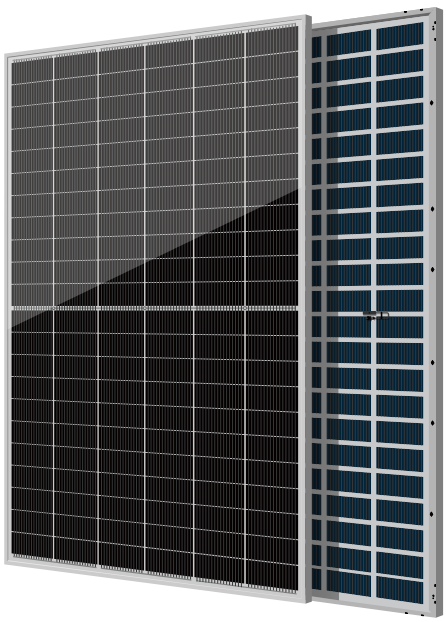
ZNSHINESOLAR



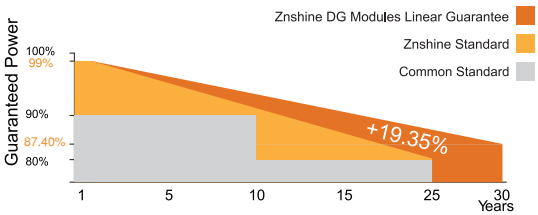
ZXMR-UHLDD132 Series

16BB HALF-CELL N-Type TOPCon Bifacial Double Glass Monocrystalline PV Module

565-590W	22.84%	0.40%
POWER RANGE	MAXIMUM EFFICIENCY	YEARLY DEGRADATION

12 YEARS PRODUCT WARRANTY

30 YEARS OUTPUT GUARANTEE



*Please check the valid version of Limited Product Warranty which is officially released by ZNSHINE PV-TECH Co.,Ltd.

KEY FEATURES

Excellent Cells Efficiency

MBB technology reduce the distance between busbars 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 early morning.

Anti PID

Ensured PID resistance through the quality control of cell manufacturing process and raw materials.

Adapt To Harsh Outdoor Environment

Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity environment.

TIER 1

Global,Tier 1 bankable brand,with independently certified advanced automated manufacturing.

Excellent Quality Managerment System

Warranted reliability and stringent quality assurances well beyond certified requirements.

Bifacial Technology

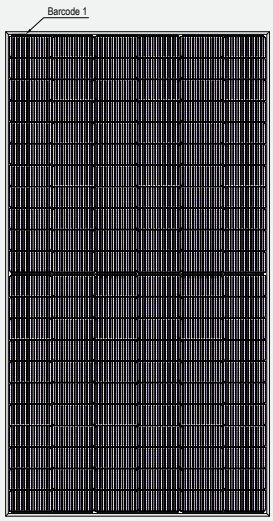
Up to 25% additional power gain from back side depending on albedo.

Founded in 1988, ZNShine solar is a world's leading high-tech PV module manufacturer.With the advanced production lines, the company boasts module capacity of 10 GW. 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.

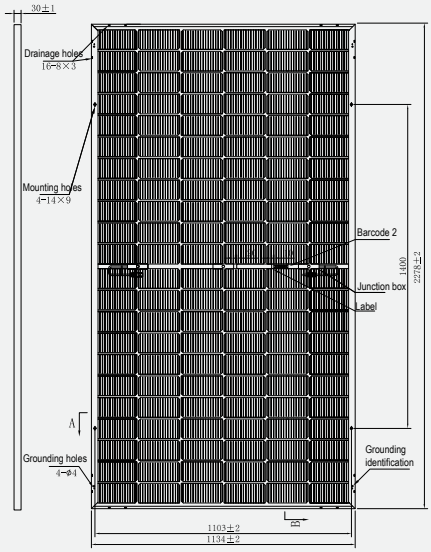
ZXMR-UHLDD132 Series | 16BB HALF-CELL N-Type TOPCon Bifacial Double Glass Monocrystalline PV Module

ZNSHINESOLAR

DIMENSIONS OF PV MODULE(mm)



