N-TYPE

SOLARHERO

HERO®PV

400-S1 G1 9 BB

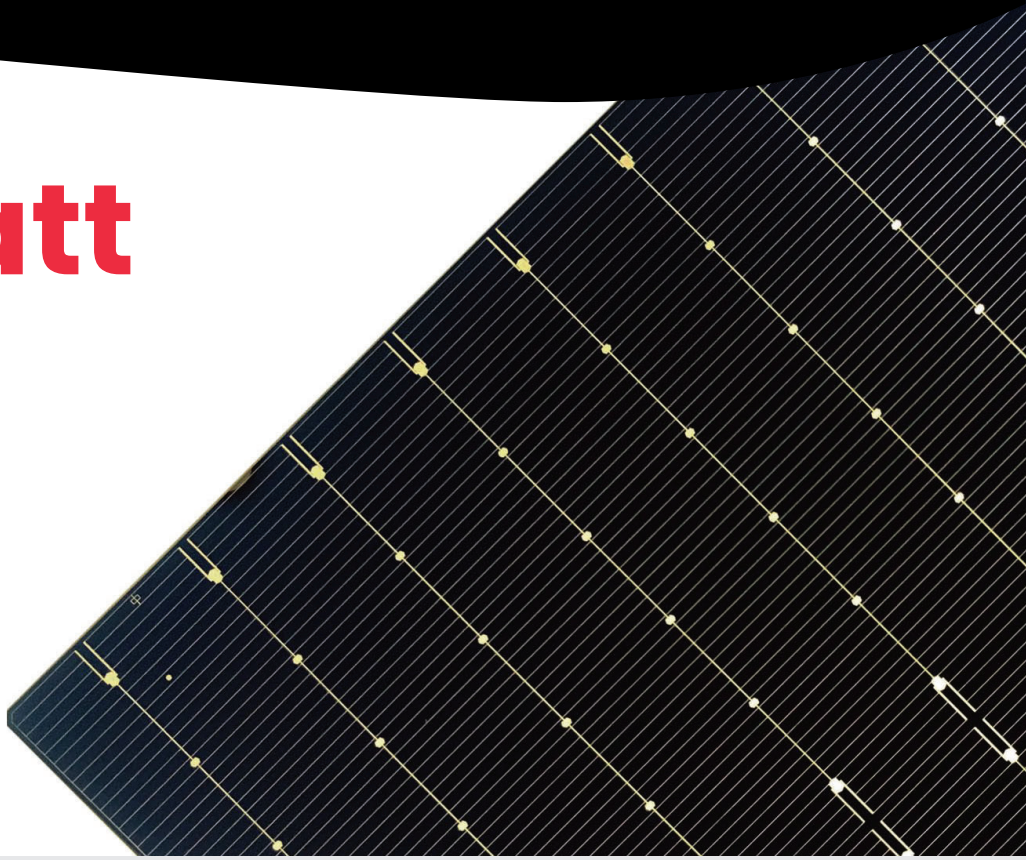
WWW.HEROPV.COM

HERO®PV

400 Watt

400-S1 G1 9BB

TOP CATEGORY
24% CELL EFFICIENCY



SUPER POWER

MULTI BUSBAR 9BB HALF CELL TECHNOLOGY
Stronger current consumption, special circuit design at much lower hot spot (HOT-SPOT) temperatures.

MODULE EFFICIENCY 21.38%
Higher power results in lower kWp costs, higher lifetime production capacity, and lower annual power reductions (degradation).

PID STANDARD TECHNOLOGY
Excellent PID resistance in a 96-hour (85% / 85%) test and can be improved to meet the higher performance of particularly harsh environments.

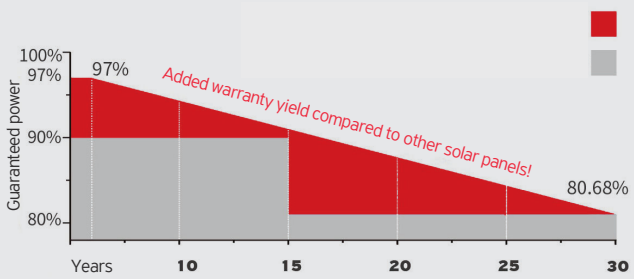
LOW-LIGHT OPTIMIZED CELL
Excellent power generation performance in low light conditions thanks to the multi BusBar.

SHADOW-RESISTANT SEMI-CELL TECHNOLOGY
Excellent micro-cracking proof cell structure with balanced internal load. Also partial shadow tolerance.

