

N-type Mono TOPCon



Stronger current collection ability, Special circuit design with much lower hot spot temperature;



Excellent PID resistance at 96 hours (85°C/85%) test, and also can be improved to meet higher standards for the particularly harsh environment;



Excellent anti-microcracking performance with more balanced interior stress;



Half cell structure brings low resistance characteristic, higher lifetime generating capacity, simultaneously lower annual power attenuation;

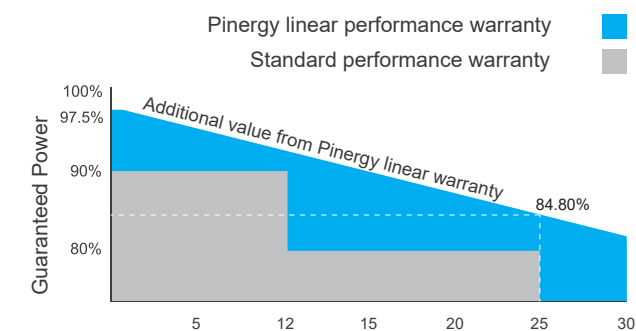


Excellent power generation performance under Low-Light condition due to multi busbar; better shading response benefit from half cell module;



Certified for 5400Pa snow and 2400Pa Wind loads test;

12 Years Product Warranty · 30 Years Linear Power Warranty



- IEC 61215, IEC 61730, CE, CQC
- ISO9001: 2015: Quality management system
- ISO14001: 2015: Environmental management system
- ISO45001: 2018: Occupational health and safety management system



Module Type: PNGNH60-DGB8-xxx , (xxx=Pmax)

Module Type	470		475		480		485		490		495		500	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Max. Power (Pmax/W)	470	303	475	357	480	361	485	364	490	368	495	372	500	376
Voltage at Max. Power (Vmp/V)	35.05	32.94	35.21	33.1	35.38	33.28	35.55	33.43	35.72	33.59	35.89	33.75	36.06	33.91
Current at Max. Power (Imp/A)	13.41	10.73	13.49	10.79	13.57	10.85	13.65	10.91	13.73	10.97	13.81	11.03	13.89	11.09
Open circuit voltage (Voc/V)	42.38	40.25	42.54	40.41	42.71	40.57	42.88	40.73	43.05	40.89	43.22	41.05	43.39	41.21
Short circuit current (Isc/A)	14.15	11.42	14.23	11.49	14.31	11.55	14.39	11.61	14.47	11.67	14.55	11.73	14.63	11.79
Module efficiency (%)	20.78%		22.01%		22.24%		22.47%		22.70%		22.93%		23.16%	
Power Tolerance (W)	0~+5													

Standard Test Condition (STC): Irradiance 1000W/m², Cell Temperature 25°C, AM1.5

Nominal Module Operating Temperature (NOCT): Irradiance 800W/m², Ambient Temperature 20°C, AM1.5, Wind Speed 1m/s

Maximum Power-Pmp (W)	517	522.5	528	533.5	539	544.5	550
Maximum Power Voltage (Vmpp/V)	38.56	38.73	38.92	39.11	39.29	39.48	39.67
Maximum Power Current (Impp/A)	14.75	14.84	14.93	15.02	15.10	15.19	15.28
Open Circuit Voltage (Voc/V)	46.62	46.79	46.98	47.17	47.36	47.54	47.73
Short Circuit Current (Isc/A)	15.57	15.65	15.74	15.83	15.92	16.01	16.09
Irradiance Ratio (Rear/Front)	10%						

Cell Type	N-type Mono TOPCon
No. of Cells	120 (6×20)
Dimension	1910x1134x35mm
Weight	27.5kg
Glass	Dual glass, 2.0mm coated tempered glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 diodes
Output Cables	4mm², Length 300mm or customized
Connector type	MC4 compatible

Per Pallet	31pcs
Per 40' HQ Container	744 pcs

NOCT Temperature	44 C $\pm$ 2 C
Temperature Coefficient (Pmax)	-0.36%/C
Temperature Coefficient (Voc)	-0.28%/C
Temperature Coefficient (Isc)	0.05%/C

Maximum system voltage (IEC)	1500V DC
Snow / Wind	5400Pa / 2400Pa
Operating Temperature	-40 °C ~ +85 °C
Maximum series fuse rating	20A

Figure 10 consists of three subplots showing the performance of the device at 470 nm.

- Top Left: Current-Voltage Curve (470W)**
 - Y-axis: Current (A), ranging from 0 to 14.
 - X-axis: Voltage (V), ranging from 0 to 40.
 - Curves are shown for different incident power densities: 1000 W/m² (black), 800 W/m² (red), 600 W/m² (blue), 400 W/m² (green), and 200 W/m² (magenta).
 - The current increases with voltage and saturates at higher voltages. The saturation current increases with increasing incident power density.
- Top Right: Power-Voltage Curve (470W)**
 - Y-axis: Power (W), ranging from 0 to 500.
 - X-axis: Voltage (V), ranging from 0 to 40.
 - Curves are shown for the same incident power densities as the top-left plot.
 - The power increases with voltage, reaches a maximum, and then decreases. The maximum power increases with increasing incident power density.
- Bottom: Current-Voltage Curve (470W)**
 - Y-axis: Current (A), ranging from 0 to 14.
 - X-axis: Voltage (V), ranging from 0 to 40.
 - Curves are shown for different temperatures: 10°C (black), 25°C (red), 40°C (blue), 55°C (green), and 70°C (magenta).
 - The current increases with voltage and saturates at higher voltages. The saturation current decreases as the temperature increases.