

XUV Spectrograph

Our XUV spectrograph features aberration-corrected flat-field imaging and is available with two gratings covering the spectral ranges 1-17 nm (1240-73 eV) and 5-80 nm (248-15.5 eV). In order to maximize light collection the spectrometer can be used without an entrance slit over a variety of source distances, with 3-17 nm and 10-80 nm spectral coverage. Its modular design is able to match different experimental geometries and configurations. It features an integrated slit holder, gate valve and filter insertion unit, as well as motorized grating positioning along 3 axes.



Key Product Features:

- Flat-field grazing-incidence spectrograph
- Wavelength coverage with single gratings:
 - 1-17 nm (1240-73 eV)
 - 5-80 nm (248-15.5 eV)
- Operation with and without entrance slit
- Adapters for different geometry options
- Integrated gate valve and filter insertion unit
- Operating pressure $<10^{-6}$ mbar
- Oil-free pump system for stand-alone vacuum operation optionally available
- Flexible choice of detectors: X-ray CCD camera or MCP/camera system

Characteristics:

	Grating 1		Grating 2		
Wavelength range	1-6 nm	3-17 nm	5-20 nm	10-60 nm	25-80 nm
Photon energy range	1240-207 eV	413-73 eV	248-62 eV	124-21 eV	50.5-15.5 eV
Operation mode	entrance slit	slit-less	entrance slit	slit-less	slit-less
Source distance	any	0.4-0.6 m	any	0.4-0.6 m	0.5-1.5 m
Flat-field size	23.5 mm	42 mm	25.4 mm	56 mm	46 mm
Resolution	0.01 nm	0.03 nm	0.02 nm	0.09 nm	0.1 nm

- Configurations for other source distances available.
- VUV option available (24-200 nm)

Sample Measurement

As a sample measurement, the plot below demonstrates the capabilities of our XUV spectrograph. It shows a high harmonic spectrum generated by the interaction of a single femtosecond laser pulse with a solid target and subsequent spectral filtering. The top panel displays the raw image recorded by the x-ray CCD camera, whereas the bottom panel shows the harmonic spectrum obtained by column binning. The substructure inherent to the generation process is clearly resolved by the XUV spectrometer.

