



DL SOLAR-L

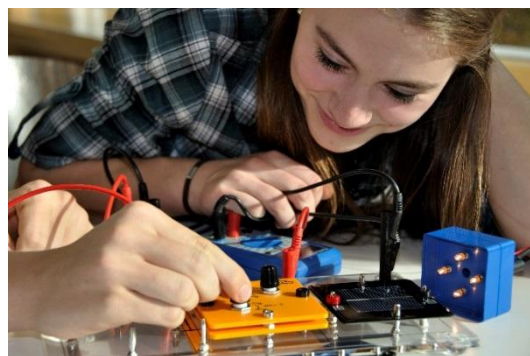
Solar photovoltaic energy

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 bulbe,
- 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.