SOLAR POWER LAB TRAINER
MODEL-SOLARPWLAB100

This trainer has been designed with a view to provide practical and experimental knowledge of Transformation of Solar Energy into Electrical energy.

SPECIFICATIONS

1. Hardware

Following Parts and Modules are assembled on Single PCB of size - 18 Inch x 15 Inch

1. Solar PV Modules Hardware:

1.	Solar Panel PV Modules	: 40W
	Open Circuit Voltage Voc	: 10V
	Short Circuit Current Isc	: 60mA
	Maximum Power Voltage (Vmp)	: 8.80V
	Maximum Power Current (Imp)	: 0.57A
2.	Battery	: 6 V / 4 AH
3.	Solar Charger	: 12 V

2. Modules and Hardware:

1. Buck & Boost Converter Module
2. Dusk to Dawn Sensor Module
3. Digital LCD Voltmeter - 0-50V DC
4. Digital Ammeter - 0-10A DC
5. 12V DC LED Lamp as a Load

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Dealer:-

3. Software:

1. Interactive Solar Training Software

2. Accessories

1.	Jumper wires	: 50 Nos.
2.	Pen Derive with Software, Library, Driver, Codes, Soft Copy of Manual and Mobile App	: 16 GB
3.	Printed Practical Manual	: 1 No.
4.	E-Books for Solar Lab	: 10 Nos. in PDF Format
5.	Mp4 Video Class for Solar Lab	: 40 Nos

3. Cabinet and PCB

The complete circuit diagram is screen printed on component side of the PCB with circuit and Parts at the same place. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement. The acrylic cover is fitted on PCB to safeguard parts. It works on 230 V AC Supply.

EXPERIMENTS

A. Theory Experiments

1. To understand theory and working of Solar Energy
2. To understand theory and working of Solar PV Modules
3. To understand theory and working of Transformation of Solar Energy into Electrical energy.
4. To understand theory of Charging of SMF type Battery
5. To understand theory and working of Solar Charger Controller
6. To understand theory and working of Buck & Boost Converter Module
7. To understand theory and working of Dusk to Dawn Sensor Module

B. Practical Experiments

8. To light a LED Bulb with Solar Energy
9. To charge the Battery using PWM type Solar Charge Controller and Solar Panel
10. To control overcharging of a Battery
11. To make AC lights ON and OFF with Sunset and Sunrise time automatically using Dusk to Dawn Sensor Module
12. To boost DC voltage to Higher level using Buck & Boost Converter
13. To measure Open Circuit Voltage, Short Circuit Current, Maximum Voltage and Current at Maximum Power of a Solar Panel