HENERGY SOLAR
恒 能 光 伏

HENERGY SOLAR POWER TECHNOLOGY CO.,LTD.

南京恒能光伏科技有限公司

COMPANY PROFILE

Henergy Solar is a brand-new PV factory founded in 2008. Henergy Solar has built a vertically integrated solar product value chain, with an overall annual capacity of approximately 6GW of Solar Cells and 4GW of solar panels. The company has a number of experienced professionals who have been engaged in the fields of solar photovoltaic product development, production and marketing for years.

The company has furthermore established technical research cooperation with couples of colleges and universities as well as research institutes, therefore it enjoys strong technical support, which enables its product technical indexes could maintain the leading position domestically. The company owns production lines for solar cell, solar module and system application products, and we are focusing on building photovoltaic power plants, Solar Farm Investment and Exploiting (EPC & PPA), Rooftop, Waterface, Greenhouse and Ground-mounted Solar Power System Engineering, etc.

Technological innovation is essential to our position as a leading global renewable energy provider. At Henergy Solar, our R&D team focuses on the research and development of next generation PV technologies with a constant commitment to product quality and reliability as well as to cost structure optimization.

With a diversified customer base in the global PV market, Henergy Solar delivers its solar modules and PV solutions worldwide. Our success is built on the trust of our customers and partners in our services, products and the mutually beneficial business modes.

Henergy Solar is committed to be socially and environmentally responsible for global carbon emissions. We constantly strive to reduce our own impact on the environment, and to find new solutions so that clean energy from the sun becomes available to an increasing number of people worldwide.

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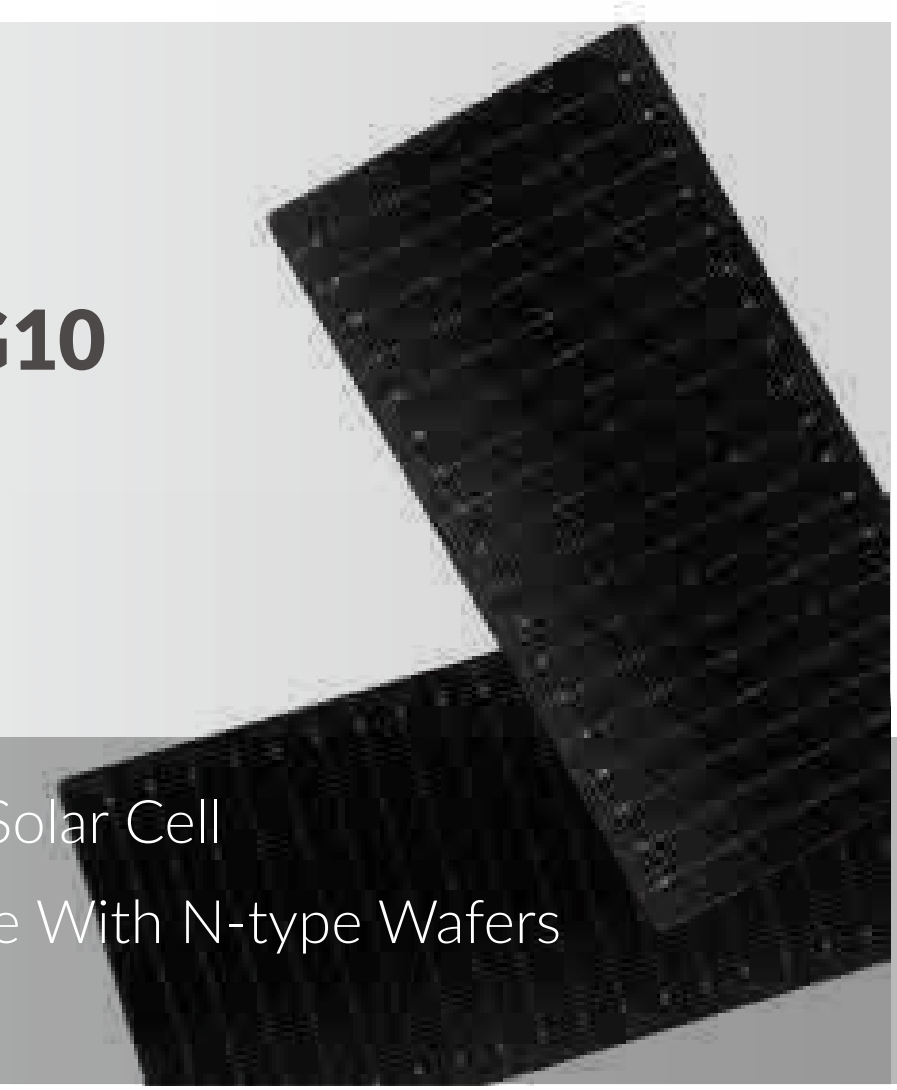
HS-18BB-G10 245-252 Series



Heterojunction Solar Cell
Great Performace With N-type Wafers

HJT solar cell is a new generation superior bifacial solar cell made out of N-type wafer, which combines merits of crystalline silicon and thin-film technology to form a single composite structure. As one of the most effective cell passivation technology in the market, HJT ensures that solar cells deliver high efficiency and great power even in hot climate.

Higher Cell Efficiency

- Phosphorus fettering combines with double-sided microcrystal process to guarantee higher cell efficiency.
- Ultra-low temperature coefficiency ensures higher and more stable power output in high temperature environment.
- No LID, No PID, lead to zero power loss.

Front side

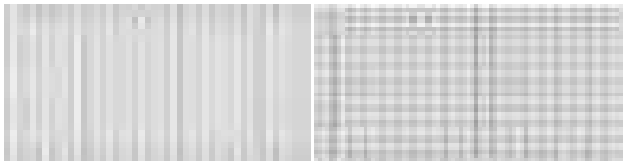
Maximum Module Power

- Half silicon ingot cutting wafer and SMBB technology to deliver higher energy output and lower power loss.
- The natural bifacial symmetrical structure of HJT cell can effectively improve the power generation capacity on cell's backside.
- No LID and No PID effectively extends the PV module life.
- PV systems with lower LCOE using HJT modules

Back side

Mechanical Characteristics

Product	HJT Monocrystalline soalr cell
Format	18BB, N-type, 182mm*91.75mm±0.25mm
Average Thickness (Si)	130μm ±13μm
Front Surface(-)	18 soldering pads (silver) Dark blue anti-reflecting ITO coating (Indium tin oxide)
Back Surface(+)	18 soldering pads (silver) Dark blue anti-reflecting ITO coating (Indium tin oxide)

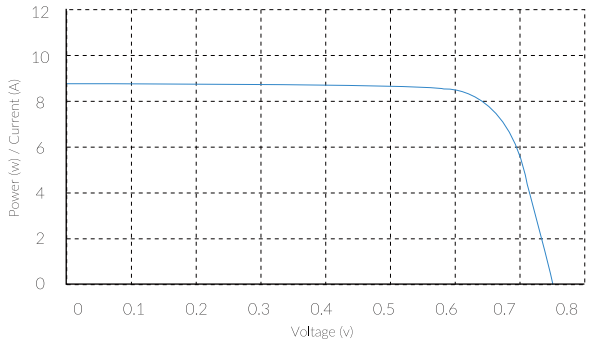


ELECTRICAL CHARACTERISTICS (STC)

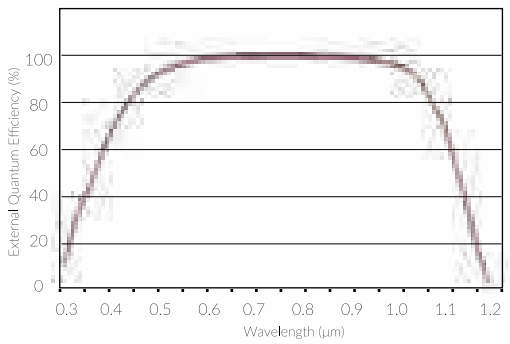
Power Class			HS-G10-245	HS-G10-246	HS-G10-247	HS-G10-248	HS-G10-249	HS-G10-250	HS-G10-251	HS-G10-252
Maximum Power	Pmpp	[W]	4.10	4.12	4.14	4.15	4.17	4.18	4.19	4.21
Short Circuit Current	Isc	[A]	6.53	6.54	6.55	6.56	6.57	6.58	6.59	6.60
Open Circuit Voltage	Voc	[V]	0.747	0.747	0.747	0.747	0.747	0.748	0.748	0.748
Efficiency	η	[%]	24.5	24.6	24.7	24.8	24.9	25.0	25.1	25.2

*PERFORMANCE AT STANDARD TEST CONDITIONS, STC: 1000 W/㎡, 25℃, AM 1.5 G

TYPICAL CURRENT/POWER-VOLTAGE CURVES (25.0%)



SPECTRAL RESPONSE



PACKING SPECIFICATIONS

pcs/box	box/carton	pcs/carton
132	18	2376

TEMPERATURE COEFFICIENTS

Power (Pmax)	-0.26%/K
Current (Isc)	+0.055%/K
Voltage (Voc)	-0.27%/K

Remind of Storage

If the sealing foil around the cell boxes is demaged, broken or opened, we suggest that:

- Store the cells in dry and clean place at room temperature
- Process the cells within 10 days after opening the seal.

HENERGY SOLAR
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HS-15BB-G12
245-252
Series

Heterojunction Solar Cell
Great Performace With N-type Wafers

HJT solar cell is a new generation superior bifacial solar cell made out of N-type wafer, which combines merits of crystalline silicon and thin-film technology to form a single composite structure. As one of the most effective cell passivation technology in the market, HJT ensures that solar cells deliver high efficiency and great power even in hot climate.

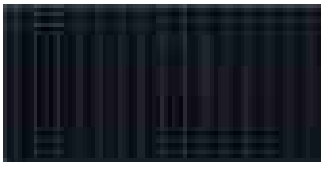
Higher Cell Efficiency

- Phosphorus fettering combines with nano-crystalline process to guarantee higher cell efficiency.
- Ultra-low temperature coefficiency ensures more power output in high temperature environment.
- No LID, No PID, lead to zero degradation.

Front side

Maximum Module Power

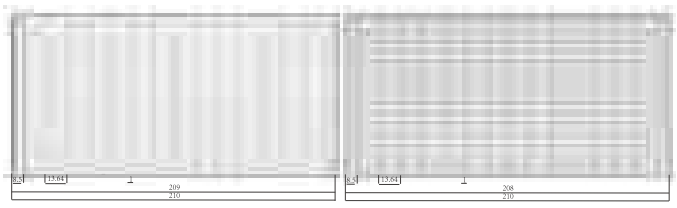
- 15-busbar technology combines half-cell design to deliver higher energy output for maximum cost savings.
- Bifacial constructure ensures more sunlight captured and converted into power on the back side.
- Extreme low LID and PID supports reliability and longevity.
- Lower LCOE cost by HJT solar system



Back side

Mechanical Characteristics

Product	HJT Monocrystalline soalr cell
Format	15BB, N-type, 210mm*105mm ±0.25mm
Average Thickness (Si)	130μm ±20μm
Front Surface(-)	15 soldering pads (silver) Dark blue anti-reflecting ITO coating (Indium tin oxide)
Back Surface(+)	15 soldering pads (silver) Dark blue anti-reflecting ITO coating (Indium tin oxide)

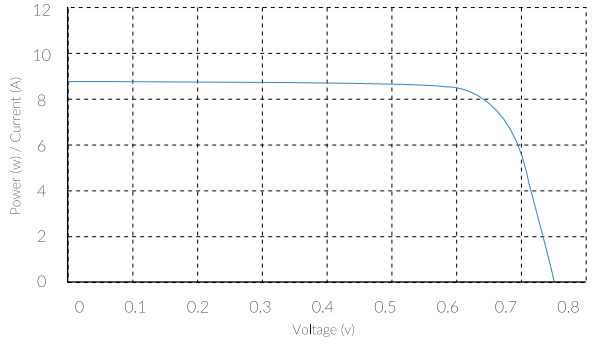


ELECTRICAL CHARACTERISTICS (STC)

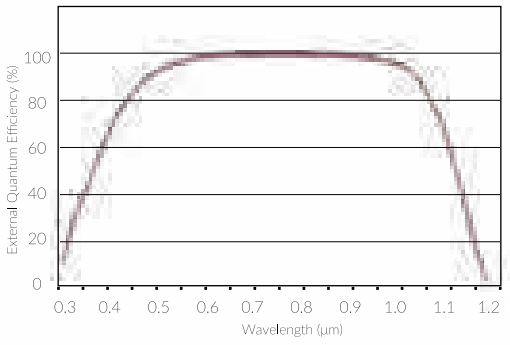
Power Class			HS-G12-245	HS-G12-246	HS-G12-247	HS-G12-248	HS-G12-249	HS-G12-250	HS-G12-251	HS-G12-252
Maximum Power	Pmpp	[W]	5.40	5.42	5.45	5.47	5.49	5.51	5.53	5.56
Short Circuit Current	Isc	[A]	8.68	8.67	8.68	8.69	8.70	8.70	8.72	8.72
Open Circuit Voltage	Voc	[V]	0.743	0.744	0.744	0.745	0.745	0.746	0.746	0.746
Efficiency	η	[%]	24.5	24.6	24.7	24.8	24.9	25.0	25.1	25.2

*PERFORMANCE AT STANDARD TEST CONDITIONS, STC: 1000 W/㎡, 25℃, AM 1.5 G

TYPICAL CURRENT/POWER-VOLTAGE CURVES (25.0%)



