Email : sales@scilabexport.com
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Product Name :

Complete Properties of Electrons Apparatus

Product Code :

SLE/EM/11



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Description :

Complete Properties of Electrons Apparatus (Product Code: SLE/EM/11) is a self-contained bench set for studying how a beam of free electrons behaves in electric and magnetic fields. It is built around a cathode-ray tube with a flat 75 mm screen, a pair of transverse field coils and an axial field solenoid, together with the supplies that drive them, and its instruction manual gives sample activities and sample data for six experiments ending with the determination of e/m. Manufactured by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, Ambala, it serves colleges in India as a complete EM ratio apparatus and electron-optics trainer in one case.

Specifications

Parameter	Detail
CRT overall length	240 mm
CRT neck diameter	51.4 mm
Flat screen diameter	75 mm
Grid pitch	10 mm
Electrostatic deflection	X-deflection ~±100 V; Y-deflection ~±100 V
Transverse field coils	Mean diameter 67 mm; 530 turns per coil
Axial field solenoid	Mean diameter 93 mm; length 228 mm; 1,300 turns
CRT cathode voltage	-750 to -1,400 V
Focus voltage	+200 to +400 V
Grid voltage	-4 to -80 V
Magnet supply	0 to 9 V, 0.155 A (transverse); 0 to 7.7 V, 2.0 A (axial)
Power requirement	110-V AC, 60 Hz
Case dimensions	470 x 330 x 215 mm
Weight	~10 kg (22 lb)

Experiments covered by the instruction manual, with sample activities and sample data:

- Electron behaviour in an electric field
- Electron deflection in a transverse electric field
- Electron paths in an inhomogeneous longitudinal electric field
- Electron deflection in a transverse magnetic field
- Spiral electron path in a longitudinal magnetic field
- Determination of e/m

Typical Use

A practical session usually starts with the undeflected spot, then applies voltages to the X and Y plates
energ e
axial