

# 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 YEARS PRODUCT WARRANTY**



**30 YEARS OUTPUT GUARANTEE**



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.



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

## VLASTNOSTI



### Vynikajúca účinnosť buniek

Technológia 9BB znižuje vzdialenosť medzi prípojnícami a čo je prínosom pre zvýšenie výkonu.



### Lepšia odozva pri slabom osvetlení

Väčší výkon pri slabom osvetlení, napríklad pri hmle, zamračení a skoro ráno.



### Anti PID

Zabezpečenie odolnosti voči PID prostredníctvom kontroly kvality buniek výrobného procesu a surovín.



### Prispôsobenie sa vonkajšiemu prostrediu

Odolnosť voči drsnému prostrediu, ako je soľ, čpavok, piesok, vysoká teplota a vysoká vlhkosť prostredia.



### TIER1

Globálna značka Tier 1 s nezávislou certifikáciou pokročilou automatizovanou výrobou.



### Vynikajúci systém riadenia kvality

Garantovaná spoľahlivosť a prísne záruky kvality nad rámec certifikovaných požiadaviek.



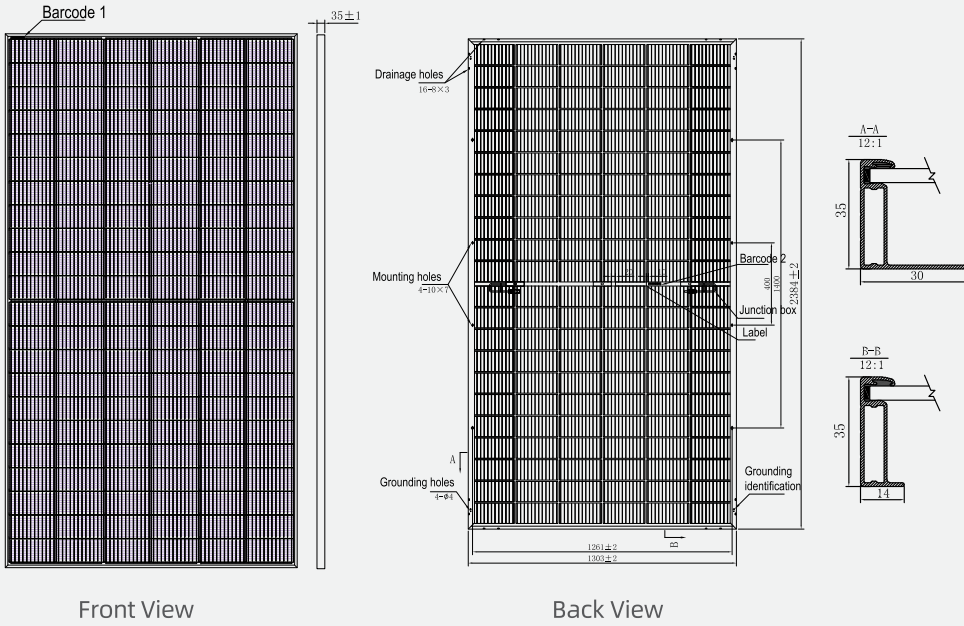
### Technológia Bifacial

Až 25 % dodatočný zisk výkonu zo zadnej strany v závislosti od albedo

Spoločnosť ZNShine solar bola založená v roku 1988 a je popredným svetovým výrobcom špičkových fotovoltaických modulov. Vďaka moderným výrobným linkám sa môže pochváliť kapacitou modulov 15 GW. Agentúra Bloomberg zaradila spoločnosť ZNShine medzi svetových výrobcov fotovoltaických modulov Tier 1. V súčasnosti spoločnosť Znshine distribuuje svoj predaj do viac ako 60 krajín po celom svete.

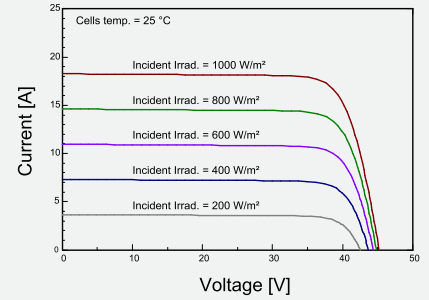
# ZXM8-TPLDD132 Series | Znshinesolar 12BB HALF-CELL **Bifacial** Double Glass Monocrystalline PERC PV Module

## DIMENSIONS OF PV MODULE(mm)

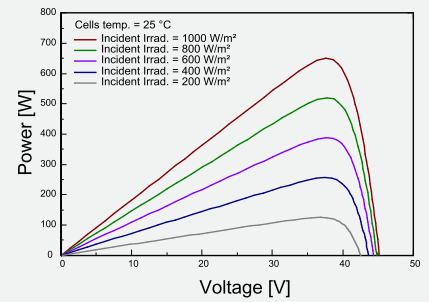


\*Remark: customized frame color and cable length available upon request

## I-V CURVES OF PV MODULE(650W)



## P-V CURVES OF PV MODULE(650W)



## ELECTRICAL CHARACTERISTICS \$TC\*

Nominal Power Watt Pmax(W)*	645	650	655	660	665	670
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

\*The data above is for reference only and the actual data is in accordance with the practical testing  
 \*STC (Standard Test Condition): Irradiance 1000W/m<sup>2</sup>, Module Temperature 25±2°C, AM 1.5  
 \*Measuring uncertainty: ±3%, all the electrical characteristics such as Power, Im, Vm and FF are within ±3% tolerance.

## MECHANICAL DATA

Solar cells	Mono PERC
Cells orientation	132 (6x22)
Module dimension	2384x1303x35 mm (With Frame)
Weight	38.5±1.0 kg
Glass	2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Junction box	IP 68, 3 diodes
Cables	4 mm <sup>2</sup> , 350 mm (With Connectors)
Connectors*	MC4-compatible

\*Please refer to regional datasheet for specified connector

## 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 Imp(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/m<sup>2</sup>, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

## TEMPERATURE RATINGS

NMOT	43°C ±2°C	Maximum system voltage	1500 V DC
Temperature coefficient of Pmax	-0.34%/°C	Operating temperature	-40°C~+85°C
Temperature coefficient of Voc	-0.29%/°C	Maximum series fuse	35 A
Temperature coefficient of Isc	0.05%/°C	Front Side Maximum Static Loading	Up to 5400Pa
Refer. Bifacial Factor	70±5%	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	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

\*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	31
Piece/Container(40'HQ)	558

\*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.