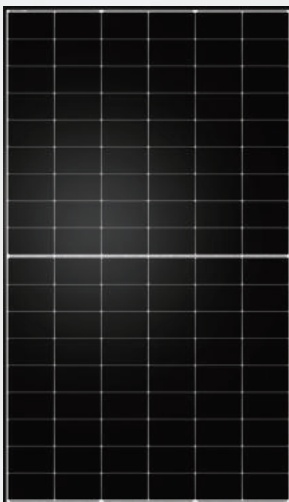


TNC

N-type Half-cell Bifacial Dual glass Black Frame and Transparent Module (54) TWMNH-54HD



High light transmittance, suitable for carports and balcony scenarios



Compact size and lightweight, hassle-free operation and low maintenance



Increased power, lower transportation cost



Integrated design, perfectly blending with architectural aesthetics

500-520W



Carport Roof

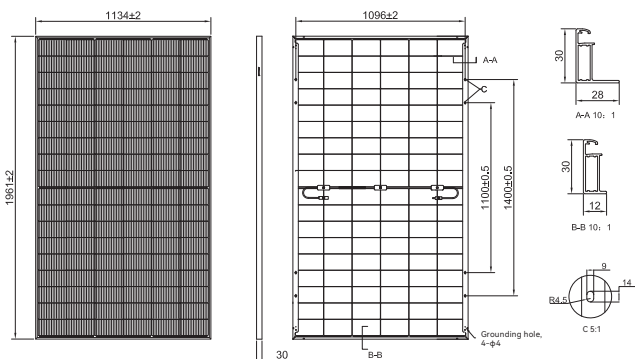


Balcony



TWMNH N-type Half-cell Bifacial Dual glass Black Frame and Transparent Module (54)

Drawings (Unit: mm)



Electrical Characteristics (STC)

Module type: TWMNH-54HDXXX

Maximum Power: P _{max} [W]	500	505	510	515	520
Open Circuit Voltage: V _{oc} [V]	40.06	40.24	40.42	40.60	40.80
Short Circuit Current: I _{sc} [A]	15.89	15.92	15.95	15.98	16.05
Voltage at Maximum Power: V _{mp} [V]	33.70	33.94	34.19	34.43	34.67
Current at Maximum Power: I _{mp} [A]	14.84	14.88	14.92	14.96	15.00
Module Efficiency: η [%]	22.5	22.7	22.9	23.2	23.4

* 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.

Electrical Characteristics (BNPI)

Maximum Power: P _{max} [W]	552.0	557.6	563.1	568.8	574.1
Open Circuit Voltage: V _{oc} [V]	40.06	40.24	40.42	40.60	40.80
Short Circuit Current: I _{sc} [A]	17.54	17.57	17.61	17.64	17.72
Voltage at Maximum Power: V _{mp} [V]	33.70	33.94	34.19	34.43	34.67
Current at Maximum Power: I _{mp} [A]	16.38	16.43	16.47	16.52	16.56

* BNPI: Front side irradiance 1000W/m², Rear side irradiance 135W/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.

Electrical characteristics with different rear side power gain

15% Maximum Power: P _{max} [W]	575	580	586	592	598
Module Efficiency: η [%]	25.9	26.1	26.4	26.6	26.9

Temperature Rating

Temperature Coefficient of P _{max}	-0.28%/°C
Temperature Coefficient of V _{oc}	-0.24%/°C
Temperature Coefficient of I _{sc}	+0.046%/°C

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

Operating Parameters

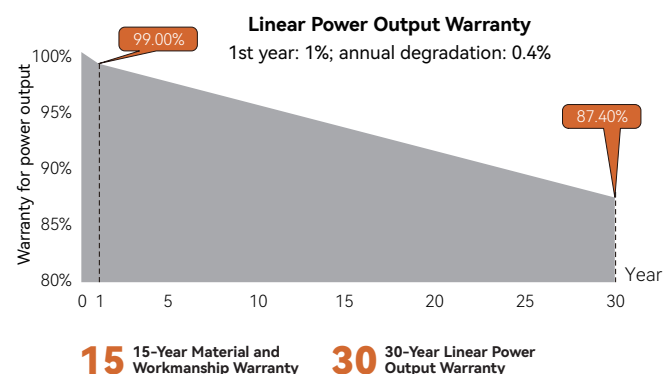
Operating Temperature*	[T ₉₈] ≤ 70°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30A
Power Output Tolerance	0~+3%
Bifaciality coefficient of P _{max}	80±5%
Bifaciality coefficient of V _{oc}	98±5%
Bifaciality coefficient of I _{sc}	80±5%

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

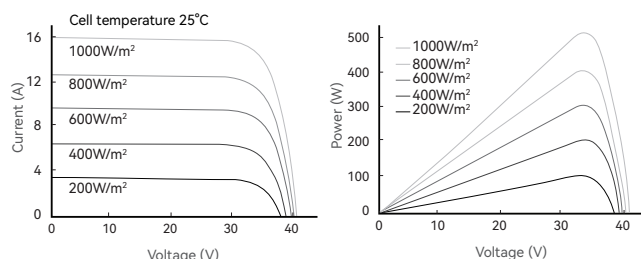
Mechanical Parameters

Cell Type	TNC
Cell Orientation	108[6×18]
Dimension	1961±2×1134±2×30mm
Weight	26.5kg
Front Glass	2.0mm AR coating semi tempered glass
Rear Glass	2.0mm semi tempered glass
Frame	Anodized aluminum alloy black frame
Junction Box	IP68, 3 diodes
Cable	4.0mm ²
Cable Length	±1,200 mm, length can be customized
Maximum Static Test Load	5,400 Pa (Positive) / 2,400 Pa (Negative)
Packaging (Per pallet)	36 pcs
Packaging	864 pcs per 40'HC

Warranty



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



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Statement: With technological process 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 has the right to adjust the technical parameters at any time without notifying the customer, the final interpretation of the technical specification is vested in Tongwei. (Ver.20260622)