

Planting A Greener Future

**Hangzhou Sunny Energy
Science and Technology Co., Ltd.**

HANGZHOU OFFICE

West Area, A building, National University Science and Technology Park of Zhejiang University. (No. 525 Xixi Rd, Hangzhou City, China.)

Tel: +86-571-87970096
Fax: +86-571-87985981
E-mail: sales@solar-sunny.com

TONGLU FACTORY

No. 288, Shizhu Rd, Tonglu Econmic Development Zone, Hangzhou City, China.



www.solar-sunny.com

© Copyright 2014 Suntellite. All rights reserved. Specifications subject to change without notice.



Solar Module

Product Catalogue



Hangzhou Sunny Energy Science and Technology Co.,Ltd

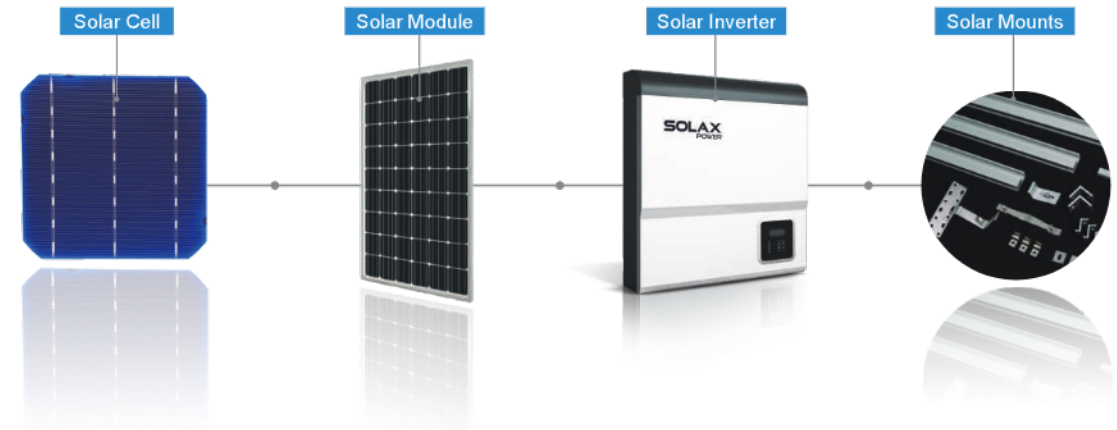
Hangzhou Sunny Energy Science and Technology Co.,Ltd (known as brand "Suntellite"), honored as the technical innovation enterprise, was established in year 2001, and is dedicated in R&D, manufacturing, sales and after-sales of PV products. The headquarter of Suntellite is located in National Science Technology Park of Zhejiang University.

With main business of PV power plant integration, Suntellite professionally manufactures most of the key products in the PV system including solar cells,PV module, on-grid inverter, LED lighting, etc.

Meanwhile, Suntellite also participates in consultation,design,construction,operation and maintenance of many national solar module.

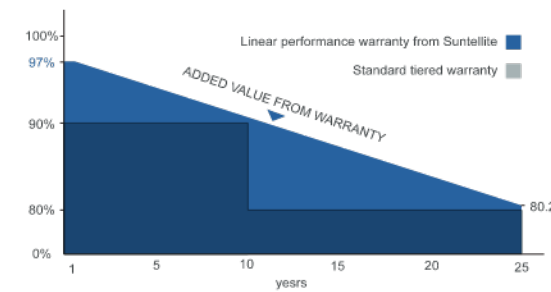
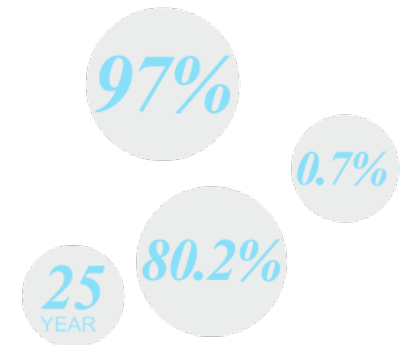
ONE-STOP SOLUTION FOR PV PRODUCTS

Suntellite manufactures solar cell,solar module,solar inverter and solar mounts and offers engineering design service,and one-stop solutions for customers.

