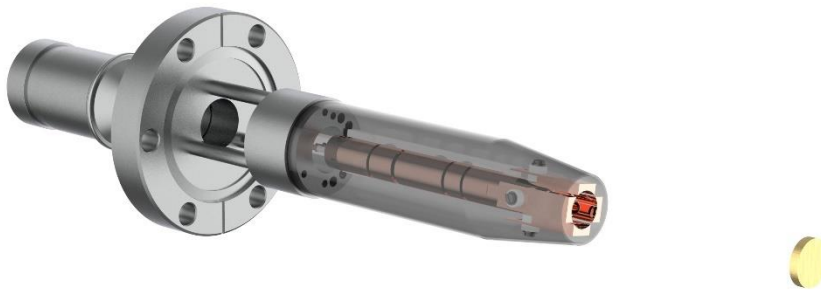


Electron Gun G10 Series Configuration Guide and Specifications



LEED configuration

Base configuration		
Model	Order Code	
EG10-CF40		Miniature electron gun mounted on CF2.75" with 6-pin feedthrough, Mu-metal shielding, tungsten filament and energy range 5 – 3000 eV.
EGPS075-D		Digital controller for electron gun voltage with range 0-750 eV, filament current control, constant beam current, automatic start-up and shut down, USB interface for PC control.
Options		
LaB ₆		LaB ₆ single crystal filament instead of a tungsten wire filament
EGPS300-D		Digital controller for electron gun with voltage range 0 -3000 V, filament current control, constant beam current, automatic start-up and shut down, USB interface for PC control.
EG10-CF40-XY		Miniature electron gun mounted on CF2.75" with Mu-metal shielding, X-Y deflection plates, thoriated tungsten hairpin filament and energy range 5 – 3000 eV. Suitable for Low Energy Electron Diffraction (LEED), Medium Energy Electron Diffraction (MEED) and Auger Electron Spectroscopy (AES). Standard specification: Beam current: 0.1 μA at 20 eV, 2 μA at 100 eV, 50 μA at 1.5 – 3 keV; Beam size: 0.8 – 1 mm at low energy (5 eV – 750 eV), 0.5 – 0.8 mm at high energy (1 keV – 3 keV). Customized specification for different filaments and beam sizes are available.

Detailed Specifications

EG10	
Mounting	Unmounted or mounted on CF2.75" (DN35CF) flange with Mu-metal shielding
Bakeability	Under vacuum, 250°C maximum
Integral Miniature Electron Gun	
Beam energy	Low Energy Mode: 5 eV to 750 eV High Energy Mode: 5 eV to 3000 eV
Beam current	Low Energy Mode: 2 μ A at 100 eV and 0.5 mm beam size High Energy Mode: up to 80 μ A at 3 keV
Beam size	from 1 mm to 250 μ m - adjusted by Wehnelt potential, limited by exchangeable aperture down to 50 μ m
Electron source	Tungsten-2% thoriated filament standard, single crystal LaB ₆ filament optional
Energy spread	0.45 eV (thoriated - tungsten filament)
Beam deflection (optional)	X-Y, two pairs of independent electrostatic deflection plates
Overall size	10 mm lens diameter and 80 mm length
Target distances	40 to 60 mm from the end of the gun
Filament light	Below 0.01 lux protection against escaping the filament light (back and side of gun lenses)

EGPS075-D and EGPS300-D Electronics	
Beam Voltage	EGPS075-D: negative 0-750 V EGPS300-D: negative 0-3000 V
Filament current	0-3.2 A Tungsten/ 0-2.1 A LaB ₆
Wehnelt voltage	0-37 V with respect to the filament
Focus voltage	LEED: positive 70-180% of the beam voltage AES: negative 0-3000 V
Retarding (grid) voltage	Negative 50-110% of the beam voltage
Screen voltage	Positive 0-5000 V
Emission current	1-200 μ A
Beam current	0.01-200 μ A
Monitoring	All voltages and currents
Display	Vacuum fluorescent, displaying all voltages, currents and program functions
On-board automation	5 pre-programmed and fully programmable operating programs for outgassing, stand-by, filament forming, beam voltage scanning, constant beam current and diagnostics
Manual control	Of all voltages via rotary dials and selection switches
PC control	PC software for full control of all functions via USB
Protection	Over-voltage, over-current, and short circuit
Dimensions	3U 19" rack mount (5.25"/133 mm), depth of 17.5" (440 mm), weight 12 kg