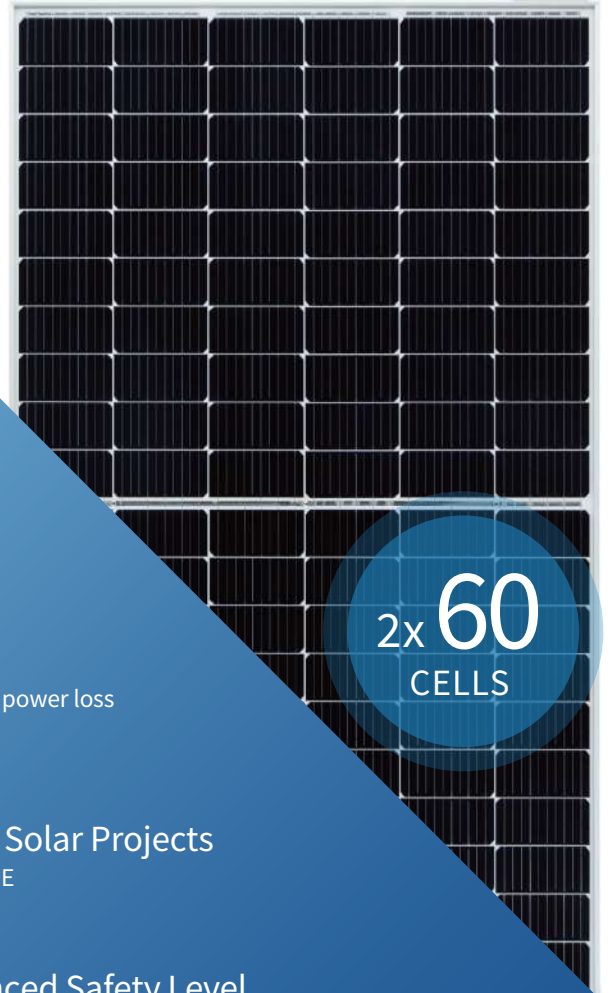


# GIWA 5

Bifacial HJT Solar Module (Half-cut)

# 470-500W



### Higher Power Output

The output power is as high as 500W  
Bifaciality is up to 90%  
Provide up to 25% extra power from rear side



### Less Power Loss

Unique half-cut cell technology reduces power loss  
Anti-PID & LID  
Promise a higher yield for PV system



### Ideal Choice For Solar Projects

Lower BOS / Lower LCOE  
Improved ROI



### Enhanced Safety Level

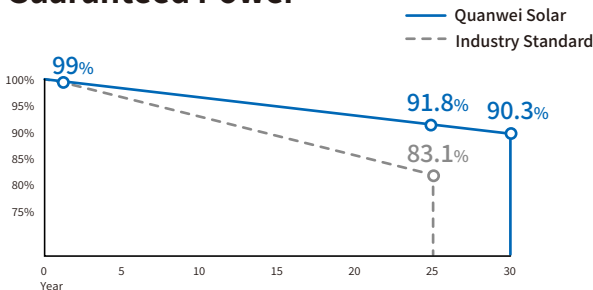
IP68 water resistance  
Long-term weather endurance



### Excellent Linear Power Warranty

Average annual degradation below 0.3% from 2nd year to 30th year.  
At least 5% higher power output than P-type module after 25 years.