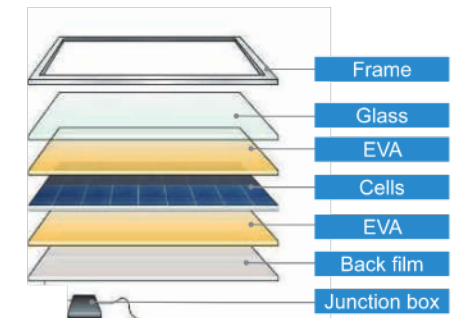


WARRANTY

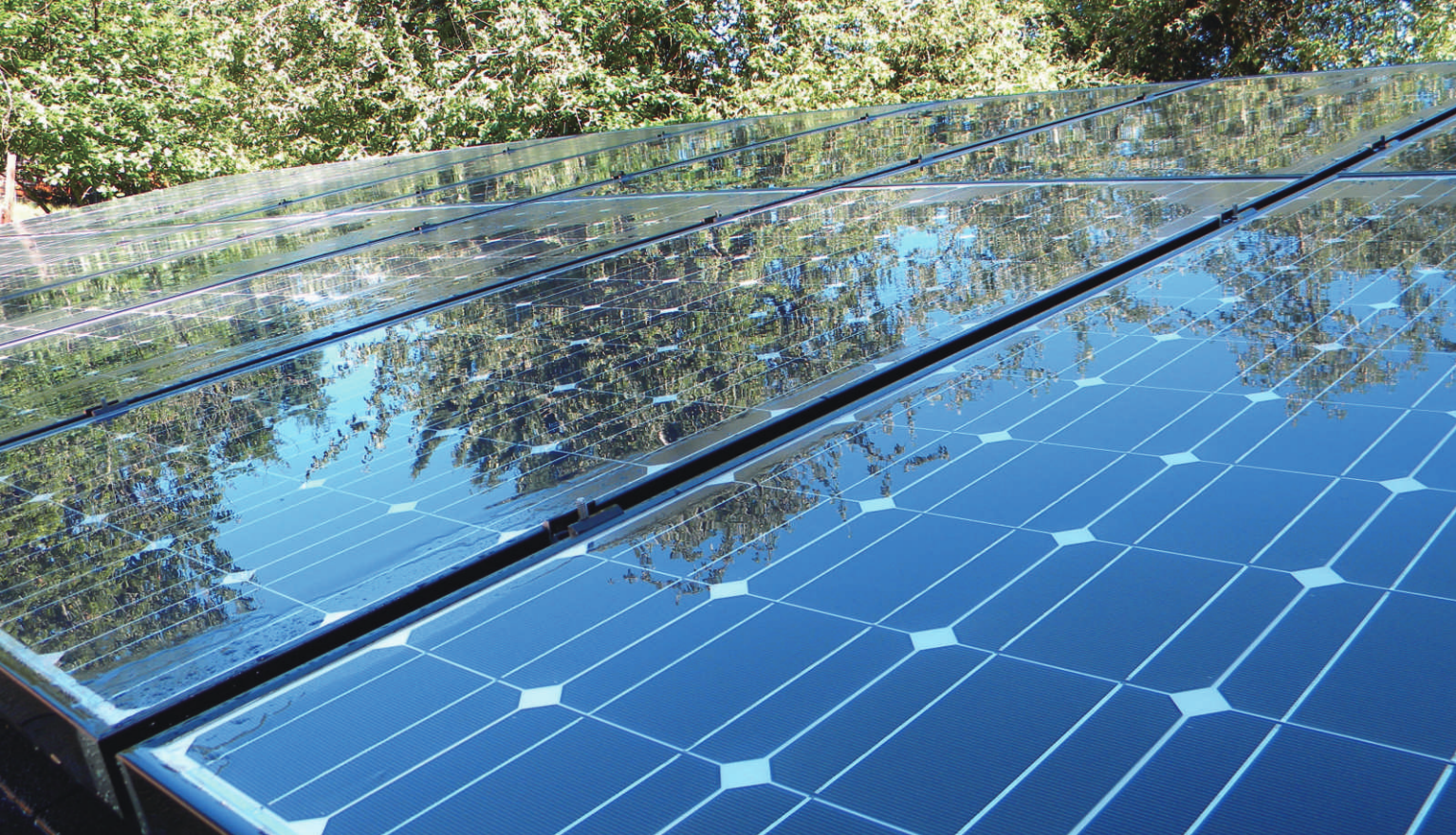
- No less than 97% output power in the first year.
- No more than 0.7% annual declination since the second year.
- 25-year warranty at 80.2% power output.
- Product liability and E&O insurance has been covered by Chubb Insurance.
- Enhanced design for easy installation and long-term reliability.