N-TYPE ZERO LID (Light Induced Degradation)
N-type solar cell has no LID naturally which can increase power generation

LINEAR PERFORMANCE GUARANTEE

25-year product warranty · 30-year linear performance guarantee



PRODUCT AND QUALITY CERTIFICATES

OHSAS 18001:2007

Engineered in EU

Hero® solar panels are manufactured in top quality by OEM rights of Solar Hero GmbH we are committed to making solar energy illuminate every corner of the Globe. We strive to provide high-efficiency, high-quality and affordable clean energy solutions. Solar Hero insists on continuous innovation according to customer needs. We invest our profit in technology research, and we promote green energy in Germany and all the EU. dsf

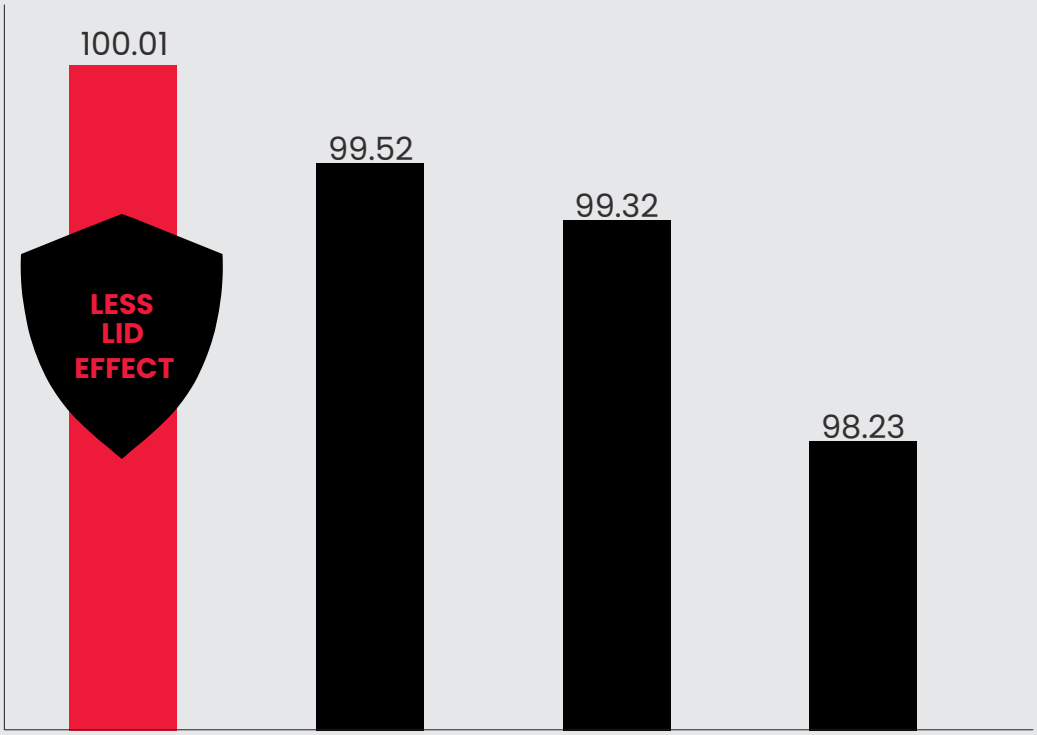
N-TYPE TECHNOLOGY
25 YEAR PRODUCT,
30 YEAR PERFORMANCE
WARRANTY

PIONEERING TECHNOLOGY

N-type cell to reduce light-induced aging (LID). With N-type cells, the effect of light-induced aging (LID) is less with HERO® SOLAR MODULES than with P-type solar cells. The N-type mono PERC technology cell is more expensive and better than the standard P-type mono PERC solution.

LIGHT INDUCED DEGRADATION IN THE FIRST YEAR

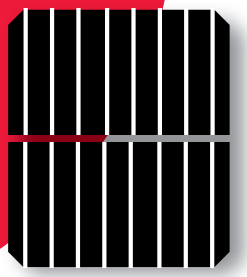
Caused by light module performance after initial aging (LID) / initial module performance (%)



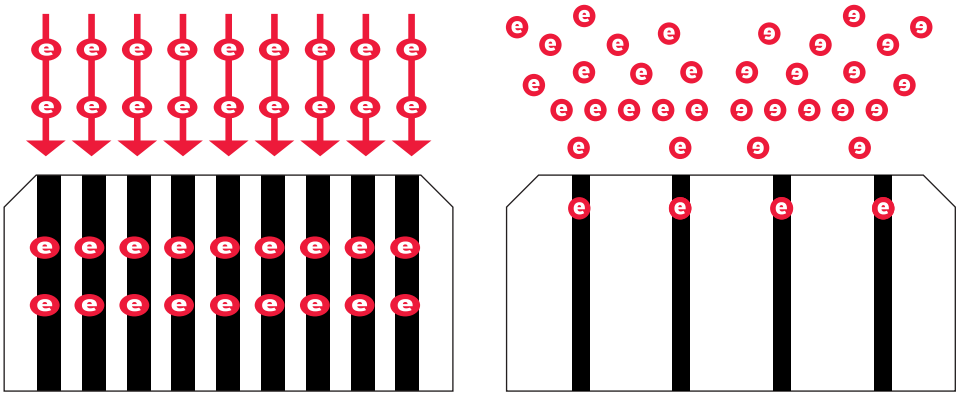
WITH N-TYPE SOLAR PERFORMANCE DOES NOT REDUCE BETWEEN 0.4% PER YEAR IN 30 YEARS!

