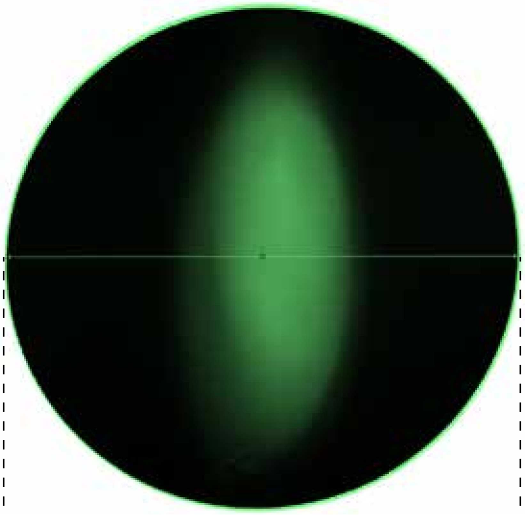
Brochure

FOCUS HIS 14 HD

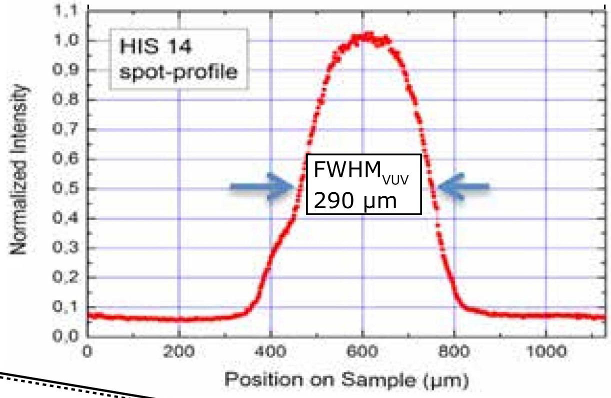
HIGH DENSITY VUV SOURCE

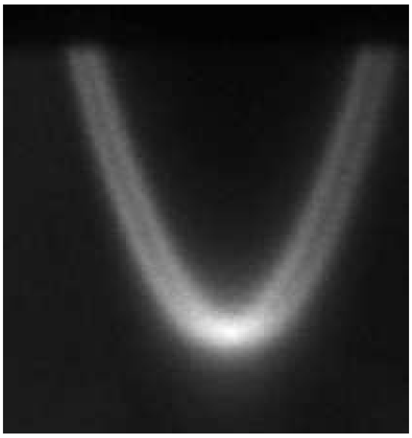
Ultimate UPS, ARPES, PEEM and µ-ARPES

- 300 µm spot size
- 50 x higher flux density (compared to non-focused source)
- Large working distance
- Ease of operation
- Discharge regulation
- Operating pressure down to 10^{-10} mbar range



VUV spot imaged with PEEM
(25° grazing incidence)





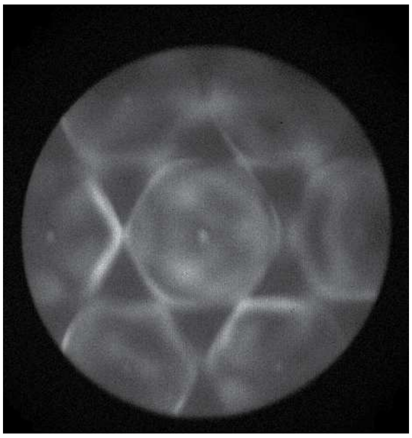
Au (111) surface state
with Rashba Splitting
HeI excitation (21.2 eV)
Dwell time 50 s
measured with PHOIBOS
100 (SPECS GmbH)

