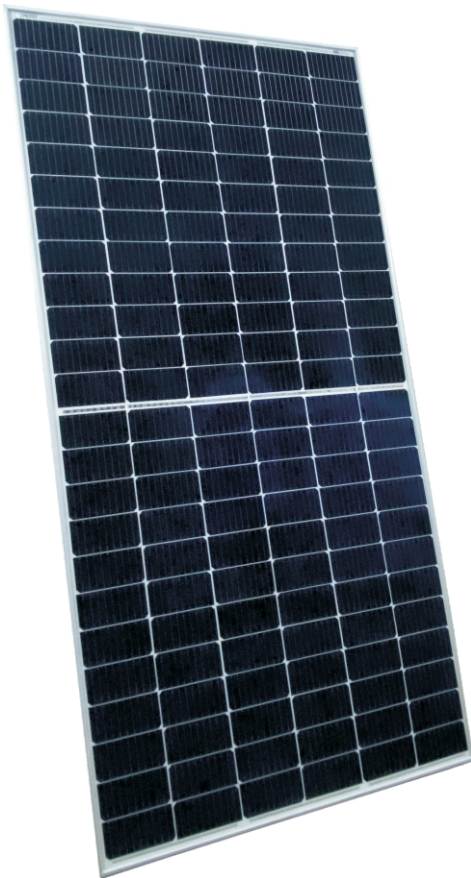
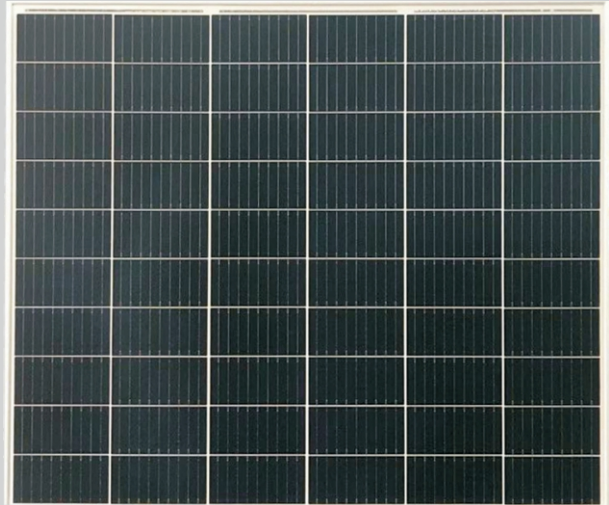




# Impulse Solar Half Cell Module (144 Cells) 450~480Watt

MONO CRYSTALLINE MODULE

ISO9001:2008, ISO14001:2004, OHSAS18001 certified factory.  
IEC61215, IEC61730 certified products.



## KEY FEATURES



### Positive tolerance:

Positive tolerance of up to 5W delivers higher output reliability.



### High Efficiency

Higher module conversion efficiency benefit from half cell structure (low resistance characteristic).



### PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.



### Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



### Severe Weather Resilience

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).

