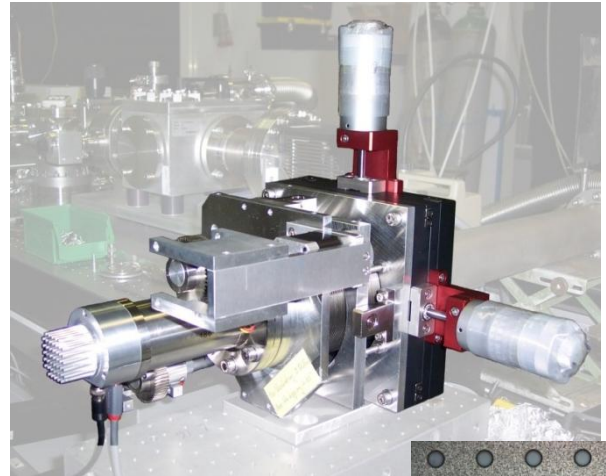


EUV/XUV Wavefront Sensor

Laser-
Laboratorium
Göttingen e.V.

Features

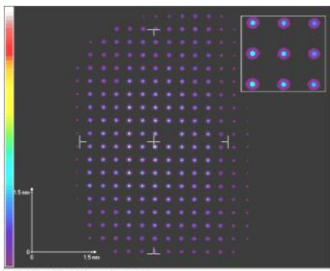
- ▶ Hartmann wavefront sensor for coherent and incoherent radiation
- ▶ Compact and self-supporting
- ▶ Achromatic
- ▶ Actinic characterization of: EUVL plasma sources
Free Electron Lasers
HHG beams
- ▶ Real-time optics adjustment
- ▶ Single-pulse repeatability $\lambda/116$ (wrms) for EUV ($\lambda = 13.5$ nm)



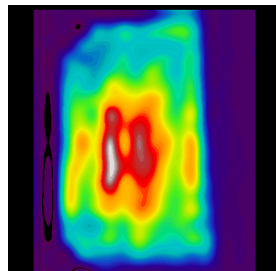
▶ Hartmann plate (pinhole array)

Specifications

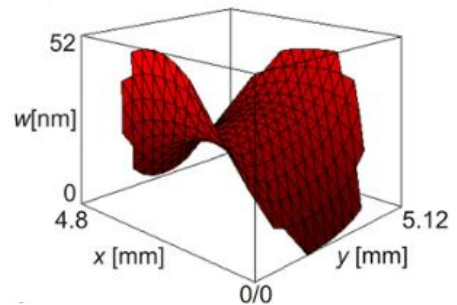
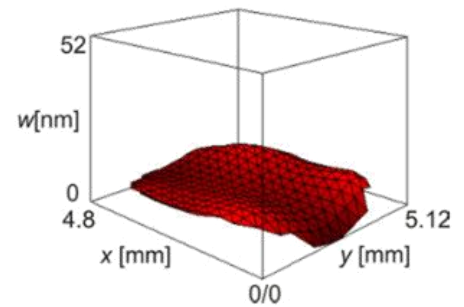
- ▶ Wavelength range < 1 nm ... 60 nm (quantum converter)
- ▶ Field of view 9.0mm x 6.7 mm (larger on request)
- ▶ Dynamic range 14 bit
- ▶ Hartmann plate precision pinholes $\varnothing 75\mu\text{m}$, 250 μm pitch
- ▶ Tilt range $\pm 10^\circ$
- ▶ x/y translation range ± 10 mm
- ▶ UHV compatible mounted on CF63 flange



▶ Spot pattern @ $\lambda=1.5$ nm (LCLS / Stanford)



▶ Reconstructed intensity profile



Wavefront measurement of Free Electron Laser FLASH (DESY/Hamburg) at $\lambda=13.5$ nm, before (above) and after (below) adjustment of beam line optics (B. Flöter, K. Mann, K. Tiedtke et al. NIM A 635, S108–S112 (2011))



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