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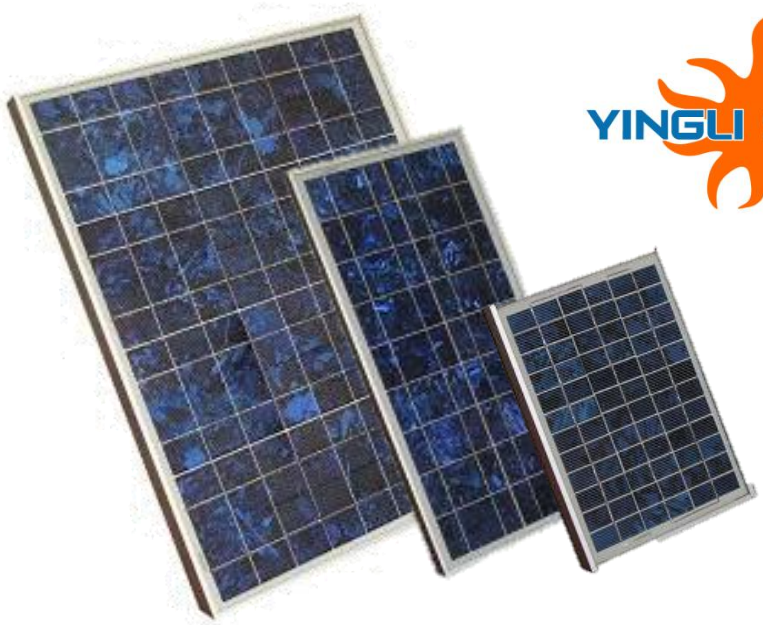
Polycrystalline Solar Panels - YINGLI



YINGLI SOLAR

10 Watt Panel – 06001JP01

20 Watt Panel – 06001JP02

30 Watt Panel – 06001JP03

40 Watt Panel – 06001JP04

60 Watt Panel – 06001JP05

85 Watt Panel – 06001JP06

130 Watt Panel – 06001JP07

The Yingli range of polycrystalline solar panels are superb value for money, offering a free 12V power source for both professional and DIY applications. The panels are constructed with a heavy duty anodised aluminium frame that provides high wind resistance and convenient mounting access. Cells are laminated between high transmissivity, low iron, 3mm tempered glass and a sheet of TPT material and finally two sheets of EVA to prevent moisture entering the module.

CHARACTERISTICS

- Installation holes for standard bracket systems and mounting are located to the rear of the frame. Please see accessories on our web site for more mounting systems.
- Bypass diodes on panels 30W and above to improve shadow tolerance.
- Waterproof versatile junction box provides flexibility of connections.
- 60W, 85W and 130W panels come fitted with approximately 1m length positive and negative cables fitted with Type 3 Multi-contact connectors. Please see accessories on our web site for suitable extension cables.
- Cables are easy to remove and replace if necessary.
- 10W to 40W panels are supplied complete with approximately 1m of 2-core cable, see picture to right.
- Panels will require blocking diodes if not used with a regulator.
- Thirty-six polycrystalline cells are connected in series for normal 12V charging.
- Panels are manufactured in accordance with IEC 61215 and come with 25 years limited output warranty.

Dear Customer

Thank you for buying a Solar Panel from us. We aim to make solar simple and safe, so please take the time to read this leaflet and any other information that comes with your panel and/or charge controller before installation.

Fran Tattersall
Director

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Technical Data

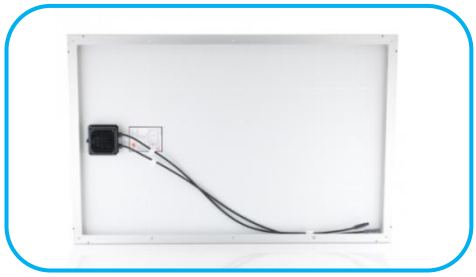
Please see information below for additional technical details.

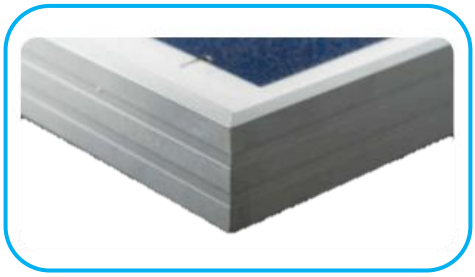
Electrical Characteristics	10W	20W	30W	40W	60W	85W	130W
Typical maximum power (Wp)	10	20	30	40	60	85	130
Open circuit voltage (Voc)	21.0	22.0	21.0	22.0	22.0	22.0	22.0
Short circuit current (Isc)	0.66	1.24	2.00	2.50	3.80	5.60	8.44
Optimum operating voltage (Vmp)	17.5	17.5	17.5	17.5	17.5	17.5	17.5
Optimum operating current (Imp)	0.57	1.14	1.70	2.30	3.40	4.86	7.43

Standard Parameters	
Nominal operating cell temperature (NOCT)	$46^{+/-\ 2o}C$
Current temperature coefficient (Isc)	+0.10%/^{o}C
Voltage temperature coefficient (Voc)	-0.38%/^{o}C
Power temperature coefficient 9Wp)	+0.47%/^{o}C
Edge grounding	<=1ohm
Wind resistance	2400Pa
Maximum system voltage	1000V

This information represents the output of typical panels in 12V configuration. This data is based on measurements made in accordance with Standard Test Conditions (STC) 1000W/m^{2}, AM 1.5 with a cell temperature of 25^{o}C.

