

182TOPCon-Half-cell Mono-facial Module(54,Fullblack)

Product Feature



High Power Output
Low LCOE



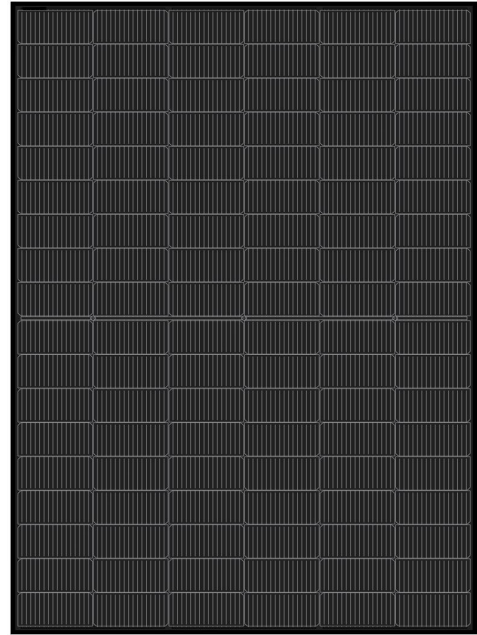
Maximum Power
up to 430W+



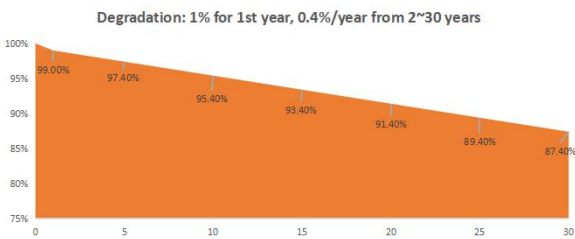
High Reliability



Low Degradation



Linear Warranty



Warranty for Material and Processing



Warranty for Linear Power output

Management System certification

- ISO9001: 2015/Quality Management System
- ISO14001: 2015/Environmental Management System
- ISO45001: 2018/Occupational Health and Safety Management System
- IEC62941: 2019/Quality system for PV module manufacturing

Product certification



Electrical Characteristics (STC)

| | | | | |
|--|-------|-------|-------|-------|
| Moduel type: TWMND-54HB*** | | | | |
| Maximum Power: Pmax [W] | 415 | 420 | 425 | 430 |
| Open Circuit Voltage: Voc [V] | 38.70 | 38.85 | 39.00 | 39.15 |
| Short Circuit Current: Isc [A] | 13.52 | 13.57 | 13.62 | 13.67 |
| Voltage at Maximum Power: Vmp [V] | 32.75 | 32.92 | 33.09 | 33.26 |
| Current at Maximum Power: Imp [A] | 12.67 | 12.76 | 12.85 | 12.93 |
| Module Efficiency: η [%] | 21.3 | 21.5 | 21.8 | 22.0 |
| STC: Irradiance 1000W/m ² , Cell Temperature 25°C, AM=1.5, Test Uncertainty: \pm 3% | | | | |

Electrical Characteristics (NMOT)

| | | | | |
|--|-------|-------|-------|-------|
| Maximum Power: Pmax [W] | 312.0 | 316.0 | 320.0 | 324.0 |
| Open Circuit Voltage: Voc [V] | 36.73 | 36.89 | 37.04 | 37.19 |
| Short Circuit Current: Isc [A] | 10.84 | 10.90 | 10.96 | 11.02 |
| Voltage at Maximum Power: Vmp [V] | 30.47 | 30.64 | 30.81 | 30.98 |
| Current at Maximum Power: Imp [A] | 10.24 | 10.31 | 10.39 | 10.46 |
| NMOT: Irradiance 800W/m ² , Ambient Temperature 20°C, AM=1.5, Wind Speed 1m/s | | | | |

Mechanical Parameters

| | |
|-------------------|--|
| Cell Type | TNC |
| Cell Orientation | 108[6 \times 18] |
| Dimensions | 1722 \pm 2 \times 1134 \pm 2 \times 30mm |
| Weight | 20.5 kg |
| Front Glass | 3.2 mm AR coated heat strengthened glass |
| Backsheet | Black inside and white outside/Full black |
| Frame | Anodized aluminum alloy black frame |
| Junction Box | IP68, 3 diodes |
| Cable | 4.0 mm ² |
| Cable length | +1200mm,-1200mm,length can be customized |
| Wind/Snow load | 2400Pa/5400Pa |
| Packaging | 36 pcs per pallet,936 pcs per 40'HC |
| Fire class rating | Class C |

