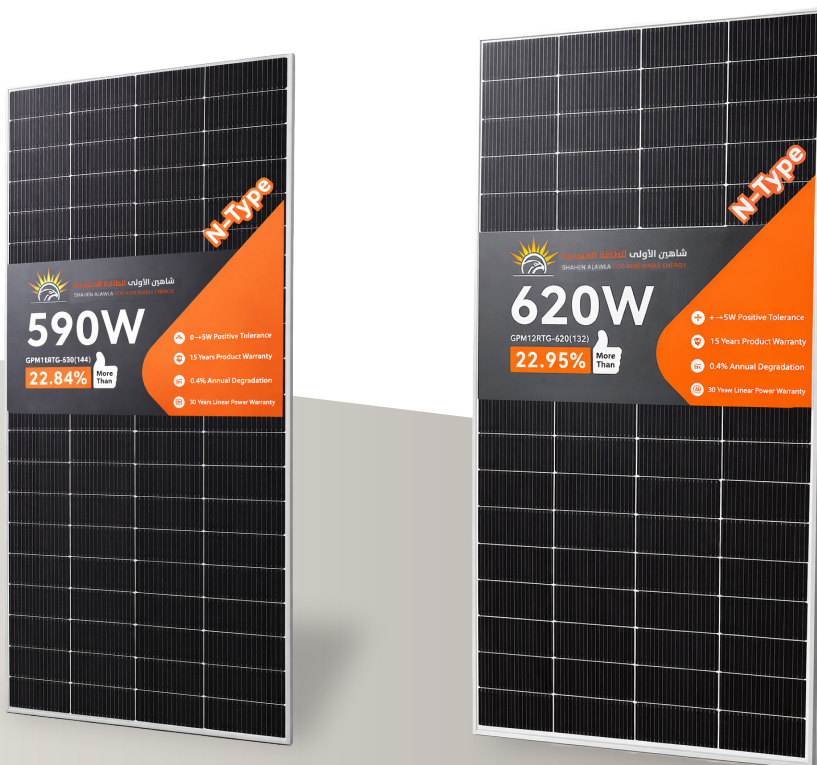


كتالوج ألواح الطاقة الشمسية

Solar panels catalog

Shahen
for Renewable Energy

2026



LIMITED PRODUCT WARRANTY
15 YEARS

LIMITED POWER WARRANTY
30 YEARS

FIRST YEAR DEGRADATION RATE
1.0% (BIFACIAL)

ANNUAL DEGRADATION RATE
0.40% (BIFACIAL)



SMBB Technology

Better light trapping and current collection to improve module power output and reliability



Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance



Hot 2.0 Technology

Better light trapping and current collection to improve module power output and reliability



Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal)



PID Resistance

Better light trapping and current collection to improve module power output and reliability



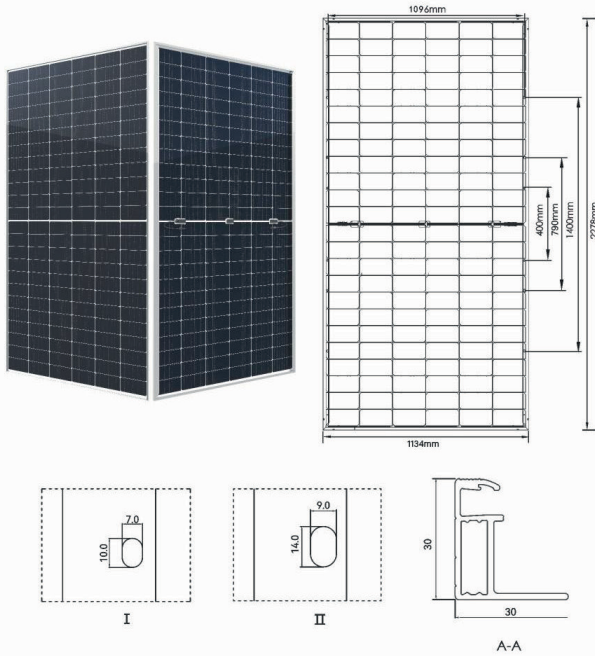
Welcome to
Shahen

Product catalog

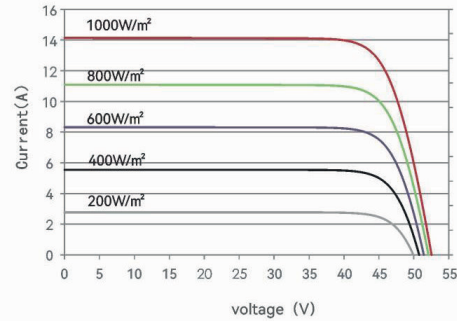
590W

Mono-Bifacial Module 182 N-Type
(144)590-GPM10TG

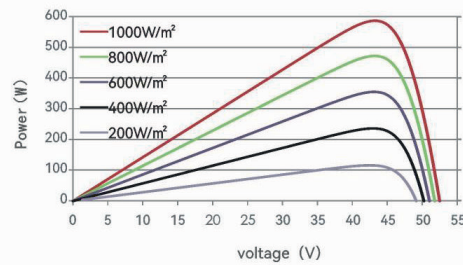
Engineering Drawings



Electrical Performance(590W)



