

Shingled Array Module: 315 W TO 340 W

Mono PERC Shingled Array Modules

Shingled Array Module Technology

In contrary to conventional solar modules based on ribbon interconnection assembly technology, shingled array modules (SAM) technology provides the highest module efficiency potential (up to 20%). And the layout of parallel string connection enables much better shading tolerance than that of conventional modules. In addition, SAM significantly improves the module reliability performance due to the elimination of ribbon and soldering. Combined with its superior aesthetics, it is ideal for residential and small commercial markets. On top of above inherent design benefits, our products undergo rigorous inspection in manufacturing to ensure the highest possible quality and reliability.

Safety

- » VDE Certified to IEC 61730
- » CSA certified to UL 1703 for 1,000V systems

Performance Tested

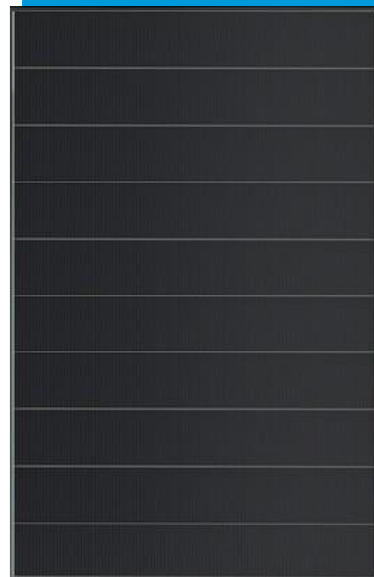
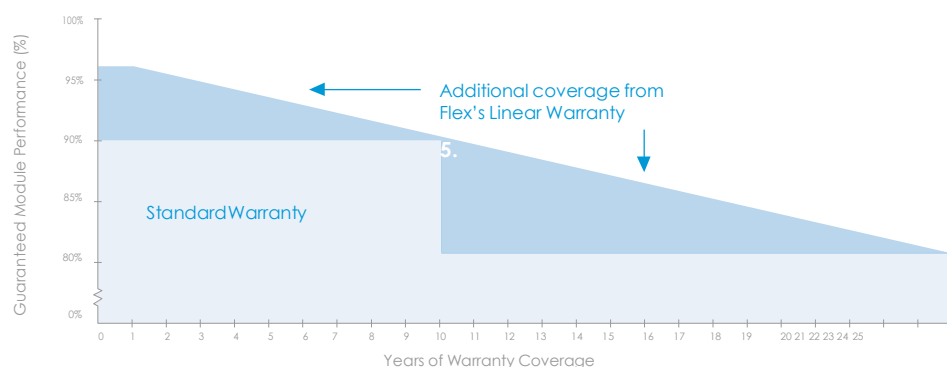
- » Industry leading PID test conditions
 - 96 hours, 85 C, 85% RH, -1kV
- » IEC 61215 long-term operations in a variety of climates including snow loading up to 5400 Pa and hail testing
- » Low glare anti-reflective coated (ARC) tempered glass
- » Outstanding performance in low-light irradiance environment
- » Power Tolerances +5 W

Quality

- » Manufactured under Flex's renowned Quality Management System of Excellence
- » Solar Module Factories are ISO 9001 and 14001 certified
- » Manufactured to AQL 0.4 Level II quality and tested up to 3x beyond IEC standards

Warranty

- » 10-year warranty for materials and workmanship
- » 25-year linear power warranty at STC:
 - 10-Years warranty on 90% performance.
 - 25-Years warranty on 80% performance.



1. POWER

- . 315–340W with positive power tolerance (0 ~ +5W)
- . up to 20% module efficiency

2. RELIABILITY

- . Elimination of ribbon and soldering

3. AESTHETICS

- . Ribbon-less design
- . True black module

4. SHADE TOLERANCE

- . Parallel string connection

CERTIFIED

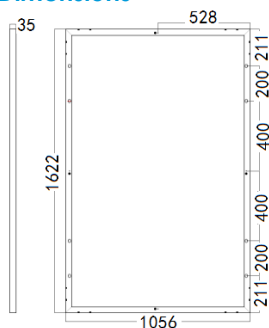
- . IEC 61215/61730: VDE
- . UL 1703: CSA

