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TECHNICAL INFORMATION

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Module	Voc	Isc	Pmp	Vmp	Imp	FF
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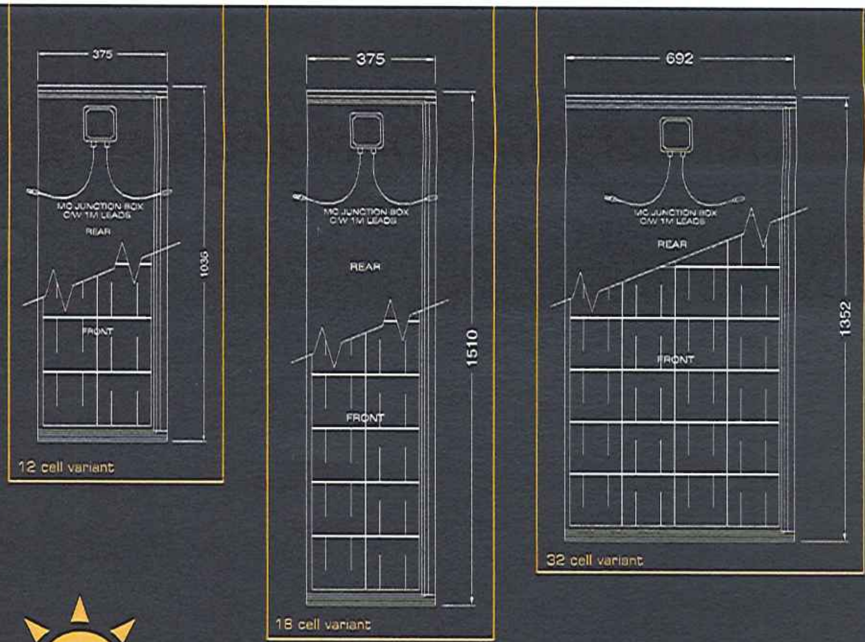
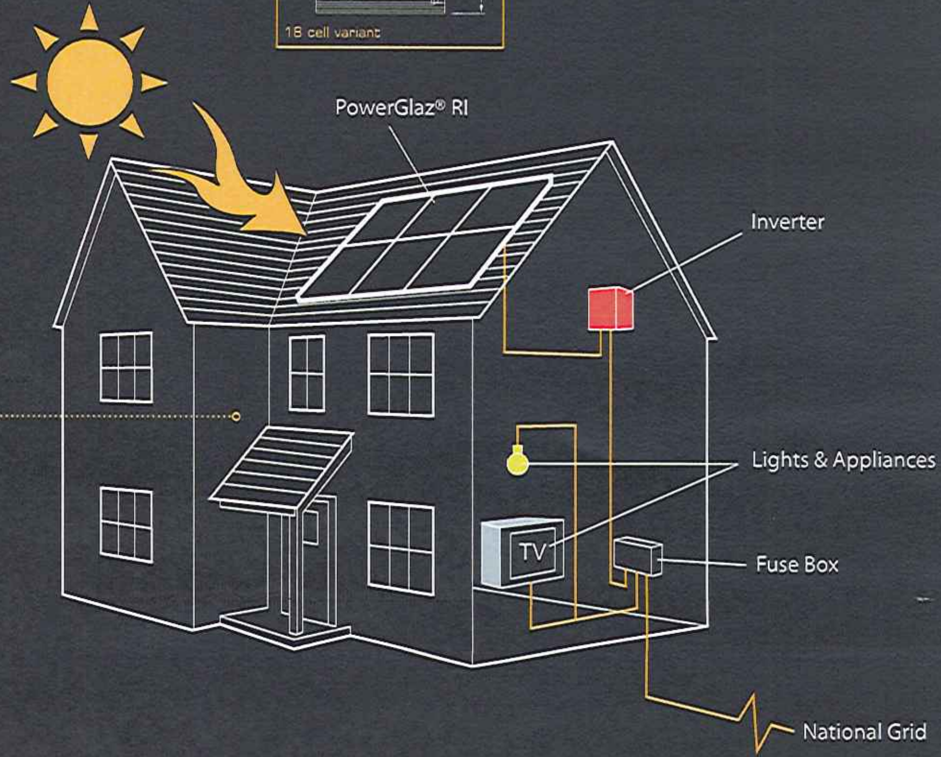
RI 6(18)	11	8.2	66	8.6	7.7	0.75
RI 6(12)	7.4	8.2	45	5.8	7.7	0.75

PowerGlaz® Roof Integrated module dimensions

Module	Length (mm)	Width (mm)	Weight (Kg)
RI 6(32)	1352	692	11.5
RI 6(18)	1510	375	7
RI 6(12)	1036	375	5



How does it work?



