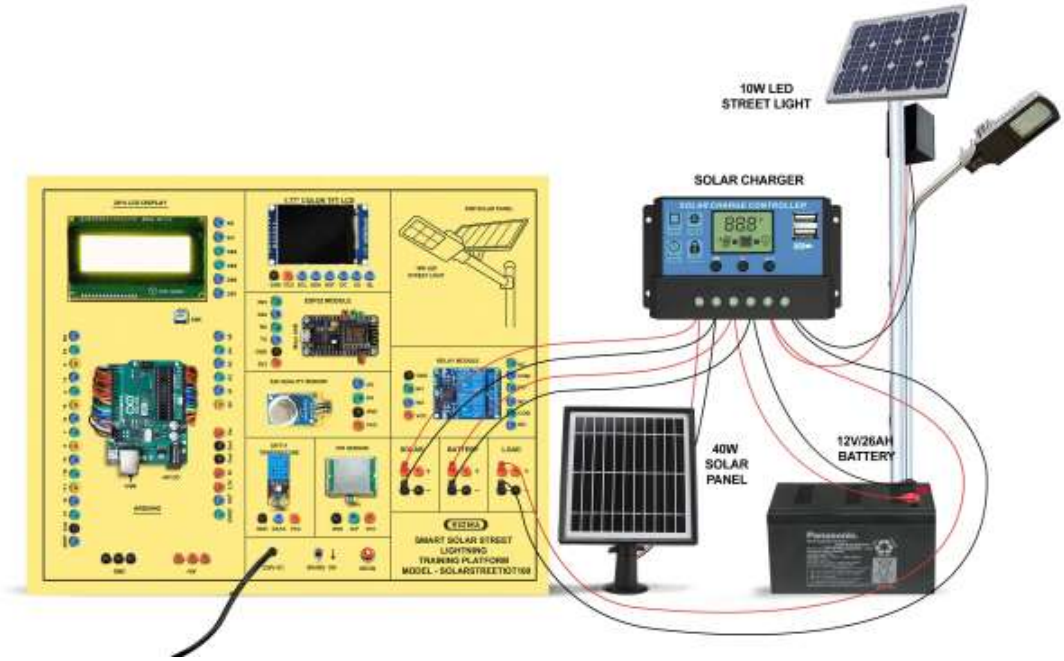
SMART SOLAR STREET LIGHTING TRAINING PLATFORM

MODEL-SOLARSTREETIOT100

SPECIFICATIONS



This trainer has been designed with a view to provide practical and experimental knowledge Sensors programing for IoT based Smart Solar Street Light system with Arduino IOT Board.

SPECIFICATIONS

A. Main Specs

1. Following Parts and Modules are assembled on Single PCB of size - 18 Inch x 15 Inch.
2. The complete circuit diagram is screen printed on component side of the PCB with circuit and Parts at the same place.
3. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement.
4. Modules and Parts should be removable without desodlering for easy repair / replacement
5. The acrylic cover is fitted on PCB to safeguard main parts

B. Arduino Microcontroller Board

1. Arduino Uno Microcontroller board based on the ATMEGA328P
2. 14 Digital Input / Output pins (of which 6 provide PWM output)
3. 16 MHz Ceramic Resonator
4. USB Port
5. Power Jack – 9V DC, 1A

C. Sensors & Other Components

1. Temperature and Humidity Sensor DHT11
2. Air Quality Sensor MQ135
3. PIR Motion Sensor
4. Solar Charge Controller 12V : PWM type
5. Auto diming Solar Panel - 40 W Polycrystalline type
6. Battery - SMF type with rating 12V, 26AH
7. DC LED Light - 10 Watt

D. Modules and Hardware:

1. 1.77 Inch TFT LCD Display
2. 20 X 4 - LCD Display
3. ESP32 Wifi Module
4. 2 mm interconnection Sockets

E. Application Software

1. SMART Street Light Dashboard

F. Accessories

1.	USB Cable	: 2 No
2.	Ethernet Cable	: 1 No
3.	Micro USB to USB cable for ESP32	: 1 No
4.	Power Supply Adaptor	: +9V DC, 1A
5.	Jumper wires	: 50 Nos.
6.	Pen Derive with Software, Library, Driver, Codes, Soft Copy of Manual and Mobile App	: 16 GB
7.	Printed Practical Manual	: 1 No.
8.	E-Books for IOT Subject	: 10 Nos. in PDF Format
9.	Mp4 Video Class for IOT Subject	: 40 Nos
10.	Excitation accessories for each sensor Cigarette lighter for Gas to test Air quality	

EXPERIMENTS

A. Theory Experiments for Arduino Board

1. To understand theory and working of Arduino Operating software.
2. To understand Pin and Connection Diagram of Arduino.
3. To understand USB Interface for Arduino.
4. To understand 20 x 4 LCD Display.

B. Theory of ESP32 Wireless Module

5. To understand theory and working of ESP32
6. To understand Operating System for ESP32
7. To understand Pin and Connection Diagram of ESP32
8. To understand USB Interface for ESP32

C. Theory Experiments for Sensors

9. To understand theory of Temperature and Humidity Sensor DHT11
10. To understand theory of Air Quality Sensor MQ135
11. To understand theory of PIR Motion Sensor
12. To understand theory of Solar Panel
13. To understand theory of PWM type Solar Charge Controller
14. To understand theory of Solar Panel and Charging of SMF type Battery 12V, 26AH

D. Practical Experiments

15. To determine Air Humidity & Temperature using DHT11
16. To measures Air Quality using MQ135 sensor
17. To detect motion using PIR sensor
18. To charge battery using PWM type Solar Charge Controller and Solar Panel

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