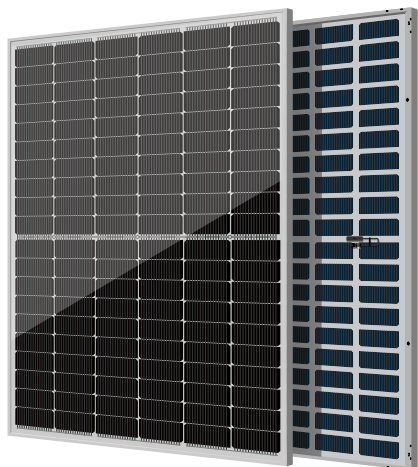




ZXM7-UHLDD120 Series

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

465-480W

POWER RANGE

22.24%

MAXIMUM EFFICIENCY

0.40%

YEARLY DEGRADATION



12 YEARS PRODUCT WARRANTY



30 YEARS OUTPUT GUARANTEE

12 years product warranty for general application
15 years product warranty for Rooftop PV system
30 years output warranty / 0.40% Annual Degradation over 30 years



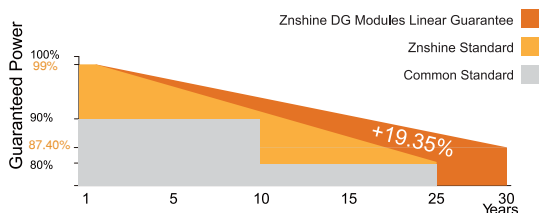
IEC 61215/IEC 61730

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.

Key Features



Excellent Cells Efficiency

SMBB 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.



TIER 1

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



Excellent Quality Management System

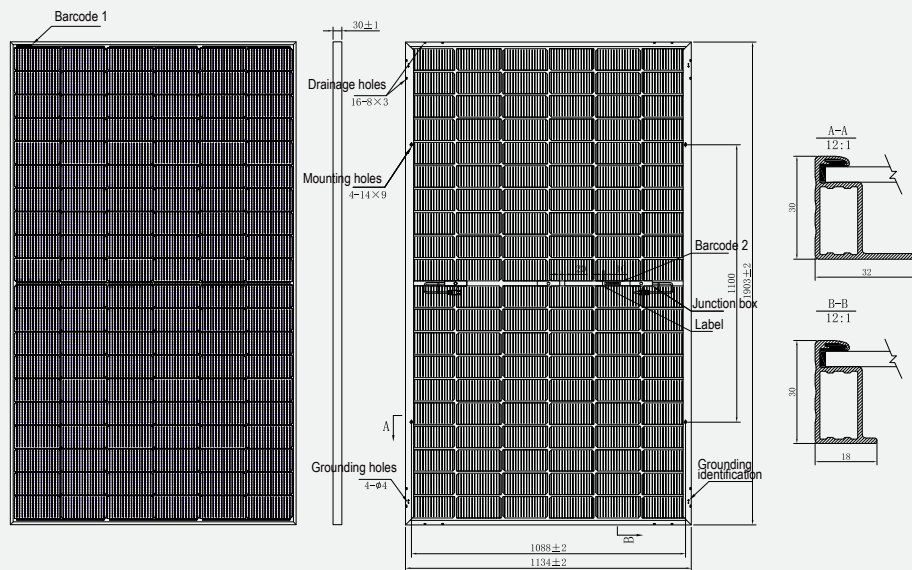
Warranted reliability and stringent quality assurances well beyond certified requirements.