SPECTRAL RESPONSE



PACKING SPECIFICATIONS

pcs/box	box/carton	pcs/carton
120	18	2160

TEMPERATURE COEFFICIENTS

Power (Pmax)	-0.26%/K
Current (Isc)	+0.055%/K
Voltage (Voc)	-0.27%/K

Remind of Storage

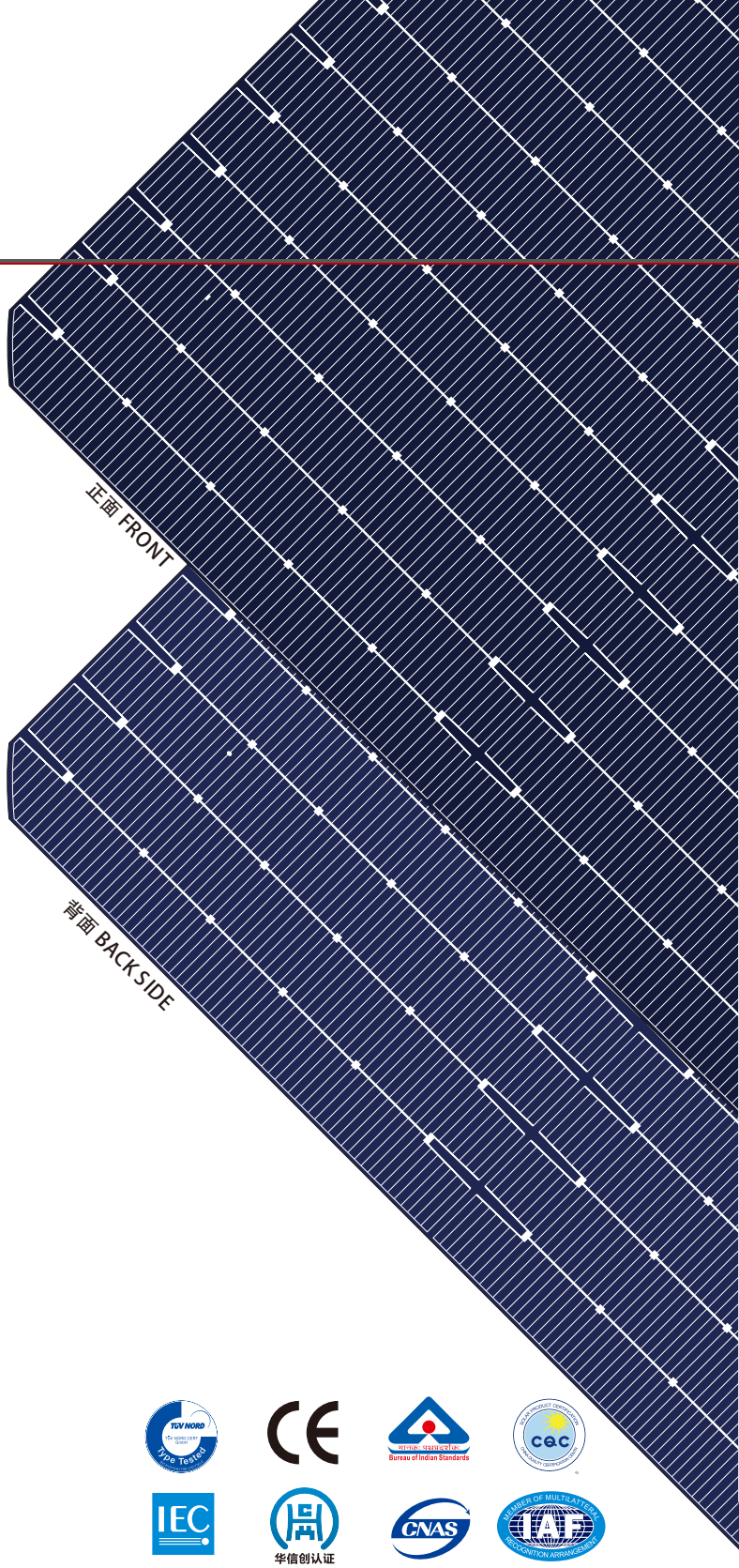
If the sealing foil around the cell boxes is demaged, broken or opened, we suggest that:

- Store the cells in dry and clean place at room temperature
- Process the cells within 10 days after opening the seal.

TOPCon SOLAR CELL

MADE FOR SKYMAX series

HSSC182MTB16



产品特征 Geometry Characteristics

- 产品型号：182 单晶双面电池
  Product model:182 mono-crystalline Bifacial solar cell
- 尺寸规格：182.2mmx182.2mm±0.5mm， Φ 247.28mm±0.5mm
  Geometry：182.2mmx182.2mm±0.5mm, Φ 247.28mm±0.5mm
- 电池厚度：130μm±13μm
  Cell thickness:130μm±13μm
- 正面：16 主栅，正 12 段，132 栅，主栅宽度 0.036±0.02mm
  Front design：16 busbars, 12 pads, 132 fingers,
  busbar width 0.036±0.02mm
- 背面：16 主栅，背 12 段，134 栅，主栅宽度 0.036±0.02mm
  Rear design：16 busbars, 12 pads, 134 fingers,
  busbar width 0.036±0.02mm

产品特点 Product Characteristics

- 高转换效率，正面效率≥24.5%
  High efficiency, Eta≥24.5%
- 双面率≥80%
  Bifacial rate up to 80%
- 光致衰减为 0"
  Light-induced Degradation is "0"
- 优越的抗 PID 性能
  Superior anti-PID performance
- 功率温度系数低至-0.32%/K
  Temperature coefficient of Power as low as - 0.32%/K
- 200W/m² 弱光下相对转换效率≥97%
  Relative conversion efficiency≥97% under low light(200W/m²)
- 封损更低，更适合高效组件
  Lower Cell to Module (CTM) Loss Rate, more suitable for high-efficiency module

品质管控 Quality Control

- 效率测试的准确性控制在±0.1%
  The accuracy of the efficiency test is controlled within ±0.1%
- 电性能、外观、EL 100%全自动检验
  Electrical performance, appearance, EL 100% automatic inspection
- 校准片朔源到 Fraunhofer ISE
  Calibration cells are traceable to Fraunhofer ISE

温度系数 Temperature Coefficients

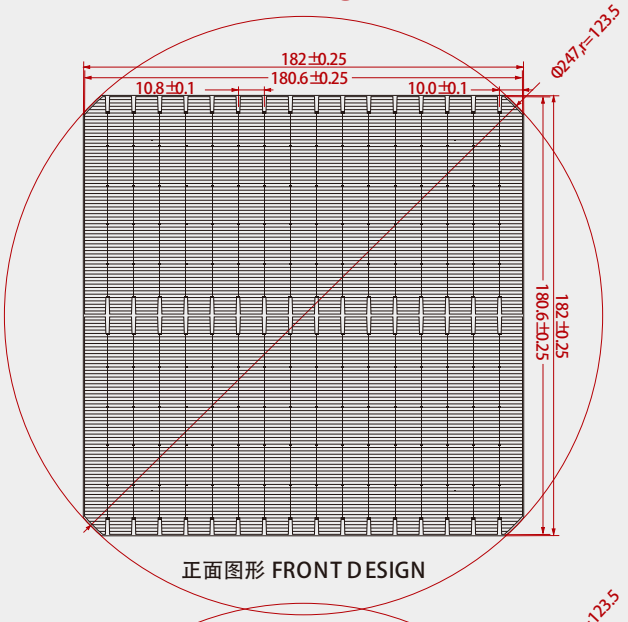
- 电流温度系数 TkCurrent： 0.045%/K
- 电压温度系数 TkVoltage：-0.25%/K
- 功率温度系数 TkPower：-0.32 %/K

Comprehensive Products and System Certificates

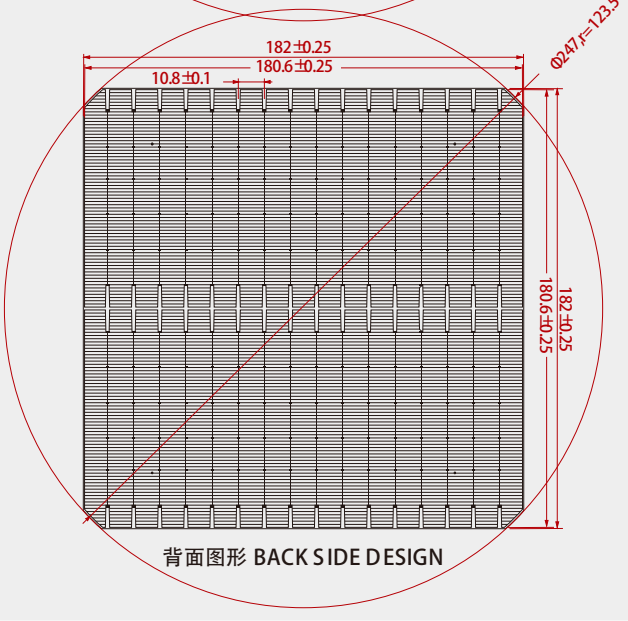
IEC61215/IEC61730/IEC61701/IEC62716
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gases Emissions Verification
OHSAS 18001: Occupational Health and Safety Management System

TOPCon SOLAR CELL
HSSC182MTB16

电池图形及尺寸 Cell graphics and sizes



正面图形 FRONT DESIGN



背面图形 BACK SIDE DESIGN

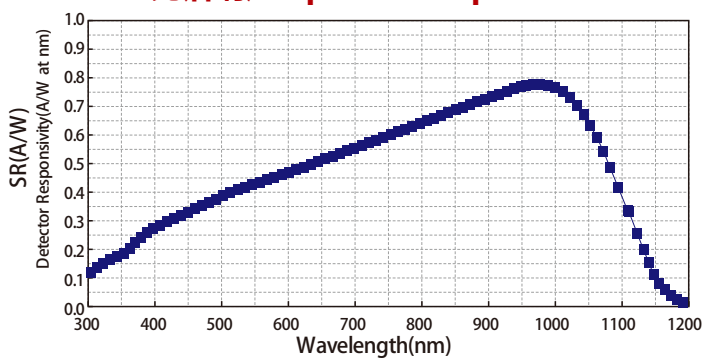
电性能特征 Electrical characteristics

Eff(%)	Power Pmpp(W)	Max. Power Current Impp(A)	Short Circuit Current Isc(A)	Max. Power Voltage Vmpp(V)	Open Circuit Voltage Voc(V)	FF(%)
25.1	8.30	13.279	13.766	0.625	0.713	84.50
25.0	8.27	13.252	13.748	0.624	0.712	84.47
24.9	8.23	13.212	13.741	0.623	0.711	84.31
24.8	8.20	13.185	13.729	0.622	0.709	84.22
24.7	8.16	13.119	13.730	0.622	0.709	83.81
24.6	8.13	13.098	13.716	0.621	0.709	83.69
24.5	8.10	13.062	13.708	0.620	0.707	83.54
24.4	8.06	13.007	13.705	0.620	0.707	83.23
24.3	8.02	12.985	13.694	0.618	0.706	82.92
24.2	7.99	12.951	13.689	0.617	0.705	82.86
24.1	7.97	12.921	13.646	0.617	0.705	82.85
24.0	7.93	12.875	13.624	0.616	0.704	82.68
23.9	7.89	12.831	13.575	0.615	0.704	82.57
23.8	7.86	12.781	13.541	0.615	0.705	82.34
23.7	7.82	12.735	13.506	0.614	0.705	82.12

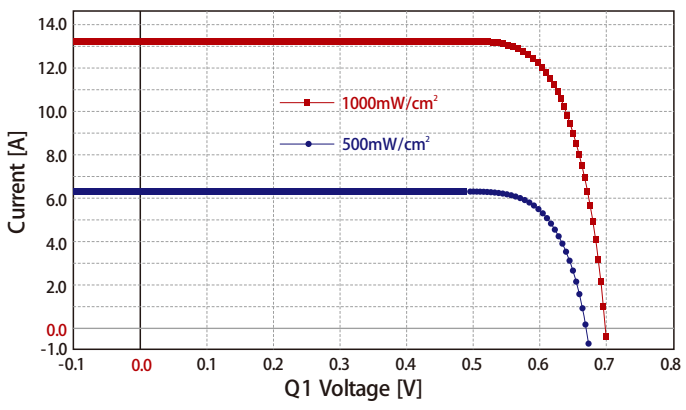
*标准测试条件下(Under standar d test condition): 1000W/ m², M 1.5G, 25° C

