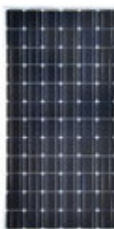
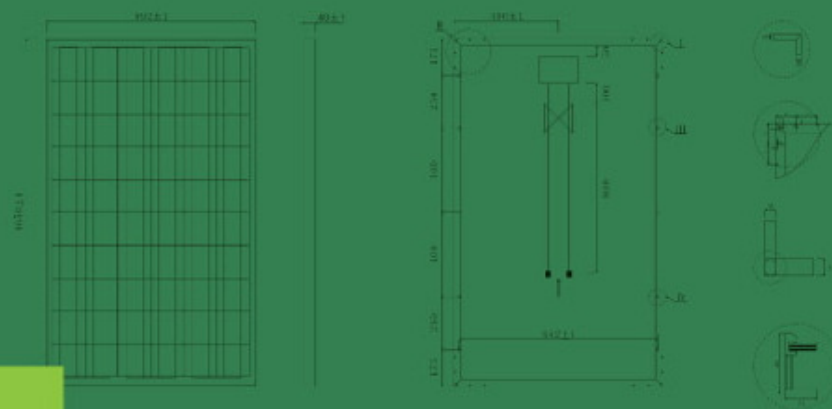


# HEDA

HIGH ENERGY DURABLE ACCESS

## Complete Roof Solution



[www.hedasolar.com](http://www.hedasolar.com)

Zhejiang Heda Solar Technology Co.,Ltd

### Test Standard

ISO14001  
EN61730  
ISO9001

### PRODUCTS

Solar Module  
Solar Tile  
Solar System

### CERTIFICATION

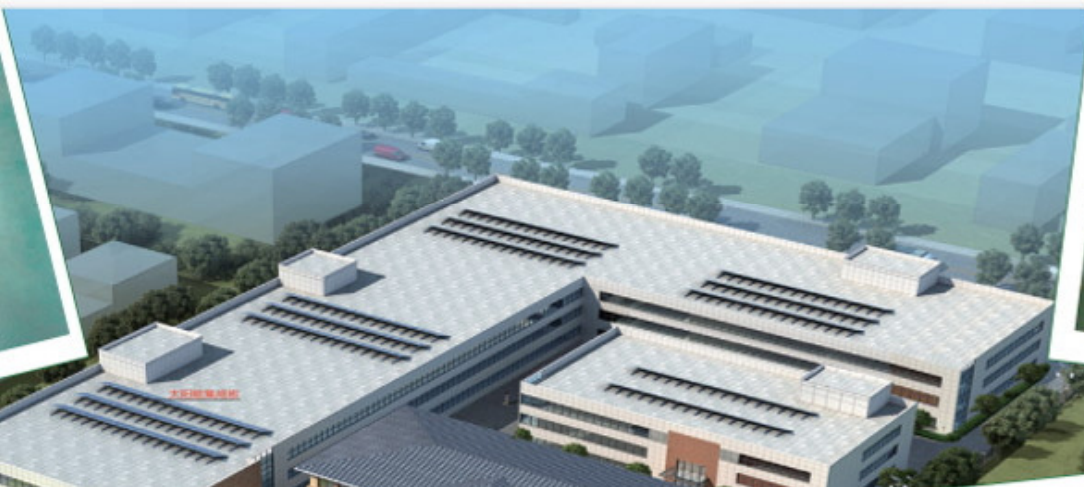


### CAPACITY

Solar Module 300MW  
Solar Tile 200MW

### MARKET

Europe(Germany, Italy,  
France, Spain)  
Australia  
South America  
Africa  
Southeast Asia





## About us

Heda Solar is a globally recognized TUV,CQC,MCS,CEC and PV marks certified company. It is a high-tech manufacturer that specializes in solar photovoltaic tiles, solar panels, solar street lights, solar systems, solar light-boxes and other solar products.

Heda solar manufactures solar panels, solar lamps and is the only manufacturer in China of solar tiles.

Lastly,Heda Solar can organize the implementation of all products needed for the photovoltaic system.