Courtesy:
Dr. L. Dudy, M. Scholz,
Universität Würzburg

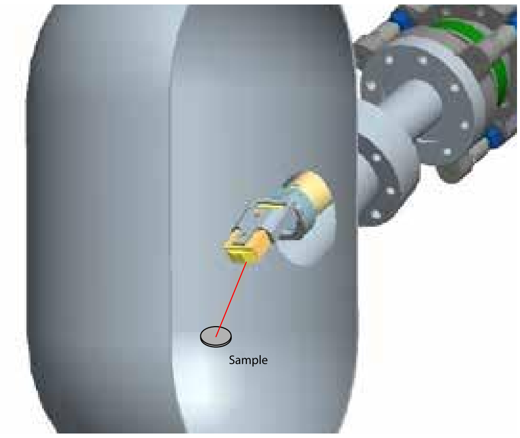
MADE
IN
GERMANY

Photo current	> 20 nA (biased Al foil, standard capillary)
Useful gas discharge lines:	He I/II, NeI/II, ArI/II, KrI/II, XeI/II, H (Lyα, Lyβ)
Spot diameter:	< 300 µm (fwhm; 5:1 demagnifying optics)
Photon line width:	< 2 meV (HeI radiation)
Photon flux density:	>50 times compared to an unfocused source
Source alignment:	CF 63 port aligner
Pumping:	2- or 3-stage differential pumping
Working distance:	Ca. 70 mm (clearance to measurement position)
Insertion depth:	Customized (to be defined)
Mounting flange:	DN 63 CF of DN 100 CF
Operating pressure:	Down to 10^{-10} mbar range
Adjustment & Discharge control	Via backside viewport
Cooling:	Water cooling
Bake out temperature:	Up to 250° C
Plasma Ignition:	Automatic
Capillary (mm):	0.8 / 1.2 / 1.7 (standard) / 2.2

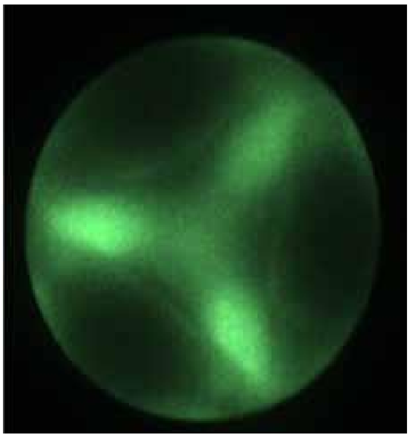
The VUV source power supply is a fully digital unit with integrated pressure measurement and automated plasma ignition. It delivers up to 1 kV anode voltage, up to 300 mA discharge current and a very stable discharge regulation.



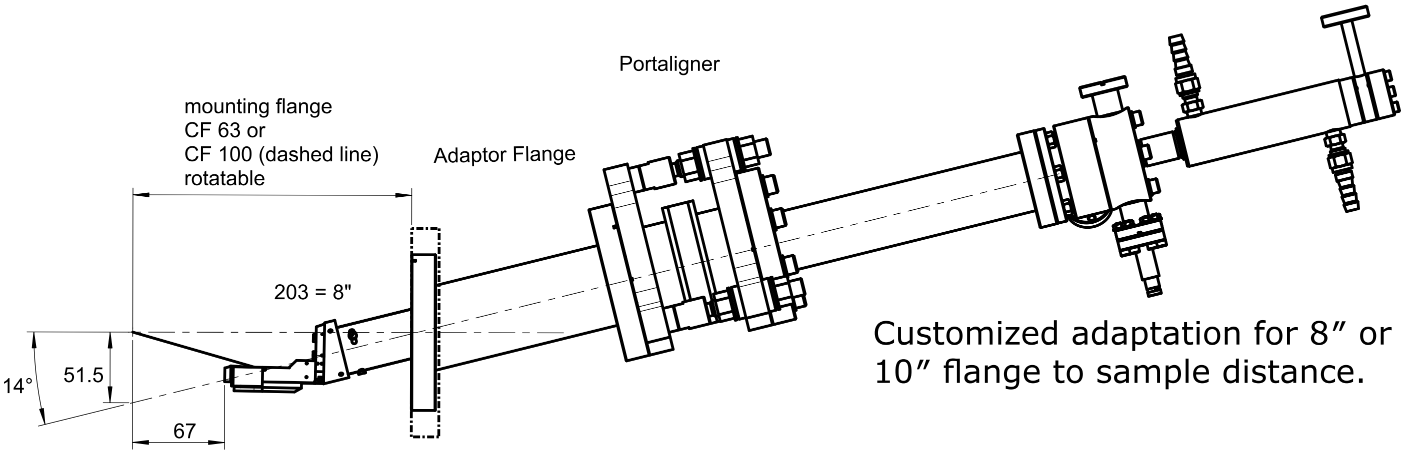
Sample: Ag (111) , Fermi surface,
He II excitation (40.8 eV)
$E - E_F = 40.8$ eV
Dwell time 1000 s
Sample region ~ 50 µm
Measured with NanoESCA II
Measured by: N.Weber, FOCUS GmbH



Application: HIS 14 HD retrofitted to an existing ARPES chamber.



Sample: Ag(111), d-bands
HeI excitation (21.2 eV)
$E-E_F= 15.5$ eV
Dwell time 5 s, sample region ~ 20 µm
Measured with PEEM and Imaging Energy Filter (IEF)
Measured by: N.Weber, FOCUS GmbH



Customized adaptation for 8″ or 10″ flange to sample distance.