



Electrical Characteristics

Module Type	PW-390-BMA	PW-395-BMA	PW-400-BMA
	STC	STC	STC
Maximum Power at STC (Pmp)	390	395	400
Open Circuit Voltage (Voc)	48.7	48.9	49.1
Short Circuit Current (Isc)	9.95	10.03	10.10
Maximum Power Voltage (Vmp)	41.2	41.4	41.6
Maximum Power Current (Imp)	9.47	9.55	9.62
Module Efficiency at STC(ηm)	19.32	19.56	19.81
Power Tolerance		+/-3%	
Maximum System Voltage		1000 VDC	
Maximum Series Fuse Rating		20A	

STC: Irradiance 1000 W/m² module temperature 25°C AM=1.5;

Temperature Characteristics

Pmax Temperature Coefficient	-0.36 %/°C
Voc Temperature Coefficient	-0.28 %/°C
Isc Temperature Coefficient	+0.05 %/°C
Operating Temperature	-40 ~ +85 °C
Nominal Operating Cell Temperature (NOCT)	45±2 °C

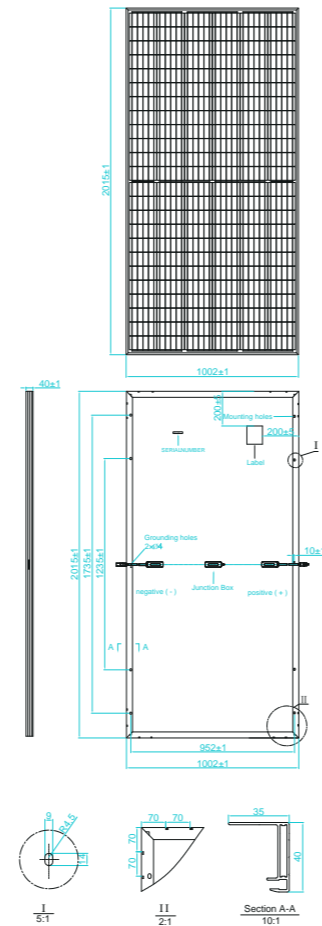
Mechanical Specifications

External Dimensions	2015 x 1002 x 40 mm
Weight	23.0kg
Solar Cells	PERC Mono crystalline 158.75 x 79.375 mm(144pcs)
Front Glass	3.2 mm AR coating tempered glass, low iron
Frame	Anodized aluminium alloy
Junction Box	IP68, 3 diodes
Output Cable	4.0 mm ² , Portrait:255mm(+)/355mm(-);Landscape:1200mm
Connector	Genuine MC4
Mechanical Load	5400 Pa
Fire Safety Class	Class C

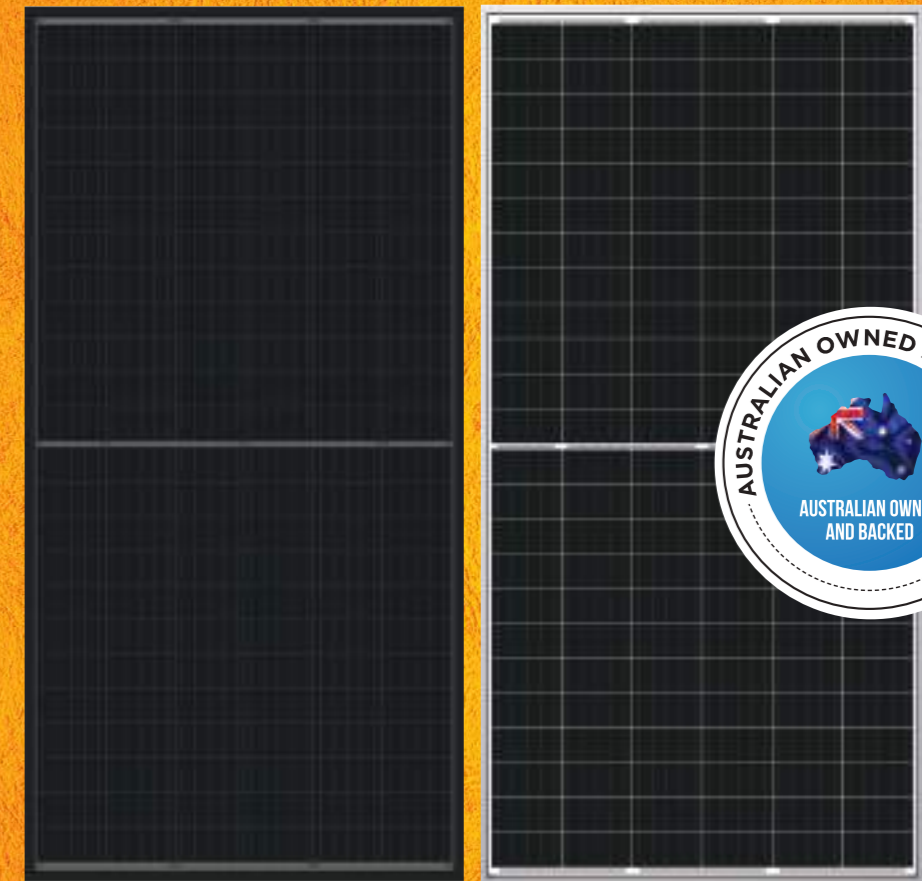
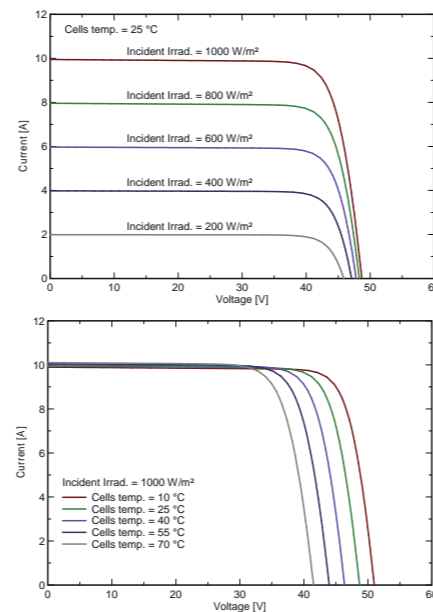
Packing Configuration

