

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

Product Feature



High Power Output
Low LCOE



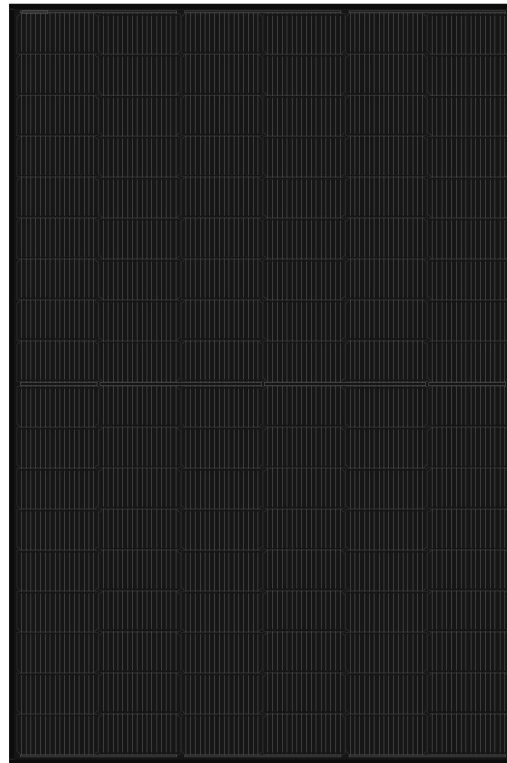
Maximum Power
up to 420W



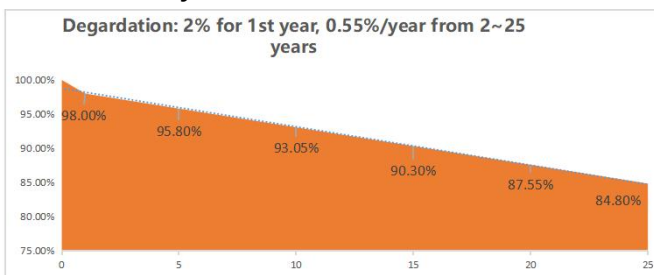
High Reliability



Low Degradation



Linear Warranty



25 year

Warranty for Material and
Processing

25 year

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

Product certification



Tongwei Solar (Hefei) Co., Ltd
Made in China

Electrical

Module type: TWMPD-54HB***

Maximum Power: Pmax [W]	400	405	410	415	420
Open Circuit Voltage: Voc [V]	37.07	37.23	37.38	37.53	37.68
Short Circuit Current: Isc [A]	13.79	13.87	13.93	13.99	14.05
Voltage at Maximum Power: Vmp [V]	31.01	31.21	31.40	31.60	31.80
Current at Maximum Power: Imp [A]	12.90	12.98	13.06	13.14	13.22
Module Efficiency: η [%]	20.5	20.7	21.0	21.3	21.5

STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5, Test Uncertainty: $\pm 3\%$

Electrical Characteristics (NMOT)

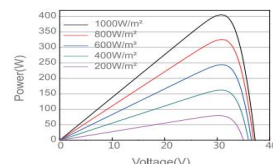
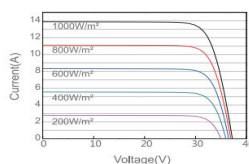
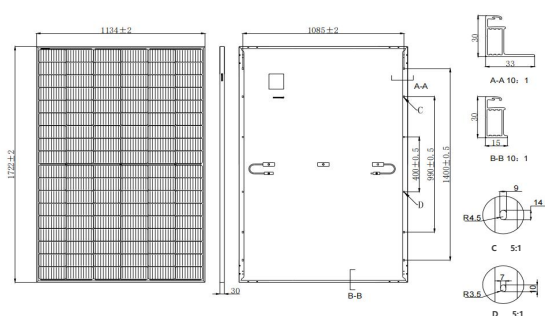
Maximum Power: Pmax [W]	302.0	306.0	310.0	314.0	317.8
Open Circuit Voltage: Voc [V]	34.88	35.12	35.31	35.50	35.64
Short Circuit Current: Isc [A]	11.03	11.10	11.16	11.22	11.27
Voltage at Maximum Power: Vmp [V]	29.26	29.47	29.68	29.89	30.08
Current at Maximum Power: Imp [A]	10.32	10.38	10.44	10.51	10.57

NMOT: Irradiance 800W/m², Ambient Temperature 20°C, AM=1.5, Wind Speed 1m/s

Mechanical Parameters

Cell Type	P-PERC
Cell Orientation	108[6×18]
Dimensions	1722±2×1134±2×30mm
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	Positive: 1200mm, Negative: 1200mm, length can be customized
Wind/Snow load	2400Pa/5400Pa
Per pallet	36 pcs
Packaging	936 pcs per 40'HC
Fire class rating	Class C

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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Temperature rating

Temperature Coefficient of Pmax	-0.34%/°C
Temperature Coefficient of Voc	-0.27%/°C
Temperature Coefficient of Isc	+0.045%/°C
NMOT	45±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

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.
 Jiangxi Jinko PV Material Co., Ltd.
 Jiangxi Hejia Technology Co., Ltd.
 YushanXinzhan Industrial Co., Ltd.
 DONGGUAN XINBEISEN WIRE AND CABLE CO LTD
 Jiangxi Han Guang Cable Co., Ltd.
 RUIXU INDUSTRY CO., LTD.
 Suzhou Xietong Photovoltaic Technology Co., Ltd.
 Jiangsu Tongling Electric 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.
 RHC2xyz, Zhejiang Renhe Photovoltaic Technology Co., Ltd.
 PV-JM608, Zhejiang Jiaming Tianheyuan Photovoltaics Technology Co., Ltd.
 PV-JM601A, Zhejiang Jiaming Tianheyuan Photovoltaics Technology 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
 TS4-xz , Trina Solar Co., Ltd.
 TS4, Trina Solar Co., Ltd.
 H4Cabdef, 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.
 PV-KST4-EVO 2A/xy_UR; PV-KBT4-EVO 2A/xy_UR, Stäubli Electrical Connectors AG
 PV-XT101.1, Suzhou Xietong Photovoltaic Technology Co., Ltd.
 PV-JK03M-2, PV-JK03M/xy, PV-JK03M1/xy, PV-JK03M2/xy, Jiangxi Jinko PV Material Co., Ltd.
 UTXCFabcde, UTXCMabcde, Amphenol Technology (Shenzhen) Co., Ltd.
 TW-PVCON-01, Tongwei Solar (Hefei) Co., Ltd.