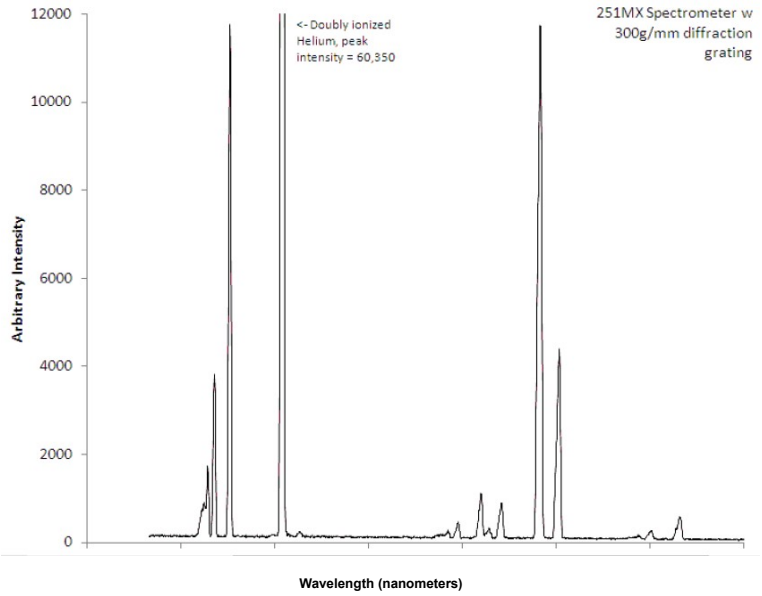
Aberration-corrected diffraction gratings for flat-field spectrograph

- Aberration-corrected unequally spaced, curved-groove replica grating
- Laminar (square wave) groove profile
- Less high-order light because of laminar groove profile*
- Replica holographic diffraction grating
- Low stray light, holographic manufacturing technology
- Suitable for soft x-ray, extreme UV and vacuum UV wavelengths
- Shift the wavelength range by moving detector sideways

Install up to two gratings in Model 251MX

Grating selection (grooves/mm)	120	300	1200	2400
Angle of incidence (degrees)	87	87	87	88.65
Deviation angle degrees	170	170	170	174.4
Resolution (nm)	~0.3	~ 0.12	~ 0.028	~ 0.01
Focal plane width (mm)	25	25	25	20
Spectral range (nm)	50 to 200	20 – 80	5 to 20	1 to 5
Spectral range (eV)	25 to 6	65 to 15	248 to 62	1240 to 248

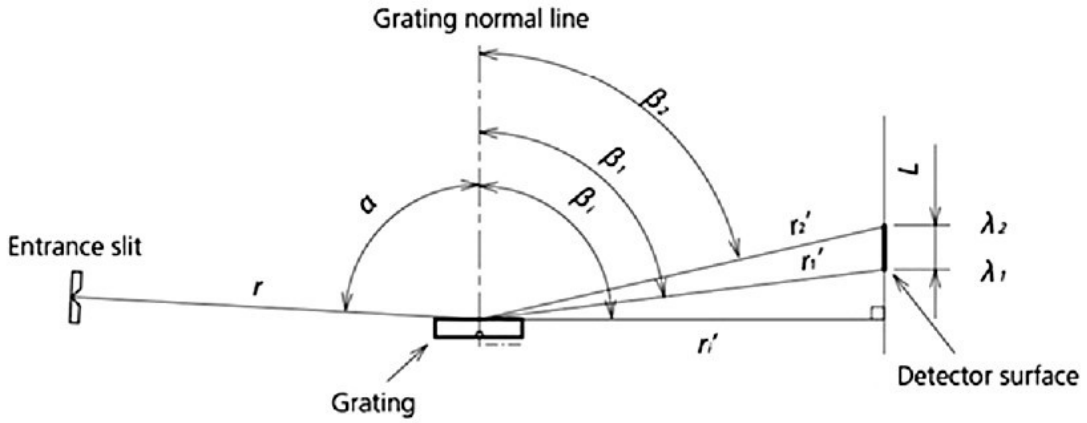
Example spectrum with 300g/mm flat field grating



McPHERSON

251MX

Unit:mm



Groove density (at grating center)	Wavelength range	Detector length	Mounting parameters								Dimensions	Coating material
N (grooves/mm)	λ1-λ2 (nm)	L (mm)	r (mm)	α (deg.)	r1' (mm)	β1 (deg.)	r2' (mm)	β2 (deg.)	ri' (mm)	βi (deg.)	WxHxT (mm)	
2400	1-6	23.5	237	88.65	235.6	85.81	238.5	80.17	235	90	50x30x10	Au
1200	5-20	25.3	237	87	236.7	83.04	241.1	77.07	235	90	50x30x10	Au
300	20-80	25.3	237	87	236.7	83.04	241.1	77.07	235	90	50x30x10	Au
120	50-200	25.3	237	87	236.7	83.04	241.1	77.07	235	90	50x30x10	Au