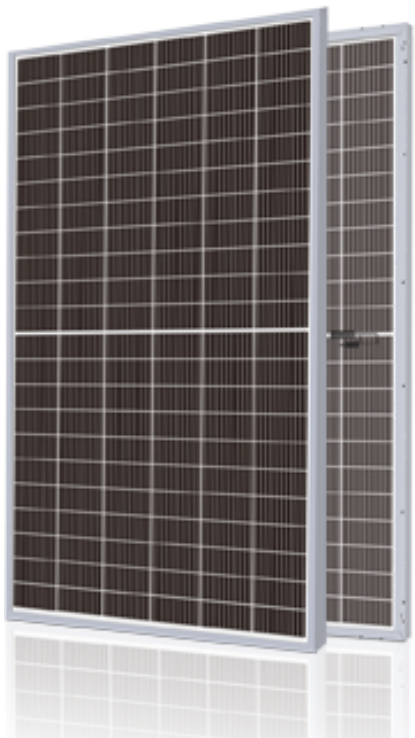
ZNSHINESOLAR



ZXM8-TPLDD132 Series

12BB HALF-CELL Bifacial Double Glass Monocrystalline PERC PV Module

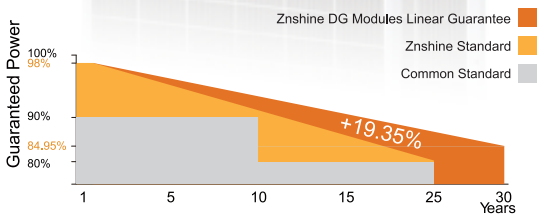
645-670W
POWER RANGE

21.57%
MAXIMUM EFFICIENCY

0.45%
YEARLY DEGRADATION

12 12 YEARS PRODUCT WARRANTY

30 30 YEARS OUTPUT GUARANTEE



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

IEC 61215/IEC 61730/IEC 61701/IEC 62716/UL6 1730

ISO 14001: Environmental Management System

ISO 9001: Quality Management System

ISO45001: Occupational Health and Safety Management System

*As there are different certification requirements in different markets,please contact your local znshine sales representative for the specific certificates applicable to the products in the region in which the products are to be used.

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.

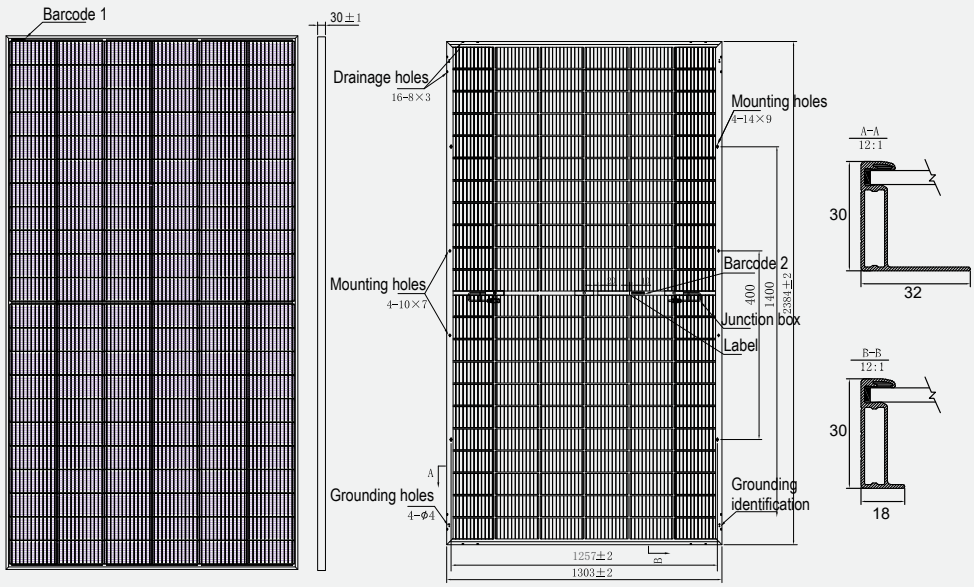
Founded in 1988, ZNShine solar is a world's leading high-tech PV module manufacturer.With the advanced production lines, the company boasts module capacity of 6GW. Bloomberg has listed ZNShine as a global Tier 1 PV module maker. Today Znshine has distributed its sales to more than 60 countries around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

