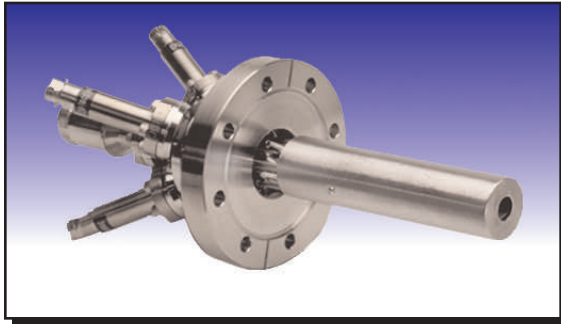


# 10keV RHEED Electron Source



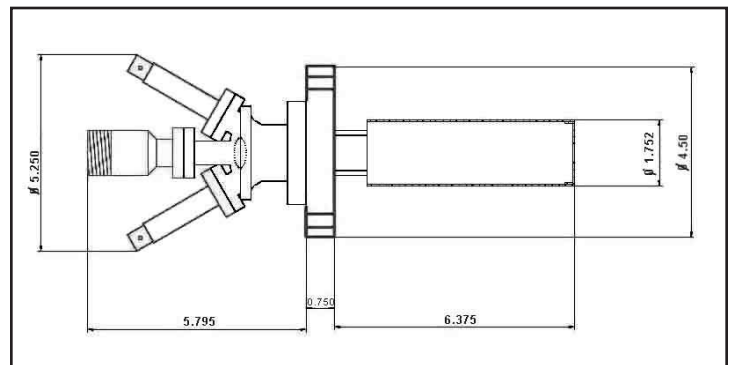
## Features

- Magnetically Shielded Optics
- 4.50" CFF Mounting Flange

## Description

Reflection High-Energy Electron Diffraction (RHEED) is an integral part of the MBE process. In thin film deposition RHEED provides important information for the user. First, its RHEED pattern conveys specific information about the surface, and second its intensity oscillation provides quantitative measures of the growth rate. RH-10 kV RHEED Electron Source is designed for operation in an UHV environment at beam voltage up to 10 kV. The 10 keV RHEED system provides a precision focus and well defined diffraction patterns with high screen intensity. The electron optics are magnetically shielded for improved operation.

Real-time RHEED patterns are captured with the optional RHEED Image Analysis hardware and software system that gives the user the power to grow high quality thin films. A complete system includes the 10 keV RHEED Electron Source, Power Supply, and Cable Set.



Dimensional Drawing in Inches

## Specifications

Beam Voltage.....10 kV  
 Filament Current.....3 A  
 Emission Current.....5 mA  
 Mounting Flange.....4.50" CF  
 Spot Size.....1.0 mm<sup>2</sup> at 17"  
 Maximum Bake out Temperature.....230 °C

Model	Description
RH-10kV	10 keV Electron Source
RH-10VPS	Power Supply
RH-CBL	Cable Set

# RHEED Power Supply

## Description

The RHEED power supply is designed to produce maximum beam and objective voltages of 10 kilovolts, emission current up to 5mA, filament current up to 5A, and X and Y deflection plate voltages of up to +/- 400 Vdc differential. The RHEED cable set consists of two cables, one for the high voltage beam, objective and filament connections, the other one for the lower voltage deflectors.



## Power Supply Specifications

Input Power.....105 to 250 Vac (48-63 Hz)  
 Input Current.....1 Amp Maximum  
 Dimension.....43cm X 33cm X 14cm

Weight.....6 Kg ( 13 lb)

### Filament Supply

Output Power.....40 Watts Max.  
 Output Current.....5 Amp Max.  
 Filament Vdc.....11Vdc - Limited by Output Power  
 Ripple at Max Current.....3 mAmps rms. 1kHz Bandwidth

### Beam Supply

Voltage.....-0.5 to -10 kV  
 Current.....300 uAmp Max.  
 Stability.....1.5V per Deg C Ambient

### Objective Supply

Voltage.....-0.5 to -10 kV  
 Current.....100 uAmp Max.  
 Stability.....1.5V per Deg C Ambient

### X Y Deflection

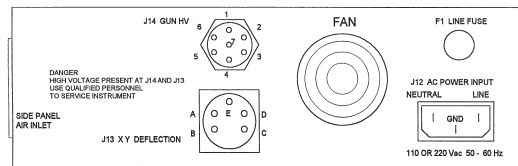
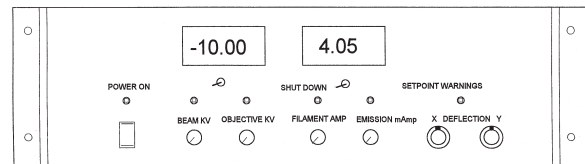
Voltage.....0 to +/- 200 Vdc Plate to Ground  
 (0 to +/- 400 Vdc Differential)  
 Current.....250 uAmp Max.  
 Stability.....5 mV per Deg C Ambient  
 Ripple.....15 mV rms  
 1 kHz Bandwidth at 325 Vdc differential

### Extraction Grid Supply

Voltage.....0 to +150 Vdc  
 Emission Current.....5 mAmp Max.  
 Stability.....0.01 mAmp per Deg C Ambient  
 Ripple at Max Current.....10 uAmp rms. 1 kHz Bandwidth

### Climatic

Inlet Air Temp.....0 to 45 °C  
 Cooling.....Internal Fan  
 Humidity.....5 to 85%



Model	Description
RH-10KV	10 keV Electron Source
RH-10KVPS	Power Supply
RH-CBL	Cable Set