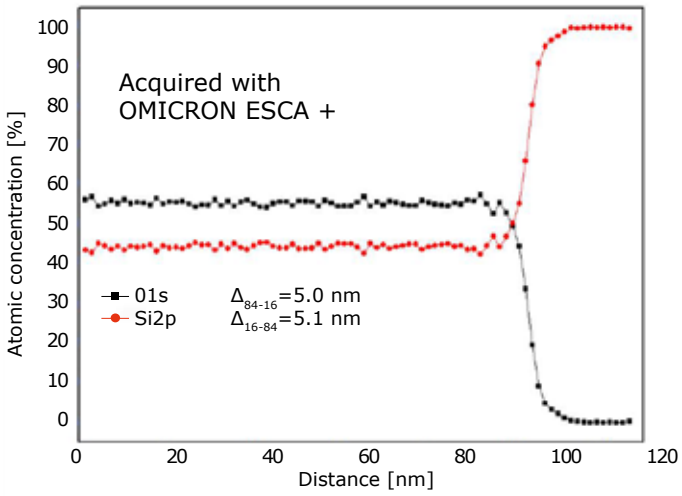
FDG 150
FOCUSED ION SOURCE

- Universal ion source for depth profiling, sample cleaning, charge neutralisation as well as for ISS and LEIS
- Beam current stabilisation with regulated leak valve
- Differentially pumped
- Scan generator, scan area up to 10x10 mm^2 @ 5 keV and 50 mm working distance



Sputter Depth Profile

FDG 150 sputter gun (4 keV ion energy, 2 µA beam current) used for XPS depth profiling through a 100 nm SiO_2 layer on Si (001):

The cross-over position of the Oxygen peak (O1s) and Silicon peak (Si2p) intensities indicates the thickness of the oxide layer.

MADE IN GERMANY

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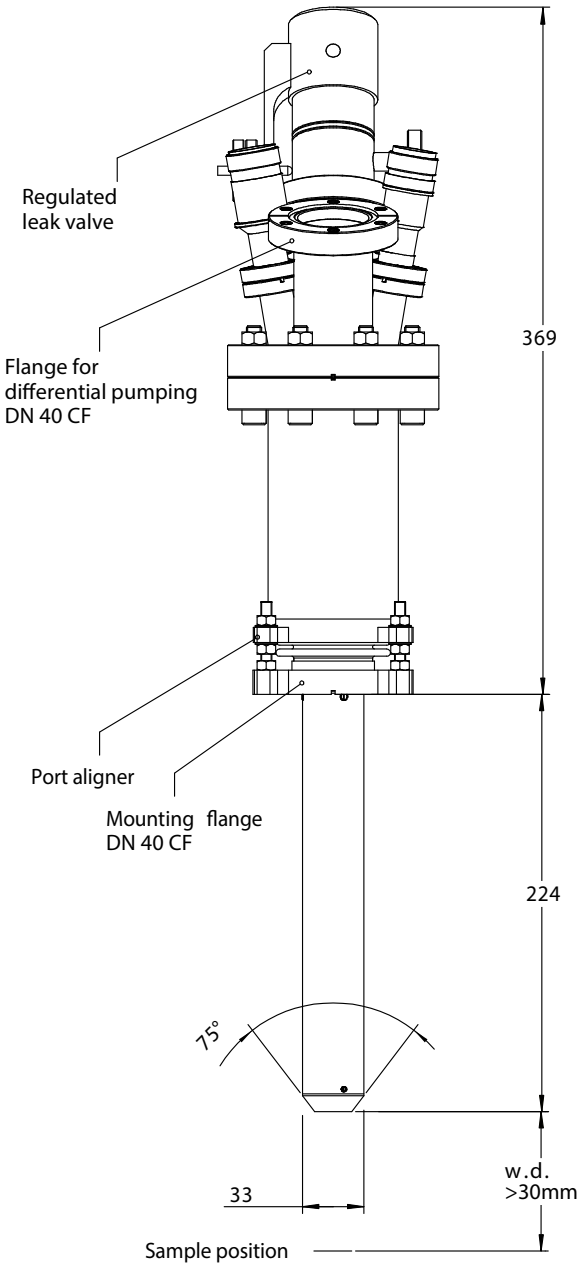
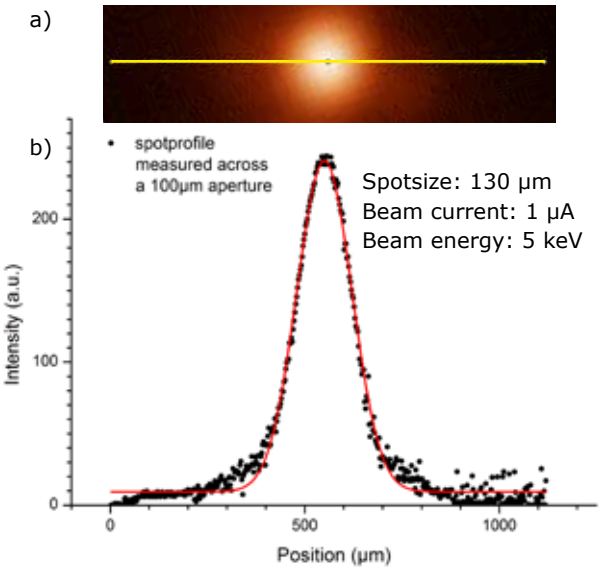
Energy range	10 eV to 5 keV
Max. beam current	> 10 µA @ 5 keV > 100 nA @ 15 eV
Max. current density	5 mA/cm²
Beam diameter	< 150 µm @ 5 keV and 30 mm working distance
Scan range	10x10 mm² @ 5 keV and 50 mm working distance extensive scan field (keystone) correction
Cathode	Yttrium oxide coated Tungsten or (optional) Iridium filament
Working distance	> 30 mm
Insertion depth	224 mm
Beam current stabilization	Regulated leak valve
Chamber pressure during operation(differentially pumped)	$5x10^{-7}$ mbar - $1x10^{-8}$ mbar
Mounting flange	DN 40 CF / 2¾" OD
Electronics Interface	TCP/IP
Software control	LabVIEW™- based Software "ProIon"



The FDG 150 is an universal UHV Ion Source for depth profile analysis with XPS and Auger Spectroscopy, for sample cleaning, for sensor cleaning in scanning probe microscopes and for charge neutralisation (ESCA). It can also be used as excitation source with ISS/LEIS instruments.
The source is differentially pumped, comes with an integrated port aligner, a regulated leak valve and allows for large working distances.

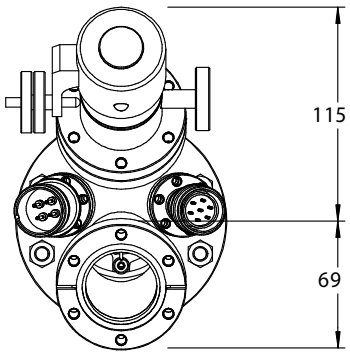
The power supply offers an integrated scan generator for beam positioning and beam scanning. Furthermore it provides a closed loop regulation of the beam current by controlling of the integrated leak valve.

The power supply can be fully controlled by the front panel or via a TCP/IP interface. An ease of use LabVIEW™- based PC Software is provided.



a) The argon ion spot imaged by scanning across a 100 µm aperture.

b) Beam profile cross section along the yellow line revealing a 130 µm spot diameter @ 1 µA beam current.



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