

Renewable Energy: Photovoltaic Modules

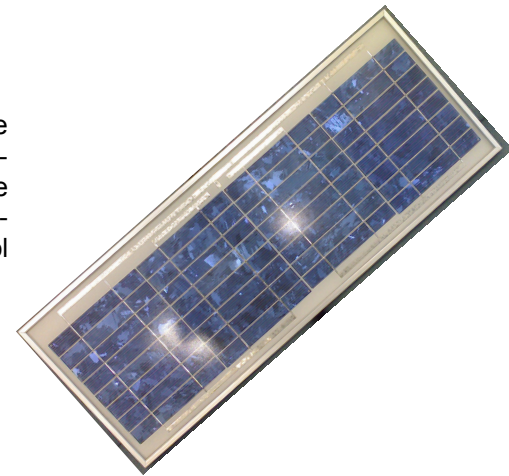


Ekarat Solar : Compact designed 15 Watts Crystalline Silicon PV modules

Ekarat Solar's compact 15 Watts PV module is produced under a stage of the art automatic assembly machines to ensure a consistency and reliability of production quality. The compact PV module is commonly used for wide range applications such as Battery charger, Street Lamppost, Garden Lamppost, Security Lighting, Electric fence charging, Telecommunications, Traffic control signals.

High efficiency module, more than 12%, is a result of solar cell's superior power output, which has been developed by our own solar cell factory. More over other component materials are also selected to comply with international standards such as IEC and TISI. These create a customer's confidence en-

- Choice of Low iron tempered glass, which allows a high light transmission rate with a great robustness or Normal glass for economical application.
- EVA encapsulate sheet, back-sheet, and clear anodized aluminum frame are technically equipped to protect the module against all weather condition.
- Junction box with IP65 to ensure water proof and prolong lifetime operation.
- Special cable with connectors is offered as option for easy interconnection.



Electrical Characteristics

Model No.	ES2015
Maximum power (Pmax)	15 W
Power tolerance	± 3%
Voltage of Pmax (Vmp)	16.7 V
Current at Pmax (Imp)	0.9 A
Short - Circuit current (Isc)	0.95 A
Open - Circuit voltage (Voc)	19 V
Temperature Coefficient of Voc	- 0.0816 V / °C
Temperature Coefficient of Isc	+ 1.6 mA / °C
Temperature Coefficient of power	- 0.3750 % / °C
Maximum series fuse rating	15 A
Maximum voltage system	1000 V

These data represent the performance of typical modules as measured at their out put terminals, and do not include the effect of such additional equipment as diodes or cables. The data are based on measurements made in accordance with ASTM E1036-85 corrected to SRC (Standard Reporting Conditions, also known as STC or Standard Test Conditions), which are:

- Illumination of $1\text{kW}/\text{m}^2$ (1sun) at spectral distribution of AM1.5 (ASTM E892-87 global spectral irradiance);
- Cell temperature of 25°C .

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Specifications subject to technical changes

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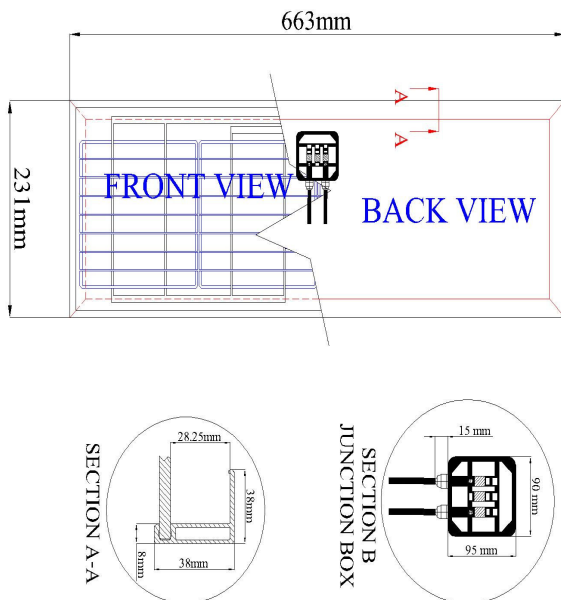
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Mechanical Characteristics

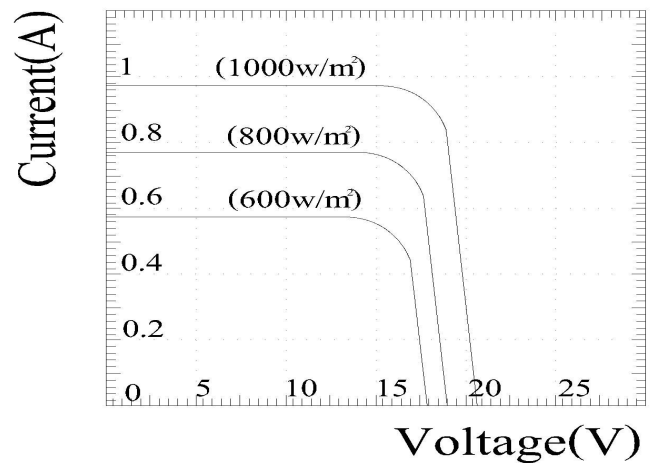
Dimension	663 x 231 x 38 mm.
Weight	2.2 kg.
Dimension tolerance	± 1 mm.
Size of carton	1150 x 1420 x 1346 mm.
Junction Box	Degree of protection: IP65 and compatibility with 2.5 - 4.0 mm cross section cable size.
Diode	Silicon or Schottky By - pass diode for every 16 Pcs connection.
Frame	Anodized Aluminum.
Construction structure	Front: High light transmission tempered glass with 3.20 mm thickness, or Normal glass as option. Back: Weather proof back sheet material. Laminated Material: EVA.
Package	70 modules per carton.

Module drawing diagram



IV - curves

Irradiance
(1,000 W/m², 800 W/m², and 600 W/m²)



Model: 15W

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