



DL SOLAR-L

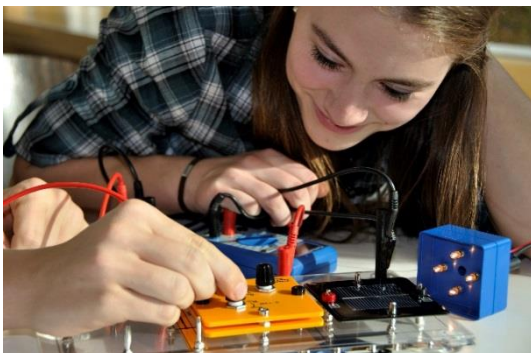
Solar photovoltaic energy

The kit DL SOLAR-L allows correlating school physics with practical usage of the photovoltaic cells. The system has been conceived in such a way that most experiments can be conducted in normal room lighting. An external current is not necessary for these experiments. The lighting module (included) is required only for a few experiments, which can be operated with a students' power supply.



COMPONENTS

- 3x Solar panel 0.5 V, 420 mA
- 1x Solar panel 0,5 V, 840 mA
- 1x Solar panel 1,5 V, 280 mA
- 1x Base unit
- 1x Lighting module
- 1x Diode module
- 1x Resistor module
- 1x Potentiometer module
- 1x Gear motor module
- 1x Buzzer module
- 1x Motor module without gear
- 1x Colour filter
- 1x Capacitor module
- 1x Solar cell cover set (4 pieces)
- 1x CD with manuals
- 1x Lid for tray
- 1x AV-module
- 1x Power module
- 1x Power supply
- 2x Test lead - black 25 cm
- 2x Test lead - red 25 cm
- 1x Thermometer



EXPERIMENTS

- Series and parallel connection of solar cells
- Dependence of the power of the solar cell on its area
- Dependence of the solar cell power on the angle of incident of the light
- Dependence of the solar cell power on the illumination intensity
- Dependence of the on-load power on the illumination intensity
- Efficiency of an energy conversion
- Dependence of the internal resistance on the illumination intensity
- Diodes character of the solar cell: I-V-characteristics under dark conditions, reverse and forward biasing in the dark and under illumination
- I-V-characteristics, MPP and filling factor of the solar cell
- Dependence of the I-V-characteristics on the illumination intensity and of the solar cell on the temperature
- Dependence of the power of the solar cell on the temperature
- Shading of series-connected and parallel-connected solar cells
- Dependence of the solar cell power on the frequency of the incident light
- Working with the plugging module
- Comparing series and parallel connected solar cells with the buzzer module and light bulb
- Comparing series and parallel connected lamps
- Direct comparison of series and parallel connection of the light bulbs
- Direction of rotation and speed of the motor
- Differences in brightness
- Tilting of the solar cell
- Diffuse, direct e albedo radiation
- Basic structure: rotating disks
- Color qualities
- Mixing colors
- Color-deception with the Benham-disk
- Relief-disk
- Centrifugal force