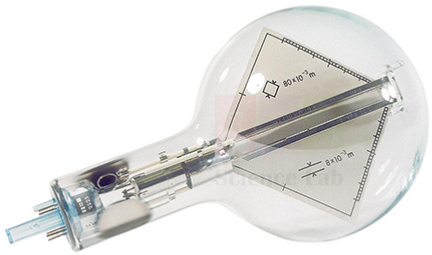
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Product Name :

Teltron Thomson Tube S

Product Code :

SLE/PHY/309



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Description :

Teltron Thomson Tube S (Product Code: SLE/PHY/309) is a high-vacuum electron tube used to determine the charge-to-mass ratio (e/m) of the electron by balancing electric and magnetic deflection, in the manner of J.J. Thomson, in college and university physics laboratories. It has a high-accuracy electron gun, a ruled phosphorescent target screen and a built-in plate capacitor rated to 500 V, making it a standard specific charge of the electron experiment. It is supplied by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, Ambala, India.

Specifications

Parameter	Detail
Tube type	High-vacuum electron tube
Electron gun	High-accuracy electron gun
Screen	Ruled phosphorescent target screen
Beam deflection	Electric field of the built-in plate capacitor; magnetic field ofexternal Helmholtz Coils S
Range	Teltron S range (connections on the stand)
Brand	Teltron (third-party brand)
Max. filament voltage	6.3 V AC
Max. anode voltage	5 kV
Anode current	Approx. 0.1 mA at 4 kV (anode)
Max. capacitor voltage	500 V
Listed for use with	EHT power supply, digital meter with two shunts, shrouded test leads (red and black)
Product code	SLE/PHY/309
Supplied by	Jain Scientific Equipments Pvt Ltd (ScienceLab), Ambala, India

What Is the Thomson Tube Used For?

The tube recreates the reasoning of Thomson's classic measurement. First, students bend the beam with the magnetic field of the external Helmholtz coils and read its path against the ruled screen. Then they apply a voltage to the built-in plate capacitor and adjust it until the electric deflection exactly cancels the magnetic one, so the beam runs straight again.

At that balance point the ratio of the two fields gives the mean electron velocity, and combining this with the curvature from the magnetic-only run yields e/m. The same set-up can be used to explore electron optics. Keep within the 6.3 V AC filament, 5 kV anode and 500 V capacitor limits, and make every high-voltage connection with shrouded leads.

Wha

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