RENEWABLE ENERGIES

SOLAR ENERGY MODULAR TRAINER WITH CONNECTION TO MAINS

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

DL SOLAR-D1

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.

OPTION: DL SIMSUN
Composed of 4 halogen lamps, 300 W each, for lighting the solar tracking system. Possibility to adjust the light intensity.

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 (°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.