

H + P SPECTROSCOPY SCIENTIFIC INSTRUMENTATION

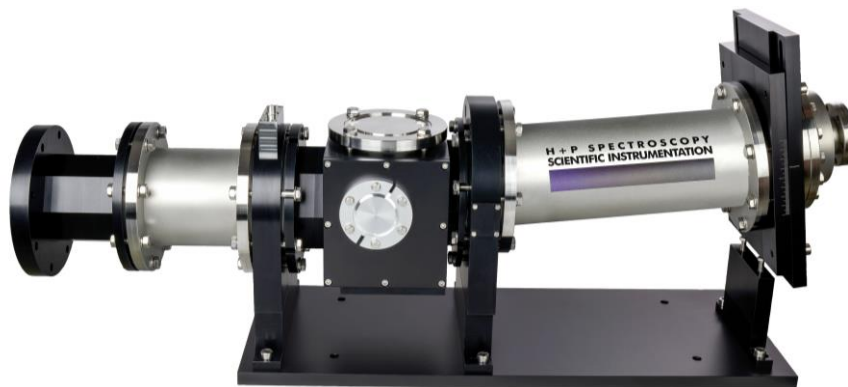
highLIGHT

Innovative high-resolution XUV / SXR spectrometers

The highLIGHT spectrograph features the highest spectral resolution in the convenient flat-field configuration available on the market. The aberration-corrected flat-fields cover wide wavelength bands from 1nm to 120nm. This spectrometer offers a unique combination of extremely high spectral resolution, wide spectral coverage, and an excellent signal-to-noise ratio. The high signal strength is achieved by instrument design, high grating efficiency, and high detector quantum efficiency.

In addition, the spectrometer can be used without entrance slit for increasing signal strength even further.

Its modular design is able to match different experimental geometries and configurations. It features an integrated slit holder and filter insertion unit, as well as a motorized grating positioning.



High resolution and high signal strength

- excellent trade-off between resolution and signal strength
- optimized signal-to-noise by stray light prevention, best-in-class grating efficiency, and high detector quantum efficiency
- absolute grating position monitoring for accurate spectral calibration

Flexibility

- can also be used in proprietary slit-less mode: direct imaging of the source, without narrow entrance aperture for ~20 times more light collection than standard versions, resulting in a signal-to-noise figure improved by the same ratio

Special solutions

- non-magnetic instruments
- special housing geometries
- EMP-protection
- special mounting situations
- UHV configurations
- etc

Customization

- every spectrometer is customized to exactly match the desired application, e. g.:
 - interfacing to experimental chambers
 - adaption of the source distance
 - integration of customer-supplied detectors
 - user-defined filter mounts

Characteristics

- Flat-field grazing-incidence spectrograph
- Wavelength ranges:
XUV grating 5 to 90 nm, SXR grating 1 to 20 nm
- Flexible choice of detectors: x-ray CCD-camera or MCP/low-noise CMOS camera system
- Operating pressure $< 10^{-6}$ mbar
Oil-free pump system for stand-alone vacuum operation optionally available
- Customizable according to user requirements

	SXR grating		XUV grating			VUV grating
Wavelength [nm]	1 - 20		5 - 90			on request
Operation mode	slit-less		slit-less			
Source distance [m]	flexible		flexible			
Wavelength [nm]	1 - 10	5 - 20	5 - 30	25 - 60	30 - 90	
Flat-field size [mm]	90	90	90	85	110	
Dispersion [nm/mm]	0.07 - 0.15	0.11 - 0.21	0.23 - 0.38	0.33 - 0.52	0.38 - 0.68	
Resolution [nm]	< 0.005	< 0.008	< 0.015	< 0.021	< 0.026	

* Other configurations (spectral range, slit operation, etc) available upon request.

