

## SOLAR TRACKER DEMONSTRATOR KIT



### SPECIFICATIONS :

- \* To study manual and automatic control of 10 W solar panel in East-west and North-south & back.
- \* MPPT Charge controller to control the solar panel
- \* Solar Panel : 12 V DC
- \* DC Motor: 12 V
- \* Rechargeable Battery: 12V 7Ah
- \* DC Adapter: 12 V 1A
- \* Tilt Sensor : 3 / 4 Axis
- \* Sensor: Light Sensor Phototransistor
- \* On Board LCD Display
- \* Fuse : 1A (3 Nos)

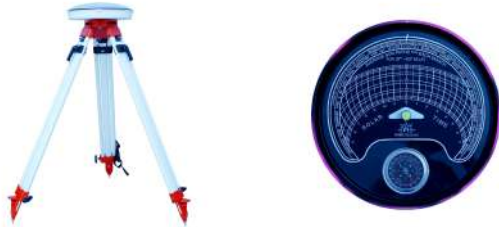
## IV CURVE TESTER



### SPECIFICATIONS :

- \* Advance Controller with graphic LCD of 2.7" to measure IV Curve through current and voltage sensors
- \* On board 6V solar cell
- \* Battery Type: Rechargeable Lithium 3400mAh
- \* Data Logging : 100 records
- \* Temp Coefficient: 0.1% of full scale
- \* Storage Environment: -20C - 60C
- \* Experiment to be covered: Current and voltage measurement of solar Cell with variable light source for IV curve

## SUN PATH FINDER



### SPECIFICATIONS:

- \* Sections Of Sun Path Finder :
  - 1.Dome Section: Having Translucent Lens/dome
  - 2.Instrument Section : Having Compass and Level
  - 3.Base Section : Having Rubber Grommets
- \* Magnetic Compass NS 140A having 6 inch diameter
- \* Tripod Stand having 3 folding Legs
- \* Reflector Compass NS 160A
- \* Operating Mode : Solar/Electricity



## PYRHELIOMETER



### SPECIFICATIONS:

- \* Spectral Consistency:  $\pm 3\%$
- \* Measuring Range: 0-2000W/M<sup>2</sup>
- \* Time Response: 95% in 10S
- \* Signal Output: 4-20mA
- \* Temperature Range: 40-85 Degree
- \* Non Linear Error:  $\pm 0.2\%$
- \* Spectral Error:  $\pm 0.2\%$
- \* Spectral Response : 285 - 3000nm
- \* Operating Voltage : 12-24 V DC
- \* Sensitivity : 7-14 microvolt/wm-2

## CUT MODEL OF PHOTO VOLTAIC CELLS ASSEMBLY



### SPECIFICATIONS:

- \* To study the cut model of photo voltaic cell of 6V minimum of six cells
- \* individual terminals for connecting cells in different combination
- \* Thin Film Photovoltaic Cell : 6V
- \* ISO Standard : 1277 - 8
- \* Each Photovoltaic cell mounted on the Panel
- \* On board Terminals for Measuring the Voltage of Each Photo voltaic cell

## SOLAR CELL KIT



### SPECIFICATIONS:

- \* Inbuilt Voltmeter & Ammeter
- \* Batten Holder 5A
- \* Powder Coated Metal Panel
- \* Monocrystalline Cell : 5V / 6V
- \* Built In Power Supply
- \* Connecting Patch chords provided for interconnections
- \* Banana Sockets provided for connections

## HOME LIGHT SYSTEM



## SPECIFICATIONS:

- \* LED Bulb
- \* Mobile Charger as Load
- \* 12V DC with FM Receiver

## SOLAR PCU OFF GRID



## SPECIFICATIONS:

- \* Off Grid 1KW MPPT Sine Solar power
- \* Output Power: 1-10Kw
- \* Input voltage: 140V , Freq: 50Hz

## DC PUMP 24V



## SPECIFICATIONS:

- \* DC Pump 24V Power Source
- \* Max Flow: 40lpm
- \* Working Current: 0.5 V to 1A

## SOLAR DC PUMP 24V



## SPECIFICATIONS:

- \* Solar DC Pump: 24V, 1HP
- \* Power Source: Electric/ Solar
- \* Current: 0.5 to 1A, Flow rate: 40 LPM

### SOLAR LANTERN ASSEMBLY SET



#### SPECIFICATIONS:

- \* Solar cell plate
- \* Led lantern bulb
- \* Charging point
- \* Brightness regulator
- \* Laboratory trainer kit

