

### Solar Panel, Solar Modules, Solar Photovoltaic Modules, PV Modules

**430W 435W 445W 450W 455W**

#### MONO HALF -CELL

Explain Model No	Model	Half-Cell	Solar Cell Type	Wattage	Silicon Type
	450W	120PCS	182 × 182 mm	450W	M:Monocrystalline

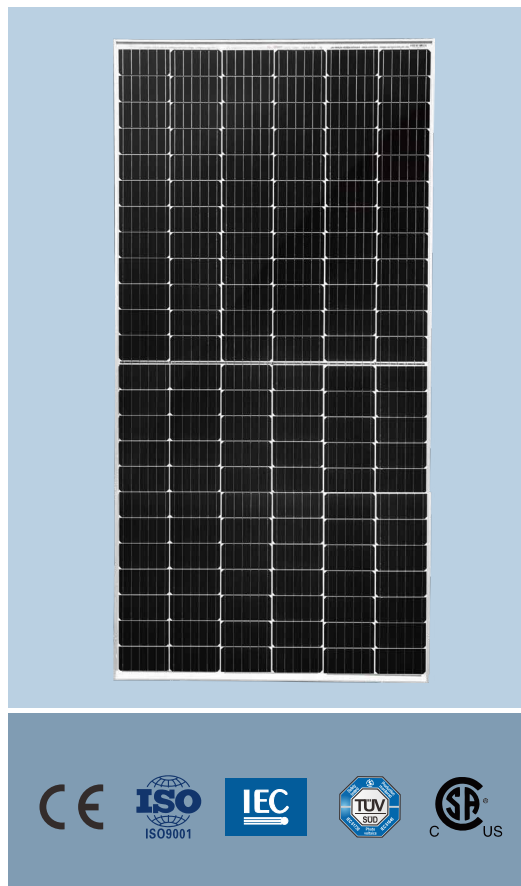
Remark: 450W is most common model.

#### Features

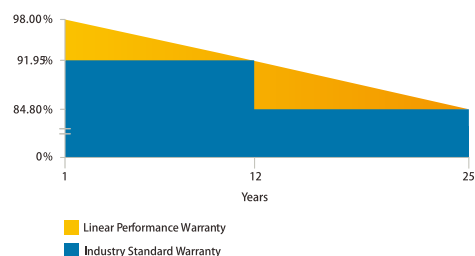
- High module conversion efficiency**  
 Module efficiency up to 21.02%
- Half-cell Design**  
 Less energy loss caused by shading due to new cell string layout and lower cell connection power loss due to half-cell design.
- Excellent weak light performance**  
 More power output in weak light condition such as cloudy, morning and sunset
- Higher Durability against harsh environment**  
 Reliable quality leads to a better sustainability even in harsh environment
- Lower operating temperature**  
 Lower operating temperature and temperature coefficient increases the power output
- Anti-PID (Potential induced degradation)**  
 Excellent Anti-PID performance
- Lower LCOE**  
 2% more power generation, lower LCOE



Warning: Read the Installation and User Manual in its entirety before handling, installing, and operation smart Solar modules.



### 25 Years Linear Warranty



Note: This publication summarizes product warranty and Specification which are subject to change without notice

25 Years Linear Power Output  
12 Years Materials and Workmanship

### ELECTRICAL PERFORMANCE

Electrical Parameters at Standard Test Conditions (STC)					
Module Type	435W	440W	445W	450W	455W
Power Output (Pmax / W)	435W	440W	445W	450W	455W
Power Output Tolerances	±3%	±3%	±3%	±3%	±3%
Module Efficiency (ηm)	20.09%	20.33%	20.56%	20.79%	21.02%
Voltage at Pmax (Vmp / V)	34.09V	34.28V	34.48V	34.67V	34.87V
Current at Pmax (Imp / A)	12.77A	12.84A	12.91A	12.98A	13.05A
Open-circuit Voltage (Voc / V)	40.8V	40.95V	41.1V	41.25V	41.04V
Short-circuit Current (Isc / A)	13.67A	13.74A	13.82A	13.89A	13.97A

STC:1000W/m<sup>2</sup> irradiance, 25°C module temperature, AM1.5g Spectrum according to EN 60904-3.