	2015 x 1002 x 40 mm		
Container	20'GP	40'GP	40'HQ
Pieces per Pallet	27	27	27+2*
Pallets per Container	10	22	22
Pieces per Container	270	594	638

* 27+2 pieces per pallet is the special package which only suits for container transport. For details, please consult POWERWAVE.



I-V Curve



PW-XXX-BMA
390-400W

Twinpower – A Module Remodelled

Powerwave's Twinpower Series solar module boasts two identical parts, which are composed of cells that are half the size of ordinary solar cells. By cutting cells into halves, these smaller currents will help reduce "Cell To Module" loss, which means higher output.

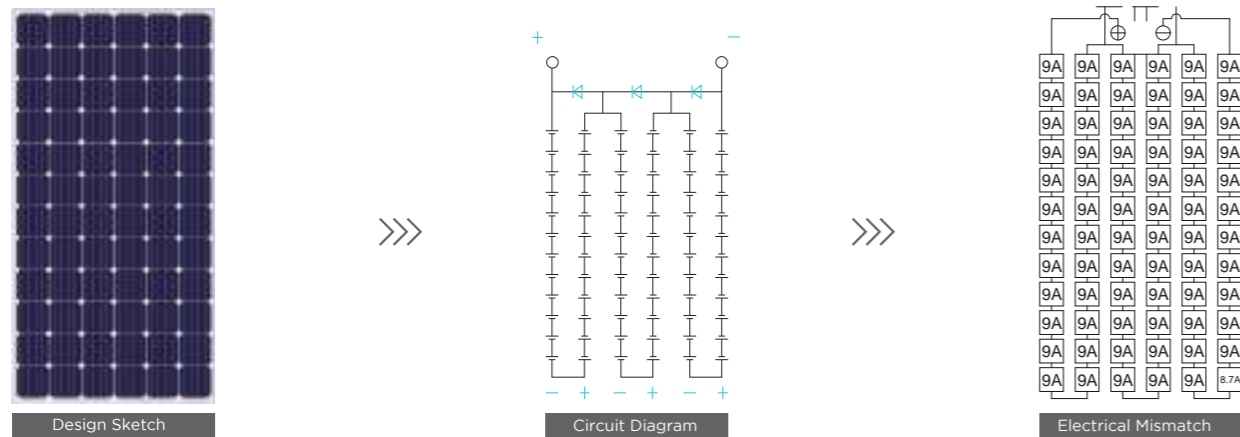
In the meantime, the overall space between cells are doubled, and more light will be transferred into power through multiple reflections. Compared to mainstream standard modules, the Twinpower series module has lower current and series resistance which helps minimize mismatch loss, internal power loss, and shadow effect, etc. Once one cell has EL defect or appearance defect, such as black edge or V sharp. After cutting, one intact half can be reused.



Less Mismatch loss

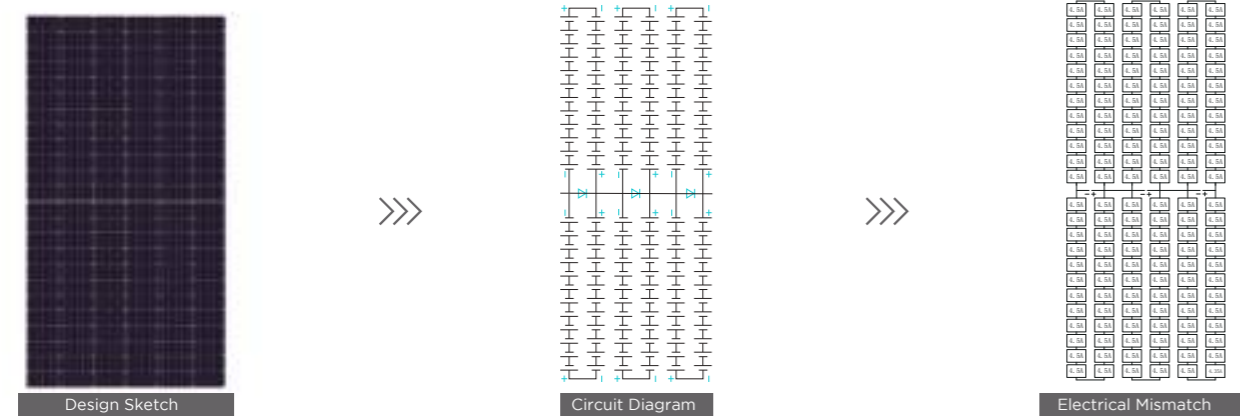
Instead of 6 internal strings of cells, the Twinpower series module has 2 x 6 shorter ones. This design effectively deals with the mismatch happened between cells caused by shadow, out of sync performance degradation, ect.

