

# ZXM6-NHLDD144 Series



Znshinesolar 9BB HALF-CELL Bifacial Light-Weight Double Glass Monocrystalline PERC PV Module

430W | 435W | 440W | 445W | 450W



## Excellent cells efficiency

9BB technology decreases the distance between bus bars and finger grid line which is benefit to power increase.



## Better Weak Illumination Response

More power output in weak light condition, such as haze, cloudy, and morning



## Anti PID

Limited power degradation caused by PID effect is guaranteed under strict testing condition for mass production



## High wind and snow resistance

■ 5400 Pa snow load      ■ 2400 Pa wind load



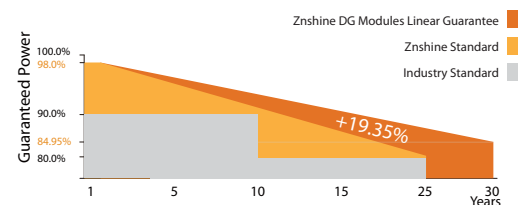
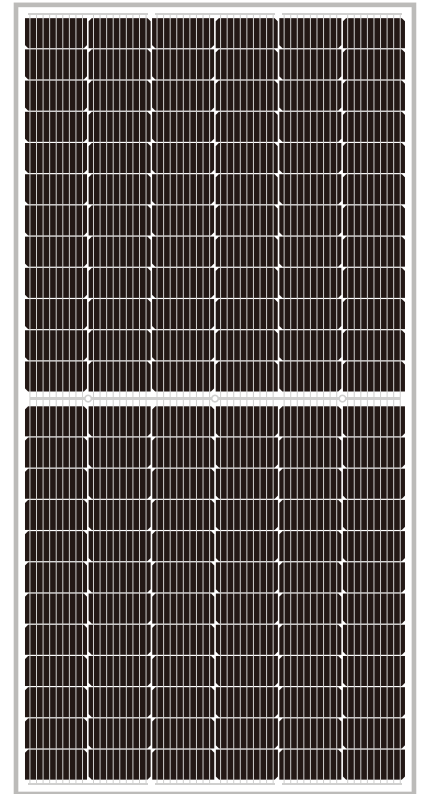
## 30 years power warranty

After 30 years our solar panel keeps at least 80% of its initial power output



## Bifacial technology

Enables additional energy harvesting from rear side(up to 25%)



12 years product guarantee  
30 years output guarantee



0.45% annual degradation  
over 30 years



Founded in 1988, ZNShine solar is a world's leading high-tech PV module manufacturer. With the state-of-the-art production lines, the company boasts module capacity of 6GW. Bloomberg has listed ZNShine as a global Tier 1 PV module maker. Today Znshine has distributed its sales to more than 60 countries around the globe.

**ELECTRICAL CHARACTERISTICS | STC\***

Nominal Power Watt Pmax(W)*	430	435	440	445	450
Power Output Tolerance Pmax(%)	0~+3	0~+3	0~+3	0~+3	0~+3
Maximum Power Voltage Vmp(V)	41.30	41.50	41.70	41.90	42.10
Maximum Power Current Imp(A)	10.42	10.49	10.56	10.63	10.69
Open Circuit Voltage Voc(V)	49.70	49.90	50.10	50.30	50.50
Short Circuit Current Isc(A)	11.07	11.14	11.21	11.28	11.34
Module Efficiency (%)	19.8	20.0	20.2	20.5	20.7

\*STC (Standard Test Condition): Irradiance 1000W/m<sup>2</sup>, Module Temperature 25°C, AM 1.5  
\*Measuring tolerance: ±3%

**ELECTRICAL CHARACTERISTICS | NMOT\***

Maximum Power Pmax(Wp)	320.90	324.60	328.30	332.00	335.40
Maximum Power Voltage Vmp(V)	38.20	38.40	38.60	38.80	39.00
Maximum Power Current Imp(A)	8.39	8.45	8.50	8.55	8.60
Open Circuit Voltage Voc(V)	46.30	46.50	46.70	46.90	47.10
Short Circuit Current Isc(A)	8.94	9.00	9.05	9.11	9.16

\*NMOT(Nominal module operating temperature):Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

**ELECTRICAL CHARACTERISTICS WITH 25% REAR SIDE POWER GAIN**

Front power Pmax/W	430	435	440	445	450
Total power Pmax/W	538	544	550	556	563
Vmp/V(Total)	41.40	41.60	41.80	42.00	42.20
Imp/A(Total)	12.98	13.07	13.16	13.24	13.33
Voc/V(Total)	49.80	50.00	50.20	50.40	50.60
Isc/A(Total)	13.79	13.88	13.97	14.05	14.14

**MECHANICAL DATA**

Solar cells	Mono PERC
Cells orientation	144 (6×24)
Module dimension	2094×1038×35 mm(With Frame)
Weight	28.5 kg
Glass	2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Junction box	IP 68, 3 diodes
Cables	4 mm <sup>2</sup> ,350 mm
Connectors	MC4-compatible

**TEMPERATURE RATINGS**

NMOT	44°C ±2°C	Maximum system voltage	1500 V DC
Temperature coefficient of Pmax	-0.36%/°C	Operating temperature	-40°C~+85°C
Temperature coefficient of Voc	-0.29%/°C	Maximum series fuse	25 A
Temperature coefficient of Isc	0.05%/°C	Maximum load(snow/wind)	5400 Pa / 2400 Pa

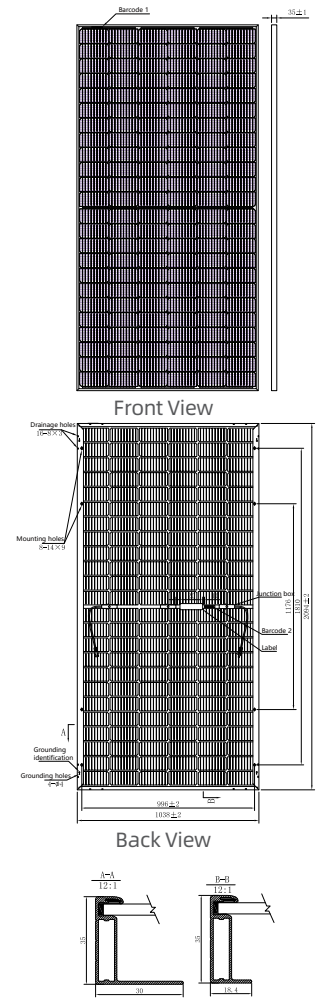
Refer.Bifacial Factor 70±5%

\*Do not connect Fuse in Combiner Box with two or more strings in parallel connection  
\*Remark:Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

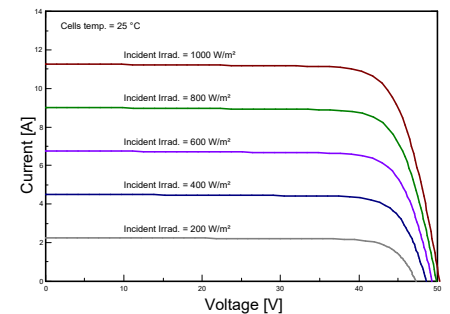
**PACKAGING CONFIGURATION**

Piece/Box	31
Piece/Container(40'HQ)	682
Piece/Container(with additional small package)	737

**DIMENSIONS(MM)**



**I-V CURVES OF PV MODULE(445W)**



**P-V CURVES OF PV MODULE(445W)**

