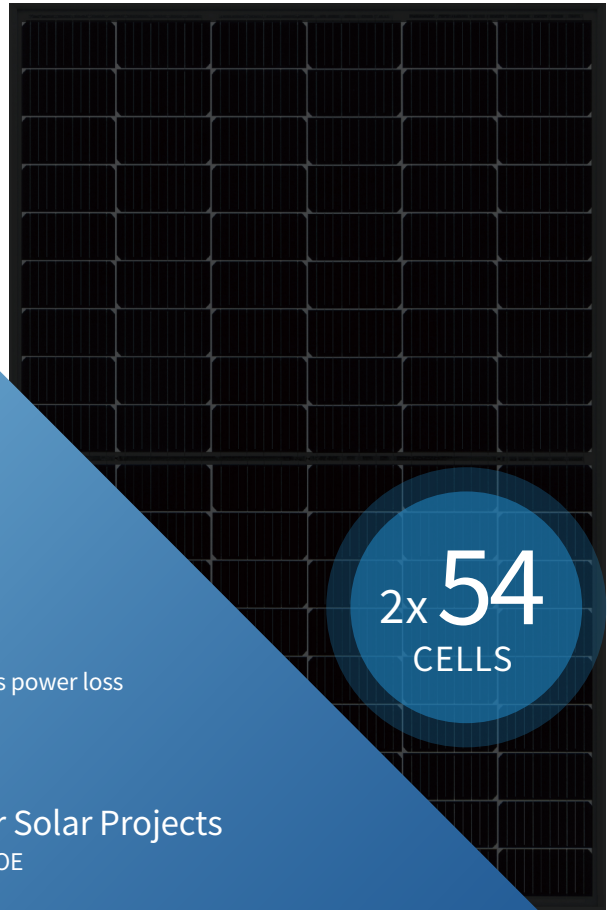


GIWA 5

Bifacial HJT Solar Module (Half-cut)

420-445W



Higher Power Output
 The output power is as high as 445W
 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



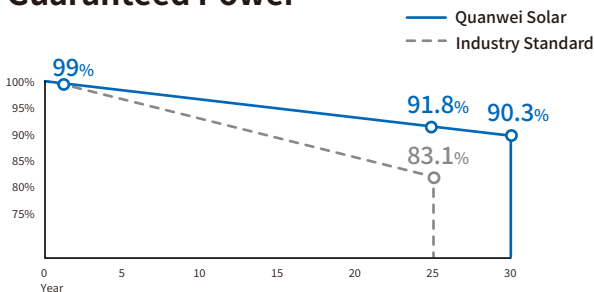
Enhanced Safety Level
 IP68 water resistance
 Long-term weather endurance



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.

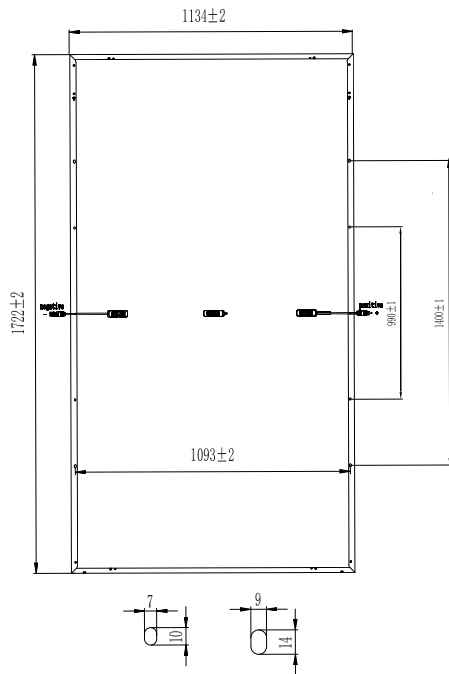
Guaranteed Power



15 years Product Warranty | **30 years** Linear Performance Warranty



TECHNICAL DRAWINGS



ELECTRICAL CHARACTERISTICS

Model/QWBDN120-	420W	425W	430W	435W	440W	445W
Testing Condition: STC Maximum Power (Pmax/W)	420	425	430	435	440	445
Operating Voltage (Vmpp/V)	33.69	33.79	33.89	33.99	34.09	34.19
Operating Current (Impp/A)	12.47	12.58	12.69	12.80	12.91	13.02
Open-Circuit Voltage (Voc/V)	40.05	40.18	40.31	40.44	40.57	40.70
Short-Circuit Current (Isc/A)	13.22	13.27	13.32	13.37	13.42	13.47
Module Efficiency (%)	21.51	21.77	22.02	22.28	22.54	22.80

STC: Irradiance 1000W/m², Spectra at AM1.5, Module Temperature 25°C.
Power Output Tolerance: 0~+5W, Test Uncertainty for Pmax: ±3%

REAR SIDE POWER GAIN(REFERENCE TO 435W FRONT)

Pmax Gain	5%	10%	15%	20%	25%
Pmax/W	456.7	478.5	500.2	522	543.7
Vmpp/V	34.01	34.01	34.01	34.03	34.03
Impp/A	13.43	14.07	14.71	15.34	15.98
Voc/V	40.57	40.57	40.97	40.97	40.97
Isc/A	13.45	13.98	14.67	15.19	15.75

MECHANICAL CHARACTERISTICS

Solar Cell	HJT 182 x 91mm
No. of Cells	108 (2 x 54)
Module Dimensions	1722 x 1134 x 30mm (67.80 x 44.65 x 1.18 inches)
Weight	23kg
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 ² , 250mm(+)/350mm(-) or Customized Length
Connectors	MC4

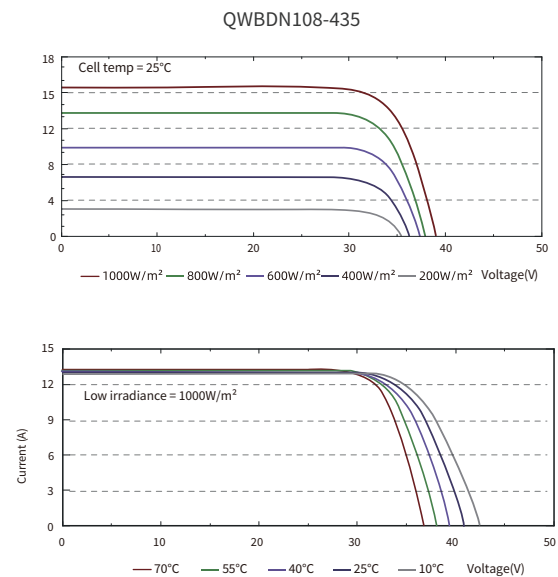
APPLICATION CONDITIONS

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	1224	936