Standard Module / With 6 internal strings of cells



Module current output is 8.7A, current mismatch in series is **0.3A**.

Twinpower / With 2 x 6 internal strings of cells



Module current output is 4.5+4.35=8.85A, current mismatch in series is **0.15A**.

Less Internal Power Loss



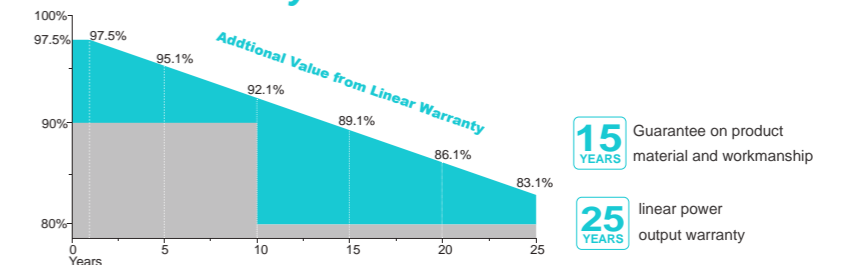
The ribbon length of half-cell is shorter than normal cell. Calculated by Joule's law and Ohm' law, the power loss reduction is nearly 6%.

Product Certificates



Insurance PICC

Warranty



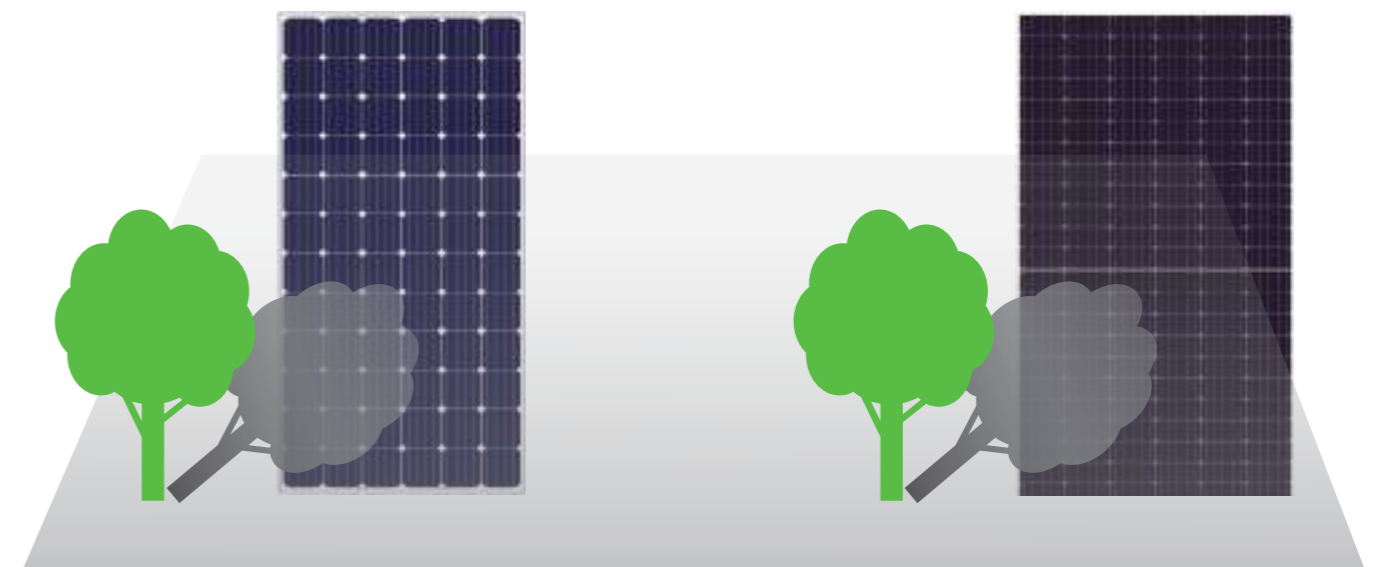
Higher Yield Due to Better Shading Response

Twinpower comprises two separated and identical solar cell arrays, which means the ordinary strings of cells are cut into halves, and these shorter strings compose arrays which has separated current paths. When a module is shaded, only one side shaded array's current will be impacted, while the other array will still be functionally producing power. Under this circumstance, when a module is shaded, the affected working areas of Twinpower will be 50% less.

By cutting solar cell into halves, the internal power loss will be lower and hot spot effect will also be reduced.

Standard Module

Twinpower Module



Specifications are subject to change without further notification