Bifacial Technology

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

DIMENSIONS OF PV MODULE(mm)

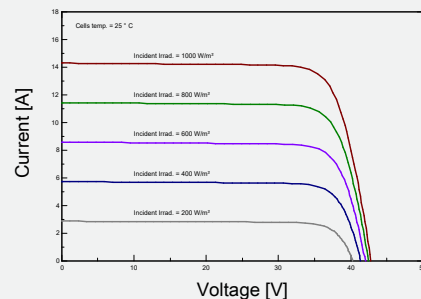


Front View

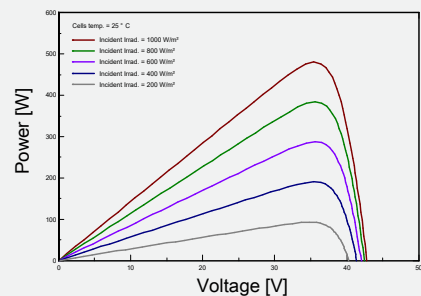
Back View

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

I-V CURVES OF PV MODULE(480W)



P-V CURVES OF PV MODULE(480W)



ELECTRICAL CHARACTERISTICS | STC*

Module Type	ZXM7 UHLDD120-465/N	ZXM7 UHLDD120-470/N	ZXM7 UHLDD120-475/N	ZXM7 UHLDD120-480/N
Nominal Power Watt Pmax(W)*	465±5	470±5	475±5	480±5
Maximum Power Voltage Vmp(V)	34.90	35.10	35.30	35.50
Maximum Power Current Imp(A)	13.33	13.40	13.46	13.53
Open Circuit Voltage Voc(V)	42.20	42.40	42.60	42.80
Short Circuit Current Isc(A)	14.10	14.17	14.24	14.31
Module Efficiency (%)	21.55	21.78	22.01	22.24

*The data above is for reference only and the actual data is in accordance with the practical testing

*STC (Standard Test Condition): Irradiance 1000W/m², 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.

ELECTRICAL CHARACTERISTICS | BNPI*

	510±5	515±5	520±5	530±5
Nominal Power Watt Pmax(W)*	510±5	515±5	520±5	530±5
Open Circuit Voltage Voc(V)	42.30	42.50	42.70	42.90
Short Circuit Current Isc(A)	15.46	15.53	15.62	15.69

ELECTRICAL CHARACTERISTICS | NMOT*

	351.70	355.50	359.00	362.90
Maximum Power Pmax(Wp)	351.70	355.50	359.00	362.90
Maximum Power Voltage Vmp(V)	32.80	33.00	33.20	33.40
Maximum Power Current Imp(A)	10.71	10.76	10.82	10.87
Open Circuit Voltage Voc(V)	39.80	40.00	40.20	40.40
Short Circuit Current Isc(A)	11.38	11.44	11.49	11.55

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

ELECTRICAL CHARACTERISTICS WITH 25% REAR SIDE POWER GAIN *

	465	470	475	480
Front power Pmax/W	465	470	475	480
Total power Pmax/W	581	588	594	600
Vmp/V(Total)	35.00	35.20	35.40	35.60
Imp/A(Total)	16.61	16.69	16.77	16.85
Voc/V(Total)	41.30	41.50	41.70	42.90
Isc/A(Total)	17.57	17.65	17.74	17.83

*The data above is for reference only and the actual data is in accordance with the practical testing
*Measuring uncertainty: ±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	120 (6×20)
Module dimension	1903×1134×30 mm(With Frame)
Weight	26.5±1.0 kg
Glass	2.0 mm+2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Junction box	PV-XT1609Nxyz, IP 68, 3 diodes
Cables	H1Z2Z2-K 1×4,0mm²
Connectors*	PV-XT101.1 Suzhou Xtong Photovoltaic Technologies Co., Ltd. manufactured in china

*Please refer to regional datasheet for specified connector

TEMPERATURE RATINGS

NMOT	44°C ±2°C
Temperature coefficient of Pmax	(-0.30±0.03)%/°C
Temperature coefficient of Voc	-0.25%/°C
Temperature coefficient of Isc	0.046%/°C
Refer.Bifacial Factor	qpsc/qPmax=80±10%, qVoc=100±10%

WORKING CONDITIONS

Maximum system voltage	1500 V DC
Operating temperature	-40°C~+85°C
Maximum series fuse	30 A
Maximum load front/back	3600/1600 with safety factor 1.5
Fire safety class	Class A
Safety class	Class II

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

PACKAGING CONFIGURATION *

Piece/Box	36
Piece/Container(40'HQ)	864

*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.