### RHEOSTATS



#### SPECIFICATIONS:

- \* 0-300 Ohm , 1A
- \* 0-10 Ohm, 5 A
- \* 0-25 Ohm, 1A
- \* 0-1 Ohm, 5A

### DC TABLE FAN



#### SPECIFICATIONS:

- \* 3 Blade Table Fan
- \* 12 V DC table fan
- \* Wattage :15 W
- \* Table Fan for Educational Purpose

### WATTMETER & ENERGY METER



#### SPECIFICATIONS:

- \* Coil rating: 240V/440V
- \* Current rating: 5A/10A
- \* Portable type
- \* Analog Type



#### SPECIFICATIONS:

- \* Three Phase Meter
- \* Current rating: 15A
- \* Voltage: 440V
- \* Induction Type

## RECHARGEABLE BATTERY



## SPECIFICATIONS:

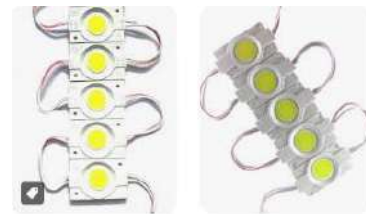
- \* Chargeable Type: Rechargeable
- \* Battery Type: Lead Acid Battery
- \* Voltage rating : 6V
- \* Current Rating :5Ah

SOLAR PV  
E LEARNING SOFTWARE

## SPECIFICATIONS:

- \* Solar cell study of series & parallel connection with animated demonstration software for 1 Year
- \* Different type of Solar PV Cells
- \* Concept Demonstration of Solar PV Cell for Solar to Electrical Energy Conversion

## LED LIGHTS



## SPECIFICATIONS:

- \* LED Lights: 12V DC, 6V DC
- \* Color: White
- \* Color Temperature: 4000 K
- \* Operating Wattage: 2.4 W

## DC LED LAMPS



## SPECIFICATIONS:

- \* LED Lights: 3W, 5W, 10W
- \* Color: White
- \* Power Source: DC
- \* Voltage : 3.2 V DC



## SOLAR GRID TIED DEMONSTRATOR KIT



### SPECIFICATIONS :

- \* Solar panel : 300W
- \* Power : 1000Wp
- \* Type - Polycrystalline
- \* Single phase grid tied inverter - inbuilt
- \* Rated output power : 1kW
- \* Max DC input voltage : 450V
- \* Max DC input current : 10A
- \* MPPT operation range: 50V-400V
- \* Rating grid voltage: 230Vac
- \* Grid voltage range : 180Vac-230Vac
- \* Grid rating output current : 4.3A
- \* Rating grid frequency: 50/60Hz
- \* Topology : Transformer less
- \* Protection: DC reverse polarity, AC short circuit, etc.
- \* Digital meters
- \* DC voltmeter : 300V
- \* DC ammeter : 20A
- \* AC voltmeter : 450V
- \* AC ammeter : 10A
- \* Bidirectional energy meter: 1no.
- \* Multifunction meter: 1no.
- \* Terminals – BS 10 safety type with Patch cords
- \* Protection devices.
- \* Structure for Solar Panel
- \* Material: GI
- \* Assembly: Detachable and easy to install

## DEMONSTRATION KIT FOR WIND GENERATION



### SPECIFICATIONS :

- Power rating : 300Watt
- Actual Output Power : 10W - 15W
- Generator output :24V
- Current – Approx. 0.3 to 0.4A
- Blades: 3nos./2 Nos
- Rotor: Three FRP blades along with standard steel nut-bolts & GI coated turbine
- Structure : MS structure with floor stand
- Wind charge controller
- Voltage :24V
- Protection: Overload and low-battery protection
- Storage battery (2nos)
- Capacity :26 AH
- Inverter Capacity :750VA
- Input voltage :190~260V
- Technology: Microcontroller based design
- Digital meters
- AC voltmeter :500V
- AC ammeter :10A
- DC voltmeter :300V
- DC ammeter :40A
- Terminals – BS10 type for safety
- Accessories
- AC Load – LED lamp type
- Lamps – 2 no. of 10 watt
- Blower – should generate the wind speed of approx. 5.5 m/s in the lab

