

144/158/170/182W

CIGS THIN FILM SOLAR PANEL

Applications

- Hybrid systems
- On-grid systems, with or without battery backup
- Solar farms
- Standalone off-grid systems
- Water pumping

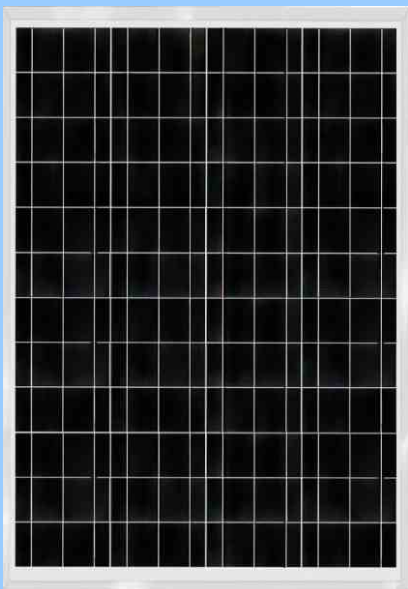
General

Shurjo Energy 2nd generation high efficiency photovoltaic panels are made using the latest Copper Indium Gallium diSelenide (CIGS) solar cells. CIGS perform well over a range of light-levels and climatic conditions, providing more KWhr per day compared to conventional silicon technology.

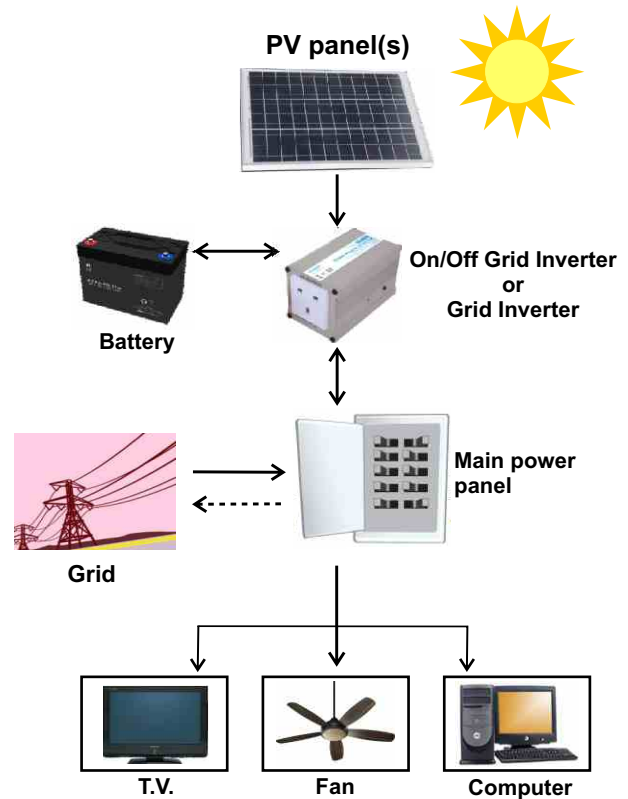
The panels provide consistent power, do not degrade when exposed to sunlight and are amongst the most efficient thin film panels in the market today.

They are constructed using the highest quality proven components, from the world's leading manufactures and have been certified by TUV.

Panels are available in the range from 6-100W for battery charging applications & from 120-182W for grid connect. Customized BIPV panels are also available.



*Panel photograph is indicative.
Appearance may change with change in design.



* ---- flow of energy for grid tie/grid tie with battery backup

Pictorial Representation

Features

- 3 layer tedlar® with aluminium interlayer
- Ultra-clear 4 mm toughened and textured glass
- Reinforced anodized aluminium frame
- Robust high quality junction box
- Pre-punched frame for easy mounting
- TUV certified to IEC 61646 & IEC 61730
- **25 years limited warranty**
5 years against manufacturing defects. 10 years to 90% of rated power, 25 years to 80% of rated power, provided panel is undamaged.

Advantages

- CIGS cells are 40x thinner than standard crystalline cells.
- This technology requires as little as 25% of energy required to produce crystalline panels.
- CIGS has a crystalline structure which is stable over a period of time giving unabated performance for many years.
- Due to its high light absorbing band-gap, it is an optimal, effective PV material.