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# Monocrystalline Solar Module

## HDS190M/195M/200M/205M/210M-72

### Electrical Characteristics

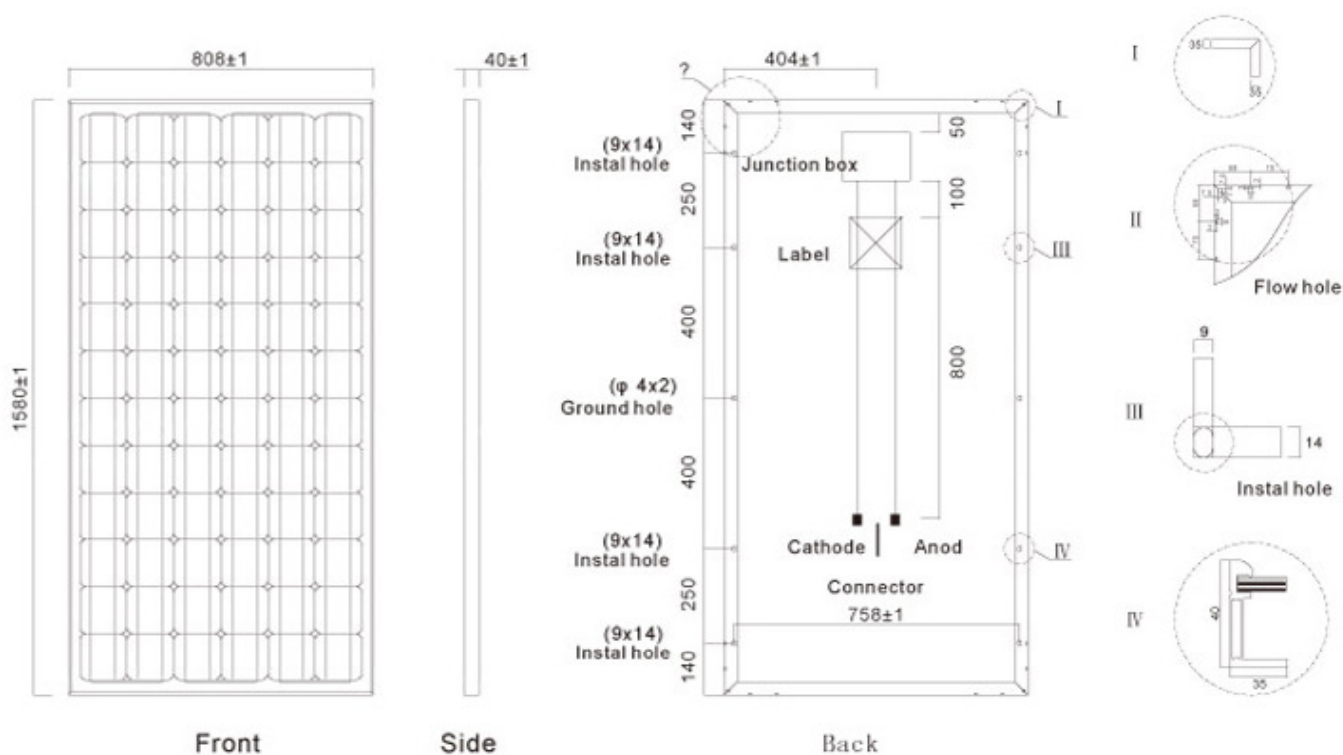
All specified Parameters at STC 25°C Ambient, 1000W/m<sup>2</sup> irradiance and AM 1.5

Type	HDS190M-72	HDS195M-72	HDS200M-72	HDS205M-72	HDS210M-72
Max-Power P <sub>m</sub> (W)	190	195	200	205	210
Power Tolerance (W)	±3	±3	±3	±3	±3
Max-Power Voltage V <sub>m</sub> (V)	36.72	37.08	37.36	37.94	38.38
Max-Power Current I <sub>m</sub> (A)	5.19	5.27	5.34	5.41	5.46
Short-Circuit Current I <sub>sc</sub> (A)	5.69	5.76	5.81	5.84	5.86
Open-Circuit Voltage V <sub>oc</sub> (V)	44.5	45	45.29	45.57	45.79
Max-System Voltage (VDC)	600V(UL)/1000V(IEC)				
Cell Efficiency (%)	17.4	17.8	18.4	18.9	19.2
Module Efficiency (%)	14.9	15.3	15.7	16.0	16.4
Max.Series Fuse (A)	10				
P <sub>m</sub> Temperature Coefficients (%/°C)	-0.45				
I <sub>sc</sub> Temperature Coefficients (%/°C)	0.06				
V <sub>oc</sub> Temperature Coefficients (%/°C)	-0.35				
NOCT Nominal Operating Cell Temperature	45±2°C				

