

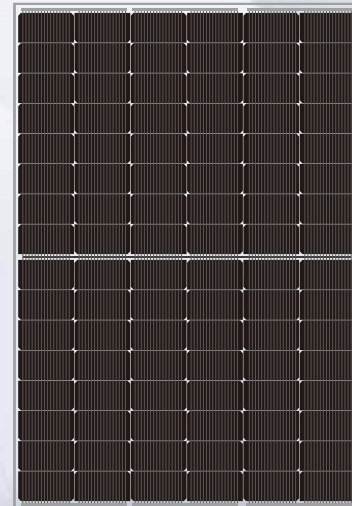
TOPCon

Double Glass Bifacial


440-460W


SN(440~460W)-96MTBR **16BB** ▶


Mono MBB **N-type** large size half cut module





KEY FEATURES


- 


Sine Energy Topcon solar modules adopts the latest 16 bus bar technology decrease the current transverse propagation path by 50% and improve the efficiency of the modules up to 23.0%.
- 


5-25w higher than Perc modules with the same size result in lower LCOE and O/M cost.
- 

N type topcon modules has better reliability in harsh environment and lower LID/LETID.
- 

N type Topcon solar cells makes longer life span, lower degradation and better performance in weak light conditions
- 

Half cut cell and optimized circuit design as well split junction box makes lower the power loss caused by shadow and mismatch.
- 

Lower thermal coefficient for higher power generation at higher temperature.
- 

Selected encapsulating materials and stringent production process controls ensures highly PID resistant.
- 

Ideal for usage in residential rooftops, commercial and large-scale plants.

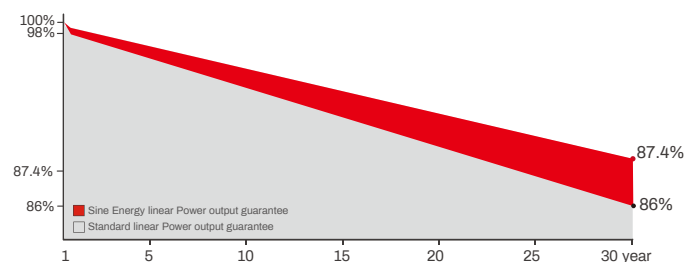
CERTIFICATION

IEC61215 | IEC61730 | IEC 61701 | CE | INMETRO
 ISO 9001
 2015 Quality Management System
 ISO 14001
 2015 Environmental Management System
 ISO45001
 2018 Occupational Health and Safety Management System



INDUSTRY LEADING WARRANTY

- 12 years Guarantee on product material and workmanship
- 30 years Linear power output warranty



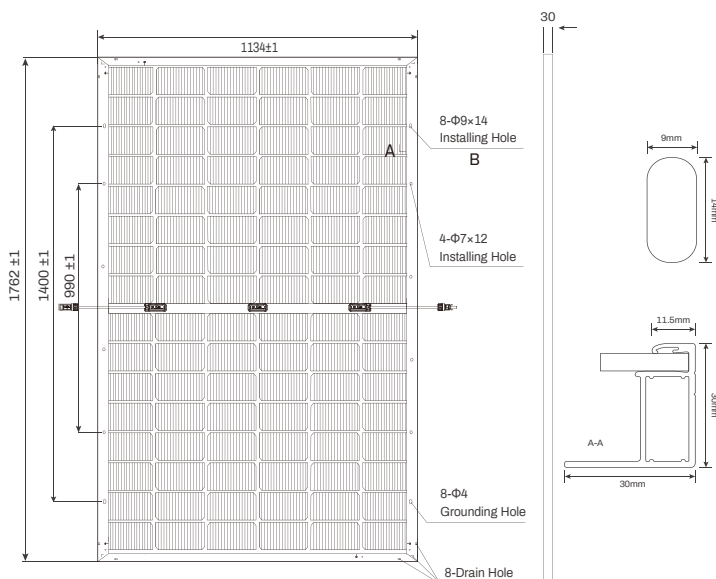
SN(440~460W)-96MTBR

Weight
23.5kg

Number of Cells
96pcs(16×6)

