

## Aberration corrected flat field

McPherson Model 251MX aberration corrected flat field spectrometer uses spherical substrate gratings with aspheric wave-front recording for an aberration corrected, high resolution spectrometer working through the soft x-ray region. This spectrometer is perfect for soft x-ray, extreme UV (EUV) and vacuum ultraviolet analysis. The long focal length and straight spectral lines provide excellent spectral resolution. Three different high quality gratings are available to match your eV energy range of interest.

The Model 251MX is ideal for direct detection with XUV sensitive CCD detectors for fast, easy high-energy spectra. Microchannel plate (MCP) intensifiers are available for systems that require gating.



### Aberration Corrected | Flat field for CCD | Two grating turret | High vacuum 10E-6 torr standard

Optical Design	Aberration corrected flat field
Angle of Incidence	87 degrees (< 3 degrees grazing)
Focal Plane Length	25 mm for microchannel plate or direct detection CCD
Detector Position	continuously variable, rotatable
Wavelength Range	refer to grating of interest for range
Zero Order Baffle	standard, adjustable in vacuum
Grating Mount	2-position, adjustable in vacuum
Grating Size	50 x 30 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

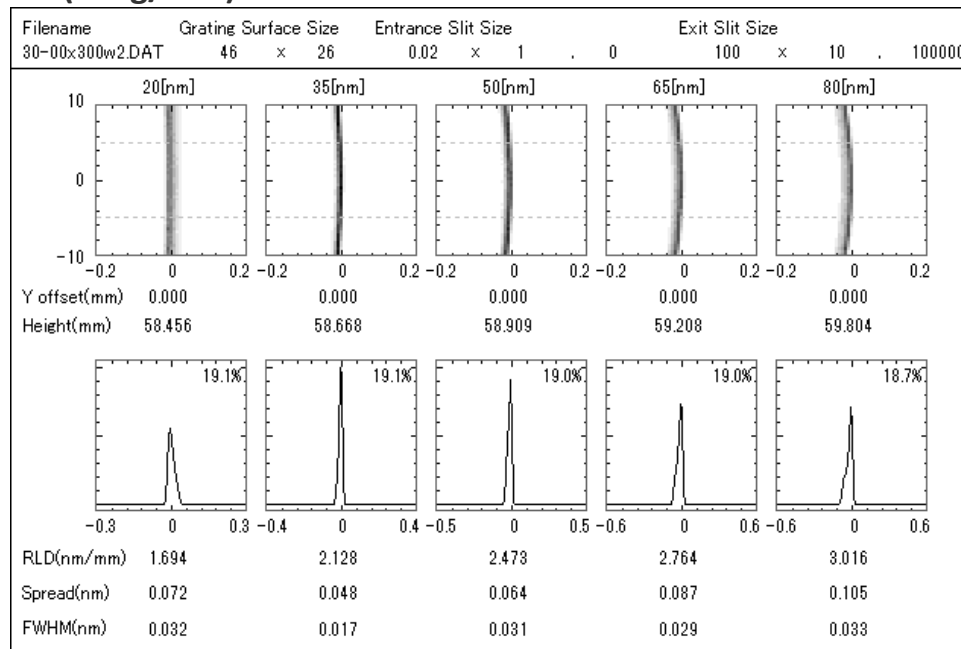
#### Ordering Information

Part Number: 100-109172 = Model 251MX Aberration Corrected Flat Field Spectrometer, adjustable entrance slit (requires grating selection and CCD)

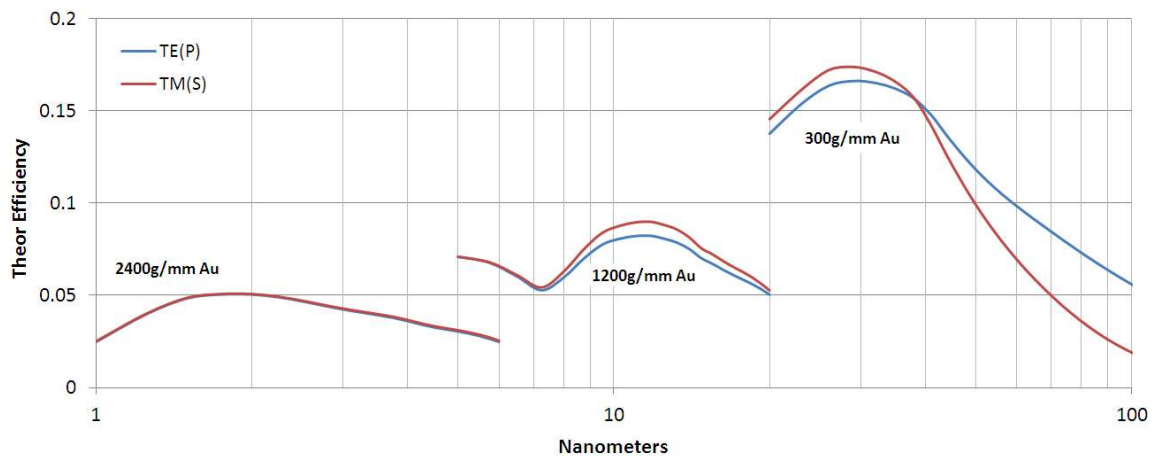
**Performance with different gratings**

Grating Groove Density (g/mm)	300	1200	2400
Deviation Angle Degrees	167	167	172
Resolution (nm)	~ 0.12	~ 0.028	~ 0.01
Focal Plane Width (mm)	25	25	20
Spectral Range (nm)	20 to 80	5 to 20	1 to 5
Spectral Range (eV)	65 to 15	248 to 62	1240 to 248