Electrical parameters at NMOT (Irradiance 800 W/m <sup>2</sup> , ambient temperature 20 °C, AM=1.5, wind speed 1 m)					
Module Type	435W	440W	445W	450W	455W
Power Output (Pmax / W)	324	328	332	336	339
Voltage at Pmax (Vmp / V)	32.1V	32.1V	32.2V	32.4V	32.6V
Current at Pmax (Imp / A)	10.01A	10.23A	10.3A	10.36A	10.42A
Open-circuit Voltage (Voc / V)	38.5V	38.6V	38.7V	38.9V	39.1V
Short-circuit Current (Isc / A)	10.97A	11.04A	11.11A	11.17A	11.24A

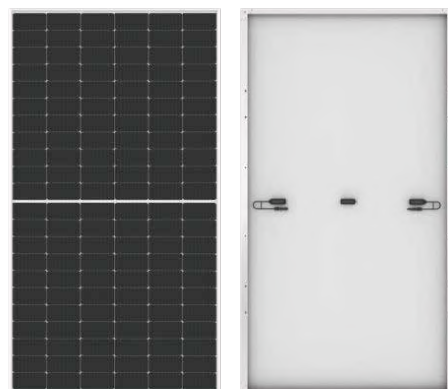
Thermal Characteristics			
Normal operating cell temperature	NMOT	°C	45±2
Temperature coefficient of Pmax	γ	%/°C	43
Temperature coefficient of Voc	βvoc	%/°C	-0.27
Temperature coefficient of Isc	αisc	%/°C	0.05
Temperature coefficient of Vmpp	βvmpp	%/°C	-0.42

Operating Conditions	
Max.system voltage	1500Vdc
Max.series fuse rating	20A
Operating temperature range	-40°C to 85°C
Max.static load,front(e.g.,snow)	5400Pa
Max.static load,back(e.g.,wind)	2400Pa
Max.hailstone impact(diameter)	25mm/23m/s

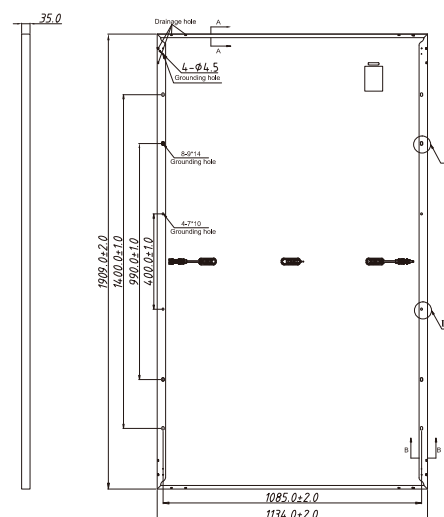
Construction Materials	
Front cover(material/thickness)	low-iron tempered glass/3.2mm
Cell(QTY)	132PCS Mono Perc (182MM)
Frame(Materials)	anodized aluminum alloy/silver/clear
Junction box(protection degree)	≥IP68
Cable (length/cross-sectional area)	300mm/4mm <sup>2</sup>

General Characteristics	
Products Dimension(L/W/H)	1909*1134*35mm
Weight	24KGS
QTY of per pallet	30pcs per pallet
Packaging box dimensions	2115*1110*1145MM
No. of pallets for 40HQ containers	22 Pallets ( 660PCS, GW.: 760KGS)