Module Size
1762×1134×30mm

Packing
37pcs/pallet,962pcs/40HQ



MECHANICAL SPECIFICATIONS

Solar Cell Type	210×182mm
Glass	Dual glass, 2.0mm coated tempered glass
Frame	Silver Anodized Aluminium Alloy
Junction Box	IP68
No. of Diodes	3pcs
Output Cable	4.0mm ² 400/400mm (custmized available)
Connector	MC4 Compatible (MC4 Original optional)
Wind/Snow Load	2400pa/5400pa

TEMPERATURE COEFFICIENT

Nominal Operating Cell Temp(NOCT)	45±2 C
Temperature Coefficient of ISC	+0.045%/C
Temperature Coefficient of VOC	-0.230%/C
Temperature Coefficient of Pmax	-0.280%/C
Operational Temperature	-40 C ~ +85 C
Maximum System Voltage	1500V DC(IEC)
Maximum Series Fuse Rating	25A
Fire Rating	Class C
Protection Class	Class II

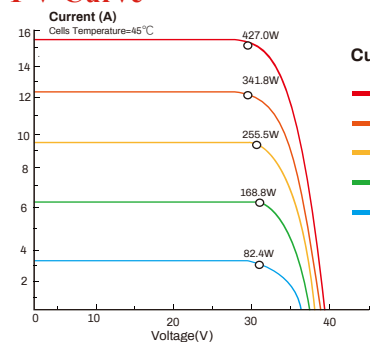
STC — Electrical Characteristics

Test conditions	STC		NOCT		STC		NOCT		STC		NOCT	
Maximum Power -Pmax(W)	440W	336W	445W	340W	450W	344W	455W	347W	460W	351W		
Maximum Power Voltage-Vmp(V)	30.86	29.23	30.99	29.34	31.10	29.45	31.22	29.55	31.33	29.65		
Maximum Power Current-Imp(A)	14.26	11.49	14.36	11.58	14.47	11.67	14.58	11.76	14.69	11.84		
Open Circuit Voltage -Voc(V)	36.09	34.86	36.22	34.95	36.33	35.05	36.45	35.14	36.56	35.24		
Short Circuit Current-Isc(A)	15.51	12.24	15.54	12.32	15.57	12.41	15.60	12.50	15.64	12.59		
Module Efficiency(STC) -ηm(%)	22.02		22.27		22.52		22.78		23.03			
Power output tolerance(W)	±3%											
STC:AM:1.5, front:1000W/m ² , 25°C. NOCT:AM:1.5, front:800W/m ² , Wind Speed:1m/s, 20°C												

BNPI — Electrical Characteristics

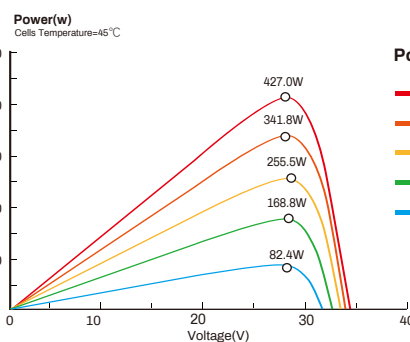
Maximum Power -Pmax(W)	482W	487W	493W	498W	504W
Maximum Power Voltage-Vmp(V)	33.66	33.75	33.91	34.02	34.15
Maximum Power Current-Imp(A)	14.32	14.43	14.54	14.64	14.75
Open Circuit Voltage -Voc(V)	36.09	36.22	36.33	36.45	36.56
Short Circuit Current-Isc(A)	15.58	15.61	15.64	15.67	15.71
Module Efficiency(STC) -ηm(%)	23.60	23.86	24.13	24.41	24.68
BNPI: AM:1.5, front:1000W/m ² , rear: 135W/m ² , 25°C.					

I-V Curve



Current-Voltage Curve(SN450-96MTBR)

— 1000W/m²
— 800W/m²
— 600W/m²
— 400W/m²
— 200W/m²



Power-Voltage Curve(SN450-96MTBR)

— 1000W/m²
— 800W/m²
— 600W/m²
— 400W/m²
— 200W/m²