Specifications

144/158/170/182W SOLAR PANEL SPECIFICATIONS

Electrical Characteristics

	SE144MP-CG1418W	SE158MP-DG1418W	SE170MP-EG1418W	SE182MP-FG1418W
Cell	Crystalline CIGS onto thin film stainless steel foil			
Characteristics (+/- 5%)				
Open circuit voltage (Voc)	41.6V	42.4V	43.6V	44.4V
Optimum operating voltage (Vmp)	27.2V	28.8V	30.0V	30.8V
Short circuit current (Isc)	6.6A	6.8A	6.9A	7.0A
Optimum operating current (Imp)	5.3A	5.5A	5.7A	5.91A
Power at STC* (Pmax)	144W	158W	170W	182W
Temperature coefficient for Voc/°C	-0.37%	-0.37%	-0.37%	-0.37%
Temperature coefficient for Power W/°C	-0.44%	-0.44%	-0.44%	-0.44%
NOCT**	44.5°C	44.5°C	44.5°C	44.5°C

Panel Dimension

Weight	21.8 kg
Dimension of panel (a) x (b)	874 x 1909 mm
Mounting oblong hole (g) x (f)	8 x 9.5 mm
Distance between mounting holes (c)	900 mm
Distance from corner (d)	504.5 mm
Frame thickness (x) - (y)	42 x 30 mm

Limits

Operating temperature	-40 to +85°C
Maximum system voltage	1000V DC

Output

Output terminal	TYCO 3-rail IP65 with two bypass diodes
Cable	TYCO (or similar) cable & connector supplied upon request
Serial fuse rating	10A

*STC: Irradiance 1000W/m² @ 25°C, AM=1.5

**NOCT = Irradiance level 800 W/m², spectrum AM 1.5, wind velocity 1 m/s, T_{amb} 20°C

Note: Panels, when first used, need two days of full sun exposure before reaching optimum performance.

Panels are marketed in India by PAE Ltd.

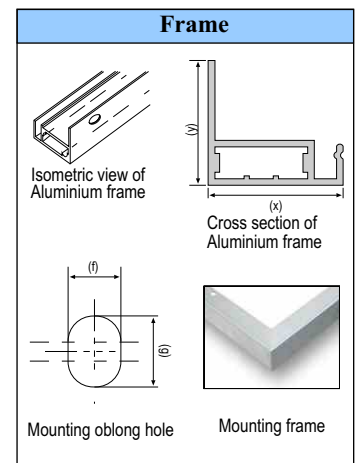
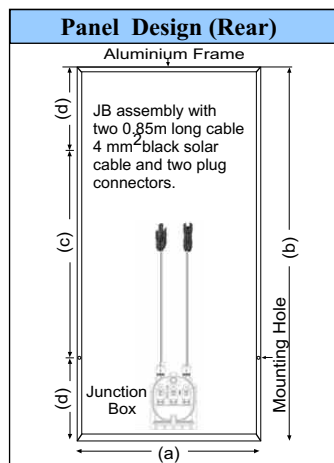
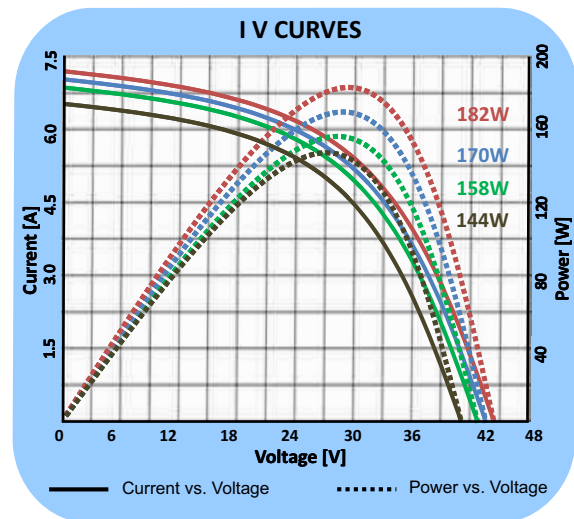
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Cells manufactured in the USA