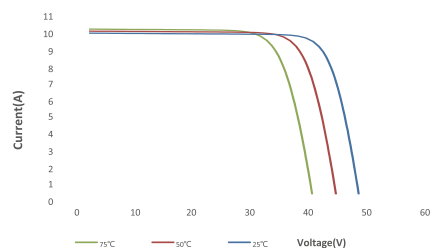
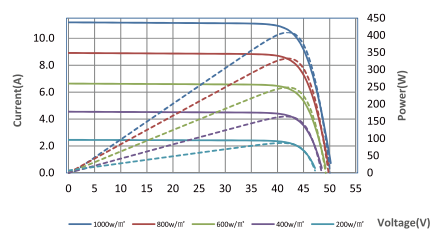
Note: This publication summarizes product warranty and Specification which are subject to change without notice.



Unit: mm



### I-V Curves



### Solar Panel, Solar Modules, Solar Photovoltaic Modules, PV Modules

**530W 535W 540W 545W 550W**

**MONO HALF -CELL 10BB**

Explain Model No	Product name	Half-Cell	Solar Cell Type	Wattage	Silicon Type
	550W	144 PCS	182 × 182 mm	550W	M:Monocrystalline

Remark: 550W is most common model.

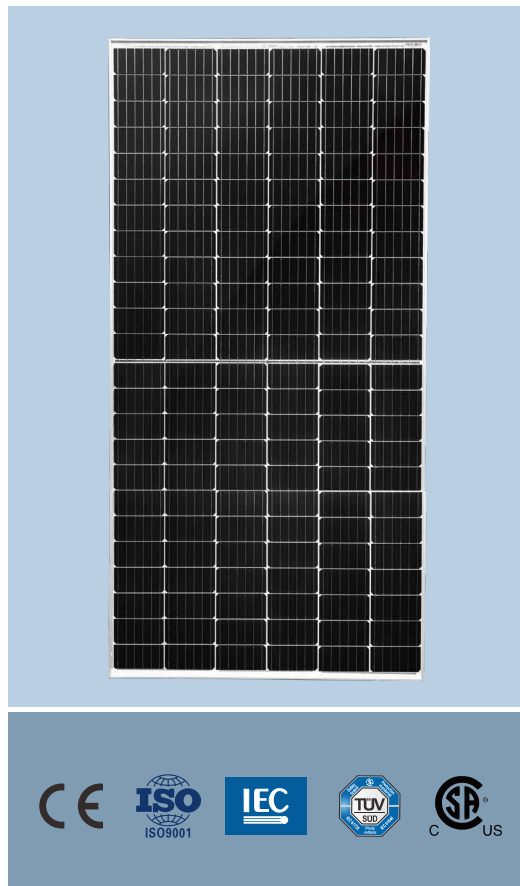
#### Features

- High module conversion efficiency**  
 Module efficiency up to 21.3%
- Half-cell Design**  
 Less energy loss caused by shading due to new cell string layout and lower cell connection power loss due to half-cell design.
- Excellent weak light performance**  
 More power output in weak light condition such as cloudy, morning and sunset
- Higher Durability against harsh environment**  
 Reliable quality leads to a better sustainability even in harsh environment
- Lower operating temperature**  
 Lower operating temperature and temperature coefficient increases the power output
- Anti- PID (Potential induced degradation)**  
 Excellent Anti-PID performance
- Lower LCOE**  
 2% more power generation, lower LCOE

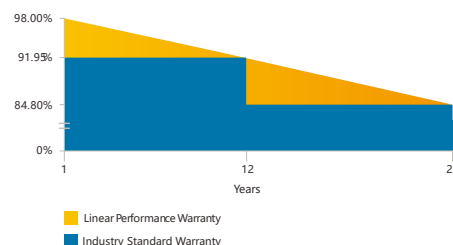


Warning: Read the Installation and User Manual in its entirety before handling, installing, and operation smart Solar modules.

Note: This publication summarizes product warranty and Specifications which are subject to change without notice



### 25 Years Linear Warranty



25 Years Linear Power Output  
12 Years Materials and Workmanship