



**55502E** Solar Power Lab is an innovative product that demonstrates the use of Solar Energy for power generation. This Lab demonstrates the power transformation from Solar PV modules to Battery, and from Battery to Loads.

It consists of a Micro Controller unit to display Voltage and Current on LCD. Using this Lab students can also learn the V/I characteristics, charging techniques, DC to DC (Buck and Boost) Converters. This Lab is a renewable energy experimental platform.

### Features

01. LCD display for Voltage and Current measurement
02. Strong and durable housing
03. Provided with stand to hold PV modules

### Object

#### Study of:

01. Series combination of Solar PV Modules
02. Parallel combination of Solar PV Modules
03. Series-parallel combination of Solar PV Modules
04. VI Characteristics of Solar PV Module
05. Blocking diode and its working in Solar PV Module
06. Bypass diode and its working in Solar PV Module
07. Effect of inclination angle of Solar PV Module
08. Different charging techniques
09. Buck, Boost converter
10. Effect of change in solar radiation on Solar PV Module

11. Running different applications i.e. LEDs, Dusk to Dawn sensing

### Technical Specifications

#### Solar PV Modules

Wattage	:	5W
Quantity	:	4 Nos.
Open Circuit Voltage	:	10V (Voc)
Short Circuit Current	:	0.61A (Isc)
Maximum Power Voltage	:	8.80V (Vmp)
Maximum Power Current	:	0.57A (Imp)

#### Batteries

Voltage	:	6V
Capacity	:	4 Ah
Quantity	:	4 Nos.

#### LCD

Voltmeter	:	0-40V
Ammeter	:	0-3A
Battery	:	12V/40AH
Solar Panel	:	75W
Wireless Transmission	:	GSM Based
Cloud Services	:	1 Year