

ASM60P 450-485 Series

N-type Double glass components



450-485W
POWER RANGE

22.27%
MAXIMUM EFFICIENCY

0.55%
YEARLY DEGRADATION

12 12 YEARS PRODUCT WARRANTY

30 30 YEARS OUTPUT GUARANTEE



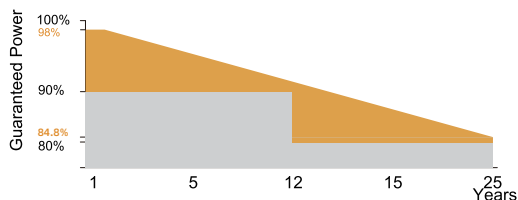
IEC 61215/IEC 61730/IEC 61701/IEC 62716/UL6 1730

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 znsolar 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 Anhui Shangxia Solar Energy 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 Management System

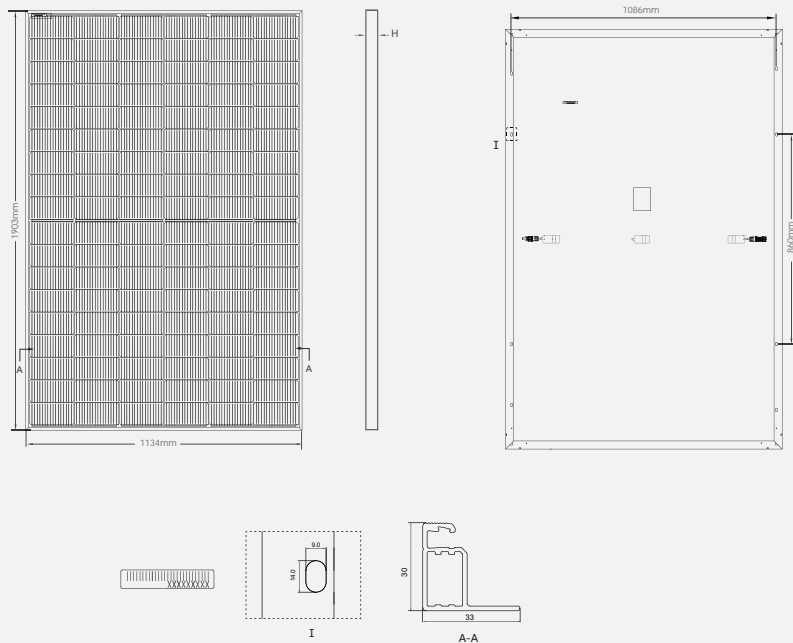
Warranted reliability and stringent quality assurances well beyond certified requirements.



Bifacial Technology

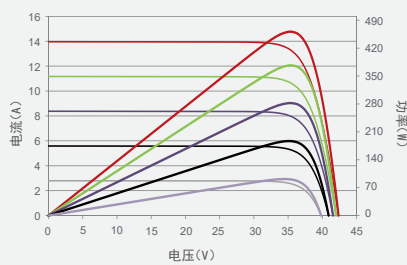
Up to 25% additional power gain from back side depending on albedo.

DIMENSIONS OF PV MODULE(mm)

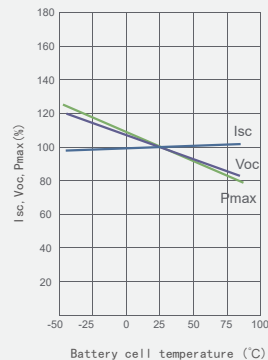


*Remark: customized frame color and cable length available upon request

Current voltage and power voltage curves(485W)



Isc, Voc, Pmax Temperature curve



ELECTRICAL CHARACTERISTICS | STC*

Nominal Power Watt Pmax(W)*	450	455	460	465	470	475	480	485
Power Output Tolerance Pmax(%)	0~+3	0~+3	0~+3	0~+3	0~+3	0~+3	0~+3	0~+3
Maximum Power Voltage Vmp(V)	33.91	34.06	34.2	34.37	34.56	35.43	35.64	35.85
Maximum Power Current Imp(A)	13.27	13.36	13.45	13.53	13.6	13.41	13.47	13.53
Open Circuit Voltage Voc(V)	41.18	41.33	42.48	41.3	41.78	42.74	42.97	43.2
Short Circuit Current Isc(A)	13.85	13.93	14.01	14.09	14.17	14.2	14.26	14.32
Module Efficiency (%)	20.85	21.08	21.32	21.55	21.78	22.01	22.24	22.27

*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°C, AM 1.5
 *Measuring tolerance: ±3%

MECHANICAL DATA

Solar cells	Double glass
Cells orientation	108 (2×54)
Module dimension	1903 × 1134 × 30mm
Weight	24.2kg
Glass	3.2mm, High Transmission, AR Coated Tempered Glass
Junction box	IP 68, 3 diodes
Cables	4 mm ² , 350 mm (With Connectors)
Connectors*	MC4-compatible

*Please refer to regional datasheet for specified connector

ELECTRICAL CHARACTERISTICS | NMOT*

Maximum Power Pmax(Wp)	335	339	342	346	350	357	361	366
Maximum Power Voltage Vmpp(V)	31.73	31.91	32.07	32.12	32.32	33.10	33.27	33.41
Maximum Power Current Imp(A)	10.55	10.61	10.67	10.77	10.82	10.79	10.85	10.91
Open Circuit Voltage Voc(V)	38.87	39.01	39.15	39.29	39.43	40.41	40.57	40.63
Short Circuit Current Isc(A)	11.19	11.25	11.32	11.38	11.34	11.49	11.55	11.63

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

TEMPERATURE RATINGS

WORKING CONDITIONS

NMOT	45°C ±2°C	Maximum system voltage	1500 V DC
Temperature coefficient of Pmax	-0.35%/°C	Operating temperature	-40°C~+85°C
Temperature coefficient of Voc	-0.28%/°C	Maximum series fuse	25 A
Temperature coefficient of Isc	+0.048%/°C	Front Side Maximum Static Loading	Up to 5400Pa
Refer. Bifacial Factor	70±5%	Rear Side Maximum Static Loading	Up to 2400Pa

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

Double-sided power generation parameters (back gain)

5%	Maximum Power (P _{MAX})	670	500	556	604	609
	Component efficiency (%)	21.20	20.70	21.17	23.37	23.57
15%	Maximum Power (P _{MAX})	660	665	670	681	690
	Component efficiency (%)	21.2	25.15	25.37	25.56	25.82
25%	Maximum Power (P _{MAX})	706	714	722	728	729
	Component efficiency (%)	27.30	27.34	27.58	27.02	27.71