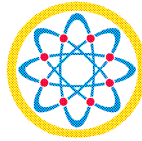


CIGS Product information
6W, 9W, 15W, 30W, 45W, 60W



SHURJOENERGY

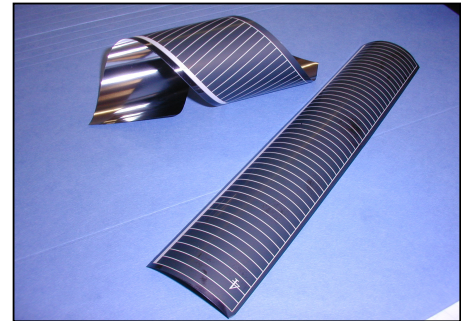
12V CIGS PHOTOVOLTAIC MODULE RANGE

Models:

SE06-H15, SE09-J15, SE15-I15, SE30-J14, SE45-J14, SE60-K16

General:

Solar cells directly convert sunlight into electricity by means of the photovoltaic effect. This occurs when photons are absorbed by a solar cell which generates a voltage across the terminals. Cells are connected in series within the module to provide sufficient voltage to operate your system or charge a battery. Modules can be connected in series and parallel to increase the system power. This solid state process provides a clean, silent, non-polluting and reliable power source of electrical energy.



Shurjo Energy high efficiency photovoltaic modules are made of Copper Indium Gallium diSelenide, (“CIGS”) which represents the latest advance in thin film solar technology.

CIGS is a crystalline material, so provides consistent power and does not degrade when exposed to sunlight – unlike amorphous PV modules. Furthermore, studies have shown that CIGS material actually yields more energy per kW installed, compared to traditional crystalline products, due to better performance in low light. The toughened glass, along with a three layer Tedlar® backing, makes for a robust lightweight solar module.

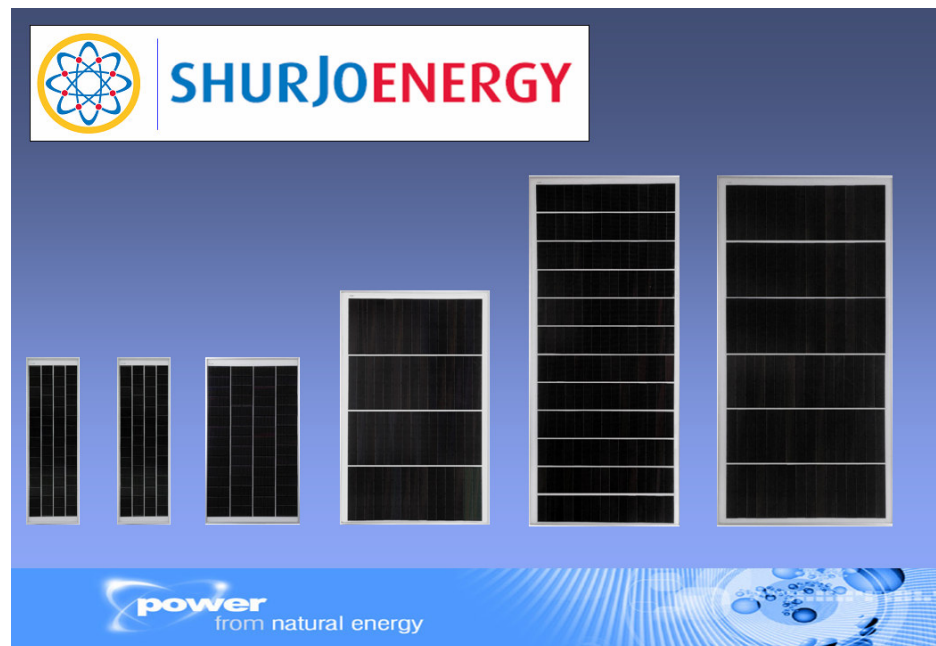
Features:

- Ultra-tough 3.2 mm toughened and textured glass
- 3 layer tedlar® with aluminium interlayer
- Reinforced anodized aluminium frame
- Pre-drilled frame for easy mounting
- High quality junction box with diode protection
- 10 year limited warranty < 10W*
- 20 year limited warranty >10W*
- Power tolerance +/- 10%
- Quality: Manufactured to IEC 61646



Applications:

- Grid connect & building integrated
- Rural Electrification
- Water pumping
- Battery charging
- Lighting systems & lanterns
- Marine and Automotive



*** Warranty: 20 year against manufacturing defects & to 80% of rated power, providing panel is undamaged**

CIGS product information **6W, 9W, 15W, 30W, 45W, 60W**

Specifications

	SE06-H15	SE09-J15	SE15-I15	SE30-J14	SE45-J14	SE60-K16
Cell	Crystalline CIGS (Copper Indium Gallium diSelenide) onto thin film stainless steel foil					
Characteristics (+/- 10%)						
Open circuit voltage (VOC)	27.5V	28.5V	28.0V	27.3V	27.1V	26.4V
Optimum operating voltage (Vmp)	17.6V	18.9V	18.5V	18.1V	17.9V	17.6V
Short circuit current	0.48A	0.58A	1.05A	2.16A	3.24A	4.2A
Optimum operating current (Imp)	0.35A	0.47A	0.81A	1.69A	2.49A	3.42A
Power at STC (Pmax)	6W	9W	15W	30W	45W	60W
Temperature coefficient for power & voltage %/°C	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5
Note: Modules, when first used, need two days of full sun exposure before reaching optimum performance						

Limits

Operating temperature	-40 to +85°C					
Maximum system voltage	48V DC	48V DC	500V DC	500V DC	500V DC	500V DC

Output

Type of output terminal	Potted junction box with 3 meter flying lead					Junction box
Cable	0.5 mm ² - 4 amp - 1100V - 6.1mm overall diameter (red +) and (black -)					None
Cable length	3m					None
Connection	Stripped wire	Stripped wire	Stripped wire	Stripped wire	Stripped wire	To Junction box

Module Dimension

Weight	1.7 kg	1.7kg	2.7kg	5.3kg	7.8kg	8.9kg
Dimension of module (a) x (b)	228 x 596 x 22 mm	228 x 596 x 22 mm	406 x 596 x 22 mm	602 x 788 x 34 mm	602 x 1186 x 34 mm	641 x 1186 x 34 mm
Mounting oblong hole	8 x 6 mm	8 x 6 mm	8 x 6 mm	8 x 7 mm	8 x 7 mm	8 x 7 mm
Module design (c) (Distance between mounting hole)	300 mm	300 mm	300 mm	400 mm	600 mm	600 mm
Module design (d) (Distance from corner)	148 mm	148 mm	148 mm	194 mm	293 mm	293 mm
Frame design (X) - (Y)	21 x 22 mm	21 x 22 mm	21 x 22 mm	34 x 22 mm	34 x 22 mm	34 x 22 mm

STC: Irradiance 1000W/m². Module temperature 25°C, AM=1.5