9 BUSBAR

- greater current conductivity
- longer service life
- better heat dissipation
- half-cell shadow tolerance
- 30 years performance and 25 years product warranty



HALF CELL TECHNOLOGY

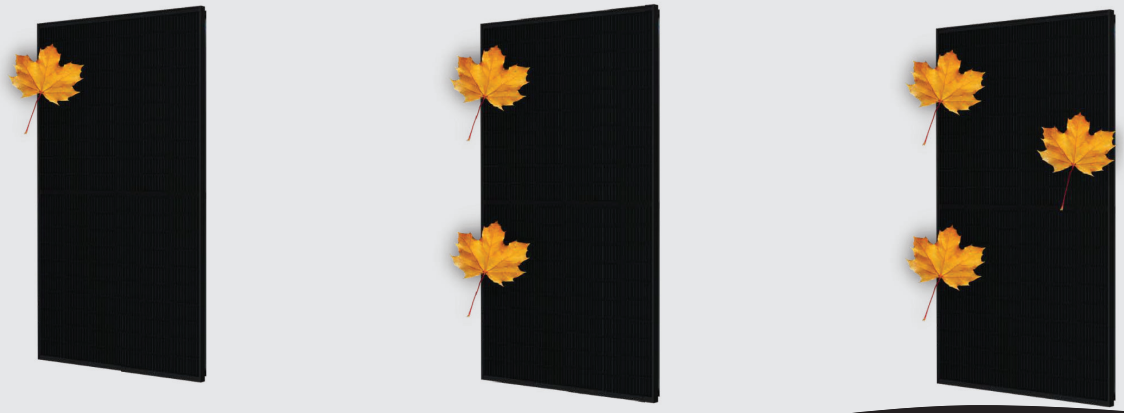


The soul of solar panels is the number and quality of the cell and the solder between them. Thus, the Hero series is made of the best "A" quality cell and 9 guidewires. Over the long years, it matters a lot if even 1 in 4 to 6 conductors detaches from the cell surface because the energy produced cannot pass through. In the case of 9 guide wires, this is not possible!

Cheaper solar panels save precisely on the number of solders and the quality of the cell, so both the distributor and the customer run the risk of reducing production after 10 years. In the case of 4-6 conductors, a fault due to soldering or a change in cold-heat can cause a serious loss compared to a 9 busbar cell.

HALL CELL SHADING RESISTANT

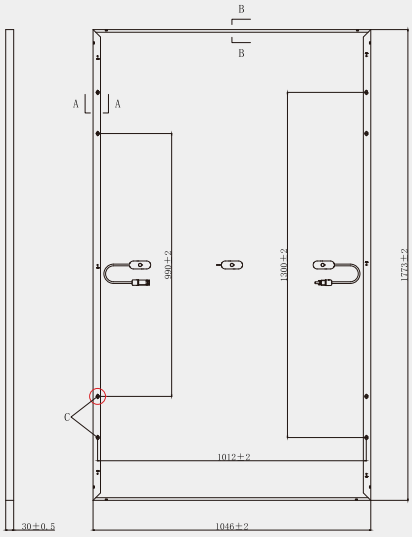
92% **84%** **76%**



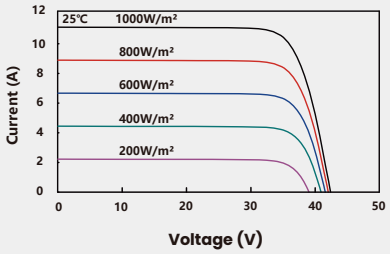
* EXPECTED PERFORMANCE WHEN COVERING A HALF CELL

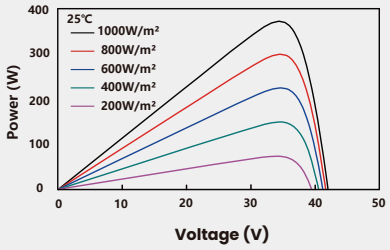
SOLARHERO

ENGINEERING DRAWING (MM)



CHARACTERISTIC CURVES





ELECTRICAL PROPERTIES (STC*)

Testing condition	Front Side
Nominal Max. Power(Pmax/Wp)	400
Open Circuit Voltage(Voc/V)	41.2
Short Circuit Current(Isc/A)	12.28
Operating Voltage(Vmp/V)	34.2
Operating Current(Imp/A)	11.70
Efficiency(%)	21.3

STC * : Irradiance = 1000 W/m², Cell Temperature = 25°C, AM = 1.5
The data above is for reference only and the actual data is accordance with the pratical testing.