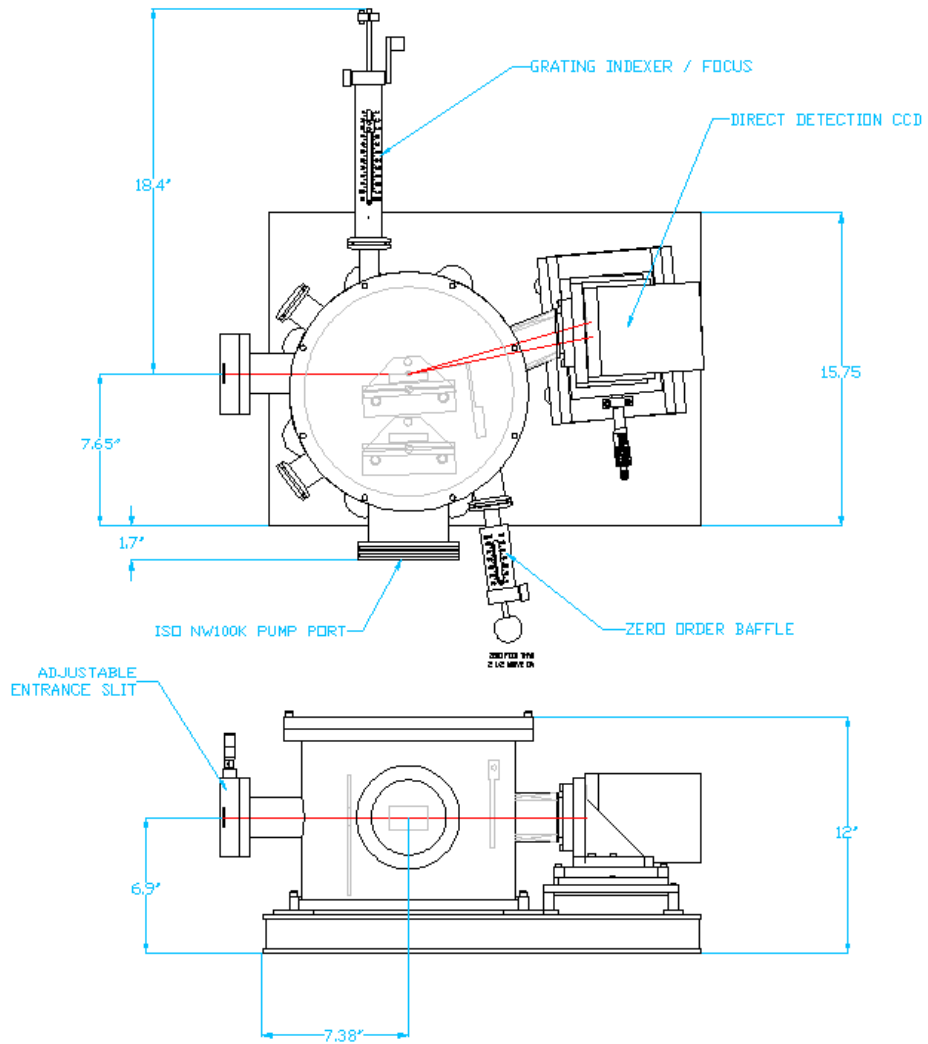
**Image formation (300g/mm)**



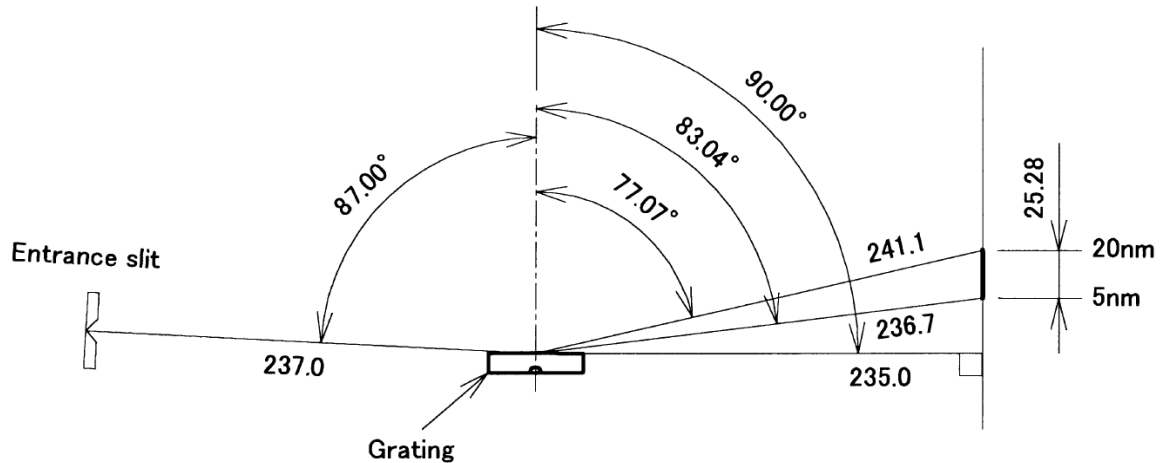
**Grating selection**



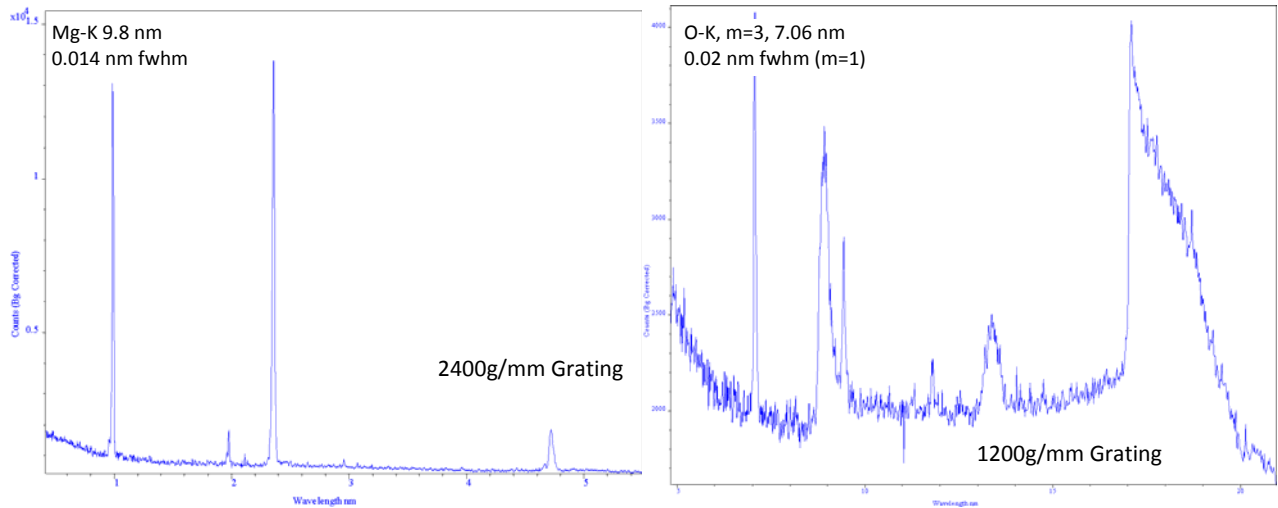
**251MX Dimensions**



**251MX Optical layout (300 and 1200g/mm)**

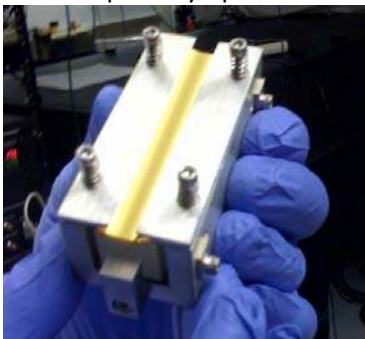


**251MX Sample Spectrum** from 1 to 20 nanometers using 2400g/mm and 1200g/mm gratings and the solid anode electron impact light source Model 642 with direct detection CCD



**Configuration examples / accessories**

Specialty optics



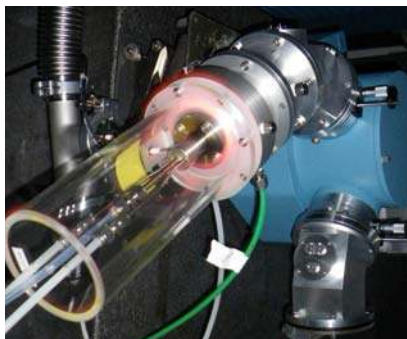
Vacuum filter wheels



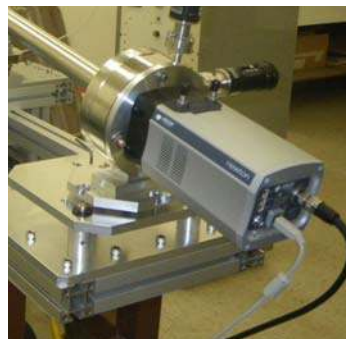
Beam visualization



Calibration sources



Direct detection CCDs



Microchannel plates

