

Solar Energy Application Demonstrator

Model : SE-1102



SINC SE-1102 Solar Energy Application Demonstrator is an exceptional and comprehensive trainer designed to showcase the functionality and attributes of Solar cells. It also highlights the principles of Series and Parallel connections of Solar Panels, Solar Cell characteristics, as well as various Solar Energy applications such as the Solar Mobile Battery Charger, Solar LED Lamp, and Solar DC Motor. This versatile equipment incorporates an artificial variable intensity light source, along with Digital Voltmeter and Digital Milliammeter to provide precise measurements.

Features

- ❖ Two Solar Cell panels with mount
- ❖ Solar Cell Characteristics
- ❖ Solar Energy Applications
- ❖ Resistive Load Bank with Rotary selector switch
- ❖ LED Lamp Load
- ❖ DC Motor Load
- ❖ Battery Load
- ❖ Square Front
- ❖ Fast response time
- ❖ High photo sensitivity
- ❖ Artificial light radiation source 100W Lamp with intensity control
- ❖ $3^{1/2}$ Digit Digital DC Volt and Current Indicator
- ❖ In-Built Variable regulated DC Power Supply
- ❖ Presents a multi-color Circuit Diagram printed on the front panel of the white board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Interconnections by 2mm high quality banana sockets and pins.



An ISO 9001:2015 Co.

Technical Specifications

▪ AC Mains Power Supply	: 230V \pm 10%, 50Hz
▪ Fixed Regulated DC Power Supply	: +5V /500mA
▪ Variable DC Power Supply	: Variable 0 to +12V
▪ Solar Panel	: Two number with mount
▪ Front	: Square/Rectangle
▪ Solar Panel Connections	: Series and Parallel
▪ Solar Cell	: 6V / 12V
▪ Power	: 3W-10W
▪ Light Source	: 100W Lamp with Variable Intensity control
▪ Load Bank	: 5 Resistive load with rotary selector switch
▪ Applications	: Mobile Battery Charger, Solar LED Lamp and Solar DC Motor
▪ Application Load	: Battery 4.8V, LED 3V, DC Motor 6V.
▪ Maximum Forward Current	: 200mA
▪ Maximum Output Voltage	: 6V/12V
▪ Current Controlling Resistor	: MFR 100 Ω , \pm 5% in series
▪ Total Digital Meters	: 02 (1 Voltmeter and 1 Milliammeter)
▪ Digital Voltmeter	: DC 0-20V, Red Color 3 ^{1/2} Digit LED Display
▪ Digital Milliammeter	: DC 0-200mA, Red Color 3 ^{1/2} Digit LED Display
▪ Weight	: 3.0 kg (approx)
▪ Dimensions (mm)	: L 270 x W 390 x H 130
▪ Interconnections	: 2mm Banana sockets
▪ Operating Temperature	: 0-50°C, 80% RH

Learning Scope

- To study the operation of Solar Cell.
- To Study the Illumination Characteristics.
- To study the V-I Characteristics of Solar Cell w.r.t. applied variable light Input.
- To study the Power- Load characteristics for the variation of Power and load current w.r.t. change of load resistors for a constant light input.
- To Study the Aerial Characteristics.
- To study the Series Connections of Solar Cell and note the Total Cell Voltage.
- To study the Parallel Connections of Solar Cell and note the Total Cell Voltage
- To Study the Solar Cell application as Mobile Charger
- To Study the Solar Cell application as LED Lamp Load
- To Study the Solar Cell application as DC Motor Load

Other Instruments Required : Nil

Accessories Included : Solar modules with stand, Light source 100W with intensity control, Set of Patch Cord and Details Instruction Manual.