Monocrystalline Silicon Solar Panel
579600 (8806-00)

LabVolt Series

Datasheet

* The product images shown in this document are for illustration purposes; actual products may vary. Please refer to the Specifications section of each product/item for all details. Festo Didactic reserves the right to change product images and specifications at any time without notice.

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Table of Contents

General Description

The Monocrystalline Silicon Solar Panel consists of two independent photovoltaic (PV) modules mounted on a common metal chassis that can be installed in the Solar Panel Test Bench, Model 8805, when performing exercises indoors, or on a tripod when performing exercises outdoors. Both PV modules are made of high-quality monocrystalline silicon cells and protected by a coat of clear glass epoxy. Independent access to the output of each PV module is provided via a pair of miniature (2 mm) banana jacks mounted on the solar panel chassis to allow either series or parallel connection of the PV modules. A multi-pin connector on the solar panel chassis allows connection of the PV module outputs to four miniature banana jacks on the front panel of the Solar Panel Test Bench to allow PV module connection from the outside of the workstation.

Indoor Operation in the Solar Panel Test Bench

Monocrystalline Silicon Solar Panel installed in the Solar Panel Test Bench (setup for indoor exercises).

A digital thermometer attached to the solar panel chassis allows the temperature of the PV modules to be monitored. A transparent window in the front panel of the Solar Panel Test Bench allows temperature monitoring even when the solar panel is installed in the test bench.

Outdoor Operation On a Tripod

Monocrystalline Silicon Solar Panel installed on a tripod (setup for outdoor exercises).

The surface of the metal chassis on which the PV modules lie is provided with a perpendicularly mounted metal pin and silk-screened angular markers. When performing exercises outdoors, the metal pin allows the orientation to be adjusted so that the solar panel is perfectly aimed at the Sun. The angular markers allow the solar panel orientation to be offset a certain angle with respect to the Sun direction when experimenting with solar panel orientation.

The Monocrystalline Silicon Solar Panel includes a potentiometer and a set of diodes. The potentiometer is used to apply a variable electrical load to the output of the solar panel. The diodes can be connected to the solar panel to serve as either bypass diodes or blocking diodes. These components are used when performing solar panel exercises outdoors (i.e., without the Solar Panel Test Bench). Access to the potentiometer and diodes is through miniature (2 mm) banana jacks mounted on the solar panel chassis.

Specifications

Parameter	Value
PV Module	
Quantity	2
Type	Monocrystalline Silicon
Number of Cells	18
Open-Circuit Voltage (VOC)	9 V @ STC
Short-Circuit Current (ISC)	100 mA @ STC
Potentiometer	Single Turn - 500 Ω - 2 W
Diodes	
Quantity	3
Peak Inverse Voltage	1000 V
Maximum Current	1 A
Thermometer	
Range	-50°C to +70°C (-58°F to +158°F)
Resolution	±0.1° from -19.9° to +199.9°, otherwise 1°
Accuracy	±1°C from -30°C to +70°C (±1.8°F from -22°F to +158°F)
Battery Voltage	1.5 V
Battery Type	A76 (LR44, G13) size or equivalent, 1 required
Angular Markers	
Range	65°
Interval	5°
Physical Characteristics	
Dimensions (H x W x D)	240 x 237 x 58 mm (9.4 x 9.3 x 2.3 in)
Net Weight	2.0 kg (4.4 lb)

Reflecting the commitment of Festo Didactic to high quality standards in product, design, development, production, installation, and service, our manufacturing and distribution facility has received the ISO 9001 certification.

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