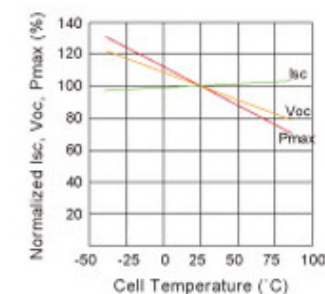
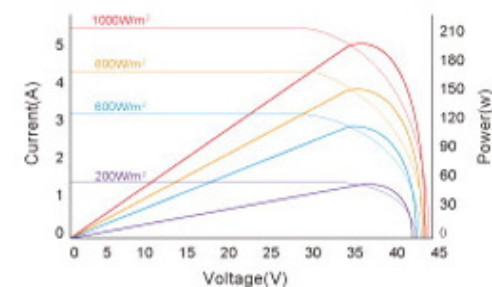
Maximum load rating: 5400Pa



## Mechanical Specifications



## I-V Curve



I-V Curves at different Irradiances (AM1.5 25 $^{\circ}\text{C}$ )

Specifications included in this datasheet are subject to change without prior notice

## Mechanical Characteristics

Cable type, Diameter and Length	4mm <sup>2</sup> , TUV certified, 900mm
Type of Connector	Compatible Type IV
Number, type and arrangement of cells	72pcs, Mono-Crystalline Silicon(6x12)
Cell Size (mm)	125x125
Dimension (mm)	1580x808x40
Weight (Kg)	15
NO.of Draining Holes in Frame	10
Glass, Type and Thickness	High Transmission, Low Iron, Tempered Glass 3.2mm

## Absolute Ratings

Dielectric Insulation Voltage	3000V
Operating Temperature ( $^{\circ}\text{C}$ )	-40~+85
Storage Temperature ( $^{\circ}\text{C}$ )	-40~+85

# Monocrystalline Solar Module

## HDS245M/250M/255M/260M/265M/270M-60

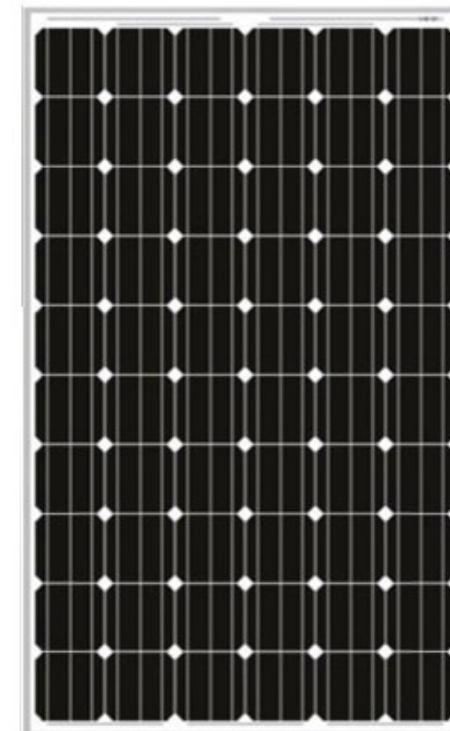


### Electrical Characteristics

All specified Parameters at STC 25°C Ambient, 1000W/m<sup>2</sup> irradiance and AM 1.5