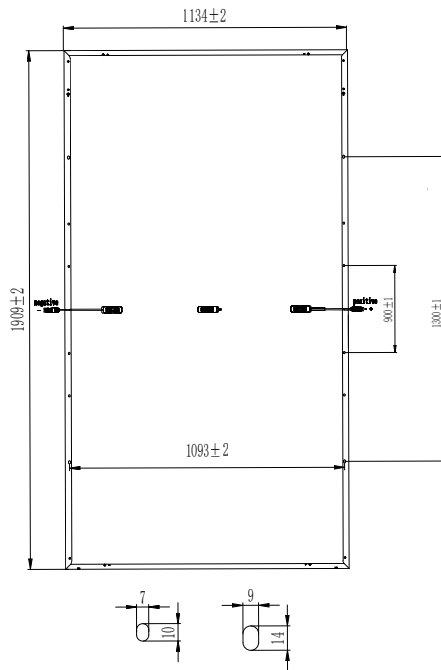
### Guaranteed Power



15 years Product Warranty | 30 years Linear Performance Warranty



## TECHNICAL DRAWINGS



## ELECTRICAL CHARACTERISTICS

Model/QWBDN120-	470W	475W	480W	485W	490W	495W	500W
Testing Condition: STC Maximum Power (Pmax/W)	470	475	480	485	490	495	500
Operating Voltage (Vmpp/V)	40.28	40.51	40.76	41.07	41.40	41.67	41.09
Operating Current (Impp/A)	11.69	11.73	11.78	11.81	11.84	11.88	11.94
Open-Circuit Voltage (Voc/V)	45.93	46.24	46.55	46.86	47.17	47.48	47.79
Short-Circuit Current (Isc/A)	12.56	12.58	12.60	12.62	12.64	12.66	12.69
Module Efficiency (%)	21.75	21.95	22.18	22.41	22.64	22.87	23.11

STC: Irradiance 1000W/m<sup>2</sup>, Spectra at AM1.5, Module Temperature 25°C.  
Power Output Tolerance: 0~+5W, Test Uncertainty for Pmax: ±3%

## REAR SIDE POWER GAIN(REFERENCE TO 490W FRONT)

Pmax Gain	5%	10%	15%	20%	25%
Pmax/W	515	539	564	588	613
Vmpp/V	41.42	41.42	41.43	41.43	41.45
Impp/A	12.44	13.02	13.62	14.20	14.79
Voc/V	47.18	47.18	47.19	47.20	47.20
Isc/A	13.26	13.98	14.72	15.56	16.37

## MECHANICAL CHARACTERISTICS

Solar Cell	HJT 182 x 91mm
No. of Cells	120 (2 x 60)
Module Dimensions	1909 x 1134 x 30mm (75.16 x 44.65 x 1.18 inches)
Weight	25.4kg
Front Glass	2.0mm AR Coating Semi-tempered Glass
Back Glass	Glazed Semi-tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 Bypass Diodes
Output Cables	4mm <sup>2</sup> , 250mm(+)/350mm(-) or Customized Length
Connectors	MC4

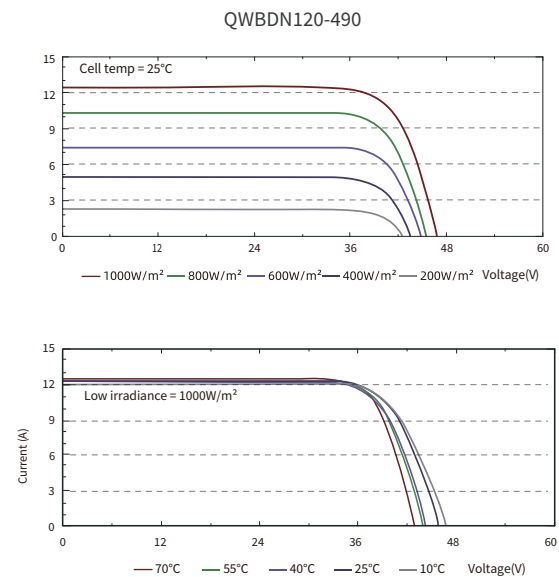
## APPLICATION CONDITIONS

Maximun System Voltage	DC1500V
Operating Temperature	-40°C~+85°C
Maximun Series Fuse	25A
Safety Protection Class	Class II
Mechanical Load	Front side 5400Pa, Back side 2400Pa
Refer. Bifaciality Factor	85%±5%

## TEMPERATURE CHARACTERISTICS

Temperature Coefficient of Pmax	-0.26%/°C
Temperature Coefficient of Voc	-0.22%/°C
Temperature Coefficient of Isc	+0.047%/°C
Nominal Module Operating Temperature (NOCT)	42±2°C

## I-V CURVE



## PACKING CONFIGURATION

Type of Shipping	Platform Trailer (17.5m)	Container 40'HC
Pieces/Pallet	36	36
Total Amount	1152	936