



TWMNH

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

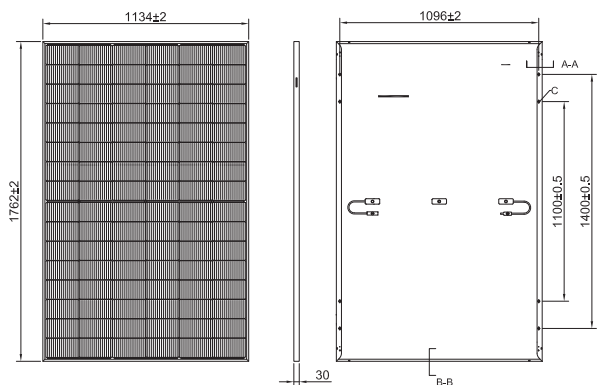
48HW440-475W

Tongwei Co.,Ltd.
<https://en.tongwei.cn/>



Learn More

Drawing (Unit: mm)



Mechanical Parameters

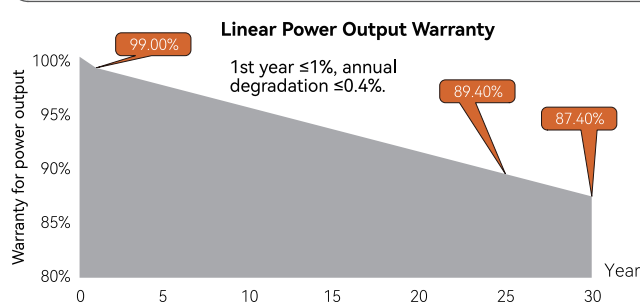
Cell Type	TNC (N Type Monocrystalline Cell)
Cell Orientation	96[6×16]
Dimensions	1762±2×1134±2×30mm
Weight	23.7kg
Front Glass	2.0mm AR coating semi tempered glass
Rear Glass	2.0mm semi tempered glass
Frame	Anodized aluminum alloy frame
Junction Box	IP68, 3diodes
Cable	4.0mm ²
Cable length	+1200mm, -1200mm, length can be customized
Connector	TW-PVCON-01(Tongwei Solar) PV-KST4-EVO2/xy_UR, PV-KBT4-EVO2/xy_UR(Staubli) PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy(Staubli) PV-ZH202B(Zhonghuan)
Wind/Snow load	2400Pa/5400Pa
Per pallet	36pcs
Packaging	936pcs per 40'HC

Electrical Characteristics (STC)

Moduel type:	TWMNH-48 HW440	TWMNH-48 HW445	TWMNH-48 HW450	TWMNH-48 HW455	TWMNH-48 HW460
Maximum Power: Pmax [W]	440	445	450	455	460
Open Circuit Voltage: Voc [V]	35.65	35.80	35.95	36.10	36.25
Short Circuit Current: Isc [A]	15.74	15.79	15.84	15.89	15.94
Voltage at Maximum Power: Vmp [V]	29.55	29.85	30.15	30.44	30.73
Current at Maximum Power: Imp [A]	14.89	14.91	14.93	14.95	14.97
Module Efficiency: η [%]	22.0	22.3	22.5	22.8	23.0

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

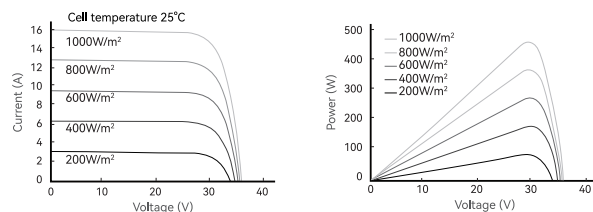
Linear Warranty



Temperature Rating

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

I-V Curve



Operating Parameters

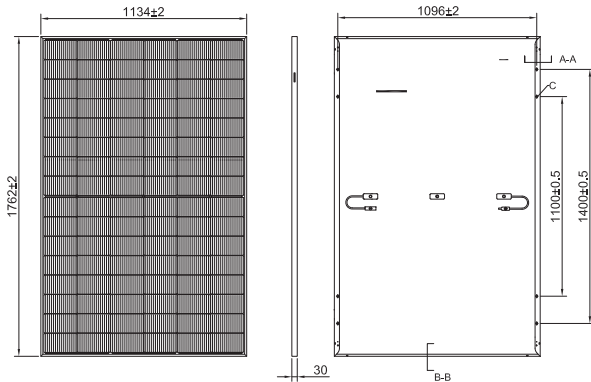
Operating Temperature	-40°C~+70°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30A
Power Selection Tolerance	0~+3%
Fire Class Rating	Class C

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)



Drawing (Unit: mm)



Mechanical Parameters

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Rear Glass	2.0mm semi tempered glass
Frame	Anodized aluminum alloy frame
Junction Box	IP68, 3diodes
Cable	4.0mm ²
Cable length	+1200mm, -1200mm, length can be customized
Connector	TW-PVCON-01(Tongwei Solar) PV-KST4-EVO2/xy_UR, PV-KBT4-EVO2/xy_UR(Staubli) PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy(Staubli) PV-ZH202B(Zhonghuan)
Wind/Snow load	2400Pa/5400Pa
Per pallet	36pcs
Packaging	936pcs per 40'HC

Electrical Characteristics (STC)

Moduel type:	TWMNH-48 HW465	TWMNH-48 HW470	TWMNH-48 HW475
Maximum Power: Pmax [W]	465	470	475
Open Circuit Voltage: Voc [V]	36.40	36.55	36.70
Short Circuit Current: Isc [A]	15.99	16.00	16.01
Voltage at Maximum Power: Vmp [V]	31.03	31.34	31.65
Current at Maximum Power: Imp [A]	14.99	15.00	15.01
Module Efficiency: η [%]	23.3	23.5	23.8

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

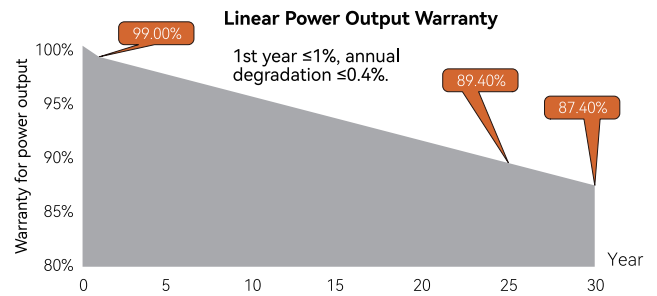
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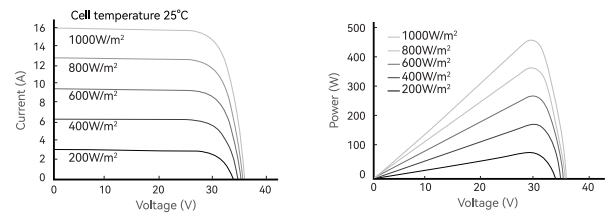
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I-V Curve



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