I-V curve



P-V curve

Electrical Parameters (STC*)

Maximum Power(W)	590
Maximum Power Voltage(V)	44.43
Maximum Power Current(A)	13.28
Open Circuit Voltage(V)	52.37
Short Circuit Current(A)	13.94
Module Efficiency(%)	22.84
Power tolerance	0~+3%

*Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Mechanical Parameters

Cell Type	182×91mm N-Type
Number of Cells	144cells (2×72)
Dimensions	2278×1134×30mm
Weight	30KG
Front Glass	2.0mm, Anti-Reflection Coating
Back Glass	2.0mm, Heat Strengthened Glass
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated,MC4 Compatible
Output Cable	4 mm ² ,300 mm standard

Electrical Parameters (NOCT*)

Maximum Power(W)	439.6
Maximum Power Voltage(V)	41.12
Maximum Power Current(A)	10.69
Open Circuit Voltage(V)	48.47
Short Circuit Current(A)	11.22

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Temperature Coefficient

Nominal Operating Cell Temperature (NOCT)	45±2°C
Temperature Coefficient of Isc	0.045%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Pmax	-0.29%/°C

(590W For) Backside Power Gain

Backside Power Gain(%)	10%	15%	20%	25%	30%
Maximum Power(Pmax/W)	649.0	678.5	708.0	737.5	767.0
Open Circuit Voltage(Voc/V)	52.37	52.37	52.41	52.41	52.43
Short Circuit Current(Isc/A)	15.36	16.06	16.75	17.44	18.13
Maximum Power Voltage(Vmp/V)	44.43	44.43	44.50	44.50	44.52
Maximum Power Current(Imp/A)	14.61	15.27	15.91	16.57	17.23

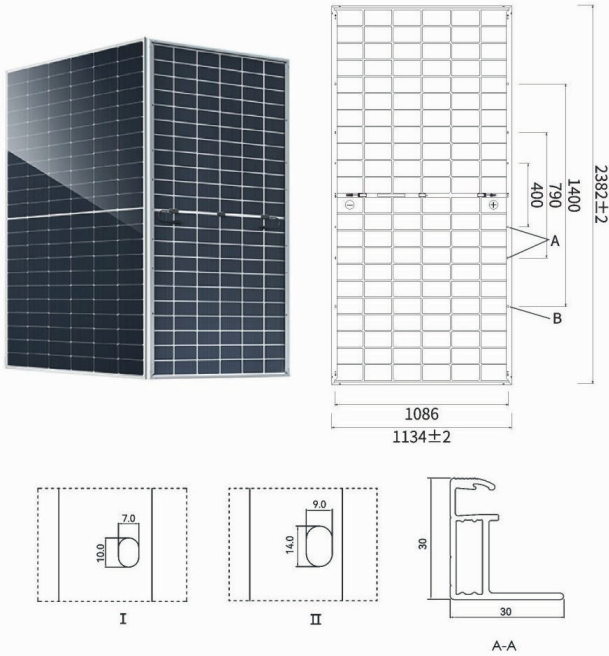
Application Parameters

Operational Temperature(°C)	-40°C~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A
Wind/ Snow Load	2400Pa/5400Pa
Packaging Configuration	36PCS/PLT,720PCS/40HQ

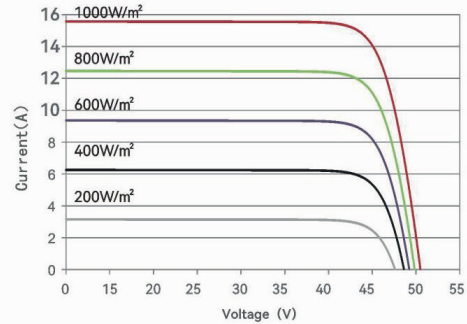
620W

N-Type 182 Mono-Bifacial Module
GPM12RTG-620(132)

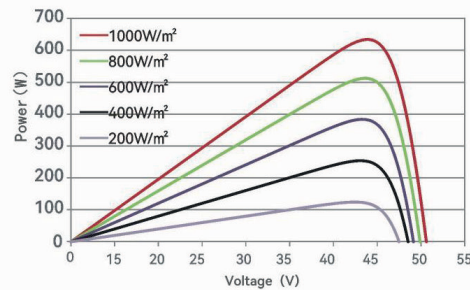
Engineering Drawings



Electrical Performance(630W)



