PERMIT

SHARP

NU series
185 W | 180 W
175 W | 170 W
Monocrystalline silicon photovoltaic modules



SAY YES TO SOLAR POWER!

Because it protects the climate.

Innovation from the photovoltaic pioneer

Sharp, as a solar specialist with 50 years of experience in photovoltaics (PV), makes an essential contribution towards groundbreaking advancements in solar technology.



The NU Sharp series of photovoltaic modules are designed for applications with a high power requirement. These monocrystalline quality modules produce a sustained, reliable yield even under demanding deployment conditions.

All Sharp NU series modules offer optimal system integration – both technically and economically – and are suitable for installation in grid-coupled systems.

Product features

- High performance photovoltaic modules made of monocrystalline (155.55 mm²) silicon solar cells with module efficiency of up to 14.1 %
- Bypass diodes to minimise power loss with shading
- Textured cell surface for especially high current yields
- BSF structure (Black Surface Field) for optimising cell efficiency
- Use of annealed glass, EVA plastic and weather-protection foil, as well as an anodised aluminium frame with water drainage holes for prolonged use
- Output: connection cable with water-protected plug connector

Quality from Sharp

Sharp Solar quality sets standards. Permanent monitoring guarantees consistent high quality. Each module is optically, mechanically and electrically tested. You recognise it from the Original Sharp label, the serial number and the Sharp guarantee.

- 2 year product guarantee
- 10 year performance guarantee for a 90 % power output
- min. 20 year performance guarantee for a 80 % power output

The detailed guarantee conditions and further information is available at **www.sharp-world.com**

Brief information for the installer

- 155.55 mm x 155.55 mm monocrystalline solar cell
- 48 cells in series
- 2,400 N/m² mechanical load-bearing capacity (245 kg/m²)
- 1,000 V DC maximum system voltage
- CE tested for your safety

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10 MAY 2011

Mechanical data

Cell	Monocrystalline (156.55 mm)² Sharp silicon solar cells
Number and connection of cells	48 in series
Dimensions	1.318 x 994 x 46 mm (1.31 m²)
Weight	16 kg
Connection type	Cable with plug connector (MC-3)

Limit values

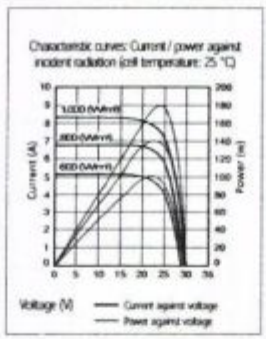
Storage humidity	up to 90	%
Operating temperature (cell)	–40 to +90	°C
Storage temperature	–40 to +90	°C
Maximum system voltage	1,000	VDC
Maximum mechanical load	2,400	N/m²

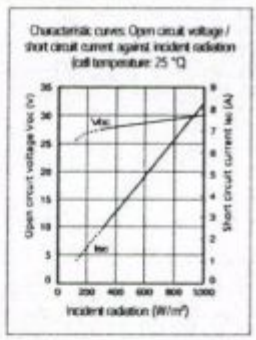
Electrical data

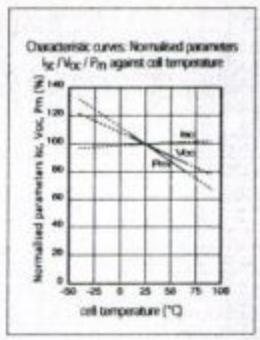
Module production in the EU		**NU-185 (E1)**	**NU-180 (E1)**				
Module production in Japan		**NU-S5 (E3E)**	**NU-S0 (E3E)**	**NU-S0 (E32)**	**NU-R5 (E32)**	**NU-R0 (E3E)**	
Rated power		185 W_p	180 W_p	180 W_p	175 W_p	170 W_p	
Open circuit voltage	V_{oc}	30.2	30.0	30.0	29.8	29.4	V
Short circuit current	I_{sc}	8.54	8.37	8.23	8.29	8.37	A
Voltage at maximum power	V_{pm}	24.0	23.7	23.7	23.2	22.4	V
Current at maximum power	I_{pm}	7.71	7.6	7.6	7.55	7.60	A
Module efficiency	η_m	14.1	13.7	13.7	13.4	13.0	%
Temperature coefficient - open circuit voltage	αV_{oc}	-104	-104	-104	-104	-104	mV/°C
Temperature coefficient - short circuit current	αI_{sc}	+0.053	+0.053	+0.053	+0.053	+0.053	%/°C
Temperature coefficient – power	αP_m	-0.485	-0.485	-0.485	-0.485	-0.485	%/°C

The electrical data apply under standard testing conditions (STC): Incident radiation 1,000 W/m² mit Lichtspektrum AM 1.5 with AM 1.5 light spectrum at a cell temperature of 25 °C. The power output is subject to a manufacturing tolerance of – 5 % and + 10 %. The modules manufactured in Europe and Japan are identical.

Characteristic curves





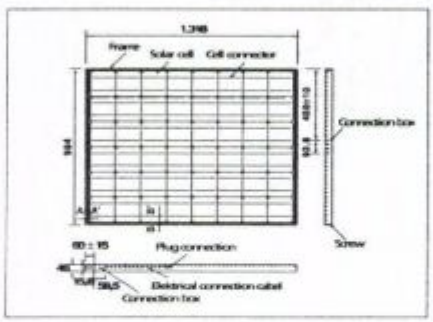


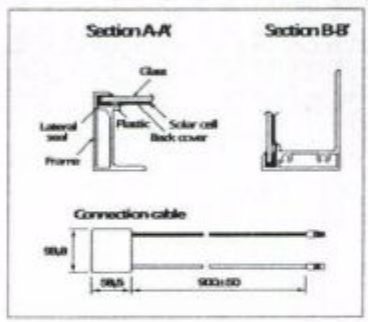
Applications

- Grid-coupled PV systems
- Grid-independent systems
- On-roof PV systems (roof parallel)
- On-roof PV systems (on stilts)
- Open air PV systems

Please read our extensive installation guide carefully prior to installing the photovoltaic modules.

External dimensions





Note

Modifications to technical data are possible without prior notice. Please request the current datasheets from Sharp before using Sharp products. Sharp assumes no responsibility for damage caused to equipment fitted with Sharp products based on unverified information.

The specifications may deviate slightly and are not guaranteed. Installation and operating instructions are to be obtained from the relevant manuals or can be downloaded from **www.sharp-world.com**

This module should not be connected directly to a load.

The reference figure on the front page shows a 12.6 kWp system at Otsmet-Solartechnik in Sekungen.

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