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maxLIGHT pro

NO-SLIT FLAT-FIELD XUV SPECTROMETER AND BEAM PROFILER

VUV
XUV
SXR

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hp spectroscopy

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Features

Direct imaging of the source

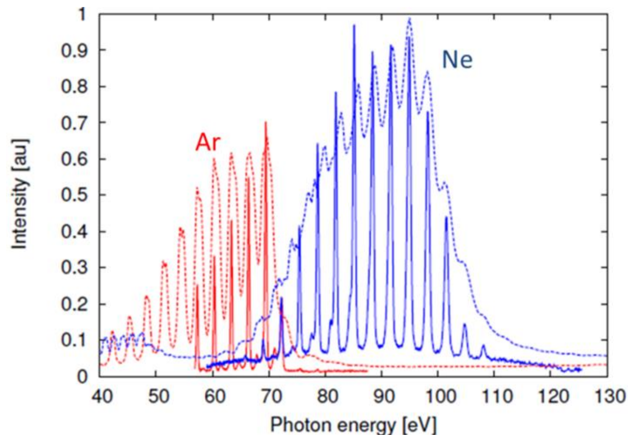
- flat-field spectrometer for the 1 to 200nm spectral range
- best-in-class efficiency through no-slit design: no need for an alignment-sensitive narrow entrance slit
- ~20x more light collection than standard spectrometers, resulting in a proportional improvement of the signal-to-noise

Accuracy and efficiency

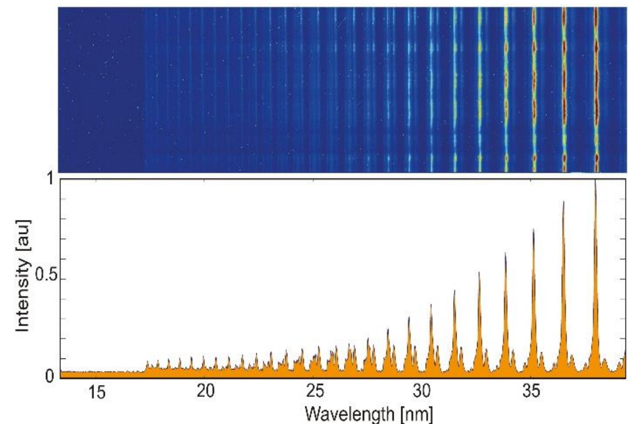
- absolute grating position monitoring for maintaining grating alignment
- highly efficient aberration-corrected flat-field grating
- integrated beamprofiler
- double stray-light filter
- convenient control by software

Customization

- every spectrometer is customized to exactly match the desired application, e.g.
- interfacing to experimental chambers
- specific device geometries
- user-defined filter mounts



Sample measurement demonstrating the improved signal strength. With the same signal strength, the resolution of maxLIGHT (solid lines) is significantly higher compared with a standard spectrometer (dotted lines). For equivalent resolution, standard technology would require a narrow slit setting and thus a significant degradation in signal strength. The proprietary no-slit technology delivers high resolution and signal strength at the same time.
(data courtesy of Prof. C. Hauri, Paul Scherrer Inst.)



Sample measurement demonstrating the resolving power of maxLIGHT. The shown high harmonic spectrum is generated by the interaction of a single femtosecond laser pulse with a solid target and subsequent spectral filtering. The substructure inherent to the generation process is clearly resolved by the XUV spectrometer.
Plasma Phys. Control. Fusion 53 124021 (2011)

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Specifications

Topology	aberration-corrected flat-field spectrometer and beam profiler
Wavelength range	1-200nm
Source distance	flexible
Detector	CCD or MCP/CMOS
Operating pressure	<10^{-6}mbar (UHV version available)
No-slit technology	yes
Entrance slit	optional
Grating positioning	motorized closed-loop
Spectral filter insertion unit	yes
Control interfaces	USB or Ethernet
Software	Windows UI and Labview/VB/C/C++ SDK
Customizable	fully customizable
Options	non-magnetic, rotated geometry, polarimetry, etc

	SXR	XUV	VUV
Wavelength range	1-20nm	5-80nm	40-200nm
Dispersion	0.2-0.4nm/mm	0.5-1.3nm/mm	0.9-1.6nm/mm
Resolution	<0.015nm at 10nm	<0.028nm at 40nm	<0.05nm at 120nm