

9BB



Black Frame Design
More Aesthetic
effect on roof



100% TEST

Double EL tests
ensures high
quality standard



Reduced hot spot risk
with optimized
electrical design and
lower operating current



Monocrystalline PERC
Half cut cells



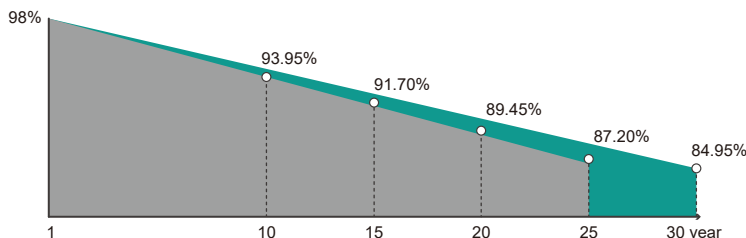
Positive Power tolerance
0~+5W extra output power



Anti-PID
Low LID Performance

450-470W

166mm 144Cells Panda Series Black Solar Module



Quality Guarantee

12-Year
material & technology warranty
30-Year
linear power output warranty

- SUNWE solar linear power output guarantee
- Standard linear power output guarantee

Electrical Characteristics (STC/NOCT)

Module Type	SW450PD		SW455PD		SW460PD		SW465PD		SW470PD	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power- Pmax(W)	450W	336W	455W	340W	460W	343W	465W	348W	470W	351W
Open Circuit Voltage - Voc(V)	52.96V	49.89V	53.09V	49.21V	53.22V	49.45V	53.35V	49.71V	53.48V	49.91V
Short- Circuit Current - Isc(A)	10.46A	8.46A	10.52A	8.49A	10.58A	8.52A	10.64A	8.57A	10.70A	8.59A
Voltage at Pmax -Vmp(V)	44.85V	41.61V	45.04V	41.75V	45.24V	41.83V	45.44V	41.99V	45.66V	42.12V
Current at Pmax - Imp(A)	10.05A	8.09A	10.12A	8.15A	10.18A	8.21A	10.24A	8.29A	10.30A	8.34A
Module Efficiency -ηm(%)	20.70%		20.93%		21.16%		21.39%		21.62%	
Power Tolerance(W)					(0, +5W)					
Maximum System Voltage(V)					1500Vdc (IEC / UL)					
Maximum Series Fuse Rating (A)					25A					

STC : Irradiance 1000W/m², Cell Temperature 25 C, Air Mass 1.5

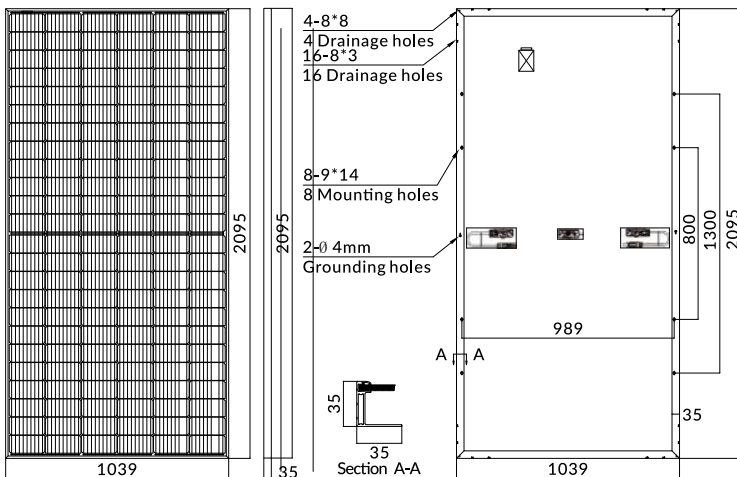
NOCT : Irradiance 800W/m², Ambient Temperature 20 C, Air Mass 1.5, Wind Speed 1m/s

Mechanical Specifications

External Dimensions	2095 x 1039 x 35 mm
Weight	24.0kg
Solar Cells	Mono crystalline 166mm (2x72pcs)
Front Glass	AR Coated 3.2 mm tempered glass
Frame	Black Anodized aluminum alloy
Junction Box	IP68 with 3 bypass diodes
Output Cables	4.0mm ² , 30cm (+), 30cm (-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max. 5400Pa, Rear Side Max. 2400Pa

Temperature Characteristics

Pmax Temperature Coefficient	-0.260%/ C
Voc Temperature Coefficient	-0.24%/ C
Isc Temperature Coefficient	+0.04%/ C
Operating Temperature	-40 ~ +85 C
Nominal Operating Cell Temperature(NOCT)	44±2 C



Packing Configuration

Container	20'GP	40'HQ
Pieces per Pallet	31	31
Pallets per Container	5	22
Pieces per Container	155	682

IV Curves

