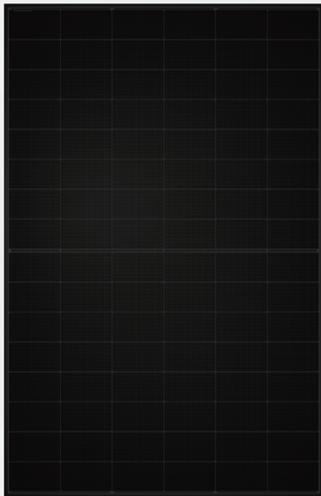


TNCC 2.0

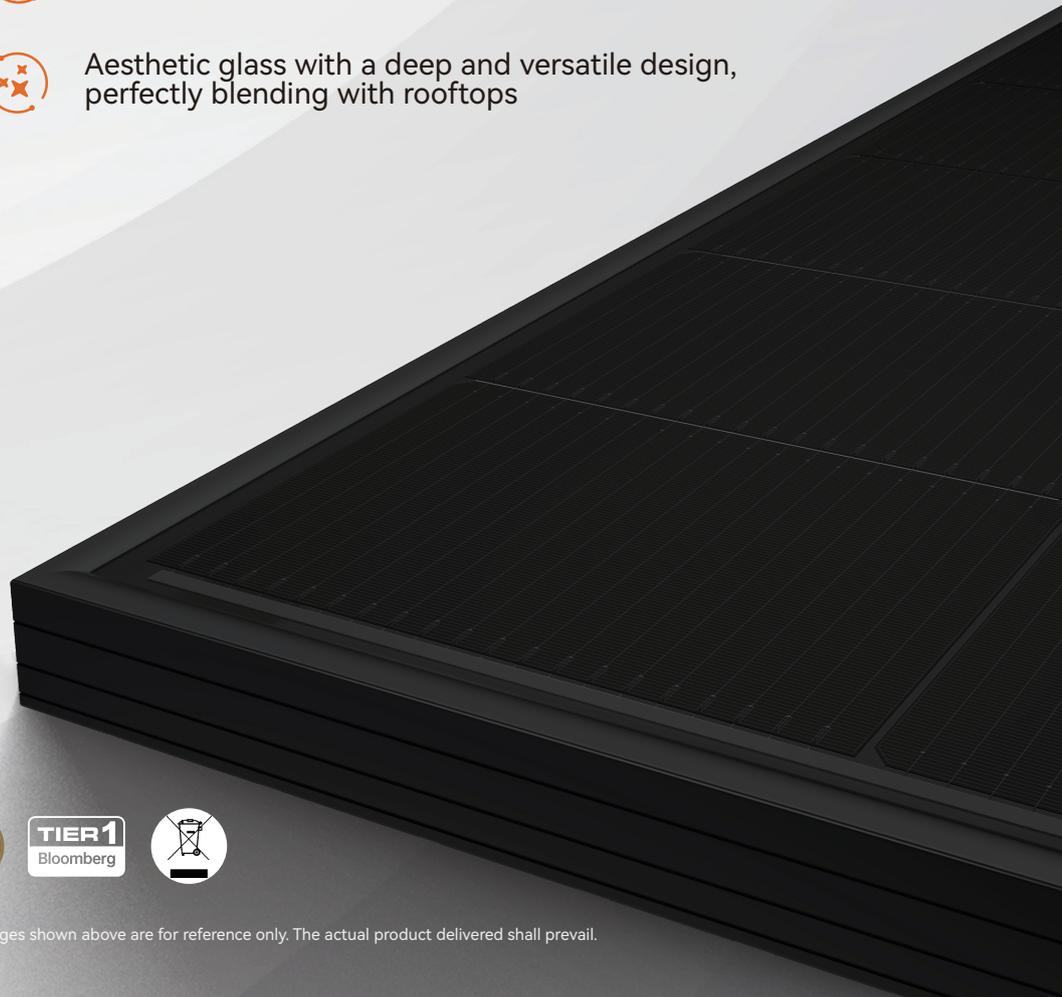
N-type Half-cell Monofacial Dual Glass Full-black Module (48)

TWMNH-48HE

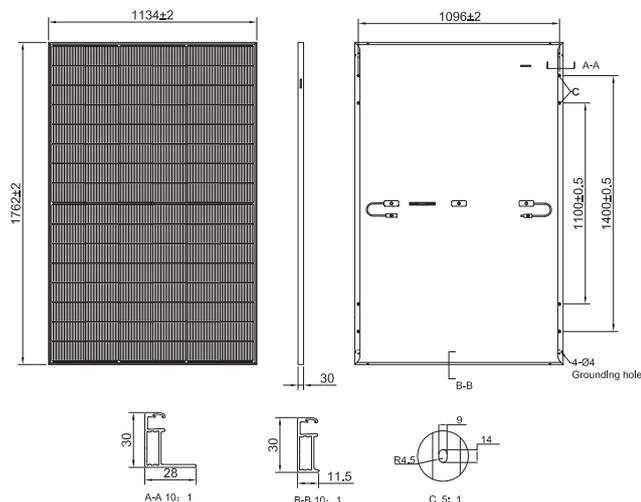


-  Higher power output, higher conversion efficiency
-  Passed hail resistance test for higher reliability
-  Compact size and lightweight, making installation easier
-  Aesthetic glass with a deep and versatile design, perfectly blending with rooftops

450-470W



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 (front) / 4,000 Pa (rear)
Packaging (Per pallet)	36 pcs
Packaging	936 pcs per 40'HC

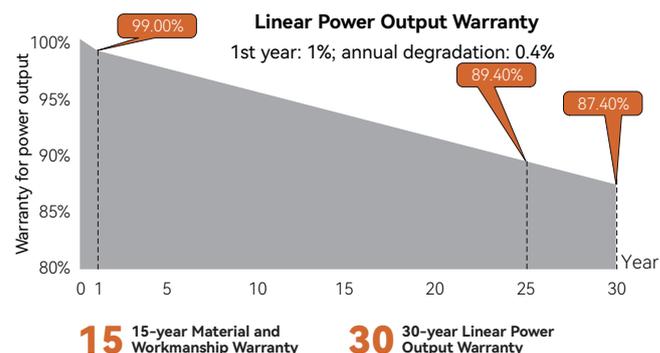
Electrical Characteristics (STC)

Module type: TWMNH-48HEXXX

Maximum Power: Pmax [W]	450	455	460	465	470
Open Circuit Voltage: Voc [V]	35.95	36.10	36.25	36.40	36.55
Short Circuit Current: Isc [A]	15.81	15.85	15.89	15.92	15.95
Voltage at Maximum Power: Vmp [V]	29.81	30.06	30.31	30.56	30.80
Current at Maximum Power: Imp [A]	15.10	15.14	15.18	15.22	15.26
Module Efficiency: η [%]	22.5	22.8	23.0	23.3	23.5

* STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5, Power measurement tolerance:±3%

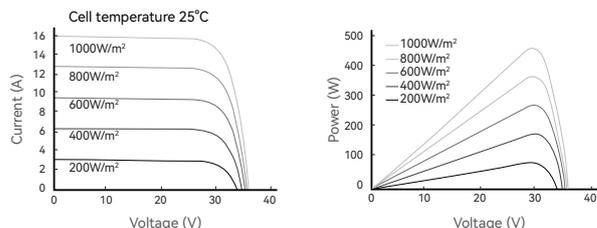
Warranty



Temperature Rating

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

Curve



Operating Parameters

Operating Temperature*	[T ₉₈] ≤ 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



Scan the code for more information