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Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Photovoltaic Solar Panel Measurement Trainer | RVX-004

Category: Renewable Energy · **Order Code:** RVX-004 · **Country of Origin:** India

Product Overview

The Photovoltaic Solar Panel Measurement Trainer RVX-004 is a modular PV panel measurement and performance analysis system for educational institutions, vocational training centres, and research laboratories. It supports thirteen experiments covering short-circuit current, open-circuit voltage, maximum output parameters, panel tilt and irradiation relationships, efficiency determination, panel type comparison, and series and parallel connections. The system includes one Polycrystalline Solar Module, two Monocrystalline Solar Modules, two Artificial Light Source Modules with independent intensity control, an Active DC Load, and a Solar Irradiance Measurement Module. DAQ software designed in National Instruments LabVIEW is included and runs on any Windows system.

View this product online: https://scienticoindia.com/product/photovoltaic-solar-panel-measurement-trainer-rvx-004/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Sr. No.	Module / Component	Qty
1	Polycrystalline Solar Module	1
2	Monocrystalline Solar Module	2
3	Artificial Light Source Module	2
4	Artificial Light Control Module	2
5	Active DC Load	1
6	Solar Irradiance Measurement Module	1
7	Set of Leads	1
8	Frame	1

Key Features

Key Features

- **PV Panel Measurement System:** dedicated trainer for PV panel measurement and performance analysis
- **Panel Types:** Polycrystalline Solar Module (x1) and Monocrystalline Solar Module (x2) included
- **Short-Circuit Current:** measurable for each PV panel
- **Open-Circuit Voltage:** measurable for each PV panel
- **Maximum Output Current:** current at maximum output determinable
- **Maximum Output Voltage:** voltage at maximum output determinable

- **Panel Tilt Analysis:** relationship between tilt, illuminance, short-circuit current, and electrical output investigable
- **Irradiation Relationships:** output voltage vs. irradiation and short-circuit current vs. irradiation determinable
- **Efficiency Determination:** PV panel efficiency calculable from measured data
- **Panel Type Comparison:** polycrystalline and monocrystalline panels comparable on the same platform
- **Series Connection:** series connection of two solar panels supported
- **Parallel Connection:** parallel connection of two solar panels supported
- **Active DC Load:** dedicated Active DC Load module included
- **Solar Irradiance Measurement:** Solar Irradiance Measurement Module included
- **Artificial Light Source:** two light source modules with two independent intensity control modules for indoor operation
- **DAQ Software:** National Instruments LabVIEW based, Windows compatible, electronic sensors included

Experiments

- Solar panels under a variety of effects
- Short-circuit current of a PV panel
- Open-circuit voltage of a PV panel
- Current at maximum output of a PV panel
- Voltage at maximum output of a PV panel
- Relationship between panel tilt, illuminance, short-circuit current, and electrical output
- Relationship between panel tilt and irradiation
- Relationship between solar panel output voltage and irradiation
- Relationship between solar panel short-circuit current and irradiation
- Determining the efficiency of a PV panel
- Comparing different panel types
- Series connection of two solar panels
- Parallel connection of two solar panels

Construction and Design

The Photovoltaic Solar Panel Measurement Trainer RVX-004 is built on a modular frame accommodating eight discrete plug-in modules. The PV panel measurement system includes one Polycrystalline Solar Module and two Monocrystalline Solar Modules, enabling direct comparison of panel types and multi-panel connection experiments. Two Artificial Light Source Modules and two Artificial Light Control Modules provide independent, controllable illuminance for each panel position. A Solar Irradiance Measurement Module captures irradiation data for correlation with panel output parameters. An Active DC Load module enables controlled loading of panel output for measurement and characterisation. All modules connect via the included set of leads.

Software

DAQ software specially designed in the National Instruments LabVIEW environment to measure and calculate experimental results. A set of electronic sensors is included for use with the software. Compatible with any Windows operating system.

Scope of Delivery

- Polycrystalline Solar Module (x1)
- Monocrystalline Solar Module (x2)
- Artificial Light Source Module (x2)
- Artificial Light Control Module (x2)
- Active DC Load (x1)
- Solar Irradiance Measurement Module (x1)
- Set of Leads (x1)
- Frame (x1)
- DAQ Software (LabVIEW-based) with electronic sensors

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

Q1. What is the Photovoltaic Solar Panel Measurement Trainer RVX-004 used for? It is used in educational institutions, vocational training centres, and research laboratories to teach PV panel measurement, performance analysis, and characterisation of different solar panel types.

Q2. Which solar panel types are included in the RVX-004?

The system includes one Polycrystalline Solar Module and two Monocrystalline Solar Modules, enabling direct comparison of panel types on the same platform.

Q3. Can series and parallel panel connections be tested on the RVX-004?

Yes. The system supports both series connection and parallel connection of two solar panels as dedicated experiments.

Q4. How is irradiation controlled for indoor experiments?

Two Artificial Light Source Modules with two independent Artificial Light Control Modules provide controllable illuminance for each panel position during indoor operation.

Q5. What performance parameters can be measured using the RVX-004?

The PV panel measurement system supports measurement of short-circuit current, open-circuit voltage, current at maximum output, voltage at maximum output, irradiation relationships, and panel efficiency calculation.

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