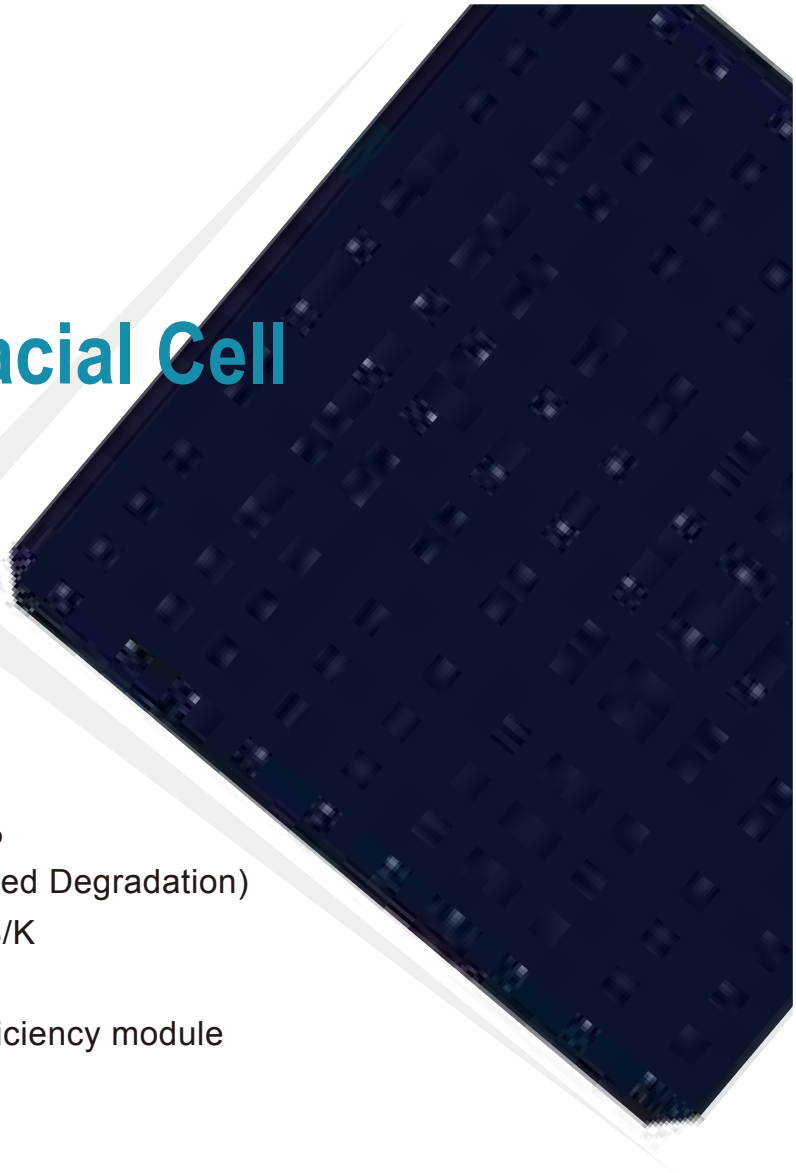
图示说明(Illustration):23.7%→实际范围(actual range)23.7%~23.8% 规范和数据只供参考，如有更改另行说明通知

光谱响应 Spectral response



IV 曲线 I-V Curve





P-Type Mono Bifacial Cell

HSC182-10D10B

Product Feature

High conversion efficiency ≥ 23.3%
Bifaciality ≥70%
LID (Light Induced Degradation) ≤2.5%
High resistance of PID (Potential Induced Degradation)
Power temperature coefficient ≤-0.35%/K
Weak light response (200W/m²) ≥95%
Lower CTM loss, better for the high efficiency module

Quality Control

Efficiency test accuracy is ±0.1%
100% automatic inspection of IV/EL/Appearance
Calibration Cell soure to Fraunhofer ISE

Management System Certification

ISO 9001:2015 Quality Management System
ISO 14001:2015 Environmental Management System
ISO 45001:2018 Occupational Health and Safety Management System

Product Features

Dimension	182mmx182mm±0.25mm, Φ247mm±0.25mm
Cell Thickness	175μm±20μm
Front side	Adopt 10 bus bars two-slice structure, pad point width 1.0mm-1.5mm, 136±10 fingers, and the front side is covered with SiN anti-reflection film
Back side	The back bus bars is 1.9 ±0.4mm, covering the fingers

Temperature Coefficients

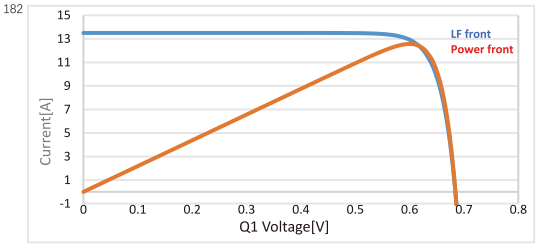
Current Temperature Coefficient	Tkcurrent:+0.048 %/K
Voltage Temperature Coefficient	Tkvoltage:-0.28 %/K
Power Temperature Coefficient	Tkpower:-0.35 %/K

Electrical Data

Eff(%)	Pmpp(W)	Umpp(V)	Impp(A)	Uoc(V)	Isc(A)	FF(%)
23.3	7.69	0.613	12.549	0.690	13.583	82.08
23.2	7.66	0.612	12.515	0.689	13.568	81.93
23.1	7.63	0.611	12.482	0.688	13.551	81.80
23.0	7.59	0.611	12.428	0.688	13.498	81.77
22.9	7.56	0.610	12.394	0.687	13.479	81.65
22.8	7.53	0.610	12.340	0.687	13.449	81.47
22.7	7.49	0.608	12.326	0.686	13.419	81.41
22.6	7.46	0.607	12.292	0.686	13.407	81.13
22.5	7.43	0.607	12.238	0.685	13.397	80.95
22.4	7.40	0.606	12.204	0.685	13.388	80.64
22.3	7.36	0.605	12.169	0.684	13.358	80.58

• Standard Test Conditions:1000W/ m², AM 1.5, 25°C Specifications and data are only for reference.

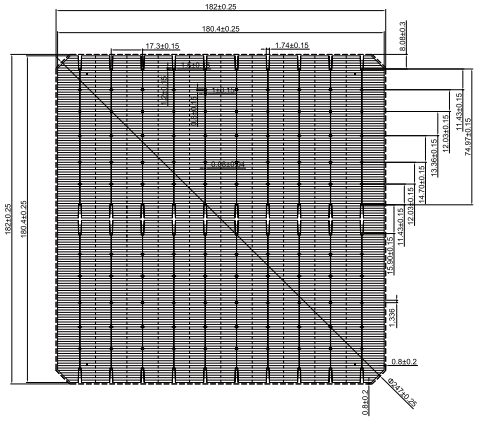
IV Curve



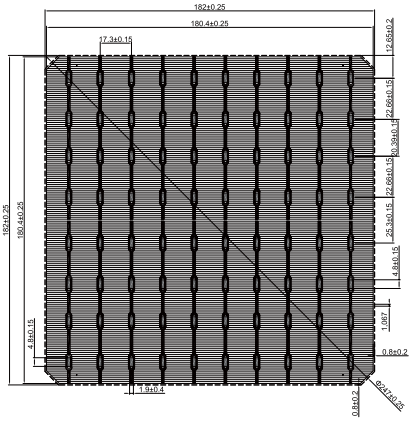
Spectral Response(SR)

Intensity(W/m 2)	Uoc	Isc
1000	1.000	1.000
800	0.991	0.801
600	0.989	0.601
400	0.962	0.402

Dimension



Front side



Rear side

P-Type Mono Bifacial Cell

HSC158-5D5B

Product Feature

High conversion efficiency, Up to 23.0%
Bifaciality ratio ≥70%
LID (Light Induced Degradation)≤2.5%
High resistance of PID (Potential Induced Degradation)
Power temperature coefficient ≤−0.38%/℃
Weak light response(200W/m²)≥95%

Quality Control

Efficiency test accuracy is ±0.1%
100% automatic inspection of IV/EL/Appearance
Calibration Cell soure to Fraunhofer ISE

Management System Certification

ISO 9001:2015 Quality Management System
ISO 14001:2015 Environmental Management System
ISO 45001:2018 Occupational Health and Safety Management System

Product Features

Dimension	158.75mmx158.75mm±0.25mm, Φ223.0mm±0.25mm
Cell Thickness	180μm±20μm
Front side	0.7±0.15mm wide bus bars, 108 finger grids , SiN
Back side	2.9±0.3mm wide discontinuous soldering pads, 150 Aluminum fingers, SiN

Temperature Coefficients

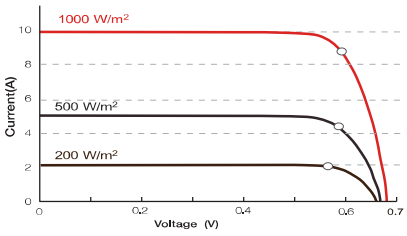
Current Temperature Coefficient	Tkcurrent：+0.048 %/K
Voltage Temperature Coefficient	Tkvoltage：-0.31 %/K
Power Temperature Coefficient	Tkpower：-0.38 %/K

Electrical data

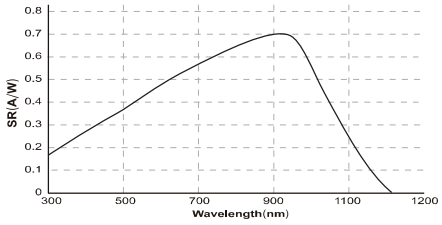
Eff(%)	Pmpp(W)	Umpp(V)	Impp(A)	Uoc(V)	Isc(A)	FF(%)
23.0	5.80	0.597	9.708	0.691	10.380	80.82
22.9	5.77	0.595	9.698	0.690	10.360	80.74
22.8	5.75	0.593	9.689	0.689	10.340	80.66
22.7	5.72	0.591	9.679	0.688	10.320	80.58
22.6	5.69	0.589	9.669	0.687	10.300	80.50
22.5	5.67	0.587	9.659	0.686	10.280	80.41
22.4	5.64	0.585	9.649	0.685	10.260	80.33
22.3	5.62	0.583	9.639	0.684	10.240	80.24
22.2	5.59	0.581	9.629	0.683	10.220	80.16
22.1	5.57	0.579	9.618	0.682	10.200	80.07
22.0	5.54	0.577	9.608	0.681	10.180	79.98

- Standard Test Conditions:1000W/ m², AM 1.5, 25°C Specifications and data are only for reference.

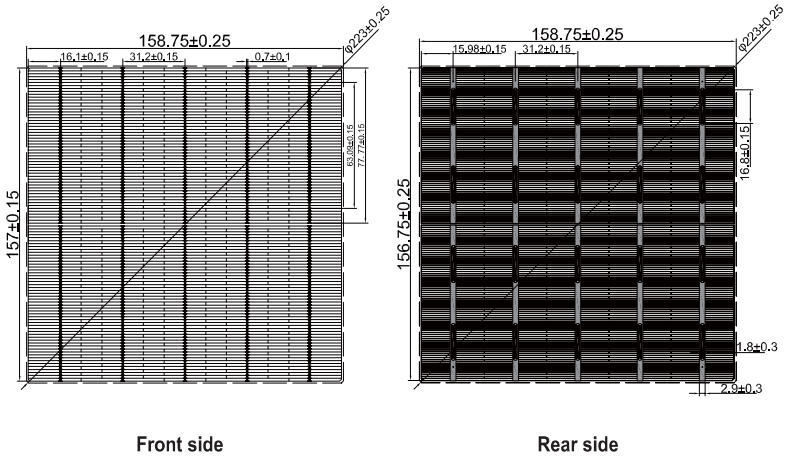
IV Curve



Spectral Response(SR)



Dimension

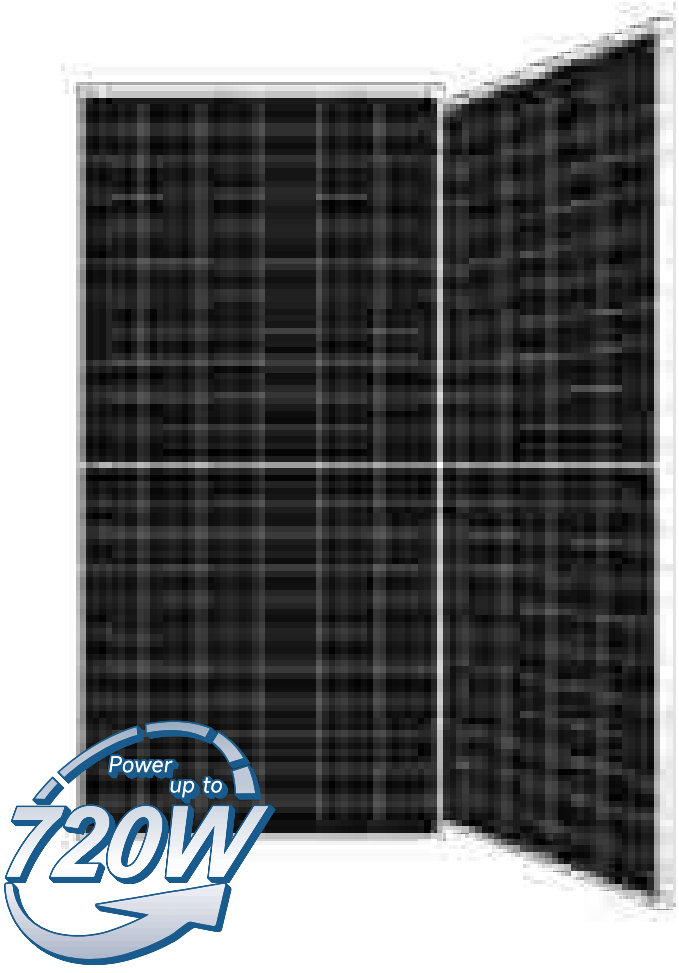


Front side Rear side

Himalaya G12 Series

700-720W

132-cell Bifacial HJT Half Cell Double-glass Solar Module



HJT Technology

Combining gettering process and μc-Si technology to ensure higher cell efficiency and higher module power.

-0.24%/℃ Pmax temperature coefficient

More stable power generation performance and even better in hot climate.

SMBB design with Half-Cut Technology

Shorter current transmission distance, less resistive loss and higher cell efficiency.

Up to 90% Bifaciality

Natrual symmetrical bifacial structure bringing more energy yield from the backside.

Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extent module lifespan.

Higher reliability

Industrial leading product and performance warranty, ensuring modules' consistent outstanding performance.

Suitable for Utility project

Lower BOS cost, lower LCOE.

