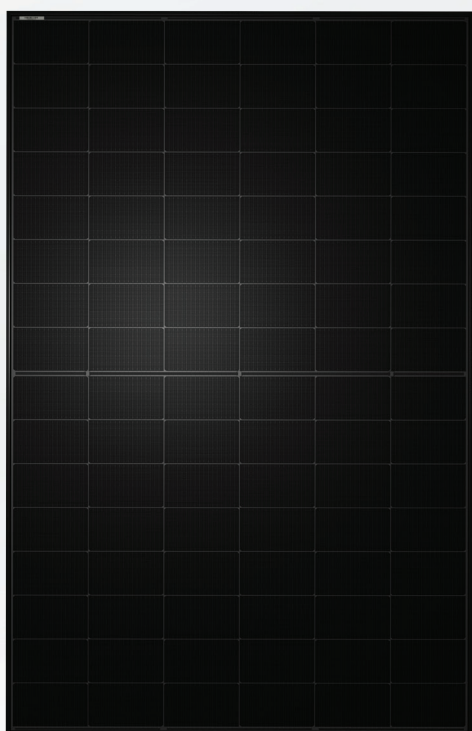


TNC^{2.0}

Full Black Series

N-Type • Dual Glass • Monofacial



Dual Glass Durability



High Performance TNC^{2.0} Technology



Hail Tested and Salt Mist Rated for Higher Reliability



Responsible Manufacturing



Worlds Largest Producer of Solar Cells



Positive Power Tolerance

470-475W

TWMNH-48HE

Reliable Performance and Superior Durability for Australian Homes

Ensuring Reliability

Our rigorous processes enable us to meet and exceed the stringent testing standards required for the Australian climate.



Salt Mist Rated

Certified to Level 8 - The highest rating to last in coastal regions.



Superior Hail Testing

Tested with larger than golf ball sized hailstones (45mm at 110km/h).



Cyclone Tested

Certified in the Northern Territory & Australia's toughest wind zones



Latest N-Type Technology

The next generation TNC 2.0 technology offers higher efficiency, low light performance and superior high temperature tolerance compared to last generation, N Type Panels.



Responsible Manufacturing

Ensures responsible manufacturing with TUV-certified quality and rigorous testing for reliable, high-performance solar solutions.



Perfect for Australian Residential Homes

Tailored to meet the unique energy needs of Australian homes, offering reliability and efficient sizing for residential solar installations.



Dual Glass Design

Dual glass construction adds rugged strength and moisture defence, reducing long term degradation for reliable output in tough environments.



25-Year Product Warranty

Reflects confidence in manufacturing quality, providing peace of mind with guaranteed performance over a quarter-century.



30-Year Performance Warranty

Ensures that panels retain high output levels over time, delivering sustained value and maximum return on investment.

Toughened Glass
Encapsulant - EVA
Photovoltaic Solar Cells
Encapsulant - EVA
Black Inner Sheet
Toughened Glass
Aluminium Frame

Built for Longevity, From Source to Installation

At TW Solar, we take pride in our vertically integrated production system, ensuring premium quality solar panels at every step of the process.

Why does this matter?

By controlling the entire journey, from refining polysilicon to assembling the final product, we deliver unmatched performance and reliability. Our supply chain has been independently verified by TÜV Rheinland, confirming our adherence to the highest ethical and environmental standards.



Polysilicon



Ingots



Wafers



Solar Cells



Solar Modules

Did you know?

As the largest producer of solar cells globally, with a 2024 capacity of over 140GW, we can power the equivalent of 21 million homes* and offer long-term warranties with confidence.

*Based 6.6kW homes



The result?

Solar panels that not only look stunning on your roof but are built to power your home with clean, reliable energy for decades.