## WEATHER MONITORING STATION



### SPECIFICATIONS:

Air Temperature  
 Operating Range : 0°C to 100°C  
 Resolution : 1°C  
 Relative Humidity  
 Operating Range : 5% to 95%RH  
 Resolution : 1%  
 Solar Radiation sensor  
 Output : 0-2VDC  
 Range : 0 to 2000W/m<sup>2</sup>  
 Spectral Response : 400 to 1100 nm  
 Atmospheric Pressure Sensor  
 Detection Range : 15- 115kPa  
 Response time : 5 Sec.  
 Air Quality Sensor (PM2.5)  
 Detection Range : 10 - 500 ppm  
 Response time : 5 Sec.  
 Wind Speed Sensor  
 Speed : 0 to 20m/S  
 Resolution : 1m/S  
 Wind Direction Sensor : North, East, West, South,  
 North-East, East-South,  
 North-West, South-West  
 Rainfall : Tipping bucket in mm  
 UV Index Sensor  
 Response wavelength : 200nm-370nm  
 Response time : 5 seconds  
 Power Supply  
 Wireless Transmission : GPRS Based

## USED WATER TREATMENT DEMONSTRATOR KIT



### SPECIFICATIONS:

- \* Waste /Used Water Treatment by Electro Coagulation,
- \* 1 litre capacity
- \* Max. Duty Cycle•120 Liters / Day
- \* Filter Cartridges•Sediment, Activated Carbon
- \* Ro Membrane•1812-75 GDP
- \* Microcontroller based Constant Current Power
- \* Transparent Tank for better visibility of process,
- \* Aluminum and Stainless Steel Electrodes for comparative study,
- \* Filters : Sand and Charcoal Electrodes,
- \* Solar Panel Power: 75 Watt,
- \* CC Power supply – 3A ,
- \* Min. Inlet Water Pressure•0.3 Kg / cm<sup>2</sup>
- \* Meters :PH meter , TDS meter



### SOLAR CELL BASED SUNLIGHT RADIATION METER



#### SPECIFICATIONS:

- \* Operating Voltage : 5V
- \* Detection Range: 0 to 1000/2000 w/m<sup>2</sup>
- \* 16 x 2 LCD
- \* Sensor Connectivity using cords
- \* Solar Cell
- \* Radiation Sensor
- \* Microcontroller based

### SOLAR ENERGY TRAINER WITH GROUPING OF SOLAR CELL



#### SPECIFICATIONS:

- \* To group (Series or parallel) at least 6 solar cells each with min. 2 Watt with suitable load
- \* LCD – Voltmeter – 40volt,
- \* Ammeter – 3 A, Battery 12 volt, 4ah
- \* Open Circuit Voltage (Voc): 10V
- \* Short Circuit Current (Isc): 0.60A, with sensing dusk to dawn
- \* Maximum Power Voltage (Vmp): 8.80V Maximum Power Current (Imp):

### SOLAR SIMULATOR FOR SOLAR CELL CHARACTERISTIC



#### SPECIFICATIONS:

- \* Digital Display for voltage and current measure
  - \* Simulation V-I Curve.
  - \* I- V Curve under Different Temperature.
  - \* Simulation Output characteristic of Solar Cell.
  - \* Minimum power – 2Watt.
- and suitable load  
watt under variable illumination, temperature,
- \* To study IV Curve of a solar cell of minimum 2
- Solar Cell - Open Circuit Voltage (Voc) : 2V
- \* Halogen Lamp as a Light Source

### SUNSHINE RECORDER



#### SPECIFICATIONS:

- \* Glass sphere: 10cm diameter
- \* Mounted Concentrically
- \* Three Overlapping pairs and
- \* A spherical bowl provided to Short curve cards,
- \* Long curve cards & Straight cards provided for recording the sun shine

## MPPT CHARGE CONTROLLER



### SPECIFICATIONS:

- \* Control Panel: Enclosure consist of high grade FRP material to provide utmost safety to the users
- \* Required Switches are provided
- \* Connectors are provided
- \* Auto Focus tracking Solar panel 12V/24V
- \* Charge controller: MPPT type with reverse polarity protection for battery as well as load
- \* Panel Regulator with LCD Display
- \* Dual USB Port charge controller
- \* Multiple Load Control Modes
- \* 30A MPPT Charge Controller
- \* A Embedded DPM provided for Voltage & Current measurement for Input
- \* A Embedded DPM provided for Voltage & Current measurement for Output
- \* Battery: 12V,7.5Ah

## PWM CHARGE CONTROLLER



### SPECIFICATIONS:

- \* PWM Switch Control 9-70V 35A
- \* PWM Soft start /Soft Stop
- \* Variable speed DC Motor Speed Controller
- \* Overcurrent Protection
- \* Charge controller: PWM type with reverse polarity protection for battery as well as load
- \* Required Switches are provided
- \* Connectors are provided
- \* A Embedded DPM provided for Voltage & Current measurement for Input
- \* A Embedded DPM provided for Voltage & Current measurement for Output
- \* Battery: 12V,7.5Ah