WARRANTY

Product Warranty 15 years

Linear Power Warranty 30 years

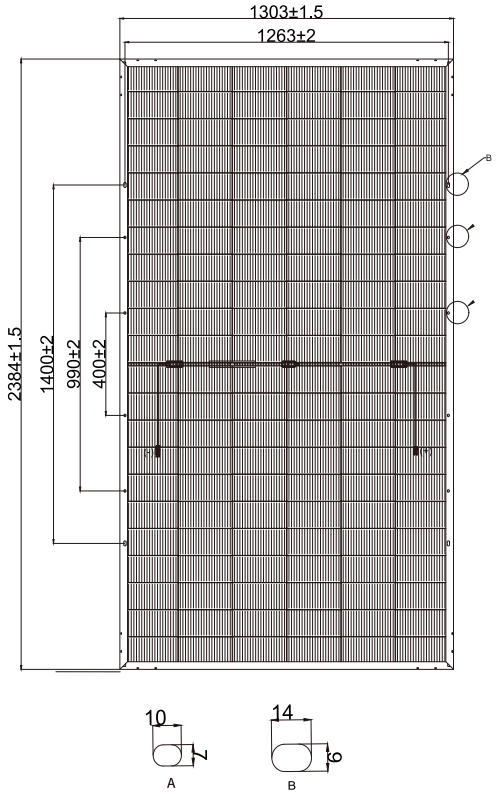
Himalaya G12 Series 700-720W

32-cell Bifacial HJT Solar Half Cell Module

- BloombergNEF Tier 1 PV module manufacturer
- Reinsurance underwritten by Ariel Re

Engineering Drawings

Unit: mm



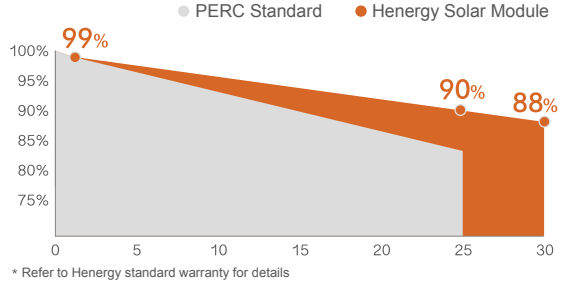
Temperature Characteristics

Nominal Operating Cell Temp. (NOCT)	44°C±2°C
Temperature Coefficient of Pmax	-0.24%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Isc	0.04%/°C

Safety & Warranty

Safety Class	Class II
Product Warranty	15 yrs Workmanship
Performance Warranty	30 yrs Linear Warranty*

* Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.



* Refer to Henergy standard warranty for details

Electrical Characteristics (STC*)

HS-210-B132		HSSP700	HSSP705	HSSP710	HSSP715	HSSP720
Maximum Power	(Pmax)	700W	705W	710W	715W	720W
Module Efficiency	(%)	22.53%	22.70%	22.86%	23.02%	23.18%
Optimum Operating Voltage	(Vmp)	42.10V	42.25V	42.39V	42.54V	42.68V
Optimum Operating Current	(Imp)	16.63A	16.69A	16.75A	16.81A	16.87A
Open Circuit Voltage	(Voc)	50.13V	50.29V	50.44V	50.59V	50.74V
Short Circuit Current	(Isc)	17.43A	17.49A	17.55A	17.61A	17.67A
Operating Module Temperature		-40 to +85°C				
Maximum System Voltage		DC1500V (IEC)				
Maximum Series Fuse		35A				
Power Tolerance		0~+5W				
Bifaciality		85%±5%				

*STC: Irradiance 1000 W/m², cell temperature 25°C, AM=1.5. Tolerance of Pmax is within +/- 3%.

BSTC**

Maximum Power	(Pmax)	770W	775W	780W	785W	790W
Optimum Operating Voltage	(Vmp)	42.10V	42.25V	42.39V	42.54V	42.68V
Optimum Operating Current	(Imp)	18.29A	18.35A	18.41A	18.46A	18.51A
Open Circuit Voltage	(Voc)	50.13V	50.29V	50.44V	50.59V	50.74V
Short Circuit Current	(Isc)	19.17A	19.22A	19.28A	19.33A	19.39A

**BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25°C.

Mechanical Characteristics

Cell Type	HJT Mono 210×105mm
Cell Connection	132 (6×22)
Module Dimension	2384×1303×35 mm
Weight	38.7 kg
Junction Box	IP68
Output Cable	4mm², 300mm in length, length can be customized / UV resistant
Connectors Type	MC4/ MC4-Evo2A/ PV-H4/Z4S-abcd/ ST4
Frame	Anodised aluminum alloy
Front Load	5400 Pa
Rear Load	2400 Pa
Glass Thickness	Double glass, 2.0mm

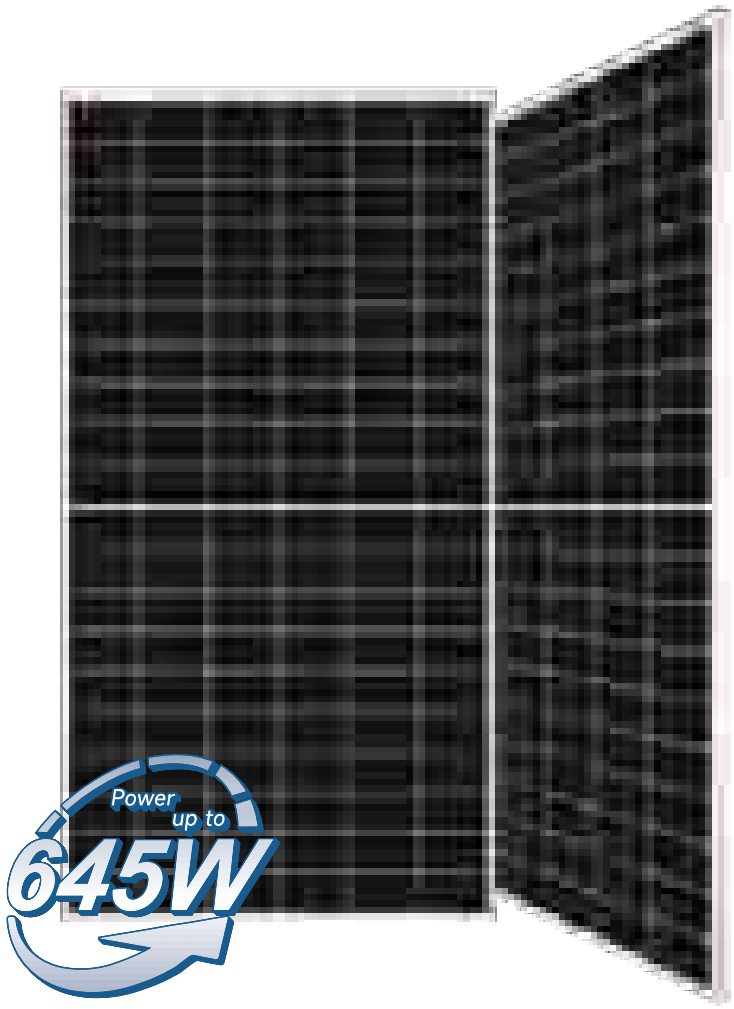
Shipping Configurations

		HC
Container Size		40'
Pallets Per Container		18
Modules Per Pallet	(pcs)	31
Modules Per Container	(pcs)	558

Himalaya G12 Series

625-645W

120-cell Bifacial HJT Half Cell Double-glass Solar Module



HJT 2.0 Technology

Combining gettering process and single-side μc-Si technology to ensure higher cell efficiency and higher module power.

-0.24%/℃ Pmax temperature coefficient

More stable power generation performance and even better in hot climate.

SMBB design with Half-Cut Technology

Shorter current transmission distance, less resistive loss and higher cell efficiency.

Up to 90% Bifaciality

Natrual symmetrical bifacial structure bringing more energy yield from the backside.

Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extent module lifespan.

Higher reliability

Industrial leading product and performance warranty, ensuring modules' consistent outstanding performance.

Suitable for Utility project

Lower BOS cost, lower LCOE

WARRANTY

Product Warranty 15 years

Linear Power Warranty 30 years

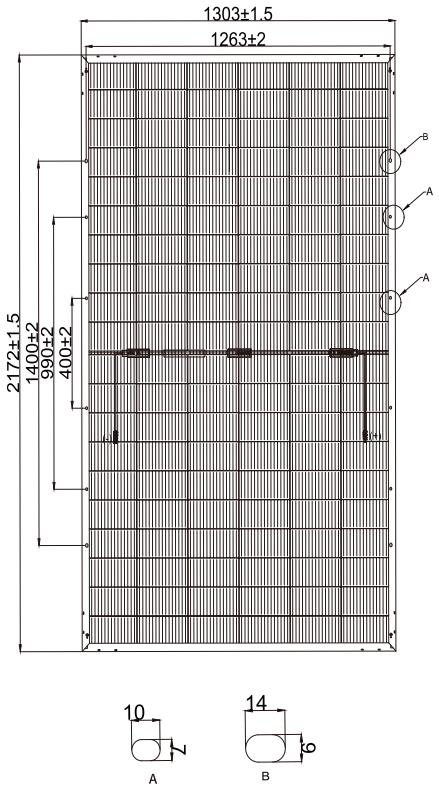
Himalaya G12 Series 625-645W

120-cell Bifacial HJT Half Cell Solar Module

- BloombergNEF Tier 1 PV module manufacturer
- Reinsurance underwritten by Ariel Re

Engineering Drawings

Unit: mm



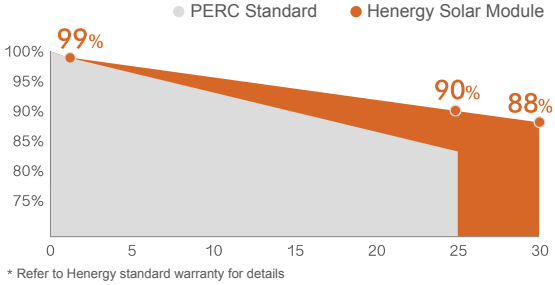
Temperature Characteristics

Nominal Operating Cell Temp. (NOCT)	44°C±2°C
Temperature Coefficient of Pmax	-0.24%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Isc	0.04%/°C

Safety & Warranty

Safety Class	Class II
Product Warranty	15 yrs Workmanship
Performance Warranty	30 yrs Linear Warranty*

* Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.



* Refer to Henergy standard warranty for details

Electrical Characteristics (STC*)

HS-210-B120	HSSP625	HSSP630	HSSP635	HSSP640	HSSP645
Maximum Power (Pmax)	625W	630W	635W	640W	645W
Module Efficiency (%)	22.08%	22.26%	22.44%	22.61%	22.79%
Optimum Operating Voltage (Vmp)	37.86V	38.03V	38.19V	38.35V	38.51V
Optimum Operating Current (Imp)	16.51A	16.57A	16.63A	16.69A	16.75A
Open Circuit Voltage (Voc)	45.13V	45.30V	45.48V	45.65V	45.82V
Short Circuit Current (Isc)	17.31A	17.37A	17.43A	17.49A	17.55A
Operating Module Temperature	-40 ~ +85°C				
Maximum System Voltage	DC1500V (IEC)				
Maximum Series Fuse	35A				
Power Tolerance	0~+5W				
Bifaciality	85%±5%				

*STC: Irradiance 1000 W/m², cell temperature 25°C, AM=1.5. Tolerance of Pmax is within +/- 3%.

BSTC**

Maximum Power (Pmax)	690W	695W	700W	705W	710W
Optimum Operating Voltage (Vmp)	37.86V	38.03V	38.19V	38.35V	38.51V
Optimum Operating Current (Imp)	18.23A	18.28A	18.33A	18.39A	18.44A
Open Circuit Voltage (Voc)	45.13V	45.30V	45.48V	45.65V	45.82V
Short Circuit Current (Isc)	19.11A	19.16A	19.21A	19.27A	19.32A

**BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25°C.

Mechanical Characteristics

Cell Type	HJT Mono 210×105mm
Cell Connection	120 (6×20)
Module Dimension	2172×1303×35 mm
Weight	35.3 kg
Junction Box	IP68
Output Cable	4mm², 300mm in length, length can be customized / UV resistant
Connectors Type	MC4/ MC4-Evo2A/ PV-H4/Z4S-abcd/ ST4
Frame	Anodised aluminum alloy
Front Load	5400 Pa
Rear Load	2400 Pa
Glass Thickness	Double glass, 2.0mm

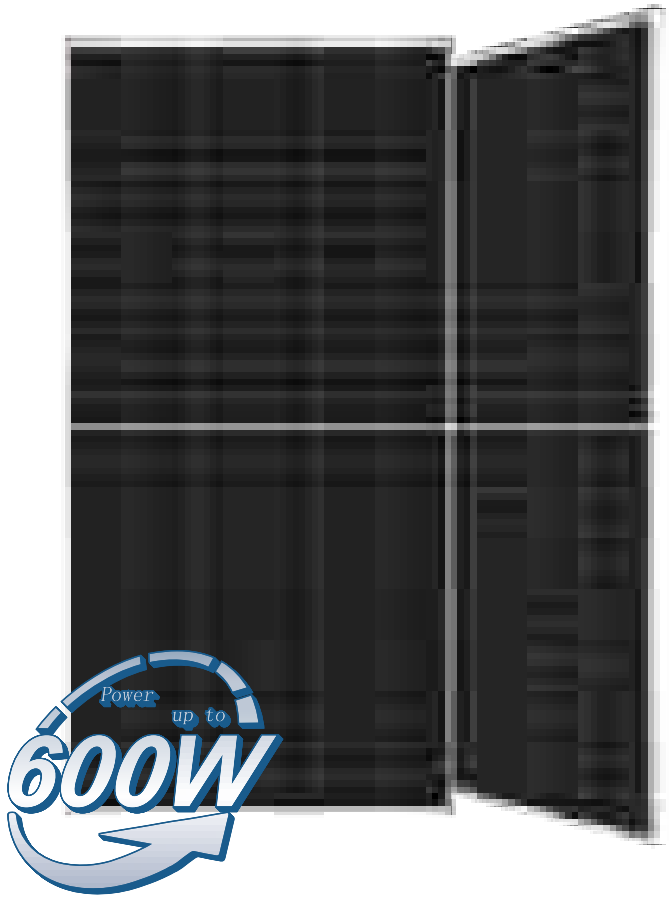
Shipping Configurations

	HC
Container Size	40'
Pallets Per Container	18
Modules Per Pallet (pcs)	31
Modules Per Container (pcs)	558

Himalaya G10 Series

580-600W

144-cell Bifacial HJT Half Cell Double-glass Solar Module



HJT 3.0

Combining gettering process and double-sided uc-Si to maximize cell efficiency and module power.