Linear guarantee Figure



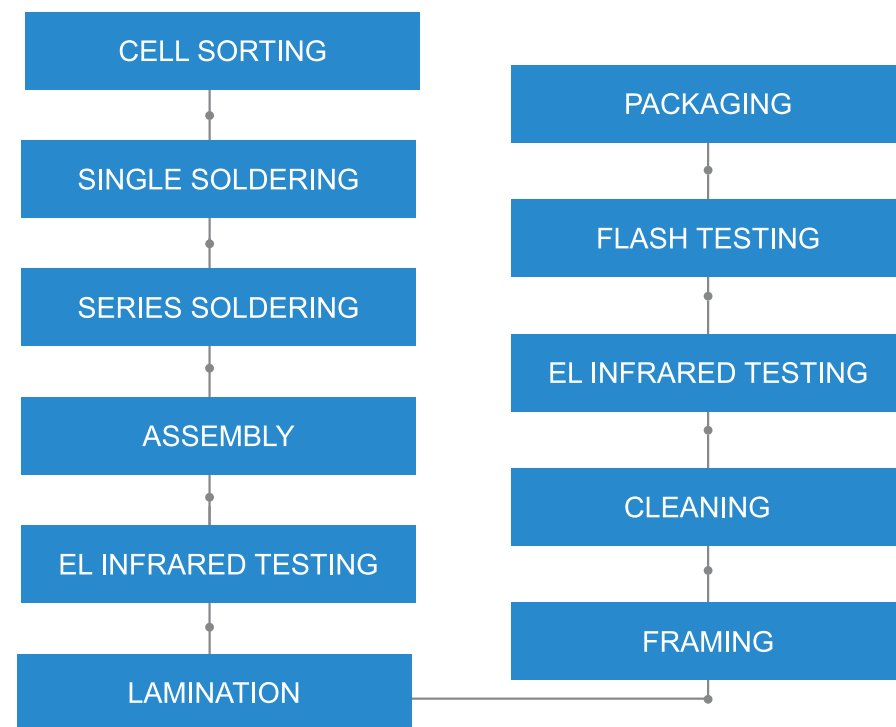
Component diagram



QUALITY CONTROL PROCESS



SUNTELLITE PV MODULE PRODUCTION PROCESS



- Underwriter Laboratories Inc
- Conformance Européenne
- TÜV
- PID Free



- MCS Certified
- BRE Global Listed
- PV CYCLE



LAMINATION

In lamination step, the following layers are stuck together through the vacuum:

Back Sheet – EVA – Solar Cell – EVA – Glass, namely through the cross-linking which takes place at process temperature of approx. 145 °C and usually lasts 16 minutes. In this step, long-chain polymers are cross-linked by adding additives. What is important here is the degree of the achieved cross-linking. Each batch supplied to production is checked chemically by us when it reaches the laboratory, to see whether the achieved degree of cross-linking is at least 80%.

Suntellite controls the parameters of the lamination process for each lamination run according to the manufacturer's data for EVA (abbreviation for ethylene vinyl acetate; a transparent plastic layer), since the parameters differ from manufacturer to manufacturer. What is decisive for us is a test, which checks the cross-linking of eva. EVA protects the solar cells against corrosive influences from outside. The solar cell is so to speak "encapsulated" and thus protected against water ingress.



SOLAR MODULE FRAMING AND CLEANING

By the step the aluminum frame is installed to the laminated module to increase the intensity of the module components and it's further sealing of the cells in order to extend the module lifespan.

Silicon gel is filled between the frame and glass. No gap for air coming into the module.

SOLAR MODULE EL INFRARED TEST

Electrostrictive the detection method of the light emitting (Electroluminescence, EL), using an electroluminescent light-emitting principle for crystalline silicon solar cells and components of the near-infrared imaging test is promptly detected by the EL test chart solar cells and components may exist defects, is an effective detection of the cell, the method of assembly. The EL test play an increasingly important role in solar module quality analysis and control.



SOLAR MODULE FLASH TEST

The purpose of the test is to calibrate the output power of the module, and test its output characteristics to determine the quality and grade of the product. The measuring is carried out strictly according to STC (Standard test conditions)