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PowerGlaz RI® Roof Integrated Solar Tiles by Romag.

Why choose the PowerGlaz® RI system?

Solar energy offers pollution free, silent, renewable energy which does not produce any 'green-house' gases.

The PowerGlaz® RI system is Romag's answer to providing cost effective solar energy for domestic houses. It provides the house builder with a complete roof integrated solar tile system. The system combines Romag's experience in producing high quality PowerGlaz® PV products with a market proven fixing system which is suitable for roof integration compatible with most slate and tile systems or as a 'total roof' system.

The PowerGlaz® RI system package includes:

- High Efficiency PowerGlaz® RI 6 series polycrystalline PV modules
- Market proven roof integration system factory fitted to the module for easy site assembly
- All associated fixing clips
- Factory fitted connectors for interconnecting the solar tiles
- Inverter and associated cabling for converting Direct Current (DC) into Alternating Current (AC)

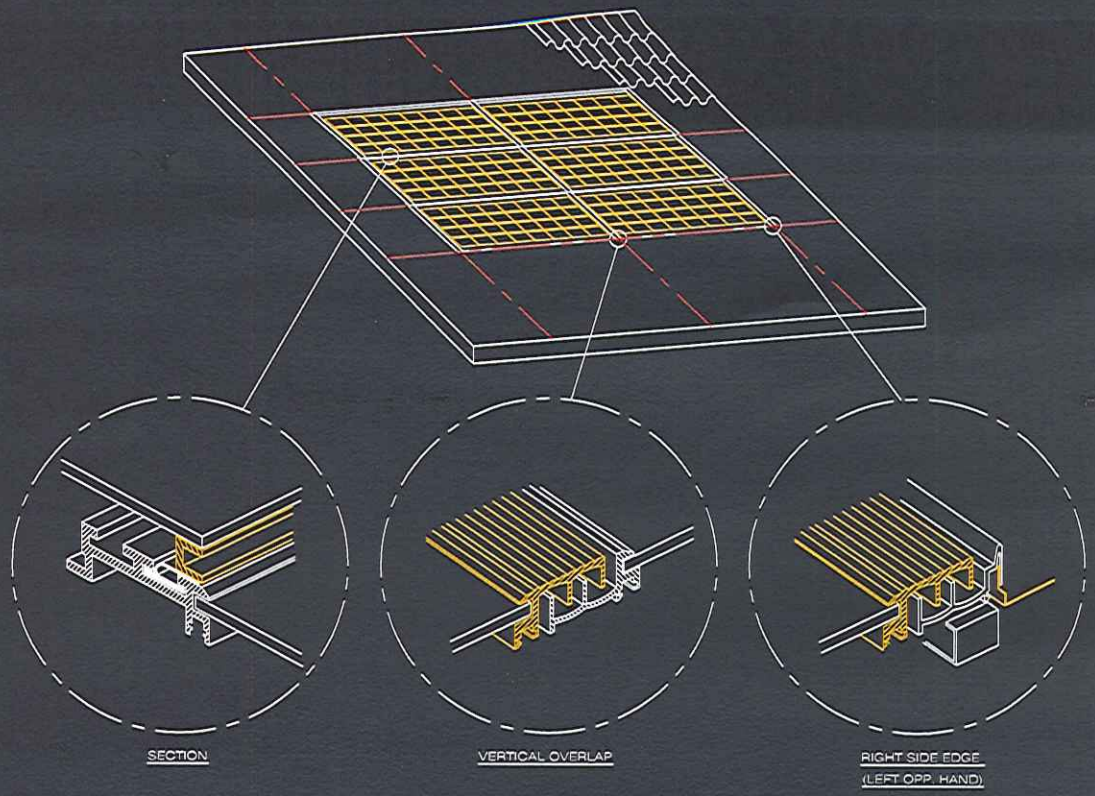
The PowerGlaz® RI 6(32)P module converts daylight into DC electricity and when converted into AC, is used by the householder in preference to energy drawn from the National Grid, thus providing cheap, clean, green electricity.

