



## Study of Solar Panel

### Model : SE-1103

**SINCOM SE-1103 Study of Solar Panel** is a comprehensive trainer designed to showcase the functionality and attributes of Solar cell panels. It highlights the principles of Series and Parallel connections of Solar Panels and its characteristics. This trainer 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 Connections and Characteristics
- ❖ Resistive Load Bank with Rotary selector switch
- ❖ 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 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.

### Technical Specifications

▪ AC Mains Power Supply	: 230V $\pm$ 10%, 50Hz
▪ Fixed Regulated DC Power Supply	: +5V /500mA
▪ 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
▪ Maximum Forward Current	: 200mA
▪ Maximum Output Voltage	: 6V/12V
▪ Current Controlling Resistor	: MFR 100 $\Omega$ , $\pm$ 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 $^{\circ}$ C, 80% RH



An ISO 9001:2015 Co.

## Learning Scope

- To study the operation of Solar Cell.
- 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 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.

**Other Instruments Required :** Nil

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