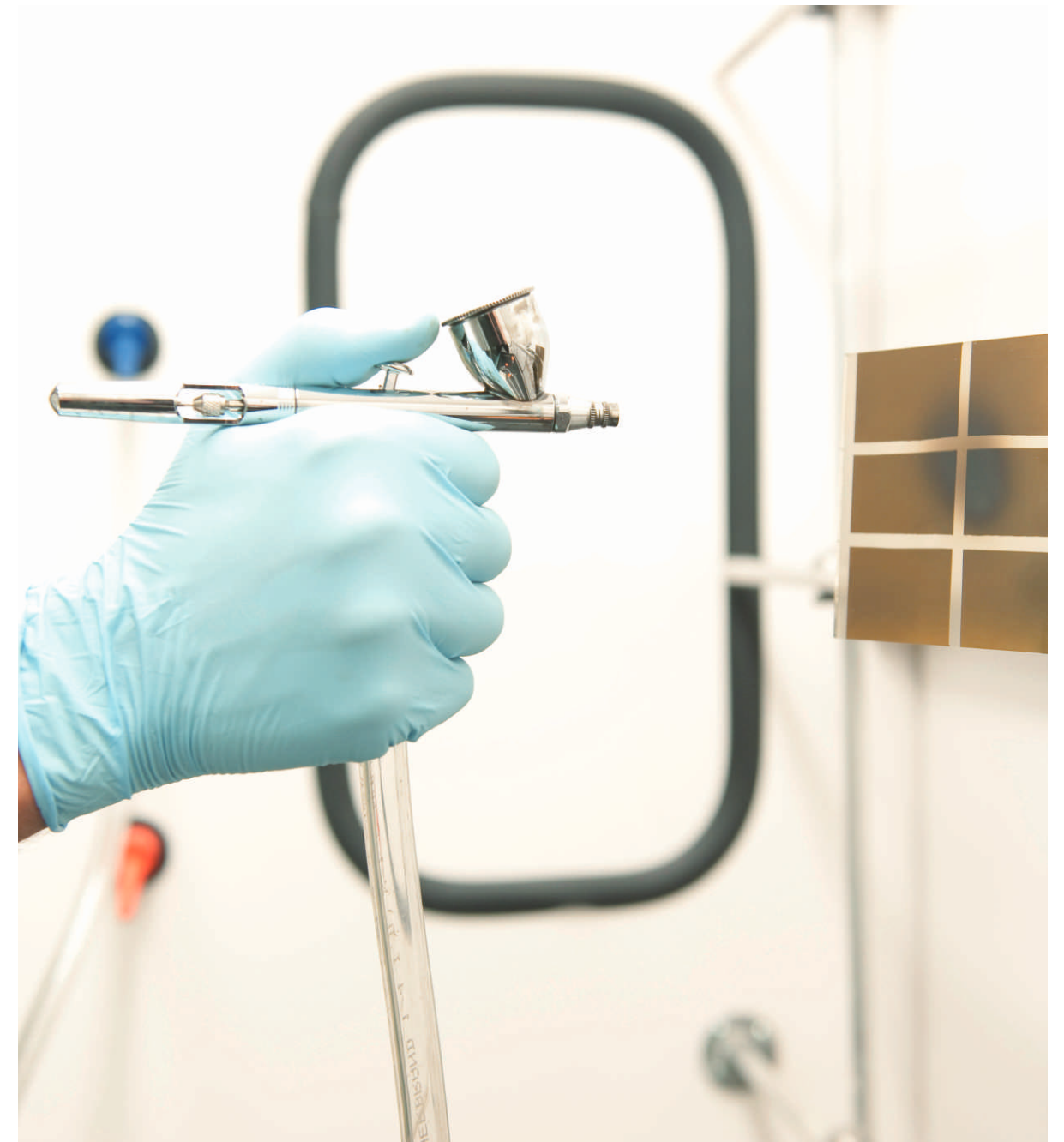
RESEARCH

With the continuous development of the application of solar cells, solar modules dedicated material innovation worldwide photovoltaic industry is in a steady increase in the period, because of solar energy as a renewable energy source, demand continued to grow.

Suntellite has continued to invest in the research and development of solar module, and contribute to create better performance solar module.

More than ever, the most effective solar module has arrived. Yes, through the hard work of our engineers, Suntellite continuously improve the performance of our products, to find the most efficient silicon solar cells and modules to pass.

Our goal is that in the limited time range, with a minimum of cost, to provide the best value to our customers first-class products and services.



MONOCRYSTALLINE SOLAR MODULE

ZDNY195C-205C



Typical electrical characteristics

Characteristics	ZDNY-195C	ZDNY-200C	ZDNY-205C
Max.Power(Pmax)	195Wp	200Wp	205Wp
Optimum Operating Voltage(Vm)	36.94V	36.95V	36.97V
Optimum Operating Current(I _m)	5.28A	5.42A	5.55A
Open-circuit Voltage(Voc)	44.88V	44.95V	45.03V
Short-circuit Current(I _{sc})	5.50A	5.65A	5.73A
Cell Efficiency	17.50%	17.90%	18.40%
Module Efficiency	15.27%	15.67%	16.06%

Note: the specifications are obtained under the Standard Test Condition(STC):1000 W/m² solar irradiance, AM1.5, Cell Temperature 25 °C .

MONOCRYSTALLINE SOLAR MODULE

ZDNY220C54-235C54



Typical electrical characteristics

Characteristics	ZDNY-220C54	ZDNY-225C54	ZDNY-230C54	ZDNY-235C54
Max.Power(Pmax)	220Wp	225Wp	230Wp	235Wp
Optimum Operating Voltage(Vm)	27.83V	28.02V	28.36V	28.49V
Optimum Operating Current(I _m)	7.91A	8.04A	8.12A	8.25A
Open-circuit Voltage(Voc)	33.36V	33.40V	33.45V	34.82V
Short-circuit Current(I _{sc})	8.42A	8.49A	8.56A	8.65A
Cell Efficiency	17.00%	17.40%	17.80%	18.20%
Module Efficiency	14.96%	15.30%	15.64%	15.98%

Note: the specifications are obtained under the Standard Test Condition(STC):1000 W/m² solar irradiance, AM1.5, Cell Temperature 25 °C .