ZXM8-TPLDD132 Series

Znshinesolar 12BB HALF-CELL Bifacial
Double Glass Monocrystalline PERC PV Module

ZNSHINESOLAR

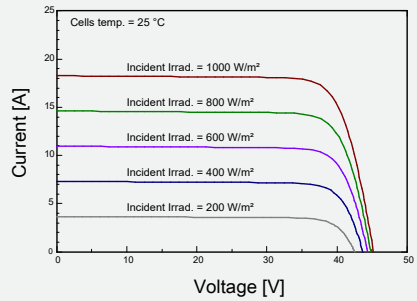
DIMENSIONS OF PV MODULE(mm)



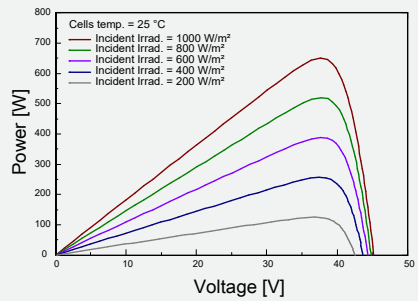
Front View

Back View

I-V CURVES OF PV MODULE(650W)



P-V CURVES OF PV MODULE(650W)



ELECTRICAL CHARACTERISTICS | STC*

Nominal Power Watt Pmax(W)*	645	650	655	660	665	670
Power Output Tolerance Pmax(%)	0~+3	0~+3	0~+3	0~+3	0~+3	0~+3
Maximum Power Voltage Vmp(V)	37.50	37.70	37.90	38.10	38.30	38.50
Maximum Power Current Imp(A)	17.21	17.25	17.29	17.33	17.37	17.41
Open Circuit Voltage Voc(V)	45.00	45.20	45.40	45.60	45.80	46.00
Short Circuit Current Isc(A)	18.22	18.27	18.32	18.37	18.42	18.47
Module Efficiency (%)	20.76	20.92	21.09	21.25	21.41	21.57

*STC (Standard Test Condition): Irradiance 1000W/m², Module Temperature 25℃, AM 1.5
*Measuring tolerance: ±3%

MECHANICAL DATA

Solar cells	Mono PERC
Cells orientation	132（6×22）
Module dimension	2384×1303×30mm (With Frame)
Weight	38.4±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-compatible

ELECTRICAL CHARACTERISTICS | NMOT*

Maximum Power Pmax(Wp)	484.90	488.60	492.30	496.10	499.80	503.60
Maximum Power Voltage Vmpp(V)	35.00	35.20	35.40	35.60	35.70	35.90
Maximum Power Current Impp(A)	13.84	13.88	13.92	13.95	13.99	14.03
Open Circuit Voltage Voc(V)	42.30	42.40	42.60	42.80	43.00	43.20
Short Circuit Current Isc(A)	14.71	14.75	14.79	14.83	14.87	14.91

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

TEMPERATURE RATINGS

NMOT	43℃ ±2℃
Temperature coefficient of Pmax	-0.34%/℃
Temperature coefficient of Voc	-0.29%/℃
Temperature coefficient of Isc	0.05%/℃
Refer.Bifacial Factor	70±10%

WORKING CONDITIONS

Maximum system voltage	1500 V DC
Operating temperature	-40℃~+85℃
Maximum series fuse	35 A
Maximum load(snow/wind)	5400 Pa / 2400 Pa

*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	645	650	655	660	665	670
Total power Pmax/W	806	813	819	825	831	838
Vmp/V(Total)	37.60	37.80	38.00	38.20	38.40	38.60
Imp/A(Total)	21.44	21.49	21.55	21.60	21.65	21.70
Voc/V(Total)	45.10	45.30	45.50	45.70	45.90	46.10
Isc/A(Total)	22.70	22.77	22.83	22.89	22.96	23.02

PACKAGING CONFIGURATION **

Piece/Box	36
Piece/Container(40'HQ)	612

*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.

**Customized packaging is available upon request.

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.

Add : 1#, Zhixi Industrial Zone，JintanJiangsu 213251，P.R. China Tel: +86 519 6822 0233

Note: Specifications included in this datasheet are subject to change without notice.ZNSHINE reserves the right of final interpretation © ZNSHINE SOLAR 2021 | Version: ZXM8-TPLDD132 2112.E