-0.24%/℃ Pmax temperature coefficient

More stable power generation performance and even better in hot climate.

Small Chamfer Design

Bigger power generation area on the solar cell, increasing 1% cell power of single piece.

SMBB design with Half-Cut Technology

Shorter current transmission distance, less resistive loss and higher cell efficiency.

Up to 90% Bifaciality

Natrual symmetrical bifacial structure bringing more energy yield from the backside.

Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extent module lifespan.

Higher reliability

Industrial leading product and performance warranty, ensuring modules' consistent outstanding performance.

Suitable for Utility Solar projects

WARRANTY

Product Warranty **15** years

Linear Power Warranty **30** years

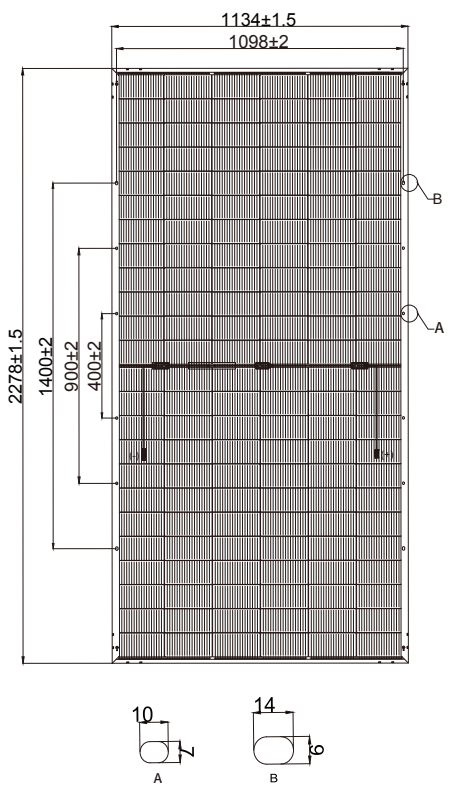
Himalaya G10 Series 580-600W

144-cell Bifacial HJT Half Cell Solar Module

- BloombergNEF Tier 1 PV module manufacturer
- Reinsurance underwritten by Ariel Re

Engineering Drawings

Unit: mm



Electrical Characteristics (STC*)

HS-182-B144	DS580	DS585	DS590	DS595	DS600
Maximum Power (Pmax)	580W	585W	590W	595W	600W
Module Efficiency (%)	22.45%	22.65%	22.84%	23.03%	23.23%
Optimum Operating Voltage(Vmp)	45.00V	45.21V	45.42V	45.63V	45.84V
Optimum Operating Current(Imp)	12.89A	12.94A	12.99A	13.04A	13.09A
Open Circuit Voltage (Voc)	53.92V	54.12V	54.31V	54.50V	54.70V
Short Circuit Current (Isc)	13.35A	13.40A	13.45A	13.50A	13.55A
Operating Module Temperature	-40 to +85℃				
Maximum System Voltage	DC1500V (IEC)				
Maximum Series Fuse	25A				
Power Tolerance	0~+5W				
Bifaciality	85%±5%				

*STC: Irradiance 1000 W/m², cell temperature 25C, AM=1.5. Tolerance of Pmax is within+/- 3%.

BSTC**

Maximum Power (Pmax)	640W	645W	650W	655W	660W
Optimum Operating Voltage(Vmp)	45.00V	45.21V	45.42V	45.63V	45.84V
Optimum Operating Current(Imp)	14.23A	14.27A	14.32A	14.36A	14.40A
Open Circuit Voltage (Voc)	53.92V	54.12V	54.31V	54.50V	54.70V
Short Circuit Current (Isc)	14.73A	14.77A	14.82A	14.86A	14.91A

**BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25C.

Temperature Characteristics

Nominal Operating Cell Temp. (NOCT)	44℃±2℃
Temperature Coefficient of Pmax	-0.24%/C
Temperature Coefficient of Voc	-0.24%/C
Temperature Coefficient of Isc	0.04%/C

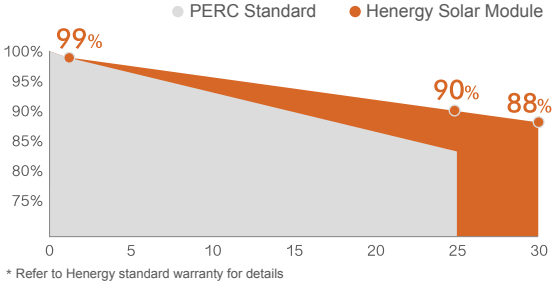
Mechanical Characteristics

Cell Type	HJT Mono 182×91.75mm
Cell Connection	144 (6×24)
Module Dimension	2278×1134×30 mm
Weight	32 kg
Junction Box	IP68
Output Cable	4mm², 300mm in length, length can be customized / UV resistant
Connectors Type	MC4-Evo 2A/ PV-H4/ Z4S-abcd/ ST4
Frame	Anodised aluminum alloy
Front Load	5400 Pa
Rear Load	2400 Pa
Glass Thickness	Double glass, 2.0mm

Safety & Warranty

Safety Class	Class II
Product Warranty	15 yrs Workmanship
Performance Warranty	30 yrs Linear Warranty*

* Less than 1% attenuation in the 1st year, the annual attenuation from the 2nd year is no more than 0.375%, and the power is no less than 88% until the 30th year.



* Refer to Henergy standard warranty for details

Shipping Configurations

	HC
Container Size	40′
Pallets Per Container	20
Modules Per Pallet (pcs)	36
Modules Per Container (pcs)	720

HS-N Series

N-type i-TOPCon bifacial dual glass

Monocrystalline module

PRODUCT:HS-NSP

POWER RANGE:675-700W

700W
MAXIMUM POWER OUTPUT

0~+5W
POSITIVE POWER TOLERANCE

22.5%
MAXIMUM EFFICIENCY

High customer value

- The star of LCOE (Levelized Cost Of Energy) .Higher string power feature effectively reduces BOS (Balance of System)and LCOE
- More energy harvest with cutting-edge N-type i-TOPCon technology
- Designed for compatibility with existing mainstream system components

High power up to 700W

- Up to 22.5% module efficiency with high density interconnect technology
- SMBB (Super multi-busbar) technology for better light trapping effect, lower series resistance and improved current collection

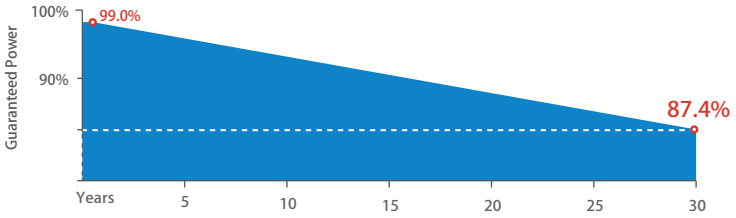
High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load

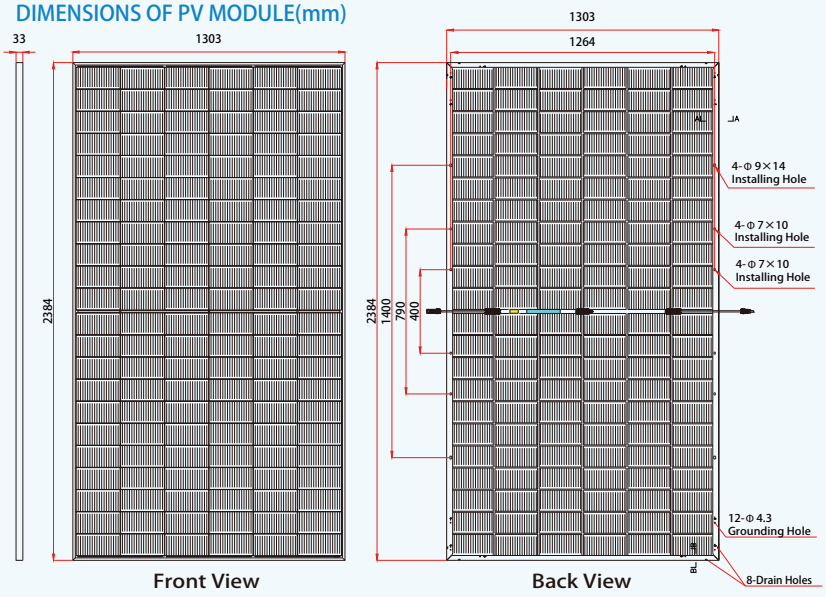
High energy yield

- Excellent product bifaciality and low irradiation performance, validated by 3rd party
- Lower degradation 1% first year, 0.4% annually thereafter
- Lower temperature coefficient (-0.30%/℃)
- Up to 30% additional power gain from back side depending on albedo

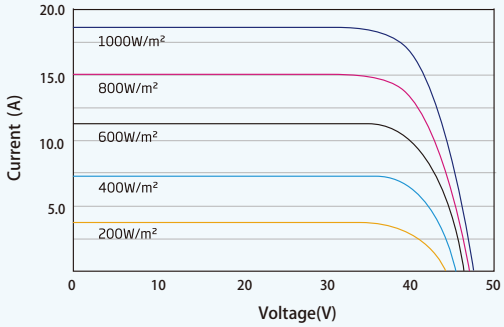
Henergy Solar Vertex Bifacial Dual Glass Performance Warranty



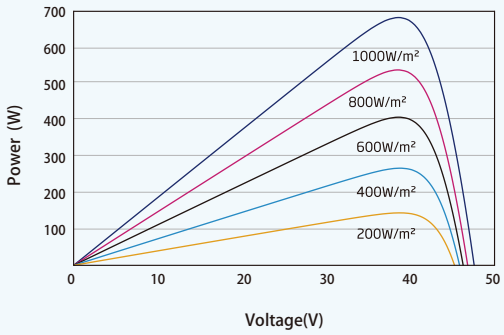
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE(690W)



P-V CURVES OF PV MODULE(690 W)



MECHANICAL DATA

Solar Cells	N-type Monocrystalline
No. of cells	132 cells
Module Dimensions	2384×1303×33 mm (93.86×51.30×1.30 inches)
Weight	38.3 kg (84.4 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)

Frame	33mm(1.30 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²) Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4 PLUS / TS4*

*Please refer to regional datasheet for specified connector.

ELECTRICAL DATA (STC & NOCT)

Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power Watts-P MAX (Wp)*	675	514	680	517	685	521	690	526	695	530	700	534
Power Tolerance-P MAX (W)	0 ~ +5											
Maximum Power Voltage-VMPP (V)	39.4	37.0	39.6	37.2	39.8	37.3	40.1	37.7	40.3	37.8	40.5	38.0
Maximum Power Current-IMPP (A)	17.12	13.89	17.16	13.91	17.19	13.94	17.23	13.96	17.25	14.02	17.29	14.05
Open Circuit Voltage-VOC(V)	47.2	44.7	47.4	44.9	47.7	45.2	47.9	45.4	48.3	45.8	48.6	46.0
Short Circuit Current-ISC (A)	18.14	14.62	18.18	14.65	18.21	14.67	18.25	14.71	18.28	14.73	18.32	14.76
Module Efficiency η m (%)	21.7		21.9		22.1		22.2		22.4		22.5	

STC: Irrdiance 1000W/m², Cell Temperature 25° C, Air Mass AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s. *Measuring tolerance: ±3%.