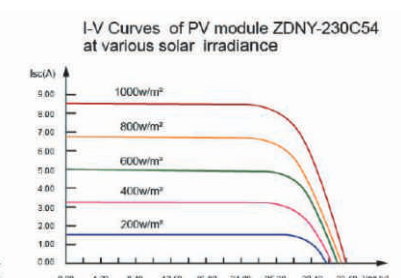
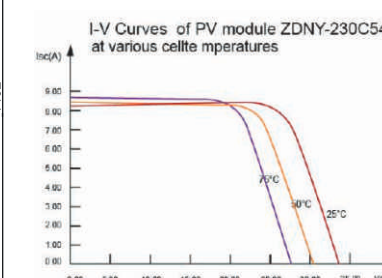
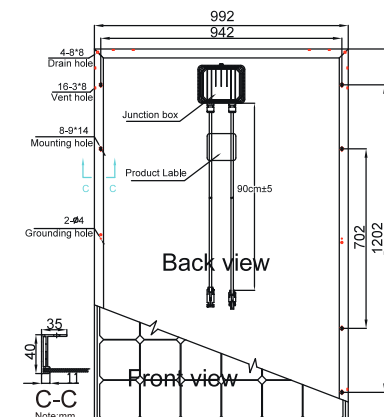
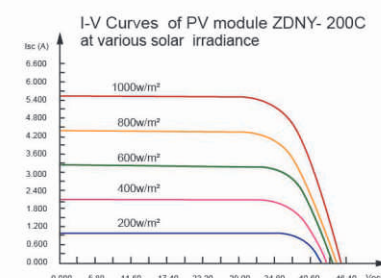
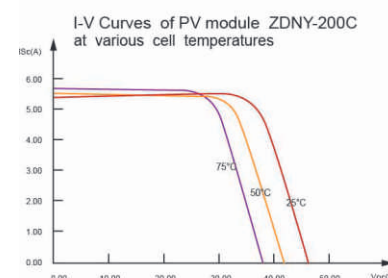
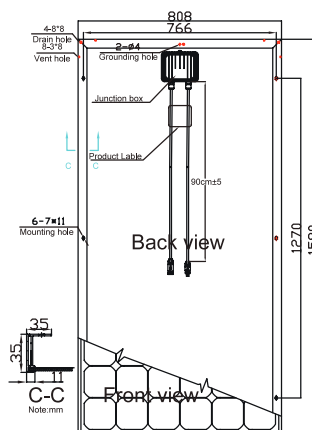
*All black series as optional

Solar Cell	Mono-crystalline 125*125mm
Output Tolerance(Pmax)	0 ~ +3%
Number of cells	72 cells in series
Module Dimension	1580*808*35mm
Weight	15kg
Max.System Voltage	1000V(TUV)/600V(UL)
Max.Series Fuse Rating	16A
Output Cable	PV 4mm ²
Cable Length	90cm±5
Number of bypass diodes	3
Temperature cycling range	(-40 ~ 85°C)
NOCT	47°C ±2°C
Temperature coefficients of I_{sc}	+(0.053±0.01)%/K
Temperature coefficients of Voc	-(0.35±0.001)%/K
Temperature coefficients of Pmax	-(0.40±0.05)%/K
Load Capacity	424pcs/20'GP
	896pcs/40'HQ



*All black series as optional

Solar Cell	Mono-crystalline 156*156mm
Output Tolerance(Pmax)	0 ~ +3%
Number of cells	54 cells in series
Module Dimension	1482*992*40mm
Weight	17.5kg
Max.System Voltage	1000V(TUV)/600V(UL)
Max.Series Fuse Rating	15A
Output Cable	PV 4mm ²
Cable Length	90cm±5
Number of bypass diodes	6
Temperature cycling range	(-40 ~ 85°C)
NOCT	47°C ±2°C
Temperature coefficients of I_{sc}	+(0.053±0.01)%/K
Temperature coefficients of Voc	-(0.35±0.001)%/K
Temperature coefficients of Pmax	-(0.40±0.05)%/K
Load Capacity	315 pcs/20'GP
	810 pcs/40'HQ



MONOCRYSTALLINE SOLAR MODULE

ZDNY250C60-270C60



Typical electrical characteristics

Characteristics	ZDNY-250C60	ZDNY-260C60	ZDNY-265C60	ZDNY-270C60
Max.Power(Pmax)	250Wp	260Wp	265Wp	270Wp
Optimum Operating Voltage(Vm)	31.17V	31.20V	31.78V	32.38V
Optimum Operating Current(I _m)	8.03A	8.34A	8.34A	8.34A
Open-circuit Voltage(Voc)	37.85V	38.82V	38.98V	39.12V
Short-circuit Current(I _{sc})	8.40A	8.71A	8.83A	8.90A
Cell Efficiency	17.40%	18.10%	18.48%	18.83%
Module efficiency	15.37%	15.98%	16.29%	16.60%

Note: the specifications are obtained under the Standard Test Condition(STC):1000 W/m² solar irradiance, AM1.5, Cell Temperature 25 °C .

MONOCRYSTALLINE SOLAR MODULE

ZDNY300C72-320C72



Typical electrical characteristics

Characteristics	ZDNY-300C72	ZDNY-310C72	ZDNY-320C72
Max.Power(Pmax)	300Wp	310Wp	320Wp
Optimum Operating Voltage(Vm)	37.62V	37.62V	45.55V
Optimum Operating Current(I _m)	7.98A	8.25A	8.95A
Open-circuit Voltage(Voc)	44.62V	45.12V	38.33V
Short-circuit Current(I _{sc})	8.56A	8.82A	8.35A
Cell Efficiency	17.40%	18.00%	18.60%
Module efficiency	15.46%	15.98%	16.49%

Note: the specifications are obtained under the Standard Test Condition(STC):1000 W/m² solar irradiance, AM1.5, Cell Temperature 25 °C .



