

TNC 2.0

N-type Half-cell Monofacial Dual Glass Black Frame Module (48)

TWMNH-48HW



Higher power output, higher conversion efficiency



Passed hail resistance test for higher reliability



Compact size and lightweight, making installation easier



Exquisite appearance, enhancing home aesthetics

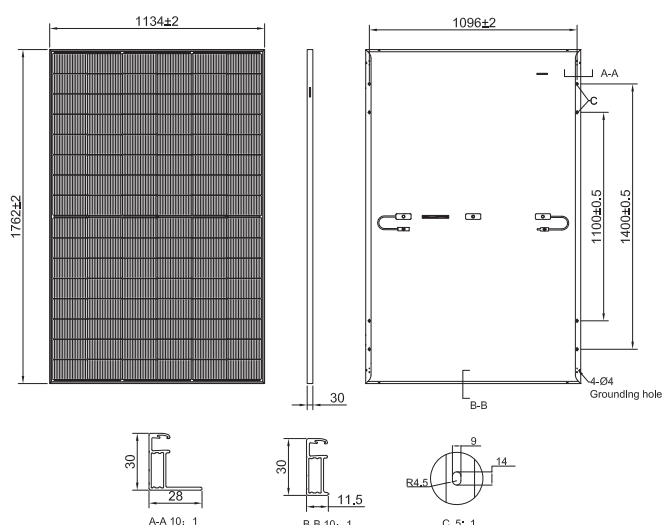
460-480W



Residential Rooftop



Drawing (Unit: mm)



Mechanical Parameters

Cell Type	TNC
Cell Orientation	96[6×16]
Dimension	1762±2×1134±2×30mm
Weight	24.3 kg
Front Glass	2.0 mm AR coating semi tempered glass
Rear Glass	2.0 mm semi tempered glass
Frame	Anodized aluminum alloy black frame
Junction Box	IP68, 3 diodes
Cable	4.0 mm ²
Cable Length	+1200mm,-1200mm,length can be customized
Maximum Static Test Load	6,000 Pa (Positive) / 4,000 Pa (Negative)
Packaging (Per pallet)	36 pcs
Packaging	936 pcs per 40'HC

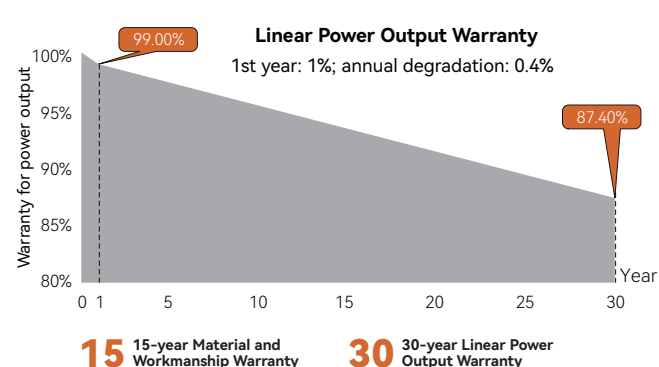
Electrical Characteristics (STC)

Module type: TWMNH-48HWXXX

Maximum Power: Pmax [W]	460	465	470	475	480
Open Circuit Voltage: Voc [V]	36.25	36.40	36.55	36.70	36.80
Short Circuit Current: Isc [A]	15.89	15.92	15.95	15.97	15.98
Voltage at Maximum Power: Vmp [V]	30.31	30.56	30.80	31.05	31.20
Current at Maximum Power: Imp [A]	15.18	15.22	15.26	15.30	15.39
Module Efficiency: η [%]	23.0	23.3	23.5	23.8	24.0

* STC: Irradiance 1000W/m², Cell temperature 25°C, AM=1.5, Power measurement tolerance: ±3%.
The above electrical parameters are for module grading only, not for individual modules.

Warranty

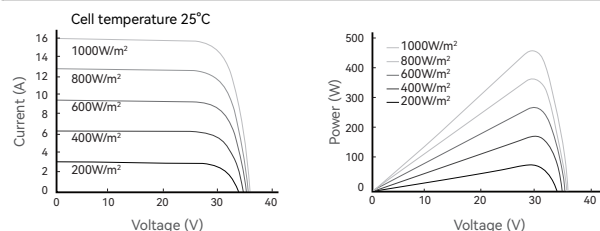


Temperature Rating

Temperature Coefficient of Pmax	-0.28%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Isc	+0.046%/°C

* Due to differences in test methods and equipment, actual measured values may deviate slightly from the above nominal values.

Curve



Operating Parameters

Operating Temperature*	[T _g] ≤ 70°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30A
Power Output Tolerance	0~+3%

*The module operating temperature can reach up to 85°C for short term.

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 (2021) / IEC 61730 (2023), IEC TS 62804,
 IEC 61701, IEC 62716, IEC 60068-2-68



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