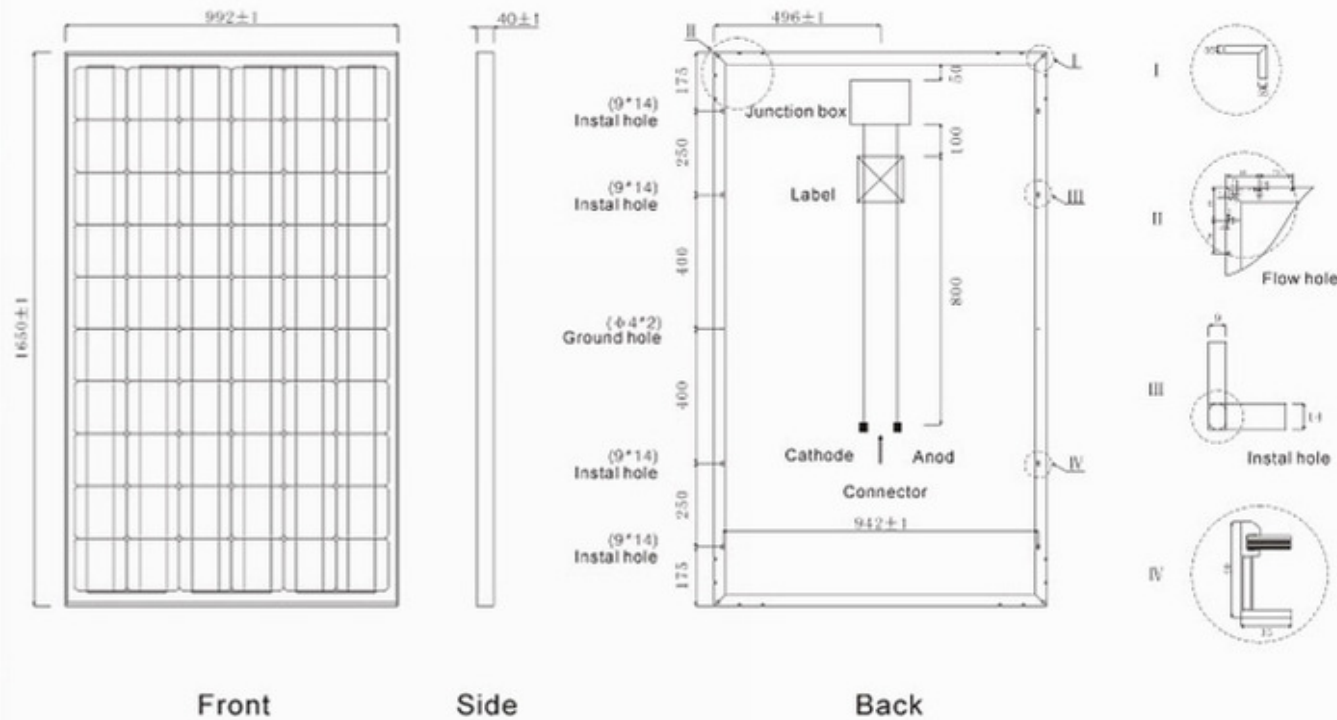
Type		HDS245M-60	HDS250M-60	HDS255M-60	HDS260M-60	HDS265M-60	HDS270M-60
Max-Power P <sub>m</sub>	(W)	245	250	255	260	265	270
Power Tolerance	(W)	±3	±3	±3	±3	±3	±3
Max-Power Voltage	V <sub>m</sub> (V)	30.2	30.7	31.38	31.68	31.98	32.28
Max-Power Current	I <sub>m</sub> (A)	8.11	8.15	8.13	8.21	8.26	8.35
Short-Circuit Current	I <sub>sc</sub> (A)	8.76	8.8	8.85	8.89	8.88	8.94
Open-Circuit Voltage	V <sub>oc</sub> (V)	37.4	38.1	37.86	37.92	38.16	38.28
Max-System Voltage	(VDC)	600V(UL)/1000V(IEC)					
Cell Efficiency	(%)	17.47	17.87	18.26	18.66	19.06	19.2
Module Efficiency	(%)	14.98	15.27	15.58	15.88	16.19	16.49
Max.Series Fuse	(A)	15					
P <sub>m</sub> Temperature Coefficients	(%/°C)	-0.45					
I <sub>sc</sub> Temperature Coefficients	(%/°C)	0.06					
V <sub>oc</sub> Temperature Coefficients	(%/°C)	-0.35					
NOCT Nominal Operating Cell Temperature		45±2°C					

Maximum load rating: 5400Pa

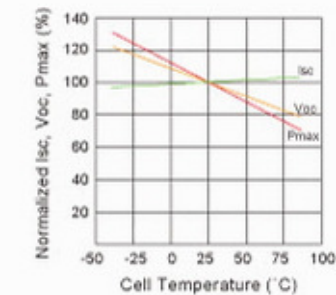
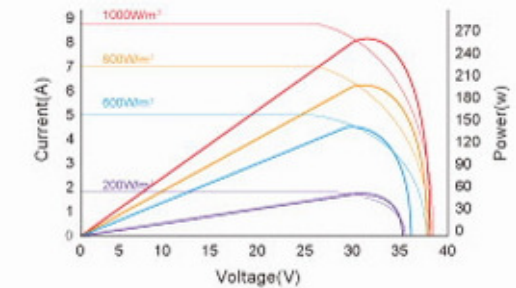




## Mechanical Specifications



## I-V Curve



I-V Curves at different Irradiances (AM1.5 25°C)

Specifications included in this datasheet are subject to change without prior notice

## Mechanical Characteristics

Cable type, Diameter and Length	4mm <sup>2</sup> , TUV certified, 900mm
Type of Connector	Compatible Type IV
Number, type and arrangement of cells	60pcs, Mono-Crystalline Silicon(6x10)
Cell Size (mm)	156x156
Dimension (mm)	1650x992x40
Weight (Kg)	21
NO.of Draining Holes in Frame	10
Color of frame	Silver
Glass, Type and Thickness	High Transmission, Low Iron, Tempered Glass 3.2mm

## Absolute Ratings

Dielectric Insulation Voltage	3000V
Operating Temperature (°C)	-40~+85
Storage Temperature (°C)	-40~+85

# Monocrystalline Solar Module

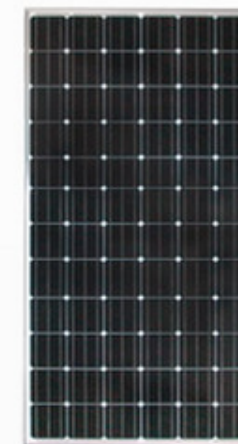
## HDS295M/300M/305M/310M/315M/320M/325M-72



HD Solar introduces all new line of high performance modules in wide application.