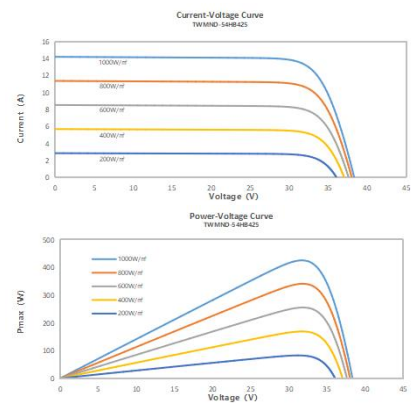
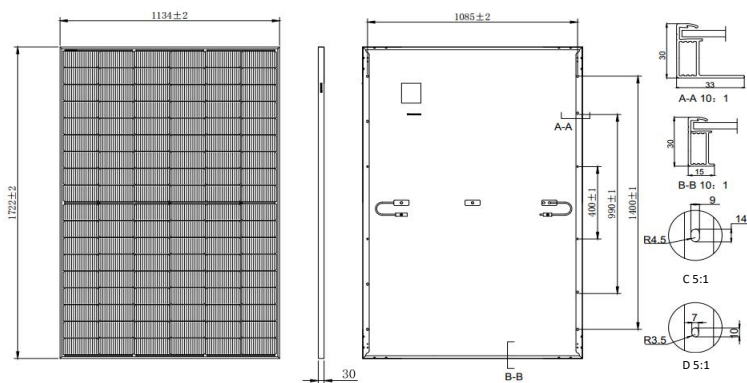
Temperature rating

| | |
|---------------------------------|--------------|
| Temperature Coefficient of Pmax | -0.30%/°C |
| Temperature Coefficient of Voc | -0.25%/°C |
| Temperature Coefficient of Isc | +0.046%/°C |
| NMOT | 45 \pm 2°C |

Operating Parameters

| | |
|----------------------------|-------------|
| Operating Temperature | -40°C~+85°C |
| Maximum System Voltage | 1500V DC |
| Maximum Series Fuse Rating | 25A |
| Power Output Tolerance | 0~+5W |

Drawing(Unit:mm)



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 specification is vested in Tongwei Solar.

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Cable Type

Zhejiang Renhe Photovoltaic Technology Co., Ltd.
Zhejiang Zhonghuan Sunter PV Technology Co., Ltd.
Zhejiang Jiaming Tianheyuan Photovoltaics Technology Co., Ltd.
Ningbo Kibor Wire&Cable Co., Ltd.
Wuxi Xinhongye Wire&Cable Co., Ltd.
Trina Solar Co., Ltd.
Changshu JHOSIN Communication Technology Co., Ltd.
SUZHOU YONGHAO CABLE CO LTD
QC Solar (Suzhou) Corporation
Suzhou Baohing Electric Wire & Cable Manufacturer Co., Ltd.
Changshu JHOSIN Communication Technology Co., Ltd.
Jiangsu Tongling Electric Co., Ltd.
Zhejiang Chuangyuan Photovoltaic Technology Co.,Ltd.
Tongwei Solar (Hefei) Co., Ltd.

Connector type

05-8, Zhejiang Renhe Photovoltaic Technology Co., Ltd.
PV-KST4-EVO2/xy_UR , PV-KBT4-EVO2/xy_UR, Stäubli Electrical Connectors AG
PV-KST4-EVO2A/xy, PV-KBT4 EVO2A/xy, Stäubli Electrical Connectors AG
UTXCFabcd, UTXCMabcd, Amphenol Technology (Shenzhen) Co., Ltd.
RHC2xyzu, Zhejiang Renhe Photovoltaic Technology Co., Ltd.
PV-JM608, Zhejiang Jiaming Tianheyuan Photovoltaics Technology Co., Ltd.
PV-JM601A, Zhejiang Jiaming Tianheyuan Photovoltaics Technology Co., Ltd.
H4CFC4DMS; H4CMC4DMS, Amphenol Technology (Shenzhen) Co., Ltd.
PV4-S1yx, Tyco Electronics (Shanghai) Co., Ltd.
HQC4, Hanwha Q CELLS (Qidong) Co., Ltd
PV-CO02-xy, SUZHOU UKT NEW ENERGY TECHNOLOGY CO., LTD
PV-JK03M-2, Jiangxi Jinko PV Material Co., Ltd.
TS4-xz, Trina Solar Co., Ltd.
TS4, Trina Solar Co., Ltd.
Z4S-abcd, Zerun Co., LTD.
H4Cabcdef, Amphenol Technology (Shenzhen) Co., Ltd.
PV-CF-C-2, 5-4-SETxxxx, PV-CM-C-2, 5-4-SETxxxx, Phoenix Contact GmbH & Co.KG
PV-ZH202B, Zhejiang Zhonghuan Sunter PV Technology Co., Ltd.
QC4.10-cds, QC Solar (Suzhou) Corporation
PV-MH5, Ningbo Minghe New Energy Technology Co., Ltd.
TL-CABLE01S-F, TL-CABLE01S, Jiangsu Tongling Electric Co., Ltd.
BIGabc4efgh, Trina Solar Co., Ltd.
PV-KST4-EVO 2A/xy_UR; PV-KBT4-EVO 2A/xy_UR, Stäubli Electrical Connectors AG

Connector type

PV-XT101.1, Suzhou Xietong Photovoltaic Technology Co., Ltd.

PV-JK03M2/xy, Jiangxi Jinko PV Material Co., Ltd.

TW-PVCON-01, Tongwei Solar (Hefei) Co., Ltd.

PV-CY03L, Zhejiang Chuangyuan Photovoltaic Technology Co., Ltd.

PV-CY20L, Zhejiang Chuangyuan Photovoltaic Technology Co., Ltd.