Electrical characteristics with different power bin (reference to 5% & 10% backside power gain)

Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Total Equivalent power -P MAX (Wp)	709	743	714	748	719	754	725	759	730	765	735	770
Maximum Power Voltage-VMPP (V)	39.4	39.4	39.6	39.6	39.8	39.8	40.1	40.1	40.3	40.3	40.5	40.5
Maximum Power Current-IMPP (A)	17.98	18.83	18.02	18.88	18.05	18.91	18.09	18.95	18.11	18.98	18.15	19.02
Open Circuit Voltage-VOC (V)	47.2	47.2	47.4	47.4	47.7	47.7	47.9	47.9	48.3	48.3	48.6	48.6
Short Circuit Current-ISC (A)	19.05	19.95	19.09	20.00	19.12	20.03	19.16	20.08	19.19	20.11	19.24	20.15

Power Bifaciality:80±5%.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43° C (±2° C)
Temperature Coefficient of PMAX	- 0.30%/° C
Temperature Coefficient of Voc	- 0.24%/° C
Temperature Coefficient of Isc	0.04%/° C

MAXIMUM RATINGS

Operational Temperature	-40~+85° C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	35A

WARRANTY

12 year Product Workmanship Warranty

30 year Power Warranty

1% first year degradation

0.40% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 33 pieces

Modules per 40′ container: 594 pieces

N-type i-TOPCon bifacial dual glass

Monocrystalline module

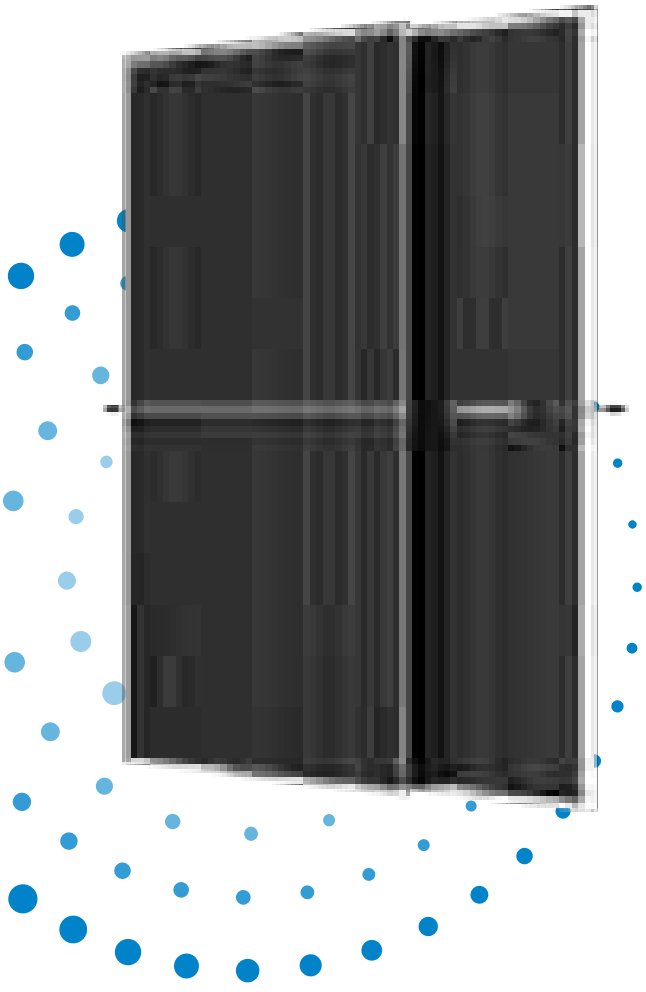
PRODUCT:TSM-NEG19RC.20

POWER RANGE:585-610W

610W
MAXIMUM POWER OUTPUT

0~+5W
POSITIVE POWER TOLERANCE

22.6 %
MAXIMUM EFFICIENCY



High customer value

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance of System) cost, shorter payback time
- More energy harvest with cutting-edge N-type i-TOPCon technology
- Designed for compatibility with existing mainstream system components
- Higher container space utilization effectively reduces the freight cost

High power up to 610 W

- Up to 22.6% module efficiency with high density interconnect technology
- SMBB (Super multi-busbar)technology for better light trapping effect, lower series resistance and improved current collection

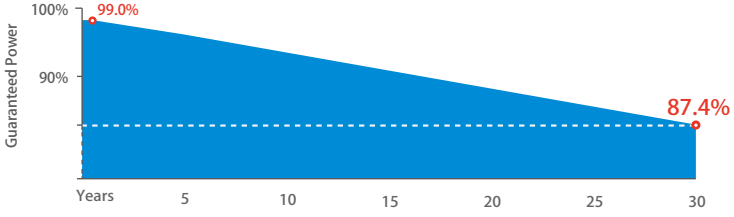
High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load

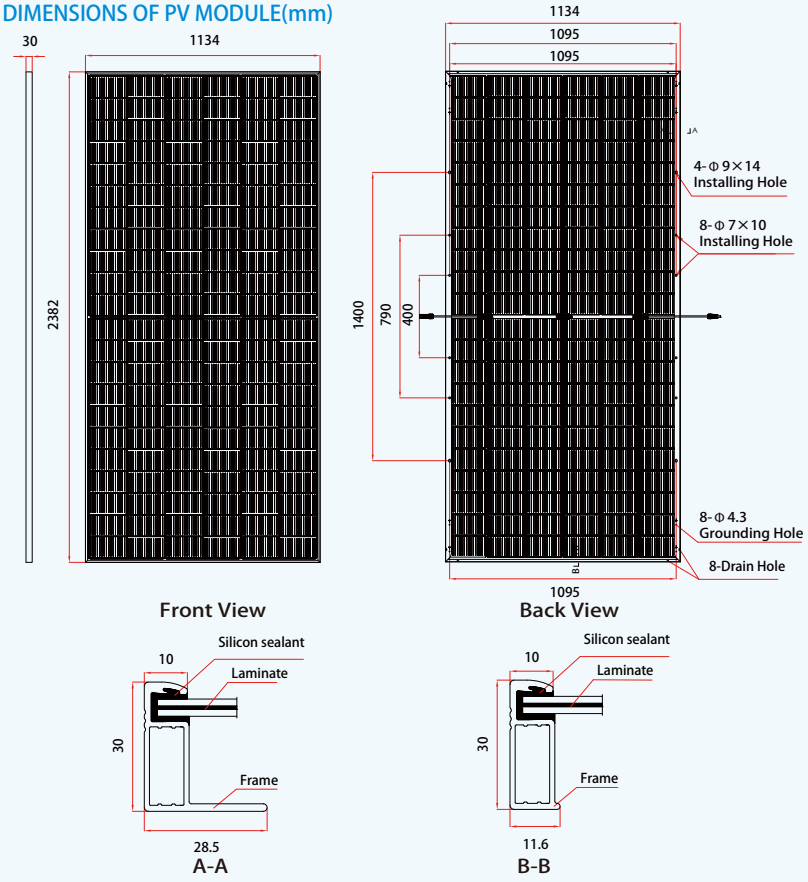
High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- Lower degradation 1% first year, 0.4% annually thereafter
- Lower temperature coefficient (-0.29%/° C)
- Up to 30% additional power gain from back side depending on albedo

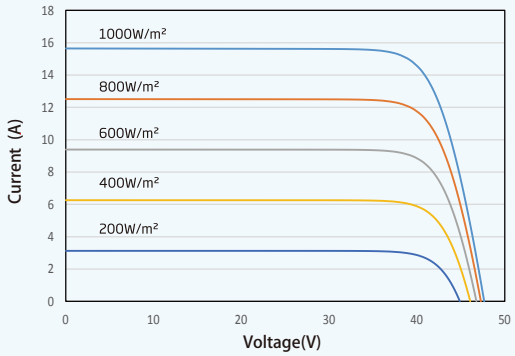
Henergy Solar Vertex Bifacial Dual Glass Performance Warranty



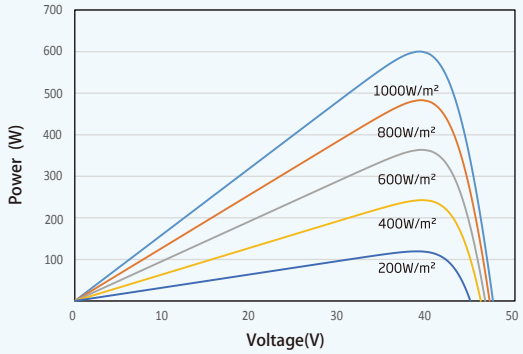
DIMENSIONS OF PV MODULE(mm)



I-V CURVES OF PV MODULE (600 W)



P-V CURVES OF PV MODULE (600 W)



MECHANICAL DATA

Solar Cells	N-type Monocrystalline
No. of cells	132 cells
Module Dimensions	2382×1134×30 mm (93.78×44.65×1.18 inches)
Weight	33.7kg (74.3 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)

Frame	30mm(1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² (0.006 inches²) Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4 PLUS / TS4*

*Please refer to regional datasheet for specified connector.

ELECTRICAL DATA (STC & NOCT)

Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Peak Power Watts-P MAX (Wp)*	585	447	590	450	595	454	600	459	605	462	610	466
Power Tolerance-P MAX (W)	0 ~ +5											
Maximum Power Voltage-VMPP (V)	39.5	37.2	39.7	37.4	40.0	37.6	40.3	37.9	40.5	38.1	40.8	38.3
Maximum Power Current-IMPP (A)	14.82	12.02	14.86	12.05	14.89	12.07	14.91	12.11	14.94	12.13	14.96	12.16
Open Circuit Voltage-VOC(V)	47.5	45.1	47.8	45.4	48.1	45.7	48.4	46.0	48.7	46.2	49.0	46.5
Short Circuit Current-ISC (A)	15.68	12.64	15.72	12.67	15.76	12.69	15.80	12.73	15.83	12.75	15.86	12.78
Module Efficiency η m (%)	21.7		21.8		22.0		22.2		22.4		22.6	

STC: Irrdiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s. *Measuring tolerance: ±3%.

Electrical characteristics with different power bin (reference to 5% & 10% backside power gain)

Backside Power Gain	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Total Equivalent power -P MAX (Wp)	614	644	620	649	625	655	630	660	635	666	641	671
Maximum Power Voltage-VMPP (V)	39.5	39.5	39.7	39.7	40.0	40.0	40.3	40.3	40.5	40.5	40.8	40.8
Maximum Power Current-IMPP (A)	15.56	16.30	15.60	16.35	15.63	16.38	15.66	16.40	15.69	16.43	15.71	16.46
Open Circuit Voltage-VOC (V)	47.5	47.5	47.8	47.8	48.1	48.1	48.4	48.4	48.7	48.7	49.0	49.0
Short Circuit Current-ISC (A)	16.46	17.25	16.51	17.29	16.55	17.34	16.59	17.38	16.62	17.41	16.65	17.45

Power Bifaciality:80±5%.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43° C (±2° C)
Temperature Coefficient of PMAX	- 0.29%/° C
Temperature Coefficient of Voc	- 0.24%/° C
Temperature Coefficient of Isc	0.04%/° C

MAXIMUM RATINGS

Operational Temperature	-40~+85 ° C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	35A

WARRANTY

12 year Product Workmanship Warranty

30 year Power Warranty

1% first year degradation

0.40% Annual Power Attenuation

(Please refer to product warranty for details)

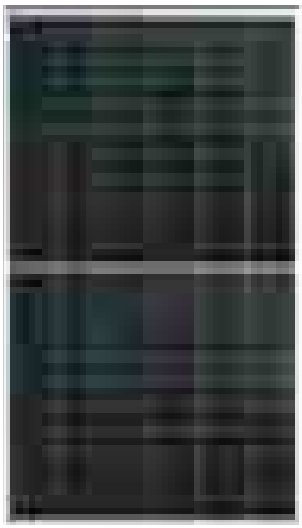
PACKAGING CONFIGURATION

Modules per box: 36 pieces

Modules per 40′ container: 720 pieces

HALF-CELL MONOFACIAL MODULE

TYPE: HSSPXXXM-D66/Pmh+



POWER OUTPUT

650-670W

MAX EFFICIENCY

21.6%

Features

High module conversion efficiency
Module efficiency up to **21.6%** achieved through advanced cell technology and manufacturing process

Lower operating temperature
Lower operating temperature and temperature coefficient increases the power output

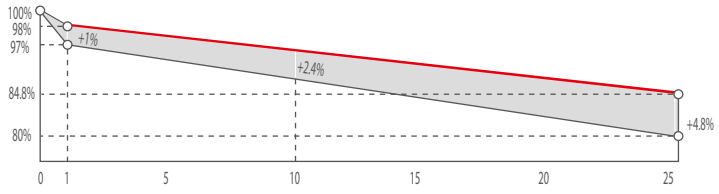
Henergy current sorting process
Up to **2%** power loss caused by current mismatch could be diminished by current sorting technique to maximize system power output

Extended wind and snow load tests
Module certified to withstand extreme wind (**2400** Pascal) and snow loads (**5400** Pascal) *

Excellent weak light performance
More power output in weak light condition, such as cloudy, morning and sunset

Withstanding harsh environment
Reliable quality leads to a better sustainability even in harsh environment like desert, farm and coastline

Industry-leading Warranty **



- First year power degradation: 2%
- Annual degradation: 0.55%
- Product warranty: 12 years
- linear warranty: 25 years

Certifications and Standards

CE IEC 61730 IEC 61215
SA 8000 Social Responsibility Standards
ISO 9001 Quality Management System
ISO 14001 Environment Management System
ISO 45001 Occupational Henlth and Safety
IEC TS 62941 Guideline for module design qualification and type approvel

***

****

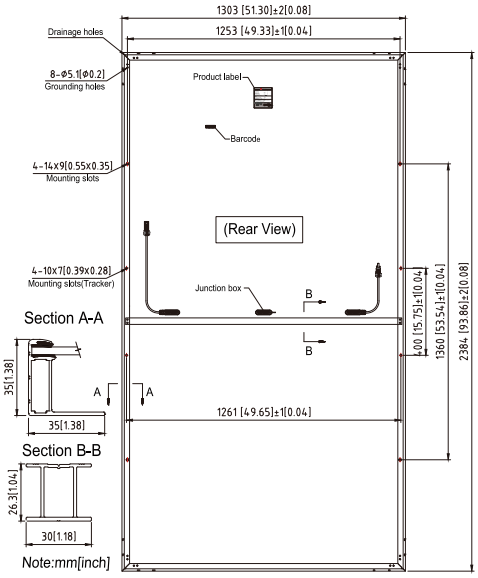
* Please refer to Henergy Standard Module Installation Manual for details.
** Please refer to Henergy Limited Warranty for details.

HSSPXXXS - D66/Pmh+ 650-670W

Mechanical Characteristics

Solar Cell	Monocrystalline silicon 210 mm
No. of Cells	132 (6 × 22)
Dimensions	2384 × 1303 × 35 mm (85.5 × 51.3 × 1.4 inches)
Weight	34.5 kgs (69.4 lbs.)
Front Glass	3.2 mm (0.126 inches) fully tempered glass
Output Cables	4.0 mm², (-) 350 mm (+) 160 mm in length or customized length
Junction Box	IP68 rated (3 bypass diodes)
Operating Module Temperature	-40 °C to +85 °C
Maximum System Voltage	1500 V DC (IEC)
Maximum Series Fuse Rating	30 A
Power Tolerance	0/+5 W

For tracker installation, please turn to Henergy for mechanical load information.



