



Model IG70 IONEC

The IONEC- model IG70 will meet your requirements for high performance sputter ion gun while maintaining simplicity in its design and an economy in its use of vacuum chamber space.

The IONEC, a miniature ion sputtering gun, is an instrument designed for cleaning sample surfaces and depth profiling for Auger Electron Spectroscopy. The gun produces a uniform, high density, inert gas ion beam with a beam diameter from 5 to 20 mm. The IONEC IG70 combines an enhanced ion source with an electrostatic lens configuration for accelerating and focusing the ion beam. The entire device is mounted on a 2 3/4" CF flange. The gun has a port to admit gas directly into the ionization region and a port to differentially pump the lens region. This will maximize the pressure differential between the main chamber and the ion source.

Features:

- enhanced ion source for increased beam intensity
- 2 3/4" CF flange mounting
- direct gas inlet to ion source
- port for differential pumping
- direct filament mounting on the 2 3/4" CF flange feedthrough
- variable beam energy from 0 to 3 keV, digital panel meters, remote control of beam energy and computer programming

Specifications

Ion Gun (Model IG70)

Ion Source	Electron impact ionization in magnetic field
Ionization Cathode	Tungsten - Rhenium filament mounted directly on 2 3/4" CF flange
Beam Size	Adjusted by focus voltage to 5 - 20 mm
Beam Current	16μA at 3 keV energy and 5×10^{-6} Torr of Ar ⁺
Beam Energy	Variable from 0 to 3000 eV
Mounting	2.75" (70mm) O.D. CF flange
Bakeability	Up to 220°C
Overall Sizes	30mm lens diameter, 130mm distance between mounting flange and filament feedthrough (180 mm including), 100mm width and 70mm depth

Test Results

ION	Beam Energy	Ion Current	Chamber Gas Pressure	Ion Current	Chamber Gas Pressure
	keV	m A	Torr	m A	Torr
	0.1	1.0		0.5	
	0.2	2.0		0.8	
	0.5	6.5		1.5	
Ar ⁺	1.0	10	5×10^{-6}	3.5	2.5×10^{-6}
	1.5	12		5.5	
	2.0	13.0		8.5	
	2.5	14		12	

3.0

16

14

Power Supply (model IPS2 and IPS3)

Outputs	Filament current: 0 - 4 A Grid voltage: +150 V Beam voltage: 0 - 3 kV Focus voltage: x 0.3 - 0.8 of beam voltage
Monitoring	Beam Energy, Filament Current and Emission Current by digital panel meters (3 1/2 digit)
Controls	10 turn potentiometers for Beam Energy and Filament Current, 12 position switch for Focus
Remote Control (optional)	Remote control mini-box for beam voltage
Computer control	0 to 9 V (Model IPS2) 0 to 5.4 V (Model IPS3)
Protection	Short circuit and arc protection, self restoring
Input	115 VAC, 60 Hz - standard International range: 100/120/220/230/240 VAC, 47 - 440 Hz
Size	19" Rack mount

Ordering Guide

IG70DP	Complete ion sputter gun with port for differential pumping
IPS2	Power supply with voltage range 0 – 2000V
IPS3	Power supply with voltage range 0 – 3000V
RC	Remote control mini-box
F007	Replacement filament
F007-FL	Replacement filament on 23/4"CFF 6-pin feedthrough

Outline Drawing**OCI Vacuum Microengineering**