I-V curve



P-V curve

Electrical Parameters (STC*)

Maximum Power(W)	620
Maximum Power Voltage(V)	41.4
Maximum Power Current(A)	14.98
Open Circuit Voltage(V)	49.6
Short Circuit Current(A)	15.91
Module Efficiency(%)	22.95
Power tolerance	0~+3%

*Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Parameters (NOCT*)

Maximum Power(W)	461.9
Maximum Power Voltage(V)	38.31
Maximum Power Current(A)	12.06
Open Circuit Voltage(V)	45.9
Short Circuit Current(A)	12.81

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Parameters

Cell Type	182×105mm N-Type
Number of Cells	132cells (2×66)
Dimensions	2382×1134×30mm
Weight	32.5KG
Front Glass	2.0mm, Anti-Reflection Coating
Back Glass	2.0mm, Heat Strengthened Glass
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated,MC4 Compatible
Output Cable	4 mm ² ,300 mm standard

Temperature Coefficient

Nominal Operating Cell Temperature (NOCT)	45±2°C
Temperature Coefficient of Isc	0.045%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Pmax	-0.29%/°C

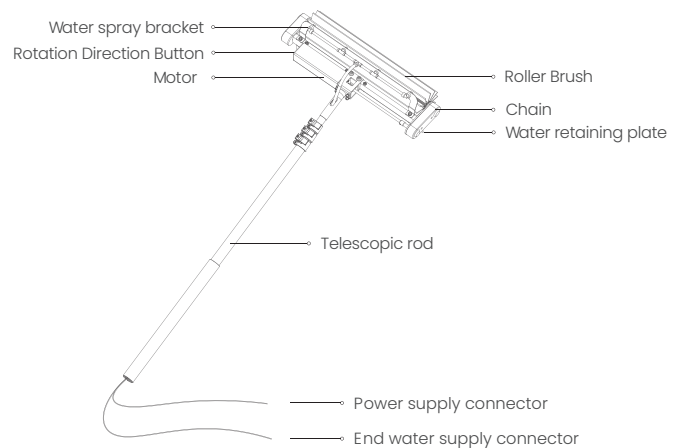
Application Parameters

Operational Temperature(°C)	-40°C~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	30A
Wind/ Snow Load	2400Pa/5400Pa
Packaging Configuration	36PCS/PLT,720PCS/40HQ

SHAHEN AUTOMATIC SOLAR BRUSH

PRODUCT INTRODUCTION

Please read this instruction manual carefully before using the product and keep it properly.



PRODUCT PARAMETERS

Working voltage: 24V

Cleaning type: Dry clean/water wash

Max water volume: 22L/min

Motor power: 150W

Cleaning width: 60cm

Speed: 680r/min

Bristle material: New nylon

PRODUCT INSTALLATION METHOD

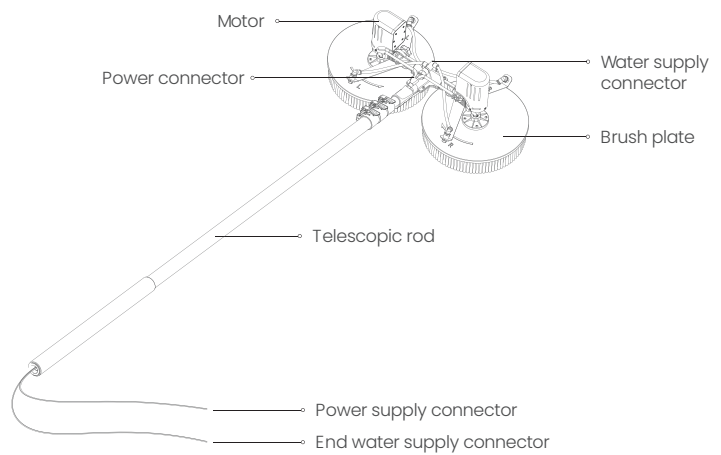
- ① Connect the telescopic rod with the brush head and the motor according to the schematic diagram (note: the motor should be installed on the left side of the telescopic rod)
- ② Connect the power supply device (lithium battery/power converter)
- ③ Connect the water supply system (water pipe + water pump / connect the faucet)
- ④ Adjust the telescopic rod to the appropriate cleaning length

Note: Spray brackets and water baffles are not installed when leaving the factory, and do not need

SHAHEN AUTOMATIC SOLAR BRUSH

PRODUCT INTRODUCTION

Please read this instruction manual carefully before using the product and keep it properly.



