SHARP

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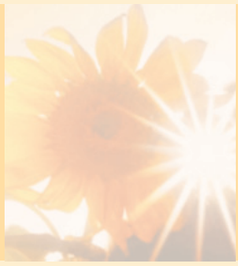
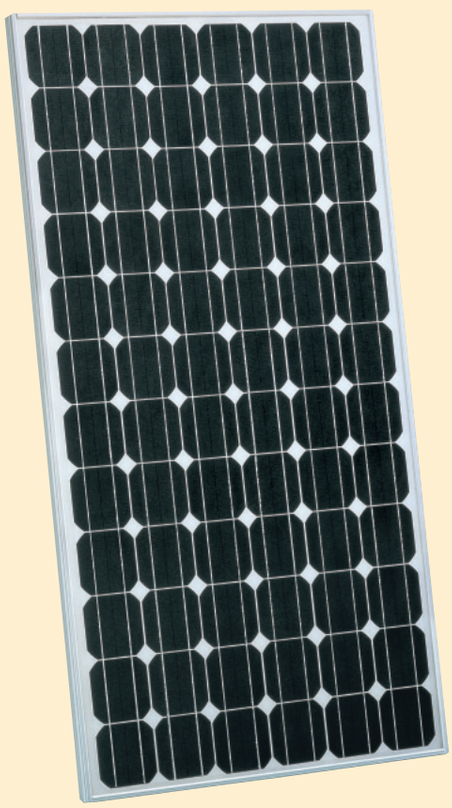
NTR5E3E / NT175E1
175 W

Photovoltaics module monocrystalline



MONOCRYSTALLINE SILICON PHOTOVOLTAICS MODULE WITH 175 W MAXIMUM POWER

Sharp's NTR5E3E / NT175E1 photovoltaics module is designed for large electrical power requirements. Based on the technology of crystal silicon solar cells cultivated for over 40 years, this module has superb durability to withstand rigorous operating conditions and is suitable for grid connected systems.



Features

- High-power module (175 W) using 125.5 mm square monocrystalline silicon solar cells with 13.5 % module conversion efficiency
- Photovoltaic module with bypass diode minimizes the power drop caused by shade. Textured cell surface to reduce the reflection of sunlight and BSF (Black Surface Field) structure to improve cell conversion efficiency: 16.4 %
- Using white tempered glass, EVA resin, and a weather-proof film along with an aluminium frame for extended outdoor use
- DC 24 V system and high-voltage output for grid-connected system
- Output terminal: Lead wire with waterproof connector
- NTR5E3E: manufactured in Japan
  NT175E1: manufactured in UK
  Apart from the place of manufacture the models are identical in construction

The reference image above shows a
23 kWp pv system from NET in Salzburg.

Specifications **NTR5E3E / NT175E1**

Cell	Monocrystalline silicon solar cells, 125.5 mm square
No. of cells and connections	72 in series
Application	DC 24 V system
Maximum system voltage	DC 1,000 V
Series fuse rating	10 A
Nominal power	175 W
Dimensions	1,575 x 826 x 46 mm
Weight	17.0 kg
Type of output terminal	Lead wire with connector

Absolute maximum ratings

Parameters	Rating	Unit
Operating temperature	-40 to +90	°C
Storage temperature	-40 to +90	°C
Dielectric voltage withstood	2,200 max.	V DC

Temperature coefficients

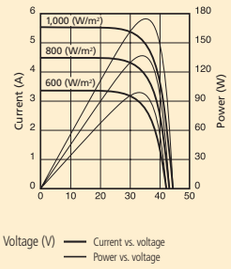
αP_m	-0.485% / °C
αI_{SC}	+0.053% / °C
αV_{OC}	-156 mV / °C

Electro-optical characteristics

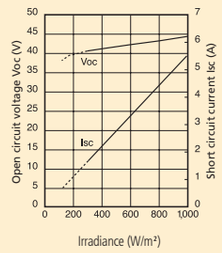
Parameters	Symbol	Min.	Typ.	Unit	Conditions
Open circuit voltage	V_{oc}	–	44.4	V	Standard test conditions (STC)
Maximum power voltage	V_{pm}	–	35.4	V	
Short circuit current	I_{sc}	–	5.4	A	Irradiance: 1,000 W/m²
Maximum power current	I_{pm}	–	4.95	A	
Maximum power	P_m	166.3	175.0	W	AM 1.5
Encapsulated solar cell efficiency	η_c	–	16.4	%	Module temperature: 25 °C
Module efficiency	η_m	–	13.5	%	

Characteristics

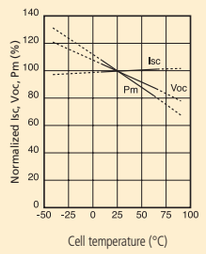
Current, power vs. voltage characteristics (cell temperature: 25 °C)



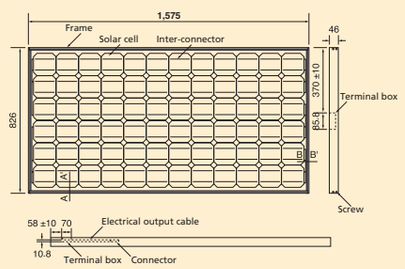
Open circuit voltage, short circuit current vs. irradiance characteristics (cell temperature: 25 °C)

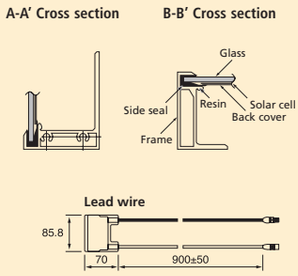


Normalized I_{SC}, V_{OC}, P_m vs. cell temperature characteristics



Outline dimensions





Applications

- Grid connected residential systems
- Office buildings
- Solar power stations
- Solar villages
- Villas, mountain cottages
- Pumps
- Lighting equipment
- Traffic signs
- Radio relay stations
- Beacons
- Telemeter systems
- Telecommunication systems

SHARP

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