



SOLAR ENERGY MODULAR TRAINER WITH CONNECTION TO MAINS



DL SOLAR-D1

Didactic system for the study of the generation of electric energy from photovoltaic panels and its inlet in the mains network.



Complete with connecting cables, experiment manual and **software for data acquisition and processing**.

TRAINING OBJECTIVES

- Measuring the mains voltage
- Measuring the load current, voltage, power, and energy
- Setting the solar panel to the most irradiated position
- Changing the inclination of the solar panel
- Changing the azimuth of the solar panel
- Covering the solar panel with different materials
- Obtaining the solar irradiation data
- Obtaining the solar panel voltage-irradiation curve
- Calculating the inner resistance of the solar panel
- Obtaining the solar panel current-voltage curve
- Measuring the electricity delivered to the mains grid
- Measuring the electricity produced by the solar panel and delivered/taken from the mains grid
- Measuring the electricity produced by the solar panel, delivered/ taken from the mains grid, and the loading of lamps

Average training hours: 8 h.

Approx. packing dimensions: 0.62 x 1.21 x 0.82 m.

Net weight: 51 kg.

TECHNICAL SPECIFICATIONS

- A photovoltaic inclinable module, 90W, 12V, complete with a cell for measuring the solar irradiation and with a temperature sensor.
- A supporting frame for the modules.
- A load module. It includes two mains voltage lamps, dichroic 35W and LED 3W, with independent switches.
- A power rheostat, 6 A, 80 W.
- A differential magneto-thermal switch module.
- A module for the measurement of: solar irradiation (W/m^2), solar panel temperature ($^{\circ}\text{C}$), solar panel current, load current, solar panel voltage and active power at mains voltage.
- A grid tie inverter, with output at mains voltage, 12 V, 300 W.
- An electric energy measurement module in kW/h.
- A network distributor.

OPTION: DL SIMSUN

Composed of 12 halogen lamps, 120 W each, for lighting the solar tracking system. Possibility to adjust the light intensity.