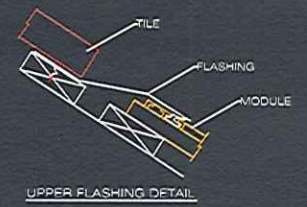
Can the 'Solar' electricity be stored for night use?

It is not necessary to store electricity; the system is 'grid connected' allowing excess energy to be 'stored' in the National grid and drawn back from the grid at night. From April 2010 the UK government is to introduce 'Feed in Tariffs' (FIT) which will enable households to 'sell' electricity back to the electricity supplier at a much higher rate than electricity purchased from the suppliers (subject to meeting Micro-generation Certification Scheme (MCS) requirements). This enables the system to be potentially self financing.

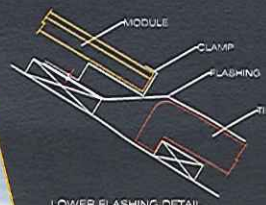
Will the house be worth more money?

The Energy Savings Trust have conducted research indicating that renewable energy can help to increase the house value by up to 10%. This is for an investment of less than 5%.

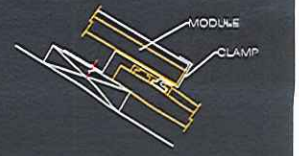




UPPER FLASHING DETAIL



LOWER FLASHING DETAIL



PANEL OVERLAP DETAIL

Mechanical data

Cell	Monocrystalline (156.5 mm)² Sharp silicon solar cells
Quantity and wiring 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

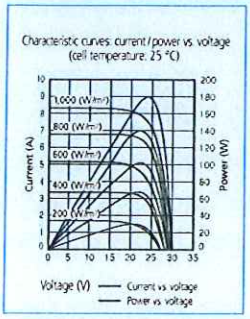
Operating temperature (cell)	– 40 to + 90	°C
Storage temperature	– 40 to + 90	°C
Maximum system voltage	1,000	V DC
Maximum mechanical load	2,400	N/m²
Over-current Protection	15	A

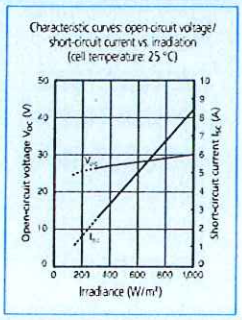
Electrical data

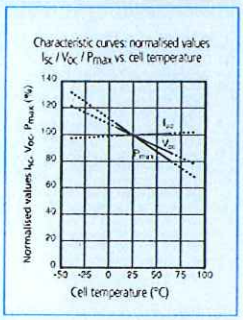
Made in EU / Made in Japan		NU-185 (E1) NU-S5 (E3E)	NU-180 (E1) NU-S0 (E3E)	NU-R5 (E32)	NU-R0 (E3E)	
Maximum power	P_{max}	185 W_p	180 W_p	175 W_p	170 W_p	
Open-circuit voltage	V_{oc}	30.2	30.0	29.8	29.4	V
Short-circuit current	I_{sc}	8.54	8.37	8.29	8.37	A
Voltage at point of maximum power	V_{mpp}	24.0	23.7	23.2	22.4	V
Current at point of maximum power	I_{mpp}	7.71	7.6	7.55	7.60	A
Module efficiency	η_m	14.1	13.7	13.4	13.0	%
NOCT		47.5	47.5	47.5	47.5	°C
Temperature coefficient – open-circuit voltage	αV_{oc}	– 104	– 104	– 104	– 104	mV / °C
Temperature coefficient – short-circuit voltage	αI_{sc}	+ 0.053	+ 0.053	+ 0.053	+ 0.053	% / °C
Temperature coefficient – power	αP_{max}	– 0.485	– 0.485	– 0.485	– 0.485	% / °C

The electrical data applies under standard test conditions (STCs): irradiation 1,000 W/m² with light spectrum AM 1.5 and a cell temperature of 25 °C. The rated electrical characteristics are subject to a manufacturing tolerance of – 5 % / + 10 %. NOCT conditions: irradiation of 800 W/m², ambient temperature of 20 °C and wind speed of 1 m/sec. The modules manufactured in Europe and Japan are identical in construction.

