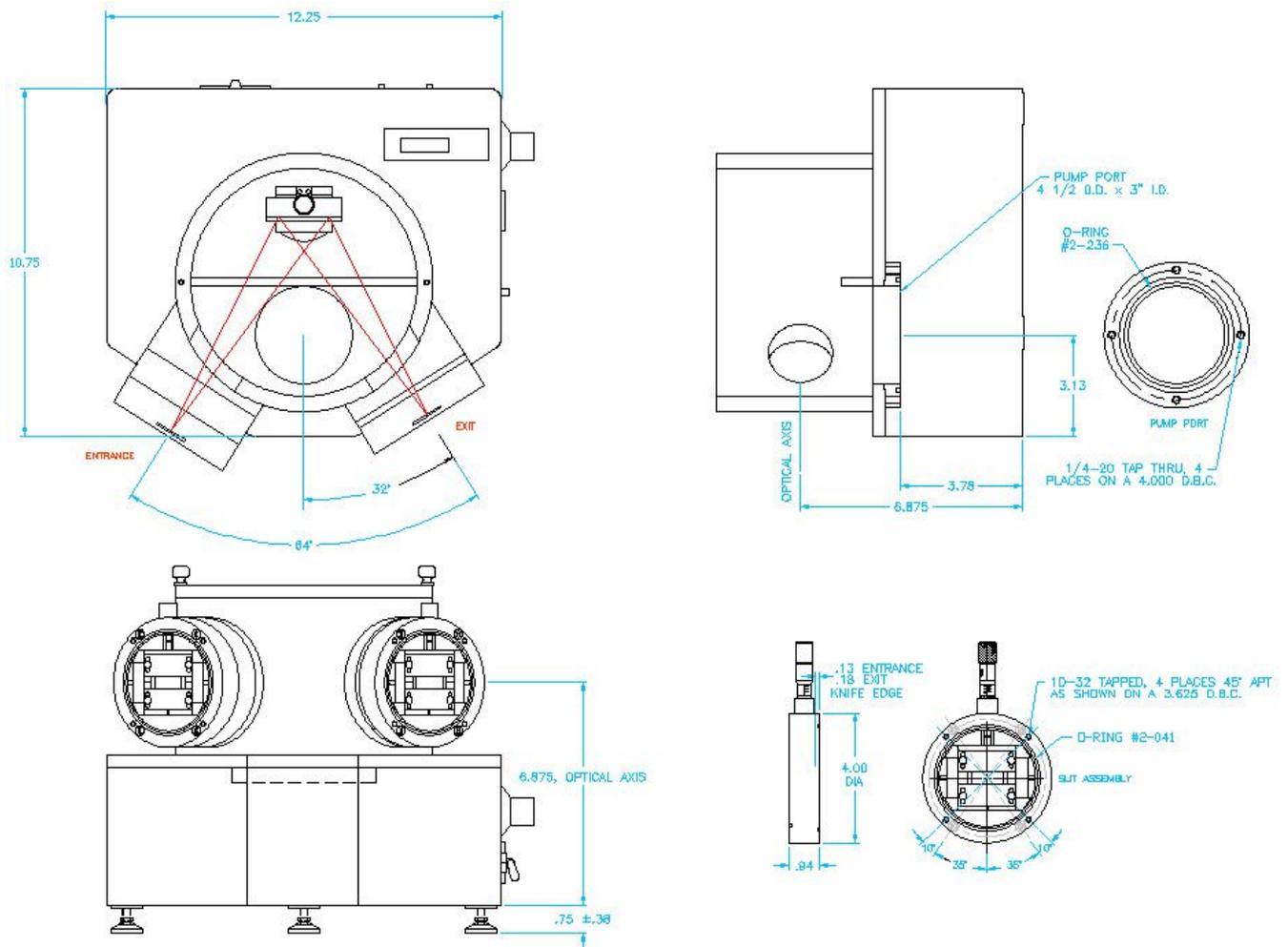
Grating Groove Density (g/mm)	2400	1200	600	300
Spectral Resolution (nm,FWHM) ¹	0.05	0.1	0.2	0.4
Dispersion (nm/mm)	2	4	8	16
Wavelength Range up to (nm)	225	550	1100	2200
Holographic Optimization: (nm) ²	80	140	140	140
	140		300	

1. Tested in scanning mode at 185 or 312 nanometers with 10 micron wide slits at slowest aperture ratio
2. Gratings work best from 2/3 blaze wavelength to 3/2 blaze wavelength