### Electrical Characteristics

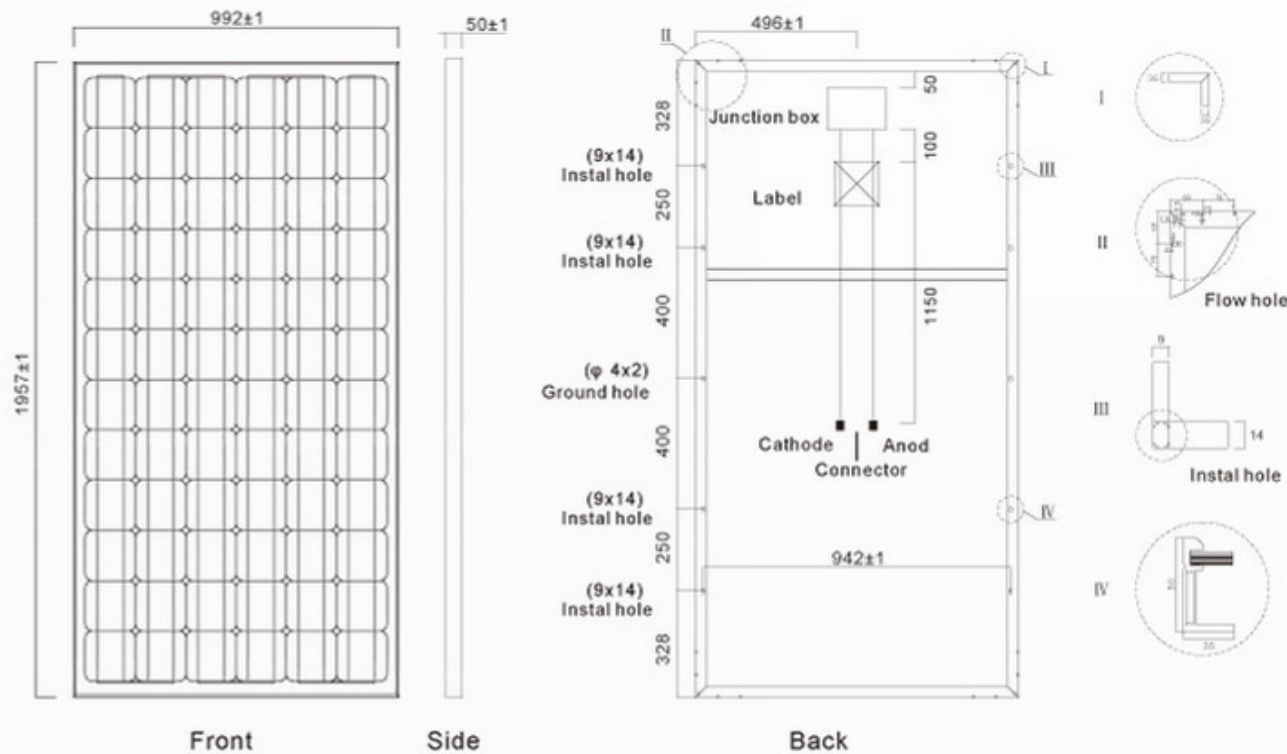
All specified Parameters at STC 25°C Ambient, 1000W/m<sup>2</sup> irradiance and AM 1.5