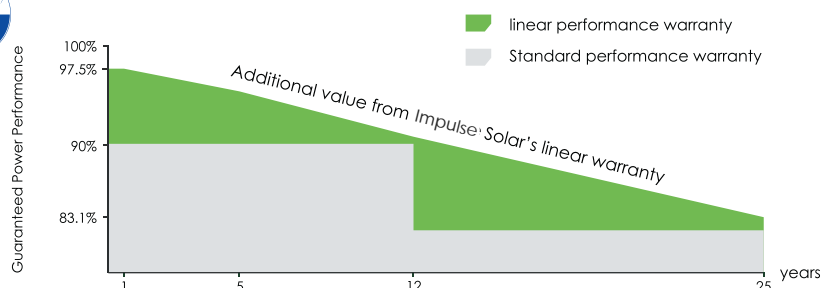


### Durability Against Extreme Environmental Conditions

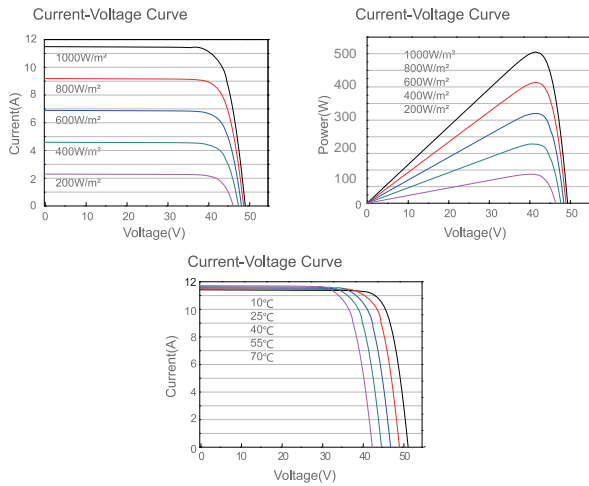
High salt mist and ammonia resistance certified by TUV NORD.

## LINEAR PERFORMANCE WARRANTY

12 Year Product Warranty • 25 Year Linear Power Warranty



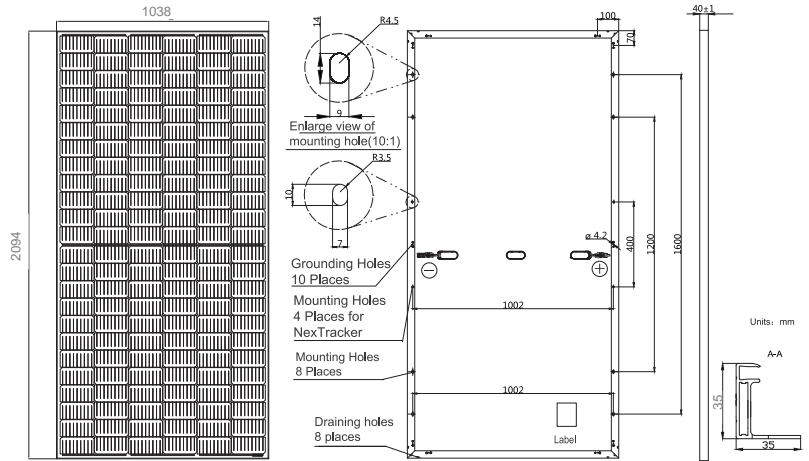
## Electrical Performance & Temperature Dependence



## Mechanical Characteristics

Cell Type	PERC Mono-crystalline
No. of cells	144(6×24)
Dimensions	2094*1038*35mm
Weight	25.0kg ±3%
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	Ip68 , 3 diodes
Output Cables	Portrait: 300mm(+)/ 400mm(-) ; Landscape: 1200mm(+)/ 1200mm(-).

## Engineering Drawings



Remark: customized frame color and cable length available upon request

## Packaging Configuration

( Two pallets=One stack )

31pcs/pallet, 682 pcs/40ft Container

## SPECIFICATIONS

Module Type	IM450M-72	IM455M-72	IM460M-72	IM465M-72	IM470M-72	IM475M-72	IM480M-72
Maximum Power (Pmax)	450W	455W	460W	465W	470W	475W	480W
Maximum Power Voltage (Vmp)	41.5V	41.7V	41.9V	42.1V	42.3V	42.5V	42.7V
Maximum Power Current (Imp)	10.84A	10.91A	10.98A	11.05A	11.11A	11.18A	11.25A
Open-circuit Voltage (Voc)	49.3V	49.5V	49.7V	49.9V	50.1V	50.3V	50.5V
Short-circuit Current (Isc)	11.6A	11.66A	11.7A	11.78A	11.83A	11.89A	11.95A
Module Efficiency STC (%)	20.33%	20.56%	20.78%	21.0%	21.23%	21.46%	21.69%
Operating Temperature(°C)	-40°C~+85°C						
Maximum system voltage	1000VDC or 1500VDC						
Maximum series fuse rating	20A						
Power tolerance	0~+5W						
Temperature Coefficient of Isc(α_Isc)	0.051%/°C						
Temperature Coefficient of Voc(β_Voc)	-0.289%/°C						
Temperature Coefficient of Pmax(γ_Pmp)	-0.350%/°C						
Nominal operating cell temperature (NOCT)	45±2°C						

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, AM=1.5

NOCT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM=1.5, Wind Speed 1m/s

\* Power measurement tolerance: ± 3%

The company reserves the final right for explanation on any of the information presented hereby. Impulse Solar.