Installed on your roof

Take a look at this impressive 19.8kW installation in Brisbane's South



b.link/twsolar-casestudy

TNC^{2.0} | Full Black Series

N-Type • Dual Glass • Monofacial

Available from



Electrical Characteristics (STC) (NMOT)

Model	TWMNH-48HE470	TWMNH-48HE475
Testing Condition	STC	STC
Maximum Power: P _{max} (W)	470	475
Open Circuit Voltage: V _{oc} (V)	36.55	36.7
Short Circuit Current: I _{sc} (A)	15.95	15.97
Voltage at Maximum Power: V _{mp} (V)	30.8	31.05
Current at Maximum Power: I _{mp} (A)	15.26	15.3
Module Efficiency: (%)	23.5	23.8

*STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5, Measuring Tolerance: ±3%

Mechanical Parameters

Cell Type	TNC (N Type Monocrystalline Cell)
Cell Orientation	96 (6x16)
Dimension (L × W × H)	Length: 1762mm
	Width: 1134mm
	Height: 30mm
Weight	22.8kg
Front Glass	2.0mm AR coating semi tempered glass
Backsheet	2.0mm semi tempered glass
Frame	Anodized Aluminium Alloy Black Frame
Cable (Including Connector)	1200mm
Junction Box	IP 68 Rated, 3 diodes
Packaging (per pallet)	36 pcs
Packaging	936 pcs per 40' HC

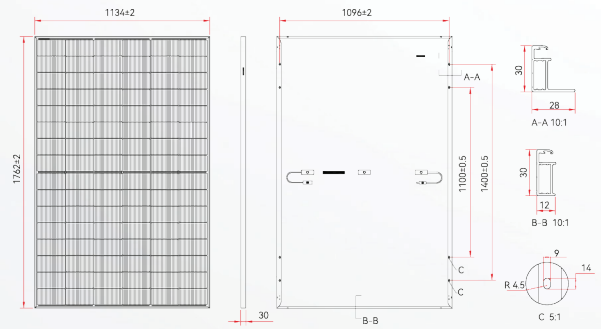
Temperature Rating

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

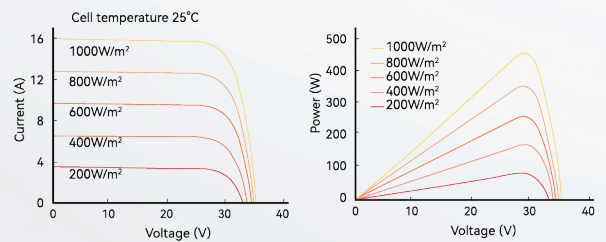
Operating Parameters

Operating Temperature	From -40°C to +70°C
Maximum System Voltage	1500V DC
Maximum Static Test Load	5400Pa Front / 2400Pa Rear
Maximum Series Fuse Rating	30A
Power Output Tolerance	0~+3W
Fire Class Rating	Class C

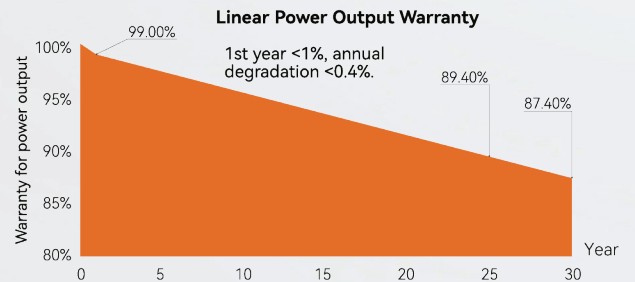
Technical Drawings



I-V Curve



Linear Power Output Warranty



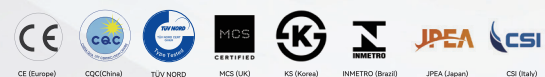
Packaging Configurations

Per Pallet	36 Modules
Per 40'HC Container	936 Modules / 26 Pallets

Certifications

Quality Management System and Product Certification

ISO 9001: 2015 / Quality Management Systems
ISO 14001: 2015 / Environmental Management Systems
ISO 45001: 2018 / Occupational Health and Safety Management Systems
ISO 50001: 2018 / Energy Management Systems
IEC 62941: 2019 / Quality System for PV Module Manufacturing
IEC 61215 (2021) / IEC 61730 (2023)



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Statement: With technological process and product update, there maybe deviation between the technical parameters of Tongwei's module products and the technical parameters contained in the specification, and Tongwei Solar has the right to adjust the technical parameters at any time without notifying the customer, the final interpretation of the technical specifications vested in Tongwei Solar. (AUS-20250120) Made in China