

# PV Modules

## Grid Connected Applications

- Quality, Protective Design
- Rugged Junction Box
- Robust for Extreme Conditions
- Long Term Performance Warranties



Silicon CPV plc's range of quality flat-plate PV modules is manufactured at the Company's state-of-the-art production facility in Pakistan. The modules utilize High efficiency Polycrystalline and Monocrystalline Silicon Cells from UK with energy conversion efficiency of up to 19%.

### Superior by Design

The PV modules employ Glass-Tedlar technology. The Silicon solar cells are embedded in flexible transparent EVA to resist UV and protect the cells from etching, ensuring superb reliability whatever the operating climate. The modules are protected by highly transparent tempered glass to provide excellent protection against adverse environmental conditions such as rain, snow, hail, ice and storms. The back of the module is sealed with high quality Tedlar and the entire laminate is installed within an anodized aluminium frame to provide structural strength and ease of installation. Holes in the hollow section prevent the build up of condensation and damage to the frame from freezing.

### Electrical Connections

Electrical connection to the PV module is made via a highly durable, patented junction box. It has a dust proof and splash proof housing using securely welded joints which protect against moisture ingress and corrosion. Its excellent capacity to dissipate heat results in a lower operating temperature for improved reliability.

### Durability and Reliability

Silicon CPV plc's modules are designed to provide very long term durability with built in reliability and comply with the requirements of IEC 61215 which defines the capability of a PV module to withstand prolonged exposure within a number of defined climatic environments. (Specified in the standard).

### Quality

Quality is a core value of Silicon CPV plc and all PV modules are manufactured under the control of the Company Quality Assurance system. The QA system includes specific QC procedures which ensure that the modules are manufactured to meet the stringent testing requirements defined by the Company and the appropriate parts of IEC 61215 and IEC 61730. Samples from production line are regularly tested in Silicon CPV Plc's own laboratory using state of the art equipment and accelerated aging using climate control chambers to ensure durability.

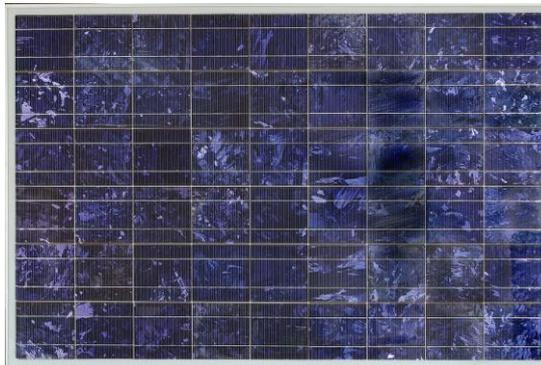
### Performance Warranties

Silicon CPV plc has such trust in its products that it expects them to operate continuously for many years and therefore confidently provides a 25 year power output warranty and a 2 year workmanship warranty.

### Recyclable

Silicon CPV plc's PV products can be recycled at the end of their natural life. The Company will be happy to discuss your recycling requirements at any time.

The modules specified are for large scale grid connected solar farms. They can also be used for battery charging in conjunction with MPPT charge controllers. Power range is from 200W to 300W



MECHANICAL	
Frame:	Aluminium
Front	Tempered Glass
Back	Tedlar
Cell Encapsulation	EVA
Junction Box	IP65 (PPE)
Connector	MC Type 4
TEMPERATURE COEFFICIENT	
Current Temperature Coefficient	+4.40 mA/K
Power Temperature Coefficient	-0.46 %/K
NOCT Normal Operating Cell Temp	48°C ± 2°C
LIMITS	
Operating Temperature Limits	-25°C to +85°C
Power Tolerance	+/- 3%
Maximum System Voltage	1,000V DC

Specifications		P225-54	P250-60	P275-66	P300-72	M240-54	M270-60	M290-66	M320-72
ELECTRICAL		Standard Test Conditions (STC) : AM1.5, 1,000W/m <sup>2</sup> , 25°C							
Maximum Power	Pmax	225W	250W	275W	300W	240W	270W	290W	320W
Open Circuit Voltage	Voc	33.59 V	37.32 V	41.05 V	44.78 V	33.97 V	40.48V	41.51 V	45.29 V
Max Power Point Voltage	Vmpp	27.92 V	31.02 V	34.12 V	37.22 V	28.67 V	32.60V	35.05 V	38.23 V
Short Circuit Current	Isc	8.67 A	8.67 A	8.67 A	8.67 A	8.89 A	8.89 A	8.89 A	8.89 A
Max Power Point Current	Imp	8.15 A	8.15 A	8.15 A	8.15 A	8.36 A	8.36 A	8.36 A	8.36 A
Cells per module		54	60	66	72	54	60	66	72
Cell Type		Polycrystalline				Monocrystalline			
DIMENSIONS									
CELL (L) x (W)	mm	156 x 156	156 x 156	156 x 156	156 x 156	156 x 156	156 x 156	156 x 156	156 x 156
MODULE (L) x (W) x (D)	mm	1480x998x45	1640x998x45	1800x998x45	1960x998x45	1480x998x45	1640x998x45	1800x998x45	1960x998x45
Module Weight	kg	18	20	22	24	18	20	22	24