

High Power Output
Low LCOE



Maximum Power
445W+



TWMNH

N-type Half-cell
Bifacial Module (48)

48HD425-445W

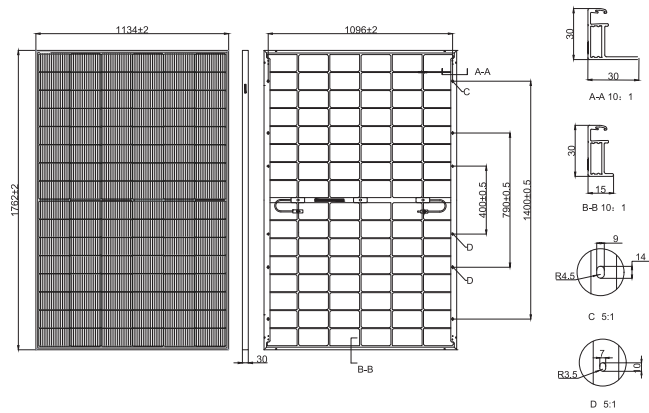


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DRAWINGS (Unit: mm)



MECHANICAL PARAMETERS

Cells	TNC (N Type Monocrystalline Cell)
Cell Orientation	96[6X16]
Dimension	1762±2X1134±2X30mm
Weight	21.0kg
Front Glass	1.6mm high transmittance, AR tempered glass
Rear Glass	1.6mm semi-tempered glass
Frame	Anodized aluminum alloy frame
Junction Box	IP68, 3 diodes
Output Cable	4.0mm ²
Cable Length	+400mm, -200mm, length can be customized
Wind/Snow Load	2400Pa/5400Pa
Packaging	36pcs per pallet, 936pcs per 40'HC

ELECTRICAL CHARACTERISTICS (STC)

Module Type: TWMNH-48HDXXX					
Maximum Power: Pmax [W]	425	430	435	440	445
Open Circuit Voltage: Voc [V]	34.13	34.31	34.49	34.67	34.85
Short Circuit Current: Isc [A]	15.80	15.85	15.90	15.95	16.00
Voltage at Maximum Power: Vmp [V]	29.18	29.36	29.54	29.72	29.90
Current at Maximum Power: Imp [A]	14.56	14.64	14.72	14.80	14.88
Module Efficiency: η [%]	21.3	21.5	21.8	22.0	22.3

ELECTRICAL CHARACTERISTICS (NMOT)

Maximum Power: Pmax [W]	319.5	323.3	327.0	330.8	334.6
Open Circuit Voltage: Voc [V]	32.22	32.39	32.56	32.73	32.90
Short Circuit Current: Isc [A]	12.76	12.80	12.84	12.88	12.92
Voltage at Maximum Power: Vmp [V]	27.47	27.64	27.81	27.98	28.14
Current at Maximum Power: Imp [A]	11.63	11.70	11.76	11.82	11.89

* STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5, Measuring Tolerance: ±3%
 * 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]	446.3	451.5	456.8	462.0	467.3
	Module Efficiency: η [%]	22.3	22.6	22.9	23.1	23.4
15%	Maximum Power: Pmax[W]	488.8	494.5	500.3	506.0	511.8
	Module Efficiency: η [%]	24.5	24.7	25.0	25.3	25.6
25%	Maximum Power: Pmax[W]	531.3	537.5	543.8	550.0	556.3
	Module Efficiency: η [%]	26.6	26.9	27.2	27.5	27.8

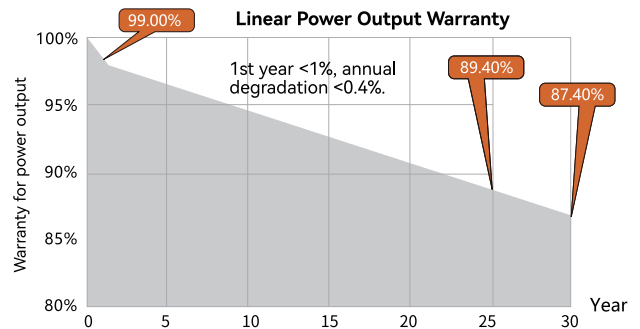
TEMPERATURE PARAMETERS

Temperature Coefficient (Pmax)	-0.30%/°C
Temperature Coefficient (Voc)	-0.25%/°C
Temperature Coefficient (Isc)	+0.046%/°C
NMOT	45±2°C

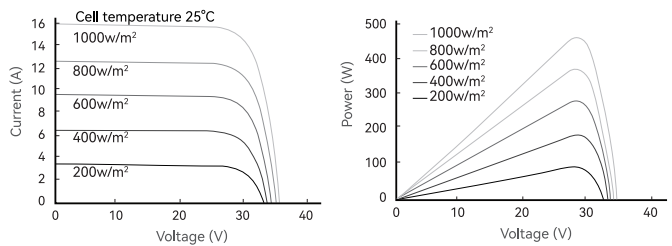
MAXIMUM RATINGS

Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30A
Power Output Tolerance	0~+5W
Maximum Bifaciality	80±5%

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 / occupation health safety management system
- ISO 50001:2011 / energy management system
- IEC TS 62941—2016 / PV industry quality management system
- IEC 61215/61730, IEC 62804(PID), IEC 61701(Salt), IEC 62716 (Ammonia), IEC 60068-2-68(Sand)



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