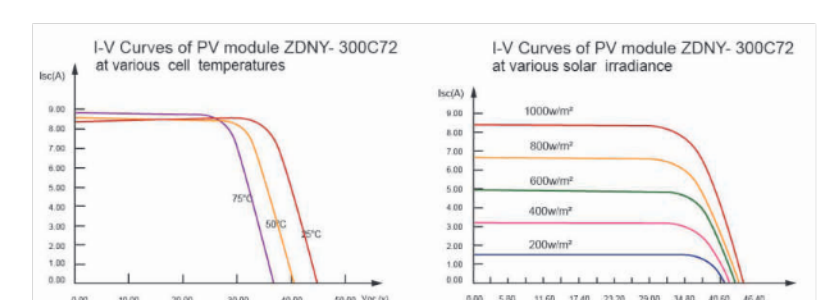
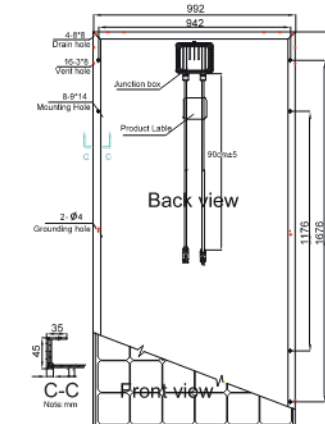
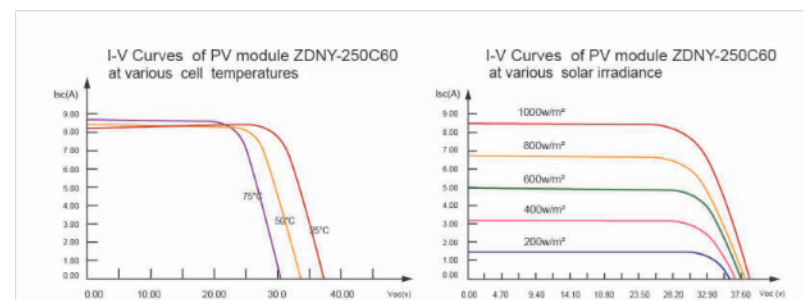
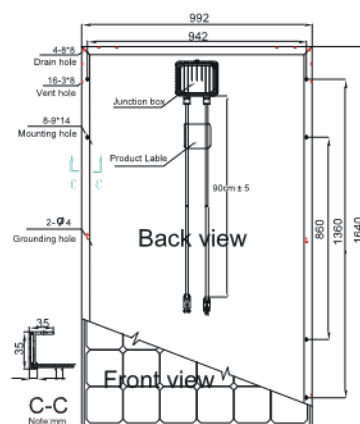
*All black series as optional

Solar Cell	Mono-crystalline 156*156mm
Output Tolerance(Pmax)	0 ~ +3%
Number of cells	60 cells in series
Module Dimension	1640*992*35mm
Weight	18.8kg
Max.System Voltage	1000V(TUV)/600V(UL)
Max.Series Fuse Rating	15A
Output Cable	PV 4mm ²
Cable Length	90cm±5
Number of bypass diodes	3/6
Temperature cycling range	(-40 ~ 85°C)
NOCT	47°C ±2°C
Temperature coefficients of I_{sc}	+(0.053±0.01)%/K
Temperature coefficients of Voc	-(0.35±0.001)%/K
Temperature coefficients of Pmax	-(0.40±0.05)%/K
Load Capacity	330 pcs/20'GP
	868 pcs/40'HQ



*All black series as optional

Solar Cell	Mono-crystalline 156*156mm
Output Tolerance(Pmax)	0 ~ +3%
Number of cells	72 cells in series
Module Dimension	1956*992*45mm
Weight	23kg
Max.System Voltage	1000V(TUV)/600V(UL)
Max.Series Fuse Rating	15A
Output Cable	PV 4mm ²
Cable Length	90cm±5
Number of bypass diodes	3/6
Temperature cycling range	(-40 ~ 85°C)
NOCT	47°C ±2°C
Temperature coefficients of I_{sc}	+(0.053±0.01)%/K
Temperature coefficients of Voc	-(0.35±0.001)%/K
Temperature coefficients of Pmax	-(0.40±0.05)%/K
Load Capacity	200pcs/20'GP
	528pcs/40'HQ



POLYCRYSTALLINE SOLAR MODULE

ZDNY215P54-230P54



Typical electrical characteristics

Characteristics	ZDNY-215P54	ZDNY-220P54	ZDNY-225P54	ZDNY-230P54
Max.Power(Pmax)	215Wp	220Wp	225Wp	230Wp
Optimum Operating Voltage(Vm)	26.80V	27.10V	27.71V	28.33V
Optimum Operating Current(I _m)	8.03A	8.12A	8.12A	8.12A
Open-circuit Voltage(V _{oc})	33.86V	34.06V	34.52V	35.06V
Short-circuit Current(I _{sc})	8.44A	8.48A	8.52A	8.52A
Cell Efficiency	16.40%	16.70%	17.10%	17.50%
Module Efficiency	14.62%	14.96%	15.30%	15.64%

Note: the specifications are obtained under the Standard Test Condition(STC):1000 W/m² solar irradiance, AM1.5, Cell Temperature 25 °C .