Characteristic curves NU-180 (E1)





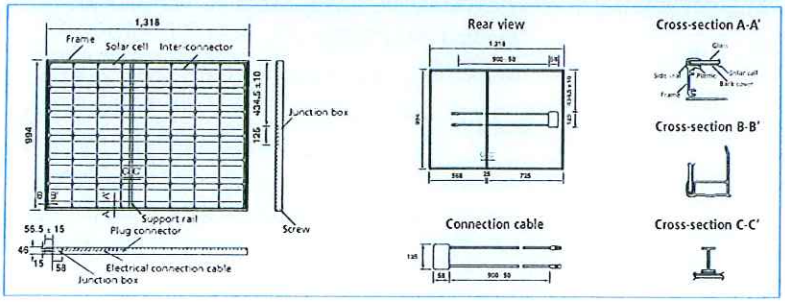


Applications

- On-grid PV systems
- Off-grid PV systems
- On-roof PV systems
- Ground-mounted PV systems

Please read our detailed installation manual carefully before installing the photovoltaic modules.

Exterior dimensions



Note

Technical data is subject to change without prior notice. Before using Sharp products, please request the latest data sheets from Sharp. Sharp accepts no responsibility for damage to devices which have been equipped with Sharp products on the basis of unverified information.

The specifications may deviate slightly and are not guaranteed. Installation and operating instructions are to be found in the corresponding handbooks, or can be downloaded from **www.sharp.eu**

This module should not be directly connected to a load.

Sharp Energy Solution Europe
a division of Sharp Electronics (Europe) GmbH
Sonninstrasse 3, 20097 Hamburg, Germany
Tel: + 49 (0) 40 / 23 76 - 0 · Fax: + 49 (0) 40 / 23 76 - 21 93
www.sharp.eu

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SolarInfo.seb@sharp.eu
Central & Eastern Europe
SolarInfo.scee@sharp.eu
Denmark
SolarInfo.dk@sharp.eu
France
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Scandinavia
SolarInfo.sen@sharp.eu
Spain & Portugal
SolarInfo.es@sharp.eu
Switzerland
SolarInfo.ch@sharp.eu
United Kingdom
SolarInfo.uk@sharp.eu

SHARP

The reference image on the front page shows a 12.6 kWp system of Osmer-Solartechnik in Grasberg, Germany.

SolarNU_48_E0409

SHARP

NU Series (48 cells)

185 W | 180 W

175 W | 170 W

Monocrystalline silicon photovoltaic modules

SAY YES TO SOLAR POWER!

Because it protects the climate.

Innovations from a photovoltaic pioneer

As a solar specialist with 50 years' experience in photovoltaics (PV), Sharp makes significant contributions to groundbreaking progress in solar technology.

Sharp photovoltaic modules in the NU series are designed for applications with high power requirements. These quality monocrystalline modules produce a continuous, reliable yield, even under demanding operational conditions.

All Sharp NU series modules offer system integration which is optimal both technically and economically, and are suitable for installations in on and off-grid PV systems.

Brief details for the installer

- 156.5 mm x 156.5 mm monocrystalline solar cells
- 48 cells in series
- 2,400 N/m² mechanical load-bearing capacity (245 kg/m²)
- 1,000 V DC maximum system voltage
- IEC/EN 61215, IEC/EN 61730, Class II (VDE: 40021391)

Product features

- High-performance photovoltaic modules made of monocrystalline (156.5 mm)² silicon solar cells with module efficiencies of up to 14.1 %.
- Bypass diodes which minimise the loss in output when shading occurs.
- Textured cell surface for particularly high electricity yields.
- BSF structure (Back Surface Field) to optimise cell efficiency.
- Use of tempered white glass, EVA plastic, and weather protection film, as well as an anodised aluminium frame with drainage holes for long-term use.
- Output: connection cable with waterproof plug connector.

Quality from Sharp

Benchmarks are set by the quality standards of Sharp Solar. Continual checks guarantee a consistently high level of quality. Every module undergoes visual, mechanical, and electrical inspection. This is recognisable by means of the original Sharp label, the serial number, and the Sharp guarantee:

- 2 year product guarantee
- 10 year performance guarantee for a power output of 90 %
- 25 year performance guarantee for a power output of 80 %

The detailed guarantee conditions and additional information can be found at www.sharp.eu.

