

Renewable Energy: Photovoltaic Modules



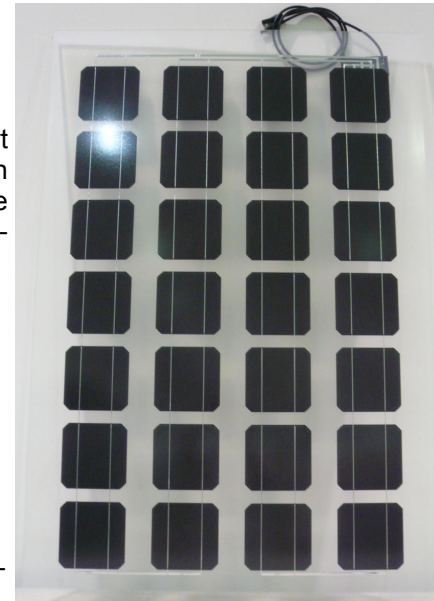
110Watts

Special custom designed Single (Mono) Crystalline PV modules

Ekarat Solar's compact 110 Watts PV module is produced under a stage of the art automatic assembly machines to ensure a consistency and reliability of production quality. This special custom designed PV module is commonly used for wide range applications such as Roof, Street Lamppost, Garden Lamppost, and building integrated design.

High efficiency module, more than 7.2 %, is a result of solar cell's superior power output, which has been developed by our own solar cell factory. Moreover, other component materials are also selected to comply with international standards such as IEC and TIS. These create a customer's confidence ensured with a manufacturing based 20 years limited warranty.

- Low iron tempered glass allows a high light transmission rate with a great robustness.
- EVA encapsulate sheet, back sheet 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.
- Bypass diode included in promptly provided junction box is to prevent the power dropped by partial shading.



Electrical Characteristics

Model No.	ES1110
Maximum power (Pmax)	110 W
Power tolerance	± 3%
No. of connected cells	28
Voltage of Pmax (Vmp)	13.92 V
Current at Pmax (Imp)	7.9 A
Short - Circuit current (Isc)	8.4 A
Open - Circuit voltage (Voc)	17.3 V
Temperature Coefficient of Voc	-0.0968 V / °C
Temperature Coefficient of Isc	+ 2.4 mA / °C
Temperature Coefficient of power	-0.4507 % / °C
Maximum series fuse rating	15 A
Maximum voltage system	1000 V

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Specifications subject to technical changes

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Mechanical Characteristics

Dimension	972 x 1483 x 4 mm.
Weight	15 kg.
Dimension tolerance	± 1 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 14 cells connection.
Frame	None
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.

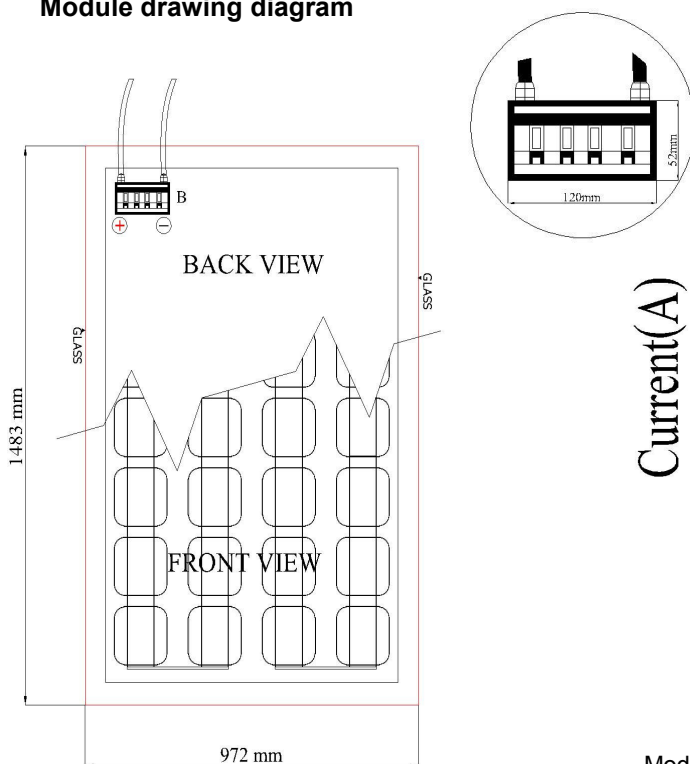
Qualification and testing

ISO 9001 for quality management system.
TIS 1843 : Thailand Industrial Standard equivalents to IEC 61215.

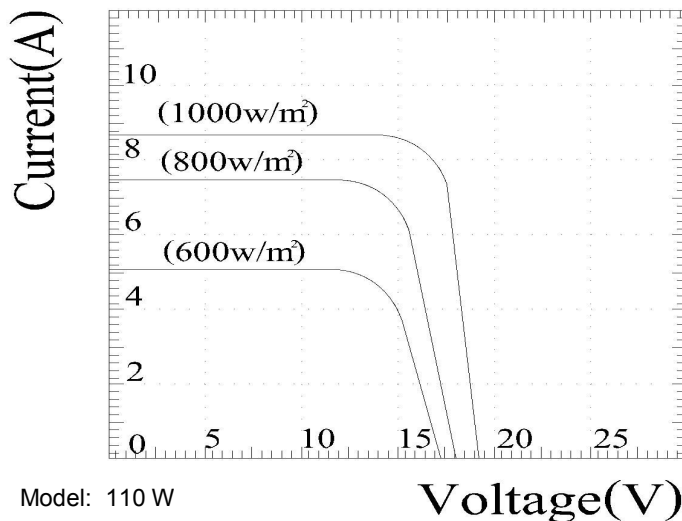


TIS-1843

Module drawing diagram



IV - curves
Irradiance
1,000 W/m², 800 W/m², and 600 W/m²



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 1kW/m² (1sun) at spectral distribution of AM1.5 (ASTME892-87 global spectral irradiance);
- Cell temperature of 25°C.

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