POLYCRYSTALLINE SOLAR MODULE

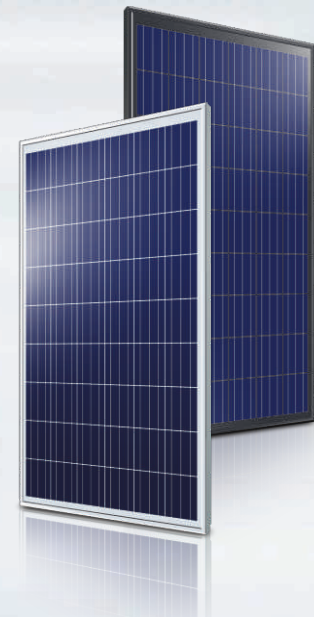
ZDNY250P60-260P60



Typical electrical characteristics

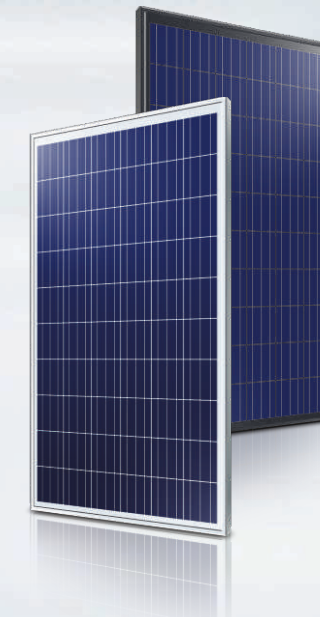
Characteristics	ZDNY-250P60	ZDNY-255P60	ZDNY-260P60
Max.Power(Pmax)	250Wp	255Wp	260Wp
Optimum Operating Voltage(Vm)	30.76V	31.37V	31.91V
Optimum Operating Current(I _m)	8.13A	8.13A	8.15A
Open-circuit Voltage(V _{oc})	37.75V	38.48V	39.10V
Short-circuit Current(I _{sc})	8.55A	8.56A	8.56A
Cell Efficiency	17.10%	17.46%	17.80%
Module Efficiency	15.37%	15.67%	15.98%

Note: the specifications are obtained under the Standard Test Condition(STC):1000 W/m² solar irradiance, AM1.5, Cell Temperature 25 °C .



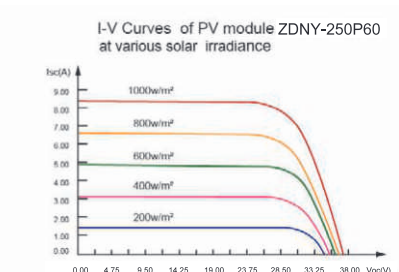
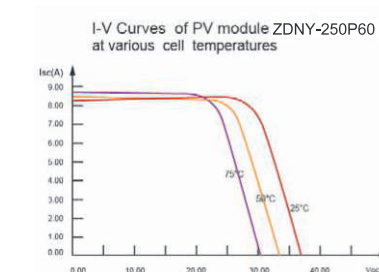
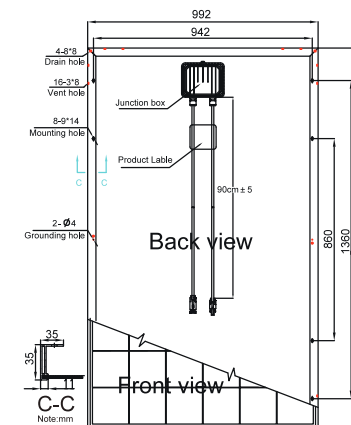
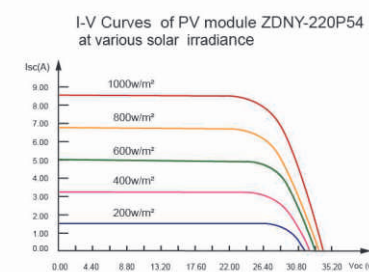
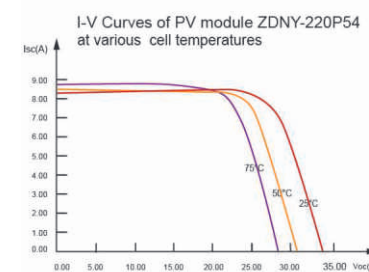
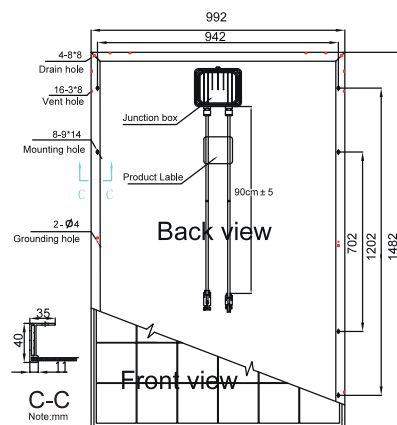
*All black series as optional

