

Horizon SOLAR ENERGY TRAINING SET

HSETS-11



The Horizon Solar Energy Training Set is prepared for the purpose of experimenting with solar power and its impact on electricity production. The experiment set is designed in accordance with the curricula of all institutions requiring technical education in which can be listed as technical university, technical high school and any institution in need of technical education. In the experiment set, user safety is prioritized in accordance with legal regulations. Laser technology is used in drawing the symbols and writing a technical brief above the test box modules. The content of the training set is applicable for advanced technical training, including basic training. The entire set of the experiment unit consists of modules that can be easily attached and removed from the main unit depending on the experimental work to be carried out. All of the components used in the modules are products or their counterparts in which are produced for industrial purposes.

Movable Main Unit

- Experiment module made of 45x90 sigma aluminum profile
- Dimension: 100 x 60 x 60 cm
- Test Box Dimension: 62 x 62 x 18 cm

Solar Energy Experiments

- Photovoltaic Panel Experiments
- Measurement of Photovoltaic Panel Open Circuit Voltage
- Measurement of Photovoltaic Panel Short Circuit Current
- Photovoltaic Panel Current Voltage Characterization
- Examination of Photovoltaic Panels No-load Output Voltage Relative to the Whole-Day Movement
- Examination of Photovoltaic Panels Loaded Output Voltage Relative to the Whole-Day Movement
- Examination of Photovoltaic Panels Seasonal No-load Output Voltage
- Examination of Photovoltaic Panels Seasonal Loaded Output Voltage
- Series Connection of Photovoltaic Panels



- Examination of Parallel Connection of Photovoltaic Panels
- Examination of Shadow Effect on Photovoltaic Panels
- Examination of Bypass Diode Effect on Photovoltaic Panels
- Examination of Mismatching Effect on Photovoltaic Panels
- Examination of the Effect of Blocking Diodes on Photovoltaic Panels
- Photovoltaic System Experiments
- Directly Connecting Photovoltaic Panel to Load
- OFF GRID Inverter Startup (No-Load)
- Installation of the Basic Photovoltaic System (DC Load)
- Installation of Basic Photovoltaic System (AC Load)
- Measurement of Energy Taken from OFF GRID Inverter
- Measurement of OFF GRID Inverter Output Power and its Efficiency



Content of the Training Set

Test Box

- AC/DC Voltage-Current Measurement Module
- Light Source Control Module
- 220 V AC Lamp Module
- 12 V DC Lamp Module
- PC Interface Module
- Off Grid Inverter Module
- Solar Charge Regulator Module
- Adjustable Ohmic load
- Diode Module

Experimental Application Module

- PV Panel that can move in 2 axes
- Monocrystalline pv panel 4 pcs
- Movable Halogen Lamp Module

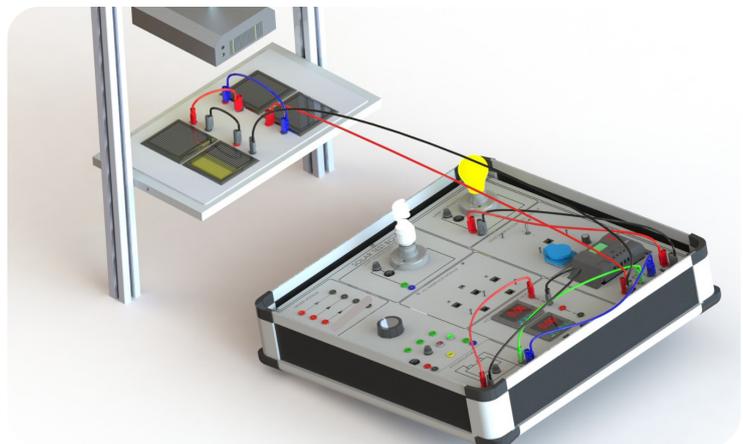
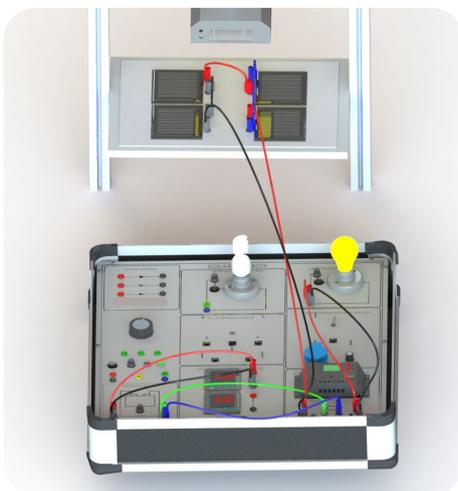
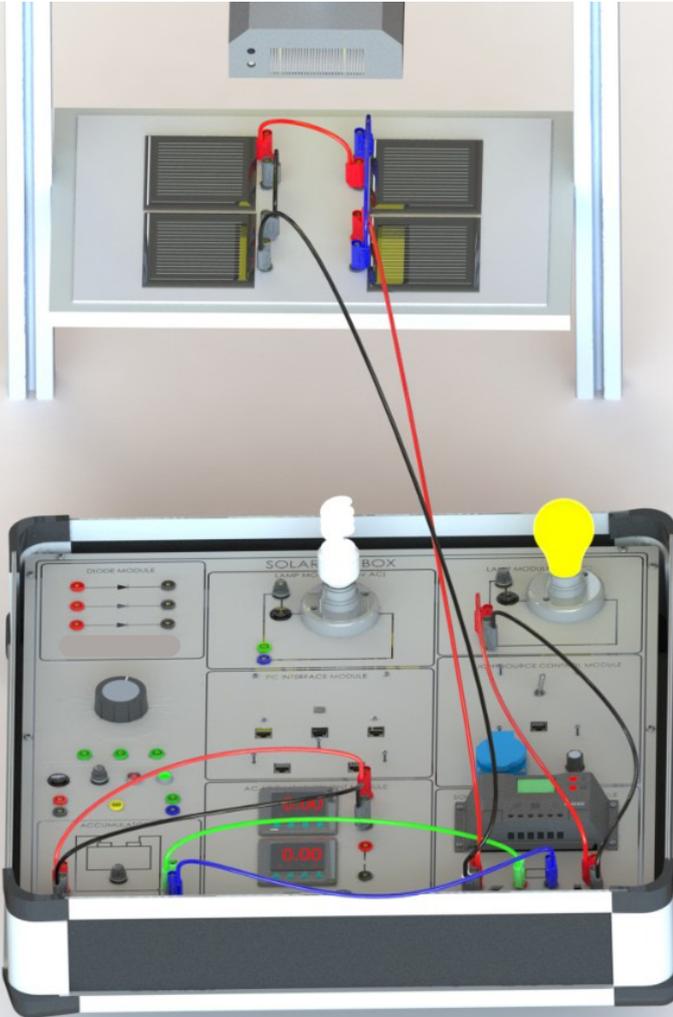
Accessory

- Isolated Cable Set 40 pcs
- Data Link Cable
- Software
- Experiment Book



Sample Experiment Scheme

Experiment connection diagrams were created with technical drawings that simulate the reality.
(Render)



Software



Pv Panel Tab

Wind Turbine Tab

Hydrogen Module Tab