Electrical Characteristics

Module Type	HSSP**670**S-D66/Wmh		HSSP**665**S-D66/Wmh		HSSP**660**S-D66/Wmh		HSSP**655**S-D66/Wmh		HSSP**650**S-D66/Wmh	
Testing Condition	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power (Pmax/W)	670	505.5	665	501.7	660	497.9	655	494.1	650	490.3
Optimum Operating Voltage (Vmp/V)	38.45	35.8	38.25	35.7	38.05	35.6	37.85	35.4	37.65	35.2
Optimum Operating Current (Imp/A)	17.43	14.1	17.39	14.07	17.35	13.99	17.31	13.96	17.27	13.92
Open Circuit Voltage (Voc/V)	46.45	43.7	46.25	43.5	46.05	43.4	45.85	43.2	45.65	43
Short Circuit Current (Isc/A)	18.43	14.87	18.39	14.84	18.35	14.76	18.31	14.73	18.27	14.7
Module Efficiency (%)	21.6		21.4		21.2		21.1		20.9	

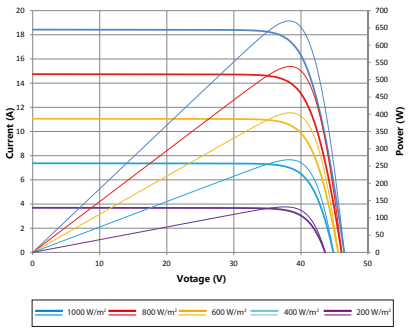
STC: Irradiance 1000 W/m², module temperature 25 °C, AM=1.5; NMOT: Irradiance 800 W/m², ambient temperature 20 °C, AM=1.5, wind speed 1 m/s; Tolerance of Pmax is within +/- 3%;

Temperature Characteristics

Nominal Module Operating Temperature (NMOT)	42 ± 2 °C
Temperature Coefficient of Pmax	-0.36%/°C
Temperature Coefficient of Voc	-0.304%/°C
Temperature Coefficient of Isc	0.050%/°C

Graphs

Current-Voltage & Power-Voltage Curve (670S)



Packing Configuration

Container	40 ' HC
Pieces per container	558

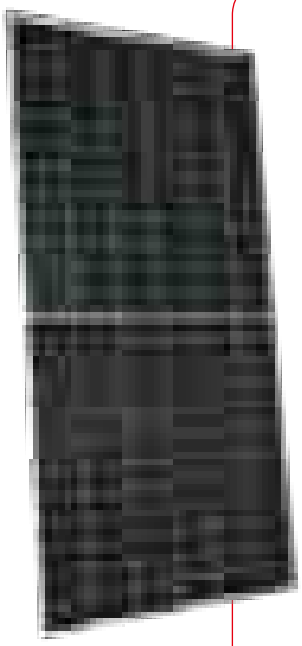
Information on how to install and operate this product is available in the installation instruction. All values indicated in this data sheet are subject to change without prior announcement. The specifications may vary slightly . All specifications are in accordance with standard EN 50380. Color differences of the modules relative to the figures as well as discolorations of/in the modules which do not impair their proper functioning are possible and do not constitute a deviation from the specification.

Ultra V

144 HALF-CELL MONOFACIAL MODULE

530-550W

HSSP*XXX*S - C72/Vmh



Features

High module conversion efficiency
Module efficiency up to 21.3 % achieved through advanced cell technology and manufacturing process

Henergy current sorting process
Up to 2 % power loss caused by current mismatch could be diminished by current sorting technique to maximize system power output

Excellent weak light performance
More power output in weak light condition, such as cloudy, morning and sunset

Lower operating temperature
Lower operating temperature and temperature coefficient increases the power output

Extended wind and snow load tests
Module certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal) *

Withstanding harsh environment
Reliable quality leads to a better sustainability even in harsh environment like desert, farm and coastline

Certifications and standards:
IEC 61215, IEC 61730, conformity to CE

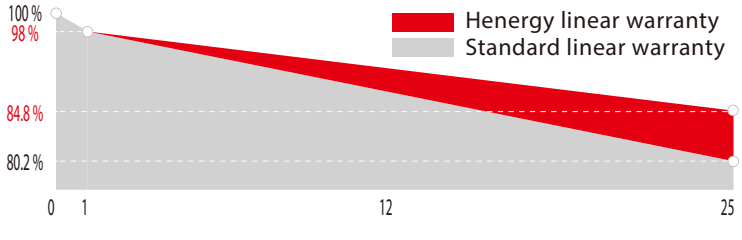
Trust Henergy to Deliver Reliable Performance Over Time

- World-class manufacturer of crystalline silicon photovoltaic modules
- Rigorous quality control meeting the highest international standards: ISO 9001, ISO 14001 and ISO17025
- Regular independently checked production process from international accredited institute/company
- Tested for harsh environments (IEC 61701, IEC 62716, DIN EN 60068-2-68) ****
- Long-term reliability tests
- 2 × 100% EL inspection ensuring defect-free modules

Special Cell Design

MBB technology decreases the distance between bus bars and finger grid line which is benefit to power increase. Half-cell aims to eliminate the cell gap to increase module efficiency.

Industry-leading Warranty based on nominal power



-2.0%	-0.55%	12 YEARS	25 YEARS
First year power degradation	Annual degradation	Product warranty	linear warranty

IP68 Rated Junction Box

The Henergy IP68 rated junction box ensures an outstanding waterproof level, supports installations in all orientations and reduces stress on the cables.

* Please refer to Henergy Standard Module Installation Manual for details. **Henergy reserves the right to the final interpretation of the warranty by Munich Re.
*** WEEE only for EU market. **** Please refer to Henergy Product Near-coast Installation Guide for details.
***** Please refer to Henergy Limited Warranty for details.

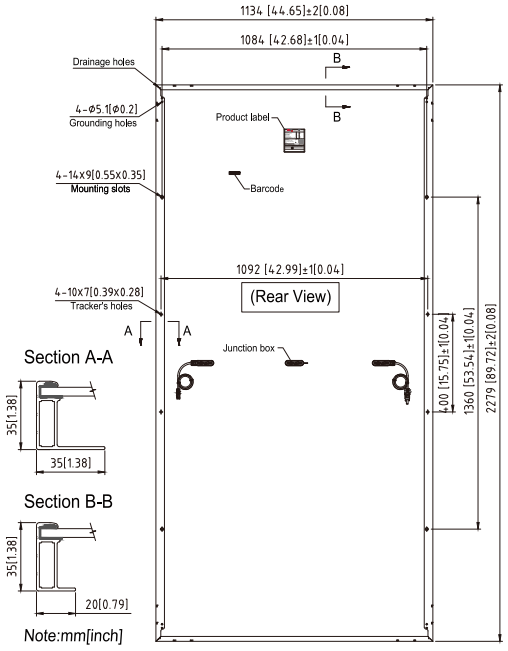
Electrical Characteristics

STC	HSSPXXXS-C72/Vmh				
Maximum Power at STC (Pmax)	550W	545W	540W	535W	530W
Optimum Operating Voltage (Vmp)	42.05V	41.87V	41.75V	41.57V	41.39V
Optimum Operating Current (Imp)	13.08A	13.02A	12.94A	12.87A	12.81A
Open Circuit Voltage (Voc)	49.88V	49.69V	49.54V	49.39V	49.24V
Short Circuit Current (Isc)	14.01A	13.96A	13.89A	13.83A	13.76A
Module Efficiency	21.3%	21.1%	20.9%	20.7%	20.5%
Operating Module Temperature	-40 °C to +85 °C				
Maximum System Voltage	1500 V DC (IEC)				
Maximum Series Fuse Rating	25 A				
Power Tolerance	0/+5 W				

STC: Irradiance 1000 W/m², module temperature 25 °C, AM=1.5;
Tolerance of Pmax is within +/- 3% ;
For tracker installation, please turn to Henergy for mechanical load information.

NMOT	HSSPXXXS-C72/Vmh				
Maximum Power at NMOT (Pmax)	415.0W	411.5W	408.0W	404.3W	400.6W
Optimum Operating Voltage (Vmp)	38.9V	38.7V	38.6V	38.4V	38.2V
Optimum Operating Current (Imp)	10.67A	10.63A	10.58A	10.53A	10.47A
Open Circuit Voltage (Voc)	46.9V	46.7V	46.5V	46.4V	46.3V
Short Circuit Current (Isc)	11.22A	11.18A	11.13A	11.08A	11.02A

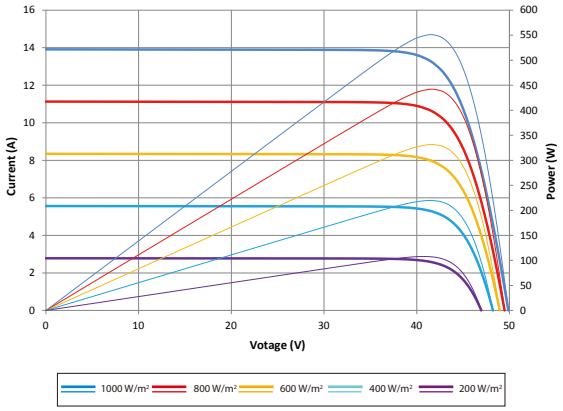
NMOT: Irradiance 800 W/m², ambient temperature 20 °C, AM=1.5, wind speed 1 m/s.



Temperature Characteristics

Nominal Module Operating Temperature (**NMOT**)	42 ± 2 °C
Temperature Coefficient of Pmax	-0.36%/°C
Temperature Coefficient of Voc	-0.304%/°C
Temperature Coefficient of Isc	0.050%/°C

Current-Voltage & Power-Voltage Curve (550S)



Mechanical Characteristics

Solar Cell	Monocrystalline silicon 182 mm
No. of Cells	144 (6 × 24)
Dimensions	2279 × 1134 × 35 mm (89.7 × 44.6 × 1.4 inches)
Weight	29.1 kgs (64.2 lbs.)
Front Glass	3.2 mm (0.126 inches)
Frame	Anodized aluminium alloy
Junction Box	IP68 rated (3 bypass diodes)
Output Cables	4.0 mm², Portrait: (-) 350 mm and (+) 160 mm in length or customized length
Connectors	MC4 EVO2, Cable 01S

Packing Configuration

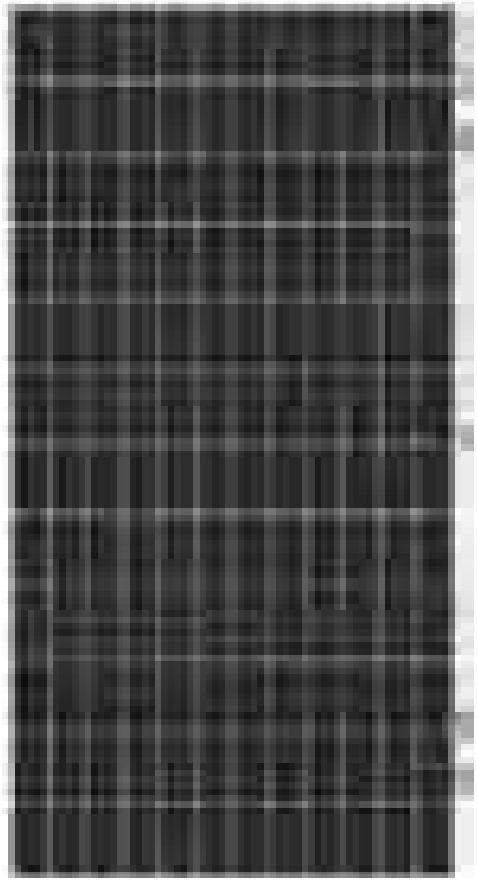
Container	40' HC
Pieces per pallet	31
Pallets per container	20
Pieces per container	620
Packaging box dimensions	2310×1130×1245 mm
Packaging box weight	965 kg

Dealer information

Flexible

520 Watt

144 Half Cell Monocrystalline Module



Features

Ultra-light: Glass free module weighs 7.7 kg, 70% lighter than conventional glass modules.

Fast-Installation： Through "Quick-Bonding" installation, It requires no penetration, reduces time on roof by 40% and eliminates the use of mounting hardware.

Aesthetic： Seamless integration with underlying installation surface.

Durable： It is the first glassless module to pass the same durability.

Transportation: Its innovative frame and low weight will very significantly reduce the cost of transportation.

Deployment: Ultra-light weight and customizable size make it the best choice to change the way how solar is deployed in the market and bring added value to special applications.

Durability: The panels are certified to withstand extreme wind (2400Pascal) and snow loads (5400 Pascal), while special materials and stringent quality control ensure panel longevity.

515W ~ 520 W

POWER OUTPUT RANGE

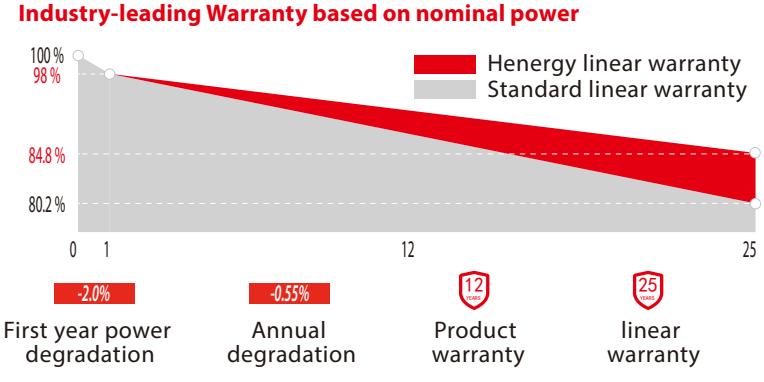
0-5 W

POWER TOLERANCE

LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty

25 Year Linear Power Warranty



HSFSP520M-12X12

Electrical Characteristics

STC	HSFSP515M-2X12	HSFSP520M-12X12
Maximum Power (P_{max})	515	520
Maximum Power Voltage (V_{mp})	42.12	42.31
Maximum Power Current (I_{mp})	10.23	12.24
Open-circuit Voltage (V_{oc})	49.3	49.5
Short-circuit Current (I_{sc})	13.49	13.56
Module Efficiency (%)	19.1	19.3
Operating Temperature (℃)	-40 ℃ to 85 ℃	
Maximum System Voltage	1500 V DC (IEC)	
Maximum Series Fuse Rating	25 A	
Application Class	Class A	
Power Tolerance	0/+5 W	

STC: Irradiance 1000W/m^2, Cell temperature 25℃, AM=1.5.