6. QUALITY

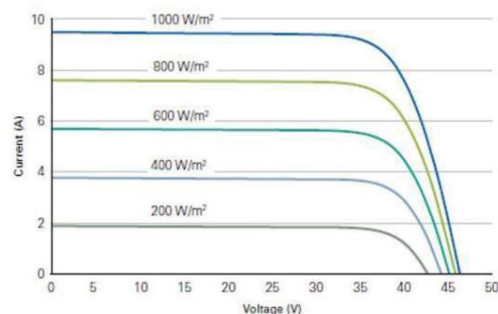
- . ISO 9001, ISO 14001
- . 100% Final Inspection

Shingled Array Modules

Dimensions



Representative I-V Curves (325W)



Electrical Data (STC)					
Maximum Power (Pmax)	320W White	325W White	330W White	335W White	340W White
Power Tolerance	0 ~ +5W	0 ~ +5W	0 ~ +5W	0 ~ +5W	0 ~ +5W
Module Efficiency	18.7%	19.0%	19.3%	19.6%	19.9%
Maximum Power current (Imp)	8.85A	8.93A	9.02A	9.10A	9.19A
Maximum Power Voltage (Vmp)	36.2V	36.4V	36.6V	36.8V	37.0V
Short Circuit Current (Isc)	9.41A	9.46A	9.49A	9.53A	9.57A
Open Circuit Voltage (Voc)	44.1V	44.3V	44.5V	44.7V	44.9V

Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m², Cell Temperature 25°C)

Electrical Data (NOCT)					
Maximum Power (Pmax)	235W	239W	243W	247W	251W
Maximum Power current (Imp)	7.19A	7.23A	7.28A	7.33A	7.4A
Maximum Power Voltage	32.7V	33.1V	33.4V	33.7V	34.0V
Short Circuit Current (Isc)	7.6A	7.63A	7.66A	7.69A	7.72A
Open Circuit Voltage (Voc)	40.4V	40.7V	41.0V	41.3V	41.6V

Values at Normal Operating Cell Temperature, Irradiance 800W/m², Spectrum AM1.5, Ambient temperature 20°C, wind speed 1m/s



Electrical Data (STC)

Maximum Power (Pmax) Power	315W Black	320W Black	325W Black	330W Black	335W Black
Tolerance	0 ~ +5W	0 ~ +5W	0 ~ +5W	0 ~ +5W	0 ~ +5W
Module Efficiency	18.4%	18.7%	19.0%	19.3%	19.6%
Maximum Power current (Imp)	8.68 A	8.77 A	8.86 A	8.95 A	9.03 A
Maximum Power Voltage (Vmp)	36.3 V	36.5 V	36.7 V	36.9 V	37.1 V
Short Circuit Current (Isc)	9.31 A	9.36 A	9.40 A	9.47 A	9.53 A
Open Circuit Voltage (Voc)	44.0 V	44.3 V	44.5 V	44.8 V	45.0 V

Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m², Cell Temperature 25°C)

Electrical Data (NOCT)

Maximum Power (Pmax)	231W	235W	239W	243W	247W
Maximum Power current (Imp)	7.00A	7.08A	7.16A	7.24A	7.32A
Maximum Power Voltage (Vmp)	33.0V	33.2V	33.4V	33.6V	33.8V
Short Circuit Current (Isc)	7.50A	7.54A	7.58A	7.62A	7.66A
Open Circuit Voltage (Voc)	40.4V	40.7V	41.0V	41.3V	41.6V

Values at Normal Operating Cell Temperature, Irradiance 800W/m², Spectrum AM1.5, Ambient temperature 20°C, wind speed 1m/s

Mechanical Data

Solar Cells	Monocrystalline PERC
Glass	3.2mm High Transmission, AR Coated Tempered Glass
Frame	Silver or Black Anodized Aluminum
J-Box	IP65/IP67 rated, with bypass diodes
Dimension	1622 x 1056 x 35 mm
Cables	4 mm ² (EU) / 12 AWG (US), 900 mm
Weight	19.0 Kg (42 lbs.)
Backsheet	White / Black
Connector	Amphenol, MC4 or MC4 Compatible

Temperature Ratings

Temperature Coefficient of Voc	-0.31%/°C
Temperature Coefficient of Isc	0.04%/°C
Temperature Coefficient of Pmax	-0.41%/°C
Nominal Operating Cell Temperature (NOCT)	45°C±2°C

Maximum Ratings

Operational Temperature	-40°C ~ +85°C
Maximum System Voltage	1000 VDC
Maximum Series Fuse Rating	13A