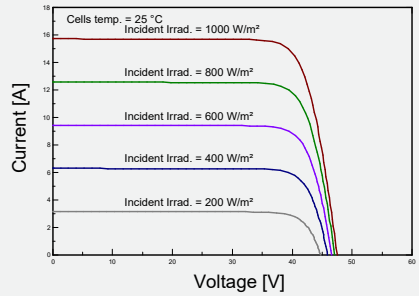
Front View



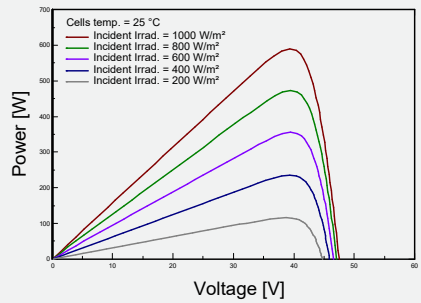
Back View

*Remark: customized frame color and cable length available upon request

I-V CURVES OF PV MODULE(590W)



P-V CURVES OF PV MODULE(590W)



ELECTRICAL CHARACTERISTICS | STC*

Nominal Power Watt Pmax(W)*	565	570	575	580	585	590
Maximum Power Voltage Vmp(V)	38.60	38.80	39.00	39.20	39.40	39.60
Maximum Power Current Imp(A)	14.64	14.70	14.75	14.80	14.85	14.90
Open Circuit Voltage Voc(V)	46.50	46.70	46.90	47.10	47.30	47.50
Short Circuit Current Isc(A)	15.48	15.53	15.58	15.63	15.68	15.73
Module Efficiency (%)	21.87	22.07	22.26	22.45	22.65	22.84

*The data above is for reference only and the actual data is in accordance with the pratical testing
*STC (Standard Test Condition): Irradiance 1000W/m², Module Temperature 25±2℃, AM 1.5
*Measuring uncertainity: ±3%, all the electrical characteristics such as Power, Im, Vm and FF are within ±3% tolerance.

MECHANICAL DATA

Solar cells	N-type Monocrystalline
Cells orientation	132 (6×22)
Module dimension	2278×1134×30 mm (With Frame)
Weight	31.5±1.0 kg
Glass	2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Junction box	IP 68, 3 diodes
Cables	4 mm² ,350 mm (With Connectors)
Connectors*	MC4-EVO2 compatible

*Please refer to regional datasheet for specified connector

ELECTRICAL CHARACTERISTICS | NMOT*

Maximum Power Pmax(Wp)	429.30	433.40	437.50	441.20	444.80	448.50
Maximum Power Voltage Vmpp(V)	36.20	36.50	36.70	36.80	37.00	37.20
Maximum Power Current Impp(A)	11.85	11.89	11.93	11.97	12.01	12.05
Open Circuit Voltage Voc(V)	44.10	44.30	44.50	44.60	44.80	45.00
Short Circuit Current Isc(A)	12.49	12.53	12.57	12.61	12.65	12.69

*NMOT:Irradiance 800W/m²,Ambient Temperature 20℃,AM 1.5,Wind Speed 1m/s

TEMPERATURE RATINGS

NMOT	44℃ ±2℃
Temperature coefficient of Pmax	(-0.28±0.028)%/℃
Temperature coefficient of Voc	-0.23%/℃
Temperature coefficient of Isc	0.045%/℃
Refer.Bifacial Factor	(80±10)%

WORKING CONDITIONS

Maximum system voltage	1500 V DC
Operating temperature	-40℃~+85℃
Maximum series fuse	35 A
Front Side Maximum Static Loading	Up to 5400Pa
Rear Side Maximum Static Loading	Up to 2400Pa

*Remark:Do not connect Fuse in Combiner Box with two or more strings in parallel connection

ELECTRICAL CHARACTERISTICS WITH 25% REAR SIDE POWER GAIN*

Front power Pmax/W	565	570	575	580	585	590
Total power Pmax/W	706	713	719	725	731	738
Vmp/V(Total)	38.70	38.90	39.10	39.30	39.50	39.70
Imp/A(Total)	18.25	18.32	18.38	18.45	18.51	18.58
Voc/V(Total)	46.60	46.80	47.00	47.20	47.40	47.60
Isc/A(Total)	19.30	19.35	19.42	19.48	19.55	19.61

*Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

PACKAGING CONFIGURATION*

Piece/Box	36
Piece/Container(40'HQ)	720

*Customized packaging is available upon request.
*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.
*Caution:Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

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