

5.1.03-15 Franck-Hertz experiment with Ne-tube



What you can learn about ...

- Energy quantum
- Quantum leap
- Electron collision
- Excitation energy

Principle:

Electrons are accelerated in a tube filled with neon vapour.

The excitation energy of neon is determined from the distance between the equidistant minima of the electron current in a variable opposing electric field.

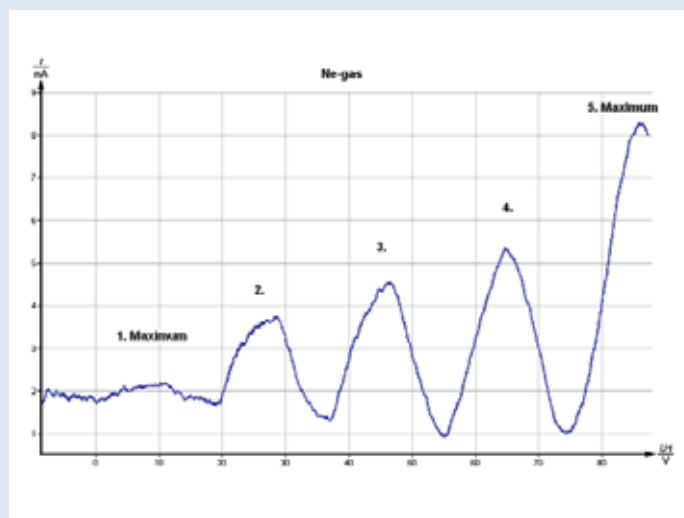
What you need:

Franck-Hertz control unit	09105.99	1
Franck-Hertz Ne-tube with housing	09105.40	1
Connecting cable for Franck-Hertz Ne-tube	09105.50	1
Screened cable, BNC, $l = 750$ mm	07542.11	1
Data cable 2 x SUB-D, plug/socket, 9 pole	14602.00	1
Software Measure Franck-Hertz experiment	14522.61	1
PC, Windows® 95 or higher		

Optional equipment:

Oscilloscope, 30 MHz, 2 channels	11459.95	1
Adapter, BNC-socket/4mm plug pair	07542.27	2
Screened cable, BNC, $l = 75$ cm	07542.11	2

Complete Equipment Set, Manual on CD-ROM included
 Franck-Hertz experiment with Ne-tube P2510315



Example of a Franck-Hertz curve for Ne-gas.

Tasks:

1. Record the counter current strength I_s in a Franck-Hertz tube as a function of the anode voltage U_a .
2. To determine the excitation energy E_a from the positions of the current strength minima or maxima by difference formation.