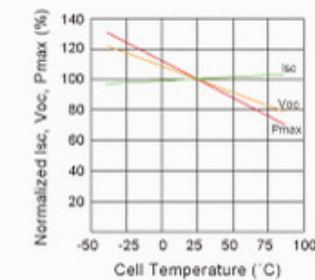
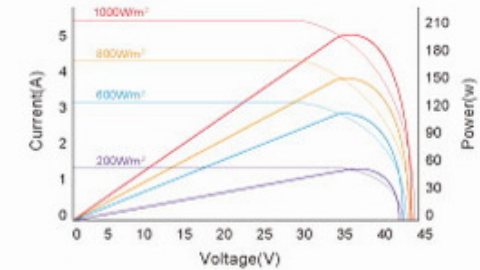
Type		HDS295M-72	HDS300M-72	HDS305M-72	HDS310M-72	HDS315M-72	HDS320M-72	HDS325M-72
Max-Power Pm	(W)	295	300	305	310	315	320	325
Power Tolerance	(W)	±3	±3	±3	±3	±3	±3	±3
Max-Power Voltage	Vm(V)	36.7	36.7	36.7	37.9	38.23	38.52	38.74
Max-Power Current	Im(A)	8.04	8.17	8.16	8.24	8.31	8.32	8.35
Short-Circuit Current	Isc(A)	8.68	8.83	8.81	8.86	8.91	8.91	8.94
Open-Circuit Voltage	Voc(V)	45.5	45.5	45.5	45.5	45.72	45.86	45.94
Max-System Voltage	(VDC)	1000V(IEC)						
Cell Efficiency	(%)	17.3	17.6	17.95	18.2	18.4	18.6	16.74
Module Efficiency	(%)	15.28	15.54	15.80	15.97	16.23	16.49	18.8
Max.Series Fuse	(A)	15						
Pm Temperature Coefficients	(%/°C)	-0.44						
Isc Temperature Coefficients	(%/°C)	0.06						
Voc Temperature Coefficients	(%/°C)	-0.35						
NOCT Nominal Operating Cell Temperature		45±2°C						

Maximum load rating: 5400Pa

## Mechanical Specifications



## I-V Curve



I-V Curves at different Irradiances (AM1.5 25°C)

Specifications included in this datasheet are subject to change without prior notice

## Mechanical Characteristics

Cable type, Diameter and Length	4mm <sup>2</sup> , TUV certified, 1250mm
Type of Connector	Compatible Type IV
Number, type and arrangement of cells	72pcs, Mono-Crystalline Silicon(6x12)
Cell Size (mm)	156x156
Dimension (mm)	1956x992x50
Weight (Kg)	24
NO. of Draining Holes in Frame	10
Color of frame	Silver
Glass, Type and Thickness	High Transmission, Low Iron, Tempered Glass 3.2mm

## Absolute Ratings

Dielectric Insulation Voltage	3000V
Operating Temperature (°C)	-40~+85
Storage Temperature (°C)	-40~+85