PRODUCT PARAMETERS

Working voltage: 24V

Cleaning type: water wash

Max water volume: 22L/min

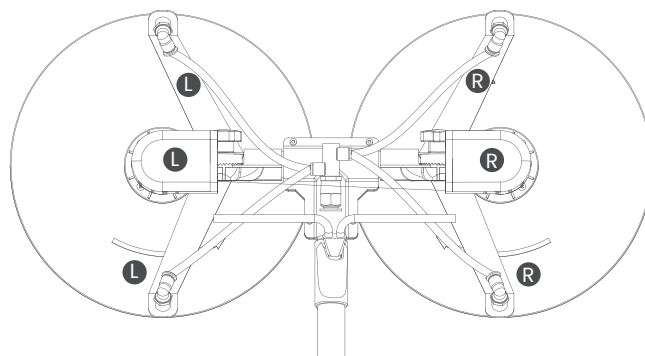
Motor power: 240/300W

Cleaning width: 65cm

Speed: 300/350 r/min

Bristle material: New nylon

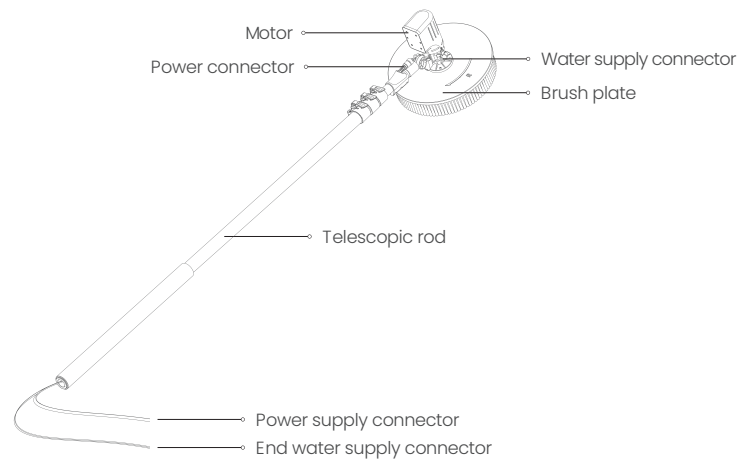
PRODUCT INSTALLATION METHOD



SHAHEN AUTOMATIC SOLAR BRUSH

PRODUCT INTRODUCTION

Please read this instruction manual carefully before using the product and keep it properly.



PRODUCT PARAMETERS

Working voltage: 24V

Cleaning type: water wash

Max water volume: 22L/min

Motor power: 120/150W

Cleaning width: 32cm

Speed: 300/350 r/min

Bristle material: New nylon

PRODUCT INSTALLATION METHOD

- ① Connect the telescopic rod with the brush head and the motor according to the connection diagram
- ② Assembly diagram of 30 ° brush head adaptive kit:
Diagonal tooth gasket *2 and Spring washer *1, please install according to the above diagram, which can achieve adaptive adjustment of the brush head's 30 ° angle (within the adaptive angle, the brush head surface can always be flat against the cleaned object, not easy to deviate, and easier to grasp and control during use).
If you need to lock the brush head and telescopic rod angle, you can remove the Diagonal tooth gasket *2 and Spring washer *1.

C-STEEL GROUND MOUNTING STRUCTURE (HEAVY DUTY)



Item Category	Technical Specification / Description
System Name	C-Steel Ground Mounting Structure (Heavy Duty)
Application Site	Open Ground / Flat Terrain (Agricultural or Industrial)
Main Material	High-Tensile Hot-Dip Galvanized Steel (C-Channel Profile)
Tilt Angle	Adjustable range: 0° to 60°
Wind Load Capacity	Maximum survival wind speed: 210km/h
Snow Load Capacity	Maximum snow pressure: $\leq 1.4 \text{ kN/m}^2$
Module Orientation	Compatible with Portrait and Landscape layouts
Mounting Hardware	End Clamps: Aluminum/Steel side fixings for module edges Mid Clamps: Inner fixings for securing adjacent modules Joints: Structural connectors for beam extensions
Support Structure	Main Beams: C-Steel profile for primary load bearing Base Supports: Heavy-duty base plates for ground anchoring
International Standards	JIS C 8955: 2017, AS/NZS 1170, DIN1055, ASCE/SEI 7-05
Local Compliance	SBC 301 (Saudi Building Code)
Design Standard	IBC 2009 (International Building Code)

SOLAR DC CABLES



Feature	Specification
Product Type	Solar PV Cable
Cross-Section	1 x 6 mm ²
Standard	EN 50618:2014
Rated Voltage	DC 1500V
Spool Length	200m
Available Colors	Black, Red


High-quality, durable single-core photovoltaic cable designed for reliable performance in solar energy systems. Manufactured to meet rigorous international standards, ensuring optimal safety and efficiency for your DC power connections.



 الرياض - حي قرطبة - الدائري الشمالي الفرعي باتجاه الغرب

 www.shahen.com.sa  shahensolar

 info@shahen.com.sa

  920016659