

# HeatWave Plasma Electron Source

The HWPES-250 is a high current, hollow cathode device that can deliver precisely controlled electron currents into plasma environments including corrosive atmospheres. Far superior to other devices, the HWPES offers easy starting (no High Voltage), very stable output, continuously variable emission current, low gas flow requirements, lower operating temperature and longer life. The output is free of any metal contaminants, a common problem with high temperature refractory sources. The unit is delivered complete with matching power supply, cabling, mounting hardware and detailed operating instructions. Consider the following applications and specifications:

### Applications:

- Ion Beam neutralization
- Surface Charge Control
- Electron Filament replacement
- Electron enhancement of magnetron and diode discharges
- Arc Discharge Generators



HWPES-250 Source with keeper electrode



HWPES-250 Cathode/Keeper  
Shown with matching power supply/controller.

### Performance and Features

Plasma e <sup>-</sup> Current	0-10 Amps (sustained) Continuously variable	Background P, max.	mTorr
Ion Current	0.5-1 mA	Lifetime	In excess of 1000 hours in an inert gas background
Operating Gases	All Noble gases and Hydrogen	Reactive gas effects	Reduced lifetime and reduced maximum background pressure
Electron Energy	Less than 1.0 eV increases with coupling voltage	Mounting Options	UHV, 2.75 CF HV, KF40
Operational Gas Flow	2-5 A/sccm (Ar) 3-7 A/sccm (Xe)	Construction	Fully welded metallic
Background P, minimum	UHV	Power Supply	90-250VAC (Auto Select) 50/60Hz, Single Phase