# Polycrystalline Solar Module

## HDS235P/240P/245P/250P/255P/260P-60



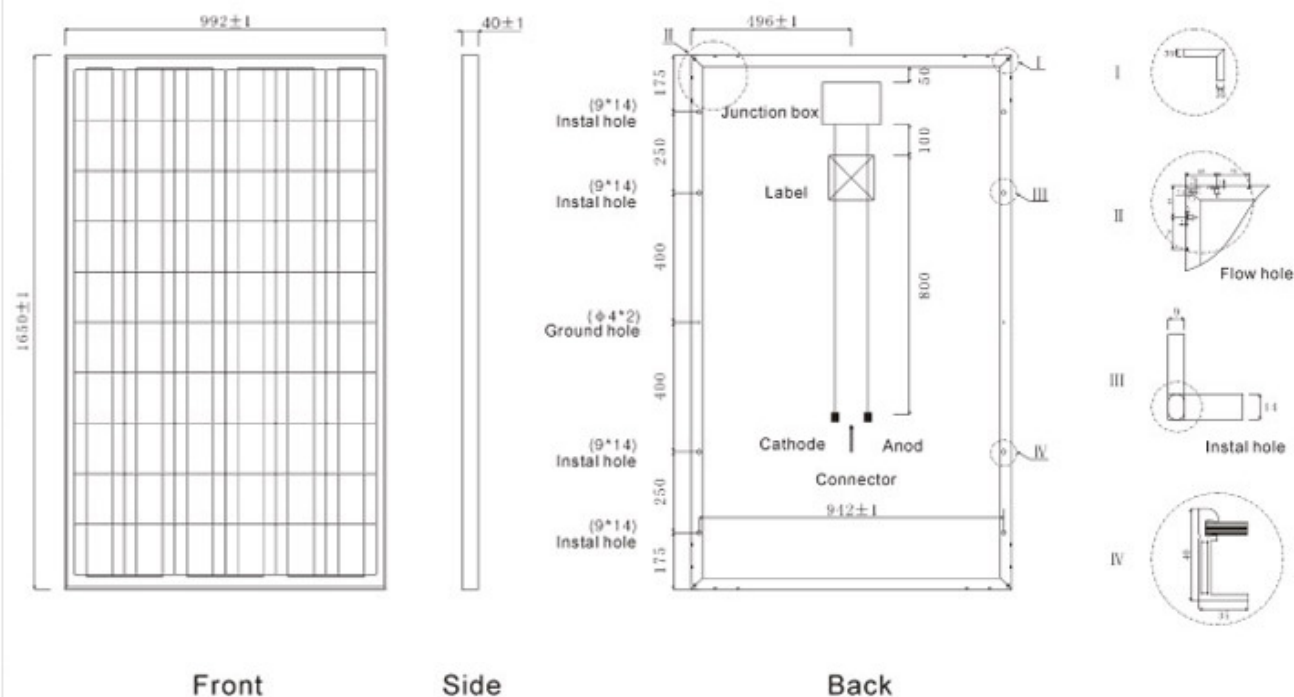
### Electrical Characteristics

All specified Parameters at STC 25°C Ambient, 1000W/m<sup>2</sup> irradiance and AM 1.5

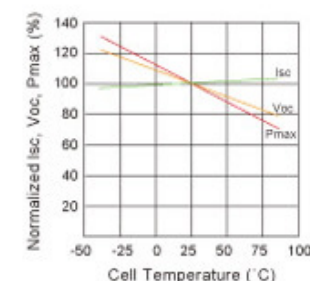
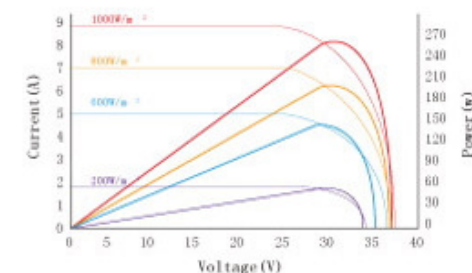
Type		HDS235P-60	HDS240P-60	HDS245P-60	HDS250P-60	HDS255P-60	HDS260P-60
Max-Power Pm	(W)	235	240	245	250	255	260
Power Tolerance	(W)	±3	±3	±3	±3	±3	±3
Max-Power Voltage	Vm(V)	30	30	30	30.5	31.38	31.8
Max-Power Current	Im(A)	7.83	8	8.17	8.1	8.17	8.2
Short-Circuit Current	Isc(A)	8.46	8.65	8.74	8.65	8.71	8.85
Open-Circuit Voltage	Voc(V)	37.2	37.2	37.2	37.68	37.8	37.98
Max-System Voltage	(VDC)	600V(UL)/1000V(IEC)					
Cell Efficiency	(%)	16.59	16.94	17.30	17.4	17.6	17.8
Module Efficiency	(%)	14.47	14.78	15.09	15.3	15.6	15.9
Max.Series Fuse	(A)	15					
Pm Temperature Coefficients	(%/°C)	-0.44					
Isc Temperature Coefficients	(%/°C)	0.06					
Voc Temperature Coefficients	(%/°C)	-0.34					
NOCT Nominal Operating Cell Temperature		45±2°C					

Maximum load rating: 5400Pa

## Mechanical Specifications



## I-V Curve



I-V Curves at different Irradiances (AM1.5 25°C)

Specifications included in this datasheet are subject to change without prior notice

## Mechanical Characteristics

Cable type, Diameter and Length	4mm <sup>2</sup> , TUV certified, 900mm
Type of Connector	Compatible Type IV
Number, type and arrangement of cells	60pcs, Poly-Crystalline Silicon(6x10)
Cell Size (mm)	156x156
Dimension (mm)	1650x992x40
Weight (Kg)	21
NO.of Draining Holes in Frame	10
Glass, Type and Thickness	High Transmission, Low Iron, Tempered Glass 3.2mm

## Absolute Ratings

Dielectric Insulation Voltage	3000V
Operating Temperature (°C)	-40~+85
Storage Temperature (°C)	-40~+85



## Polycrystalline Solar Module

### HDS280P/285P/290P/295P/300P/305P/310P-72

HD Solar introduces all new line of high performance modules in wide application.

