

FDG 15

HOT FILAMENT ION SOURCE



- True differential pumping
- Non line-of-sight filament
- Integrated port aligner
- Up to 300 mm working distance
- Variable spot size
- Integrated port aligner
- Ion current measurement



Energy range	400 eV to 5 keV (10 eV optional)
Max. beam current	> 10 μ A @ 5 keV > 100 nA @ 15 eV (10 eV option)
Beam diameter	between 300 μ m and 2" @ 5 keV
Integral Port Aligner	Yes
Cathode	Yttrium oxide coated Tungsten or (optional) Iridium filament
Working distance	30 mm - 300 mm
Insertion depth	173 mm
Beam current stabilization	Regulated leak valve (optional)
Chamber pressure during operation(differentially pumped)	5×10^{-7} mbar - 1×10^{-8} mbar
Mounting flange	CF 35 / 2 3/4" OD
Electronics Interface	TCP/IP
Software control	LabVIEW™- based Software "ProIon"
Integrated current measurement	Yes

The FDG 15 ion source is designed to clean samples for surface analysis, to perform simple depth profiling, to act as an excitation source for ISS/LEIS experiments and optionally to provide slow ions (< 15 eV) e.g. for charge neutralization in ESCA.

An extremely clean ion beam is ensured by a non line-of-sight filament, a gas inlet directly into the ionization cage and an effective differential pumping.

The ionization is done by electron bombardment to allow for a continuous variable beam current from the nA to μ A regime.

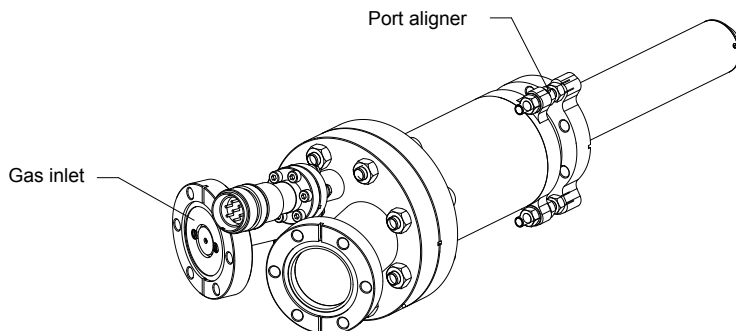
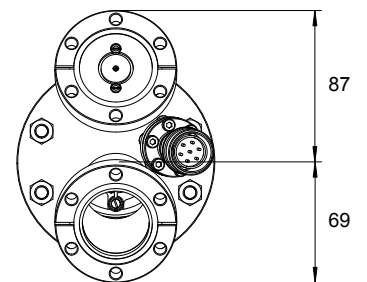
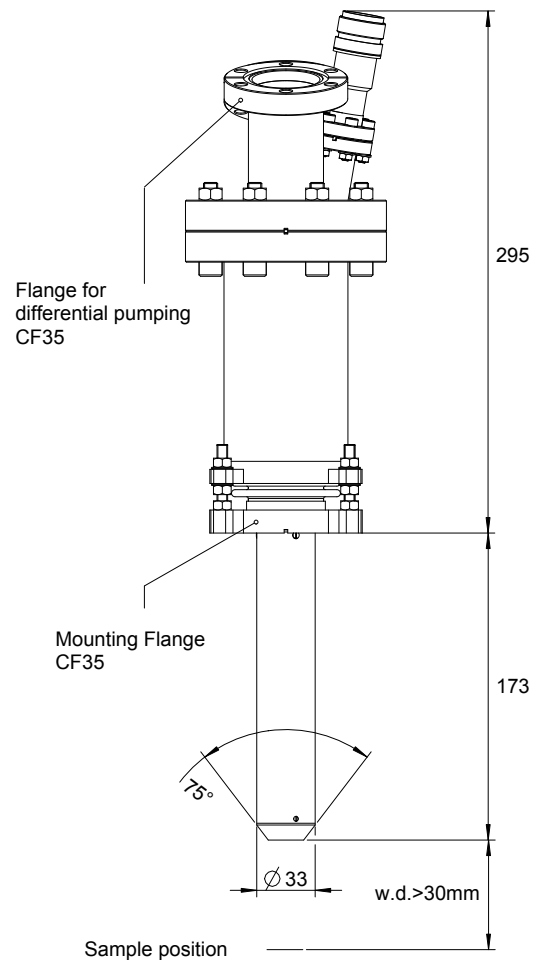
A dedicated ion focusing optics allows to reduce the spot size down to 300 μ m for sputtering of small crystals and to adapt for large working distances up to 300 mm.

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.

The source and the power supply can be upgraded with a regulated gas inlet in combination with a closed loop regulation for long time stabilization of the ion current.

Another upgrade option is the low energy mode that generates < 15 eV ions e.g. for charge neutralization in ESCA.

For dedicated depth profiling the FDG 150, an extended version of the FDG 15 is available. See related flyer.



* LabVIEW™ is a trade mark of National Instruments