



High Power Output
Low LCOE



Maximum Power
450W+



TWMNH N-type Half-cell Bifacial Full-black Module (48) **48HC430-450W**

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Residential
Rooftop

15
YEAR
Materials
Warranty

30
YEAR
Power
Warranty

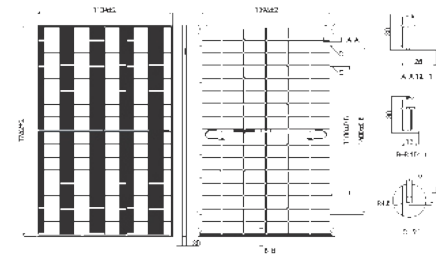


Learn More

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48HC430-450W

DRAWINGS (Unit: mm)



ELECTRICAL CHARACTERISTICS (STC)

Module Type: TWMNH-48HCXXX					
Maximum Power: Pmax [W]	430	435	440	445	450
Open Circuit Voltage: Voc [V]	34.31	34.49	34.67	34.85	35.03
Short Circuit Current: Isc [A]	15.85	15.90	15.95	16.00	16.05
Voltage at Maximum Power: Vmp [V]	29.36	29.54	29.72	29.90	30.08
Current at Maximum Power: Imp [A]	14.65	14.73	14.81	14.89	14.97
Module Efficiency: η [%]	21.6	21.8	22.0	22.3	22.5

* STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5

ELECTRICAL CHARACTERISTICS (NMOT)

Maximum Power: Pmax [W]	323	327	331	335	338
Open Circuit Voltage: Voc [V]	32.59	32.77	32.94	33.11	33.28
Short Circuit Current: Isc [A]	12.60	12.64	12.68	12.92	12.96
Voltage at Maximum Power: Vmp [V]	27.31	27.51	27.68	27.89	27.96
Current at Maximum Power: Imp [A]	11.83	11.89	11.96	12.02	12.09

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

ELECTRICAL CHARACTERISTICS (Rear Power Gain)

5%	Maximum Power: Pmax[W]	451	456	462	467	472
	Module Efficiency: η [%]	22.6	22.8	23.1	23.4	23.6
15%	Maximum Power: Pmax[W]	494	500	506	511	517
	Module Efficiency: η [%]	24.7	25.0	25.3	25.6	25.9
25%	Maximum Power: Pmax[W]	537	543	550	556	562
	Module Efficiency: η [%]	26.9	27.2	27.5	27.8	28.1

TEMPERATURE PARAMETERS

Temperature Coefficient (Pmax)	-0.28%/°C
Temperature Coefficient (Voc)	-0.24%/°C
Temperature Coefficient (Isc)	+0.044%/°C
NMOT	45±2°C

MAXIMUM RATINGS

Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30A
Power Output Tolerance	0~+3%
Bifaciality	80±10%

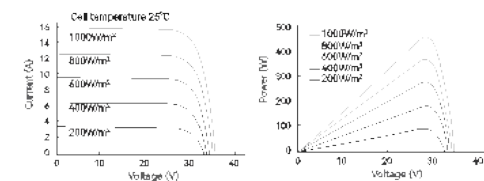
MECHANICAL PARAMETERS

Cells	TNC (N Type Monocrystalline Cell)
Cell Orientation	96(6x16)
Dimension	1762±2×1134±2×30mm
Weight	20.9kg
Front Glass	1.6mm high transmittance, AR tempered glass
Rear Glass	1.6mm semi-tempered glass
Frame	Anodized aluminum alloy black frame
Junction Box	IP68, 3 diodes
Output Cable	4.0mm²
Cable Length	±1200mm, length can be customized
Wind/Snow Load	2400Pa/5400Pa
Packaging	36pcs per pallet, 736pcs per 40'HC

WARRANTY



I-V CURVE



CERTIFICATIONS

Quality Management System and Product Certification

ISO 9001: 2015/Quality management system
ISO 14001: 2015/Environmental management system
ISO 45001: 2018/Occupational health and safety management system
ISO 50001: 2018/Energy management system
IEC 62941: 2019/Quality system for PV module manufacturing
IEC 61215/61730, IEC 62804(PID), IEC 61701(Sah),
IEC 62716 (Ammonia), IEC 60068-2-68(Sand)



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Statement: TWM technology, products and product update, there may be deviation between the technical parameters of Tongwei's module products and the technical parameters contained in the specification, and Tongwei so or has the right to adjust the technical parameters at any time without notifying the customer, the final interpretation of the technical specifications is vested in Tongwei so or. (Rev:09-2024016)