

5435 - Photoelectric effect - Planck's Constant

Order code: **5001.5435**



Cena bez DPH

746,00 Eur

Price with VAT

902,66 Eur

Parameters

Thanks to this apparatus you are allowed to study photoelectric effect, this instrument is a good starting point to study quantum mechanics. It is basically composed of two parts: a phototube and a control unit (in which is built-in a voltmeter and a nanoammeter). Three LEDs, with wavelength known, are supplied: they are used as monochromatic light sources. The light intensity could be varied from 0 to 100%. The photoelectric effect or photoemission is the production of electrons or other free carriers when light is shone onto a material. You will be able to check the relation between the energy of the emitted electrons and the wavelength of the incident radiation: you will be able to calculate which is the value of the Planck constant using Einstein notion regarding photoelectric effect.

Technical data

- Power supply: 24V DC
- Voltmeter 4 digits, sensibility < 2mV
- Ammeter 4 digits, sensibility < 5nA
- Button to cut off current
- LED light adjustment 0-100%
- Anodic tension adjustment
- Three LEDs (red, green, blu)

Dimensions and weight:

- Control station 19x13,5x6cm weight 370g
- Phototube base 13x18x15,5cm weight 560g

Topics

- How to use it
- Historical notes on the nature of light
- Electromagnetic waves
- Intensity of electromagnetic waves
- Photoelectric effect
- Photoelectric cell
- Work function
- Threshold frequency
- Characteristic graphic of a photocell
- Stopping potential
- Kinetic energy of electrons doesn't depend on radiation intensity
- The number of emitted electrons depends on radiation intensity
- Summary
- Einstein quantum theory
- How Einstein quantum theory explains events
- How to value threshold frequency
- How to measure Planck constant