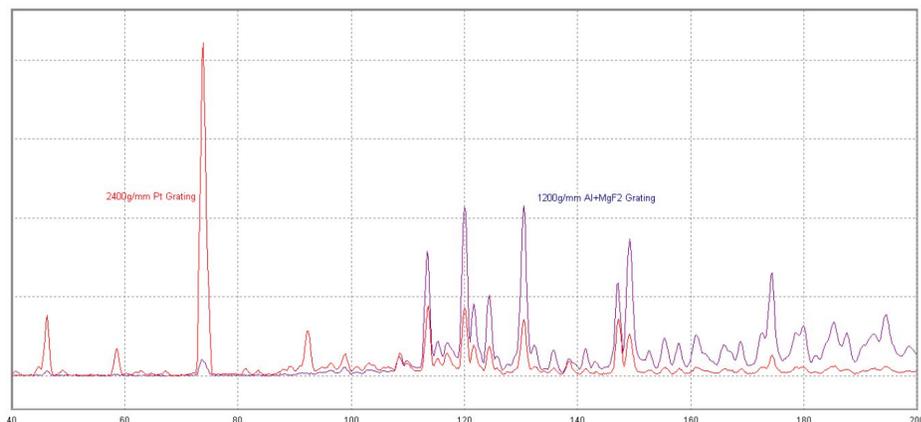
Grating selection



234/302 Dimensions

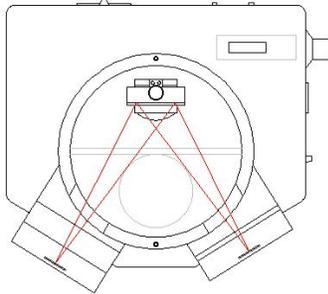


234/302 Sample Spectrum from 40 to 200 nanometers (hollow cathode source)

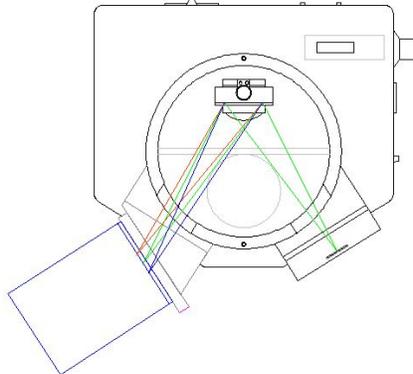


Instrument Configurations

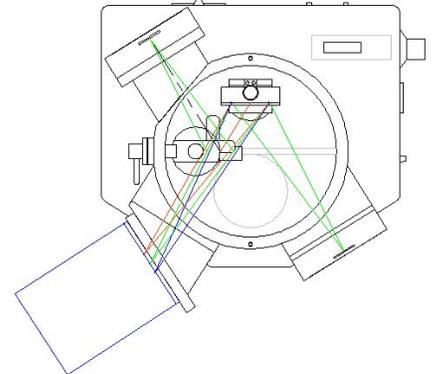
Scanning monochromator



Spectrograph



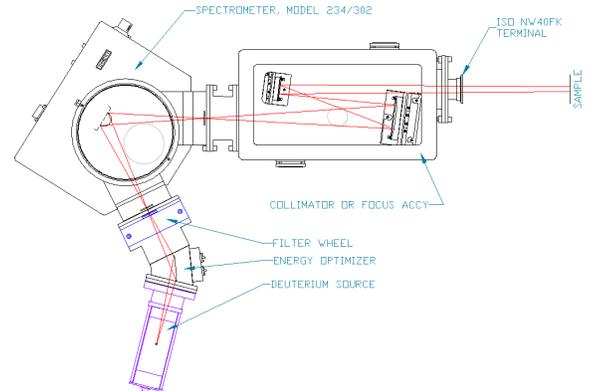
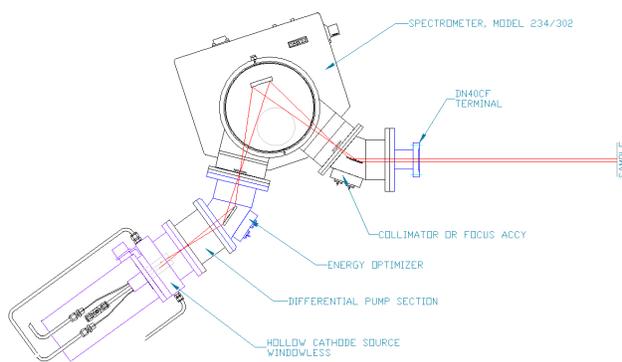
Multi-port



Optional dual-grating turret and ultra-high vacuum (UHV) configuration not shown

System Example 1 –Extreme UV Tunable Light Source 30 to 160 nm

System Example 2 – Deep & VUV Tunable Light Source 120 to 220 nm



System Example 3 –120 to 220nm Tunable Source with UV/Vis to IR Emission