Solar Cell	Poly-crystalline 156*156mm
Output Tolerance(Pmax)	0 ~ +3%
Number of cells	54 cells in series
Module Dimension	1482*992*40mm
Weight	17.5kg
Max.System Voltage	1000V(TUV)/600V(UL)
Max.Series Fuse Rating	15A
Output Cable	PV 4mm ²
Cable Length	90cm±5
Number of bypass diodes	3/6
Temperature cycling range	(-40 ~ 85°C)
NOCT	47°C ±2°C
Temperature coefficients of I_{sc}	+(0.053±0.01)%/K
Temperature coefficients of V_{oc}	-(0.35±0.001)%/K
Temperature coefficients of P_{max}	-(0.40±0.05)%/K
Load Capacity	315 pcs/20'GP
	810 pcs/40'HQ



*All black series as optional

Solar Cell	Poly-crystalline 156*156mm
Output Tolerance(Pmax)	0 ~ +3%
Number of cells	60 cells in series
Module Dimension	1640*992*35mm
Weight	18.8kg
Max.System Voltage	1000V(TUV)/600V(UL)
Max.Series Fuse Rating	15A
Output Cable	PV 4mm ²
Cable Length	90cm±5
Number of bypass diodes	3/6
Temperature cycling range	(-40 ~ 85°C)
NOCT	47°C ±2°C
Temperature coefficients of I_{sc}	+(0.053±0.01)%/K
Temperature coefficients of V_{oc}	-(0.35±0.001)%/K
Temperature coefficients of P_{max}	-(0.40±0.05)%/K
Load Capacity	330 pcs/20'GP
	868 pcs/40'HQ



POLYCRYSTALLINE SOLAR MODULE

ZDNY290P72-300P72



Typical electrical characteristics

Characteristics	ZDNY-290P72	ZDNY-295P72	ZDNY-300P72
Max.Power(Pmax)	290Wp	295Wp	300Wp
Optimum Operating Voltage(Vm)	35.75V	36.34V	36.81V
Optimum Operating Current(Im)	8.12A	8.12A	8.15A
Open-circuit Voltage(Voc)	45.20V	45.41V	46.17V
Short-circuit Current(Isc)	8.55A	8.55A	8.55A
Cell Efficiency	16.60%	16.80%	17.10%
Module Efficiency	14.95%	15.20%	15.46%

Note: the specifications are obtained under the Standard Test Condition(STC):1000 W/m² solar irradiance, AM1.5, Cell Temperature 25 °C .

PROJECTS WORLDWIDE



Location : Mie Prefecture, Japan
 Installation Date : Nov, 2013
 Application Type : Domestic
 System Size : 480KW
 Installation Type : Ground Mounted
 Module Supplier : Suntellite



Location : Mie Prefecture, Japan
 Installation Date : Nov, 2013
 Application Type : Commercial
 System Size : 72KW
 Installation Type : Roof Mounted
 Module Supplier : Suntellite



Location : Adana/Turkey
 Installation Date : Dec, 2013
 Application Type : Commercial
 System Size : 500KW
 Installation Type : Ground Type
 Module Supplier : Suntellite



Location : Slovenia
 Installation Date : Nov, 2011
 Application Type : Commercial
 System Size : 1MW
 Installation Type : Ground Mounted
 Module Supplier : Suntellite



Location : Mantova, Italy
 Installation Date : March, 2011
 Application Type : Commercial
 System Size : 1,008KW
 Installation Type : Ground Mounted & Tracker System
 Module Supplier : Suntellite



Location : Hangzhou, China
 Installation Date : 2014
 Application Type : Commercial
 System Size : 1MW
 Installation Type : Roof Top
 Module Supplier : Suntellite



Location : Yamanashi, Japan
 Installation Date : 2014
 Application Type : Commercial
 System Size : 850KW
 Installation Type : Ground Mounted
 Module Supplier : Suntellite



Location : Yamanashi, Japan
 Installation Date : 2014
 Application Type : Commercial
 System Size : 1.4MW
 Installation Type : Ground Mounted
 Module Supplier : Suntellite



*All black series as optional

Solar Cell	Poly-crystalline 156*156mm
Output Tolerance(Pmax)	0 ~ +3%
Number of cells	72 cells in series
Module Dimension	1956*992*45mm
Weight	23kg
Max.System Voltage	1000V(TUV)/600V(UL)
Max.Series Fuse Rating	15A
Output Cable	PV 4mm2
Cable Length	90cm±5
Number of bypass diodes	3/6
Temperature cycling range	(-40 ~ 85°C)
NOCT	47°C ±2°C
Temperature coefficients of Isc	+(0.053±0.01)%/K
Temperature coefficients of Voc	-(0.35±0.001)%/K
Temperature coefficients of Pmax	-(0.40±0.05)%/K
Load Capacity	200pcs/20'GP
	528pcs/40'HQ

