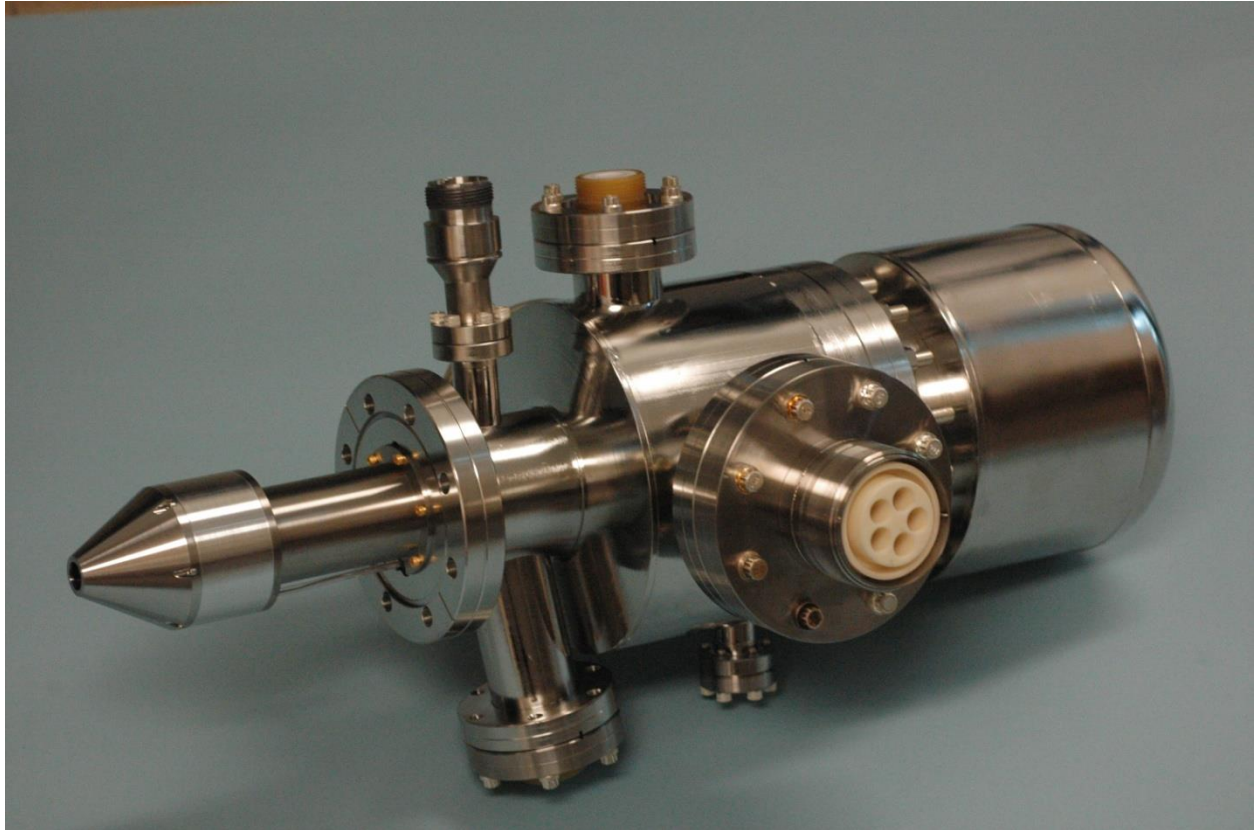


Model 1420 - 20kV Ion Gun



Design Features

- Adjustable spot size $\geq 5\mu\text{m}$ for spatially defined sputtering or implantation
- Emission regulated bombardment provides stable ion current
- Continuously variable beam energy 5kV to 20kV
- Dual octupole for beam scanning and astigmatism correction
- Pre-objective scanning for reduced spot size
- No direct filament to sample line of sight to avoid sample contamination
- Customer replaceable filaments and beam trimming apertures
- Dual filaments provide operational backup in case of filament end of life
- All UHV compatible and etch resistant materials used in fabrication
- Differential pumping to minimize main chamber gas load
- Operates over the range of inert gases and Nitrogen

Options

- Thoria coated Iridium filaments for operation with Oxygen
- Variable aperture for spot size down to 1um
- Blanking plates for fast beam pulsing
- Alkali metal source for operation with Cs, Li, Na, K etc
- Source oven to permit production of ions of evaporable materials
- Source with integral Wien filter

Performance @ 20kV, Ar Ions

Mode	Spot Size (um FWHM)	Beam Current	Current Density (A/cm ²)
Large Spot	40	20uA	1.5
Medium Spot	15	5uA	2.8
Small Spot	8	500nA	1.0

Controller Details



- **Input Power** 115/230VAC 50/60Hz Autoselect
- **Beam Energy** 0-20,000V, 1mA
- **Focus, Condenser** 0-20,000V, 1mA
- **Filament Power** Emission regulated, 5V, 5A max
- **Ionization** Electron accelerating voltage and emission software selectable
- **Ion Extraction** 0-2500V software selectable
- **Deflection** +/-400VDV supply for +X,-Y,+Y and -Y. Remaining octupole elements supplied from a resistor divider network. Optional 8 channel deflection supply with astigmatism correction and secondary electron imaging capability
- **Interlocks** System and auxiliary interlocks
- **User Interface** USB based graphic user interface
- **Chassis Dimensions** 483(W) x 267(H) x 435 (D) mm. 19 inch rack mount case 6U high

Graphic User Interface