NOCT	HSFSP515M-X24	HSFSP520M-6X24
Maximum Power (P_{max})	424.4	429.2
Maximum Power Voltage (V_{mp})	41.6	41.8
Maximum Power Current (I_{mp})	10.21	10.26
Open-circuit Voltage (V_{oc})	49.6	49.8
Short-circuit Current (I_{sc})	10.76	10.82

NOCT: Irradiance 800W/m^2, Ambient temperature 20℃, AM=1.5, Wind speed 1 m/s.

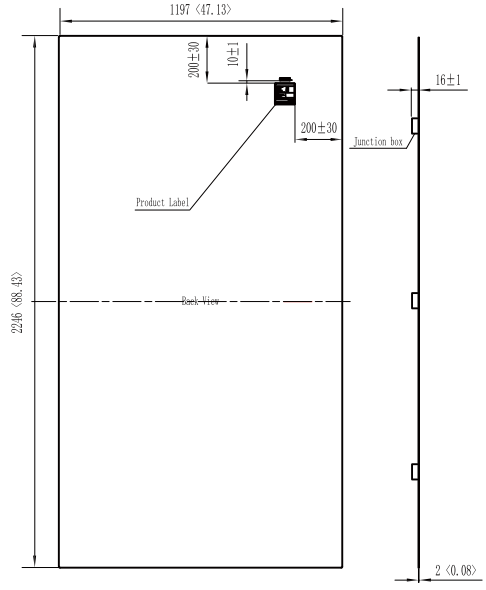
Mechanical Characteristics

Solar Cell	Monocrystalline silicon (182mm half cell)
No. of Cells	144 (12×12)
Module Dimensions	2246×1197×2mm
Weight	7.7 kgs
Backsheet	White
Frame	Flameless
J-box	IP 68 rated
Output Cables	Photovoltaic technology cable 4.0 mm^2, (±)450 mm
Connector	MC4 compatible

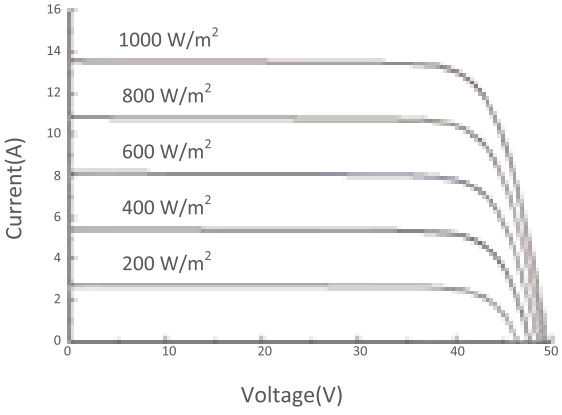
Packaging Configuration

	20' GP	40' HC
Module per pallet	66	66
Pieces per container	264	528

Dimensions



I-V Curve (520W)



Temperature Characteristics

Nominal Operating Cell Temperature (NOCT)	41±2 ℃
Temperature Coefficient of Pmax	-0.34 %/℃
Temperature Coefficient of Voc	-0.26 %/℃
Temperature Coefficient of Isc	0.033 %/℃

Dealer Information:

HS_IEC_EN _2023A

Colored Glaze · Crystal Clear

Crystalline silicon, green building materials (BIPV)

Building facade use,can replace traditional curtain wall or as a facade decoration

Transmittance customized

More transparent: superior light transmission performance to meet architectural lighting needs

Customization: size and shape can be customized

More efficient: high light transmittance, high power generation

Environmentally friendly

Energy saving: can reduce building energy consumption by 11%

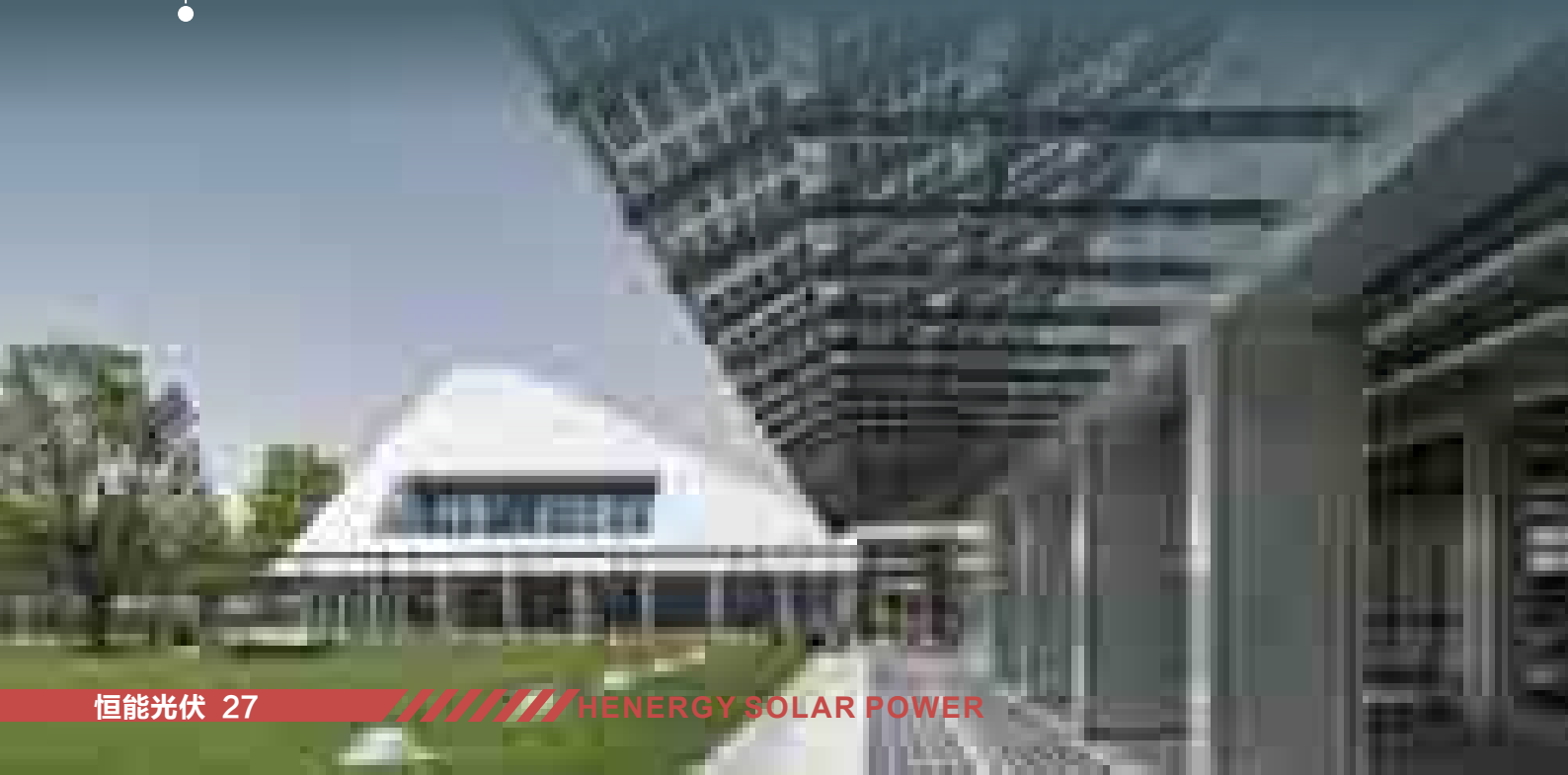
Photovoltaic power generation

Green energy provide for all

The same life as the building

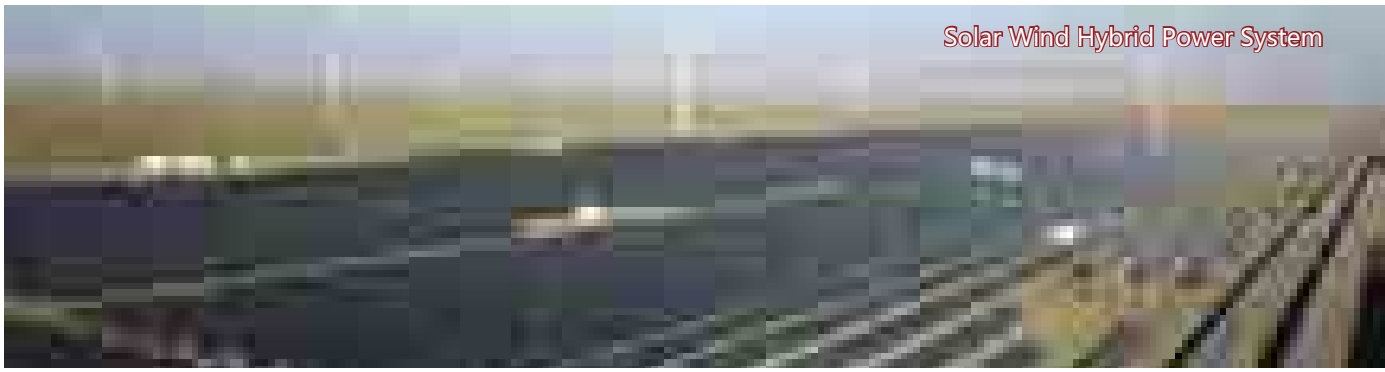
Construction encapsulant, more than 40 certification, same life as the building

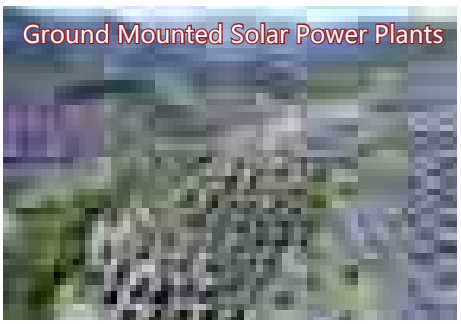
GB/T35684 waterproof test, Class A fireproof, wind resistance

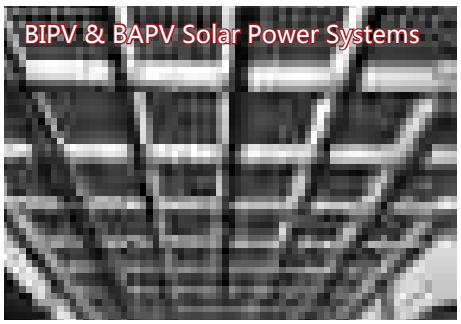


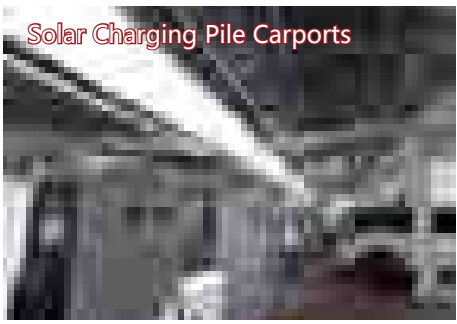
PROJECT CASES

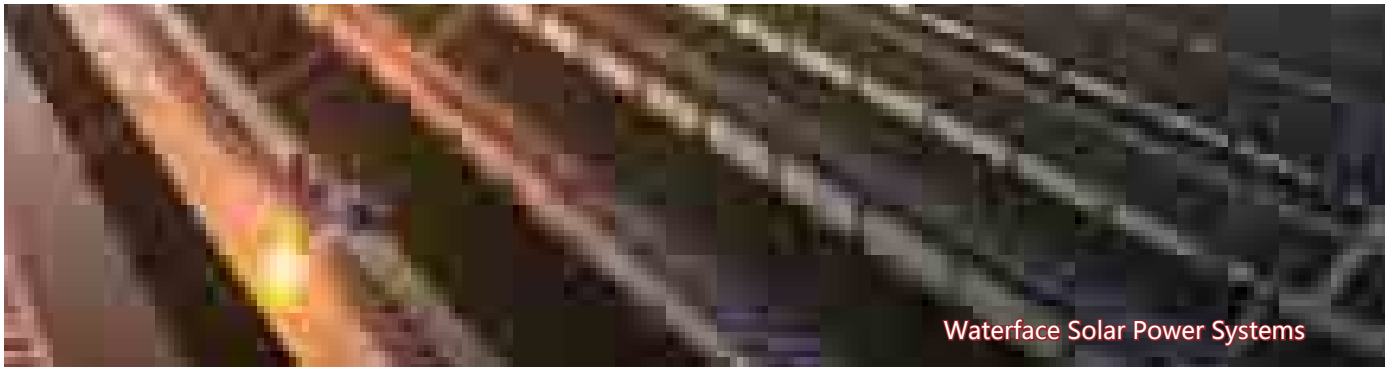
Henergy Solar works much on Solar Power Plant Investing & Exploiting (EPC & PPA projects): Overall design, engineering, producing, installation, maintenance, testing, operation and techincal consult for solar power plants.











Henergy Solar Website

CNPV Website

南京恒能光伏科技有限公司

Henergy Solar Power Technology Co., Limited

Add.: No. 219, Lantian Road, Lukou Street, Jiangning District, Nanjing city, Jiangsu, China

T: + 86 25 8619 2219

E: sales@henergysolarpower.com | sales@cnpvsolar.com

W: www.henergysolarpower.com | www.cnpvsolar.com