



## LED and LDR Characteristics

### Model : SA-128

**SINCOM SA-128 LED & LDR Characteristics** is very useful to study the V-I characteristics different Light Emitting Diode (LED) and optical characteristics of LDR under different light conditions. The LEDs and LDR as widely used as an optical devices in many applications such as Light Transmitter, Visual Indicator, smoke detection, automatic lighting control, batch counting, Optical receiver circuits and burglar alarm systems. The trainer is simply designed to plot LED and LDR characteristics and determine its various parameters in a simple experimental way. The trainer is without meters and has the facility to connect the external analog or digital voltmeter, ammeter and variable light intensity source in the circuit.

### Features

- ❖ 5mm Diameter LED and 5mm ceramic LDR Package
- ❖ On Board three LEDs and one LDR are provided with easy selection.
- ❖ Convex Front
- ❖ LED used is having transparent Red, Yellow, Green colors, 5mm Diameter.
- ❖ LDR used is CDS coated with epoxy, Fast response, High Sensitivity and good spectrum characteristics.
- ❖ LDR is having high dark resistance and Passive Resistance output
- ❖ Current controlling resistor in series
- ❖ Facility to vary wide range of applied DC input voltage
- ❖ In-Built Variable regulated DC Power Supply
- ❖ Multi color Circuit Diagram printed on the front of the white board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ Facility to connect the external Digital/ Analog Voltmeter and Ammeter
- ❖ On Board 60W Lamp load with variable light intensity
- ❖ User friendly Designed
- ❖ Very Easy for Operation
- ❖ Interconnections by 2mm high quality banana sockets and pins
- ❖ Maximum Test points to explore all the corners of experiment
- ❖ 1 Year Warranty

### Technical Specifications

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|---|--|
| ▪ AC Mains Power Supply                 | : 230V $\pm$ 10%, 50Hz                     |
| ▪ DC Power Supply                       | : IC Regulated Variable 0V to +12V / 500mA |
| ▪ Device Used                           | : Three LED and One LDR                    |
| ▪ Current Controlling Resistor          | : MFR 1K $\Omega$ , $\pm$ 5% in series     |
| ▪ <b>For Light Emitting Diode (LED)</b> |  |
| • Diodes Used                           | : Light Emitting Diodes (LEDs)             |
| • Total LEDs Used                       | : Three                                    |
| • LED color & Diameter                  | : Red, Yellow and Green, 5mm               |
| • Front                                 | : Convex                                   |
| • Max. Operating Voltage                | : 12V                                      |



An ISO 9001:2015 Co.

- Viewing angle : 40°
- Maximum Forward Current : 20 mA
- **For Light Dependent Resistor (LDR)**
  - LDR Used : 10KΩ
  - LDR Type : NTC, CDs coated
  - Diameter and Front : 5mm Front Convex
  - Viewing angle : 50°
  - Dark Resistance : @ 10KΩ under standard conditions
  - Maximum LDR Current : 25mA under full light conditions
  - Maximum Operating Voltage : 15V
  - Light Source : 60W Lamp load max-Variable Intensity control
- Weight : 2.0 kg (approx)
- Dimensions (mm) : L 220 x W 270 x H 110
- Interconnections : 2mm Banana sockets
- Operating Temperature : 0-50°C, 80% RH

### Learning Scope

- To Study Forward characteristics of Red, Yellow and Green colors Light Emitting Diodes (LED).
- To Observe & Note the Change in the Intensity & Voltage across LEDs w.r.t. applied forward Voltage.
- To Study operation of Light Dependent Resistor (LDR).
- To Study the characteristics of LDR of different values.
- To Observe & Note Change in LDR Resistance, Current & Voltage w.r.t. change in the intensity of light.

### Other Instruments Required

**SINCOM Digital VI meter (DVI) : Model DVI-02** Range V-20V,I-200mA DC. Dimmerstat single phase 230V.

### Accessories Included

Set of Patch Cord, Lamp Load 60W with variable light intensity and Details Instruction Manual