Standard Parameters	10W	20W	30W	40W	60W	85W	130W
Weight	1.3Kg	2.3Kg	3.9Kg	4.3Kg	6.5Kg	8.4Kg	16Kg
Length of panel (mm)	350	525	745	540	770	1010	1470
Fixing holes distance (mm)	170	265	373	280	290	510	870
Width of panel (mm)	285	350	350	660	660	660	680
Fixing holes distance (mm)	251	315	315	626	626	626	648
Depth of panel (mm)	25	25	25	25	35	35	50
Polycrystalline cells	36	36	36	36	36	36	36





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Installation Information

ELECTRICAL SAFETY

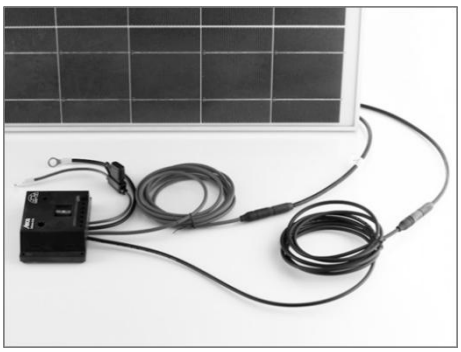
- Observe polarities when connecting solar panels and batteries.
- Photovoltaic panels produce electricity immediately when exposed to light, so it is recommended that you cover the front of the solar panel if outdoors when installing to help avoid potential for shocks.
- The voltage and current produced from individual PV modules is generally low, but touching live wiring or terminals can cause shock and burns. This danger increases when modules are connected together for higher voltage and current.
- Battery charging can produce flammable gasses and vapours. Always ensure the batteries are in a vented environment.
- Do not allow water to come into contact with wire connections, charge regulator or battery at any time.
- Do not short circuit either the panel or the battery.

HANDLING PRECAUTIONS

This product has been designed to be robust under normal conditions. However, we recommend that the module is carefully handled and stored at all times and that the following precautions are taken:

- Avoid handling the front surface of the PV modules.
- Forceful impacts to the front or back surfaces can cause irreparable damage
- The modules should be kept flat and should never be twisted or bent.
- Never disassemble the module.
- Drilling or welding the frame is not recommended.
- Never use a device that concentrates the light on the solar panel as this could seriously damage the solar cells.
- Always use electrically insulated tools.
- Always use a suitable charge regulator to prevent overcharging and for reverse current protection.

JUNCTION BOX and WIRING



The modules are designed for 12V applications and as such output cables should be appropriate for voltage and outdoor applications. After connections have been made, coat exposed terminal connections with silicon to protect from corrosion, or other suitable method.

The junction box is fixed with a high quality silica gel which ensures ageing resistance and high sealing performance.

- When wiring to the charge regulator first connect the regulator to the battery and then connect the controller to the panel. It is good practice to fit a fuse between the controller and the battery.

Refer to the instructions that come with your charge controller for more information.

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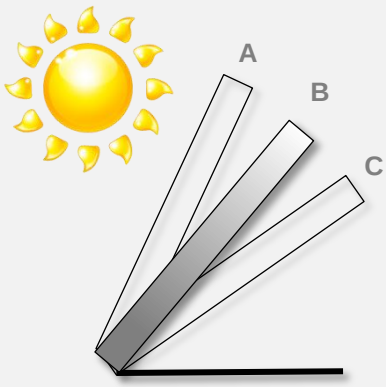
Installation Information

INSTALLATION

The position of your solar panel should be considered carefully, allowing for the physical requirements of its mounting, together with its proximity to where you will fit the charge regulator.

- You should leave a minimum clearance gap of 10mm beneath the panel, for heat dissipation from the panel.
- Solar panels can be mounted at any angle and are commonly mounted horizontally for practical reasons, particularly on motor caravans. However, by mounting them at an angle and directed at the sun can improve efficiency. The optimum angle equates to the angle of latitude for your particular location, which for the UK would be 50° (see diagram right).
- Minimising the distance between the regulator and the battery will help reduce any voltage drop.
- After installation and during use, always be mindful of the sunlight reaching the panel and when parked up or moored and ensure that the panel will not be shaded.
- It is good practice to keep the panel clean from dirt and debris at all times and it should be cleaned using a mild solution of soap and water.
- Select Solar supplies a wide range of mounting and cable accessories; please see our web site for full details.



10mm CLEARANCE

A – 65° optimum angle for winter if adjustable

B – 50° optimum angle if fixed position

C – 35° optimum angle for summer if adjustable

ACCESSORIES

Please see web site for full details.

Code 08003BS01

Code 08003BS02

Code 08003BS04

Code 08001MC11

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