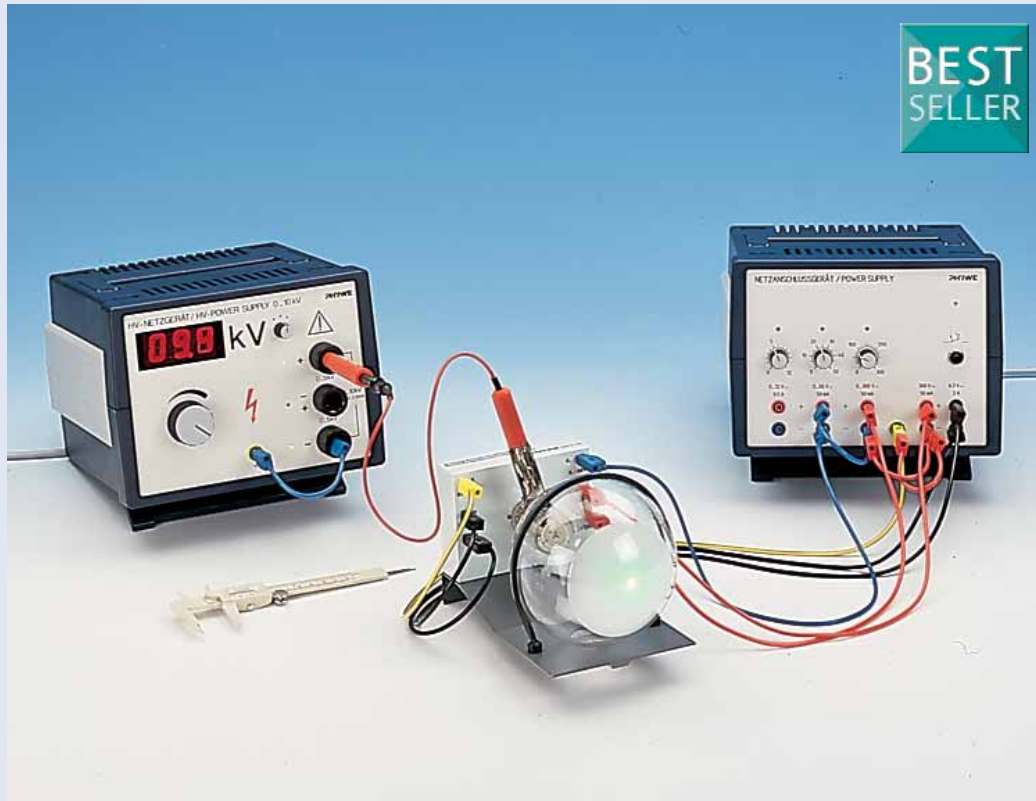


Electron diffraction 5.1.13-00



What you can learn about ...

- Bragg reflection
- Debye-Scherrer method
- Lattice planes
- Graphite structure
- Material waves
- De Broglie equation

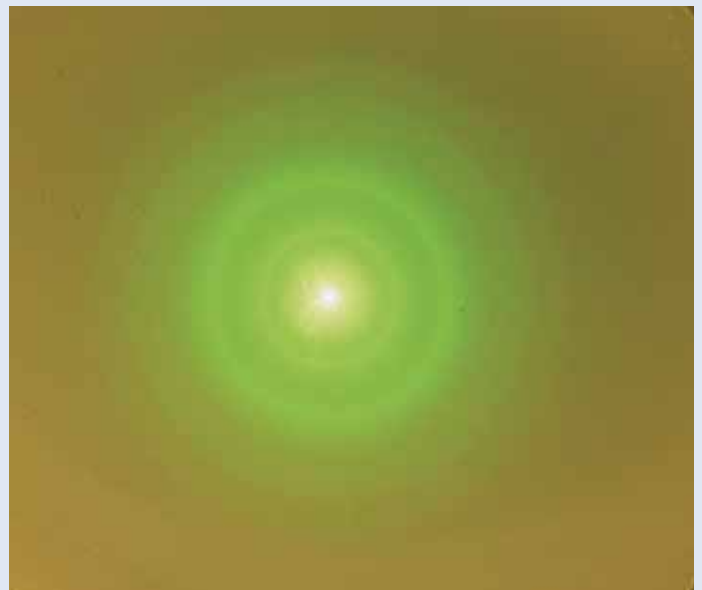
Principle:

Fast electrons are diffracted from a polycrystalline layer of graphite: interference rings appear on a fluorescent screen. The interplanar spacing in graphite is determined from the diameter of the rings and the accelerating voltage.

What you need:

Electron diffraction tube on mounting	06721.00	1
High voltage supply 0...10 kV	13670.93	1
High value resistors, 10 MΩ	07160.00	1
Connecting cable, 30 kV, $l = 500$ mm	07366.00	1
Power supply, regulated, 0...600 V-	13672.93	1
Vernier caliper, plastic	03011.00	1
Connecting cable, 4 mm plug, 32 A, red, $l = 25$ cm	07360.01	2
Connecting cable, 4 mm plug, 32 A, blue, $l = 25$ cm	07360.04	2
Connecting cable, 4 mm plug, 32 A, red, $l = 75$ cm	07362.01	2
Connecting cable, 4 mm plug, 32 A, yellow, $l = 75$ cm	07362.02	1
Connecting cable, 4 mm plug, 32 A, blue, $l = 75$ cm	07362.04	1
Connecting cable, 4 mm plug, 32 A, black, $l = 75$ cm	07362.05	2

Complete Equipment Set, Manual on CD-ROM included  
 Electron diffraction P2511300



Tasks:

1. To measure the diameter of the two smallest diffraction rings at different anode voltages.
2. To calculate the wavelength of the electrons from the anode voltages.
3. To determine the interplanar spacing of graphite from the relationship between the radius of the diffraction rings and the wavelength.