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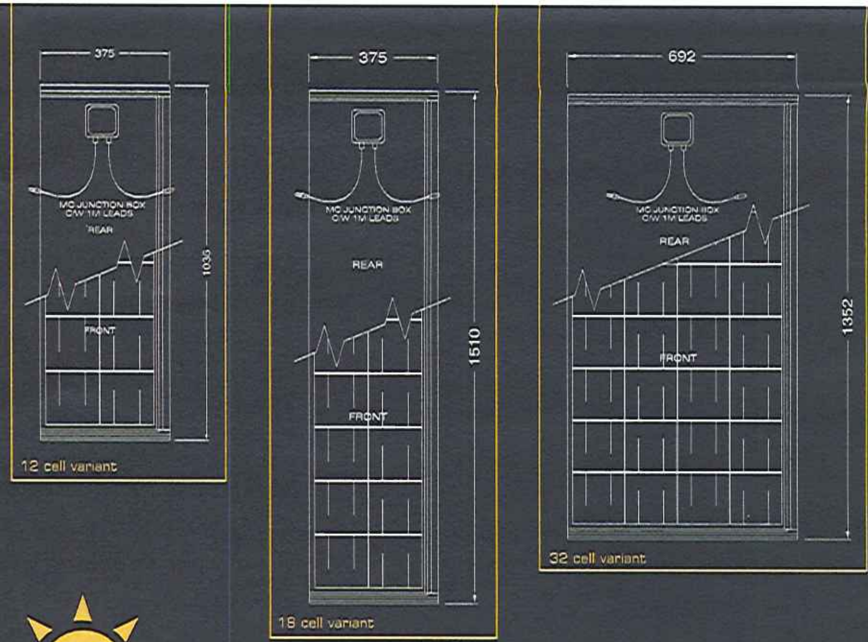

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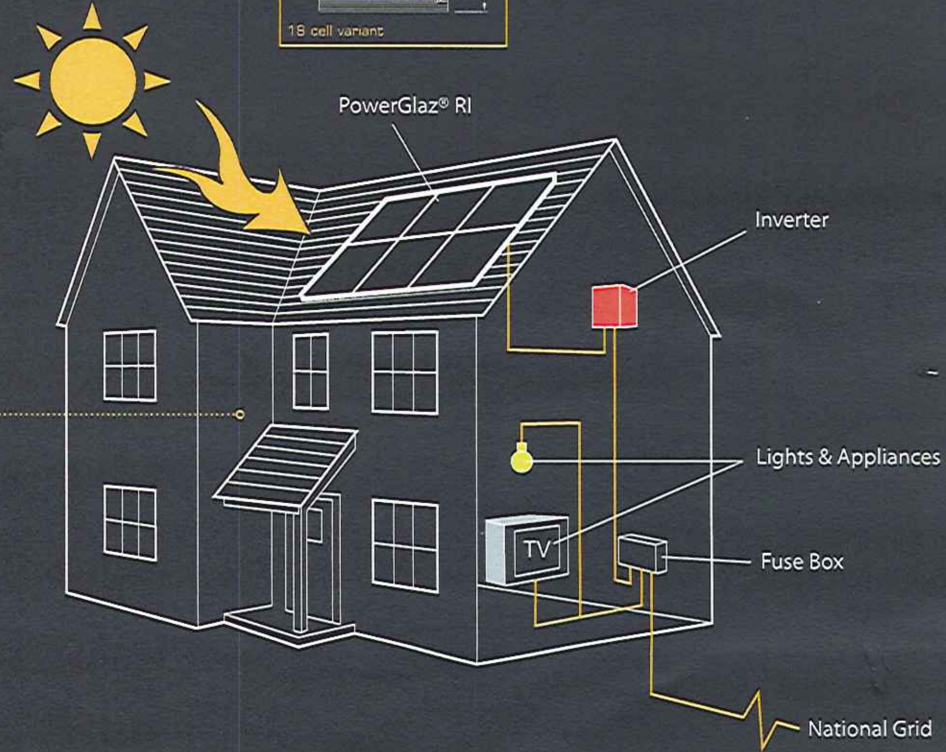

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