

## XUV-VUV spectrometer AGS



### Amplitude Grating Spectrometer AGS for absolute measurements in a wide spectral range :

- Grazing incidence amplitude grating which provides extremely wide spectral range from 6 up to 200nm
- Spectral resolution:  $\lambda/\Delta\lambda = 50$
- High quantum efficiency CCD
- Compact design

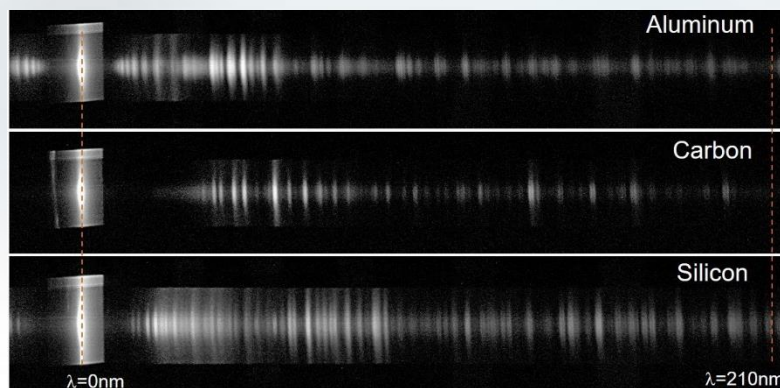
AGS spectrometer was specially developed for studying and characterizing the emission from short-pulse laser experiments. The absolute intensity and spectral calibration allows the determination of the UV photon number emitted by laser-based XUV-VUV sources, e.g. DPP and LPP sources and high-harmonic generation from plasma surfaces or in gaseous media.

### Principle of spectrometer design:

- The grazing incidence amplitude grating in comparison to a free standing transmission grating is more reliable and robust at the same time providing higher sensitivity for a whole spectral range down to soft X-ray
- Usage of flat amplitude reflecting grating allows the avoidance of all even orders of diffraction and provides deep suppression of higher odd orders, making high signal and low noise measurements
- Absence of focusing elements in the scheme makes operation reliable in all spectral range and results in a very compact design
- CCD detectors have stable quantum response and can be easily calibrated for quantitative measurements

In comparison to transmission grating spectrometers, ASG keeps high sensitivity for the whole spectral range down to 6nm:

### Images of spectra acquired by AGS



### AGS line-resolved spectra of light elements in laser produced plasma

