DEFLECTION UNIT AND CONTROL UNIT, *HP-4*

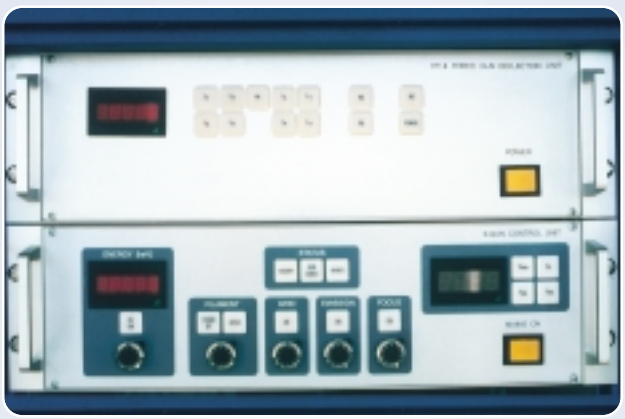
HP-4 is designed to deliver a high-quality electron beam under realistic MBE conditions.
This is achieved by using several beam alignments that can be adjusted while the gun is operating. The position of the electron beam source can be varied to center the brightest spot of the filament on the optical axis.

The first set of deflection plates then eleminates any deviation in the beam direction.
And finally, the aperture manipulator allows the exact alignment of the electron beam with the axis of the magnetic lens for minimum aberrations.

Selectable apertures reduce the beam diameter and divergence, while the electron source is operated at its optimum for minimum energy spread.
This results in superior FWHM and transfer width of the diffraction pattern.

Electrostatic deflection is used througout for maximum stability and minimum beam distortion.
The internal electromagnetic shielding greatly reduce the influence of stray fields, the most important noise source in RHEED experiments.

- Electron energy 3...50 keV
  Electron energy stability (± 0.01 %, ±0.001 % optional)
- Beam current 0... 100µA
- Beam current stability ±0.1 %, (±0.01 % optional)
- Magnetic lens stability ±0.01 %



- Deflection voltages stability ±0.01 %
- Threefold beam alignment
- Remote control box for all relevant beam parameters
- Safety locks for high voltage connectors and vacuum pressure

Additional options:
- Lanthanum hexaboride cathode
- Internal 16 bit DAC control of gun parameters with parallel port PC interface

Technical Data

Type	HP-4 Contol Unit/ Deflection Unit
Input voltage	230 VAC (50Hz)
Acceleration voltage	0 ... 50 kV
Features	Threefold beam alignment, remote control box for all relevant parameters, safety locks for high voltage and vacuum pressure
Options	Internal 16 bit DAC control of gun parameters with parallel port PC interface
Size	19“ x 3 HE (each unit)