MECHANICAL PARAMETERS

Cell Size	N Type 166mm*83mm(TOPCon Cells)
Module Size	1773X1046X30mm
Glass Thickness	3.0mm
Module Weight	24Kg
Output Cable	4mm², cable length 1200mm (can be customized)
Connector	MC4-Connectors
Junction Box	IP68, 3 bypass diodes
Frame	Anodized aluminium alloy

ELECTRICAL PROPERTIES (NOCT*)

Product name	G1 9BB 400
Nominal Max. Power(Pmax/Wp)	302
Open Circuit Voltage(Voc/V)	38.8
Short Circuit Current(Isc/A)	9.90
Operating Voltage(Vmp/V)	32.2
Operating Current(Imp/A)	9.38

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

TEMPERATURE COEFFICIENTS

Short Circuit Current(Isc)	+0.046%/°C
Open Circuit Voltage(Voc)	-0.260%/°C
Nominal Max. Power(Pmax)	-0.320%/°C
NMOT	42±2°C

OPERATING PARAMETERS

Max. System Voltage	1500V (IEC)
Power Tolerance	5%*
Operating Temperature	-40°C ~ +85°C
Max. Fuse Rated Current	25A
Front Static Load	Snow load 5400Pa, Wind Load2400Pa
Packing Specification	39pcs/Pallet; 216(20GP); 936(40HQ)

Measurement tolerance of the rated power 3% depending on equipment.
The specifications and average values can vary slightly.
A possible light-induced degradation after commissioning is not taken into account.

info@solarhero.de | SOLAR HERO GmbH | 40789 Monheim am Rhein, Rheinpromenade 11 | VAT NUMBER: DE345157888

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Product Service

C E R T I F I C A T E

No. Z2 118630 0001 Rev. 01

Holder of Certificate: **SOLAR HERO GmbH**
Rheinpromenade 11
40789 Monheim am Rhein
GERMANY

Certification Mark:

Product: **Crystalline Silicon Terrestrial Photovoltaic (PV) Modules**

Mono-crystalline Silicon Photovoltaic Module

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition, the certification holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. All applicable requirements of the testing and certification regulations of TÜV SÜD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: 701262219901-01

Valid until: 2028-01-15

Date, 2023-03-22

(Zhulin Zhang)

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Product Service

C E R T I F I C A T E

No. Z2 118630 0001 Rev. 01

Model(s):

All electrical data is shown as relative to this test conditions: front side irradiance 1000 W/m², 25 °C, AM 1.5
SOLARHERO xxx-S1 (xxx=385-415, in steps of 5)
SOLARHERO xxx-S1 PRO1 (xxx=385-415, in steps of 5)
SOLARHERO xxx-S1 PRO2 (xxx=385-415, in steps of 5)
SOLARHERO xxx-S1-B (xxx=410-465, in steps of 5)
SOLARHERO xxx-S1-B PRO (xxx=410-465, in steps of 5)
SOLARHERO xxx-S2 (xxx=400-435, in steps of 5)
SOLARHERO xxx-S2 PRO1 (xxx=400-435, in steps of 5)
SOLARHERO xxx-S2 PRO2 (xxx=400-435, in steps of 5)
SOLARHERO xxx-S2-B (xxx=530-585, in steps of 5)
SOLARHERO xxx-S2-B PRO (xxx=530-585, in steps of 5)
xxx is standing for rated output power at STC.

Parameters:

Safety Class:	Class II
Max. System Voltage:	1500V DC
Test Laboratory:	Yangzhou Opto-Electrical Product Testing Institute No.10 West Kaifa Road, Yangzhou, 225009 Jiangsu P.R.China
Construction:	Framed or Frameless, with Junction box, cable and connector.
Fire Safety Class:	Class C according to UL790

Tested according to:

IEC 61215-1:2016
IEC 61215-1-1:2016
IEC 61215-2:2016
IEC 61730-1:2016
IEC 61730-2:2016
EN 61215-1:2016
EN 61215-1-1:2016
EN 61215-2:2017
EN IEC 61730-1:2018
EN IEC 61730-1:2018/AC:2018-06
EN IEC 61730-2:2018
EN IEC 61730-2:2018/AC:2018-06

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