### Electrical Characteristics

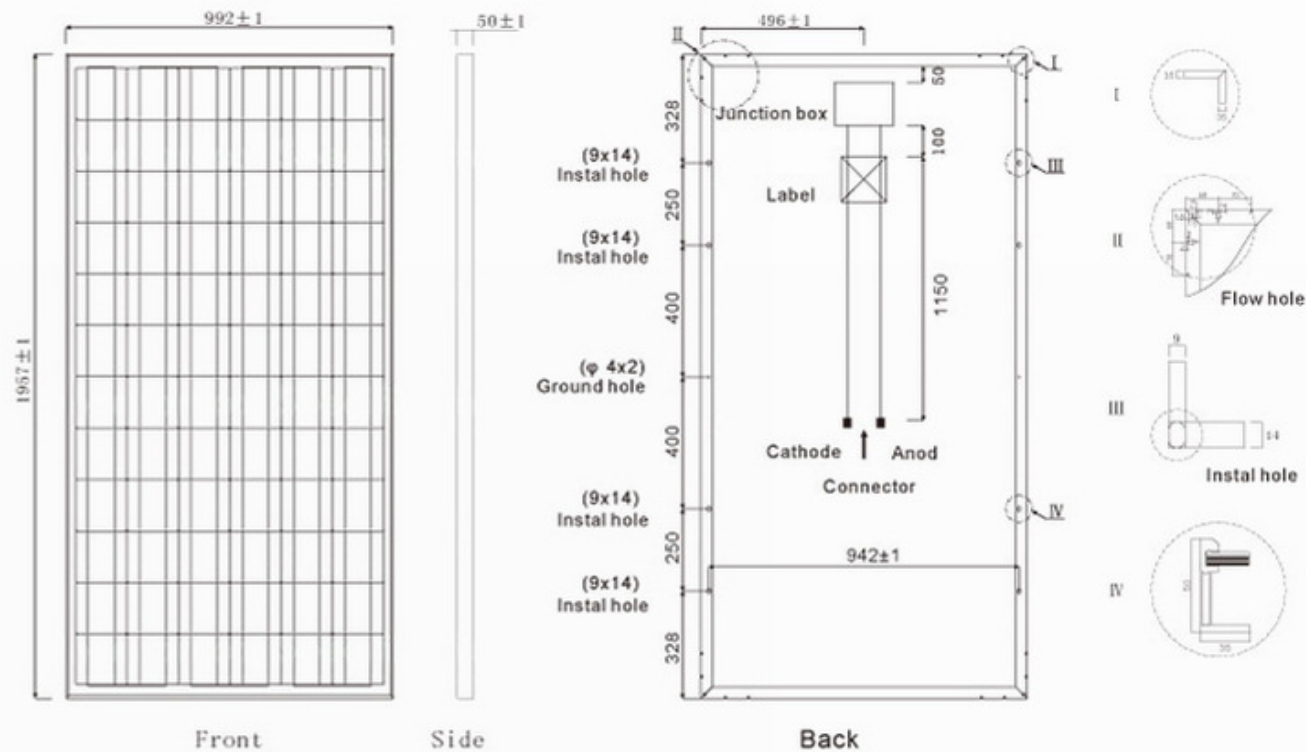
All specified Parameters at STC 25°C Ambient, 1000W/m<sup>2</sup> irradiance and AM 1.5



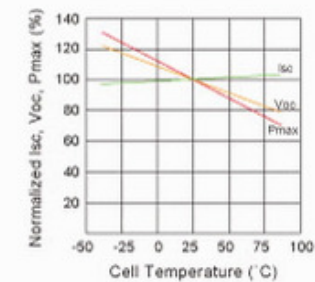
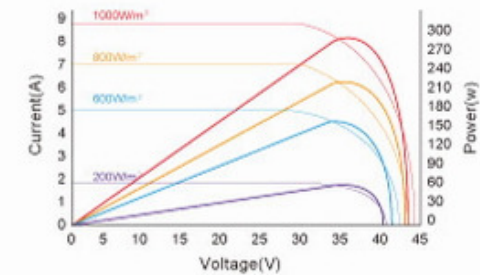
Type		HDS280P-72	HDS285P-72	HDS290P-72	HDS295P-72	HDS300P-72	HDS305P-72	HDS310P-72
Max-Power P <sub>m</sub>	(W)	280	285	290	295	300	305	310
Power Tolerance	(W)	±3	±3	±3	±3	±3	±3	±3
Max-Power Voltage	V <sub>m</sub> (V)	36	36	36	36.5	36.5	37.66	38.02
Max-Power Current	I <sub>m</sub> (A)	7.78	7.92	8.05	8.08	8.12	8.14	8.22
Short-Circuit Current	I <sub>sc</sub> (A)	8.4	8.55	8.61	8.65	8.69	8.72	8.79
Open-Circuit Voltage	V <sub>oc</sub> (V)	44.6	44.6	44.6	45.2	45.3	45.3	45.5
Max-System Voltage	(VDC)	1000V(IEC)						
Cell Efficiency	(%)	16.2	16.5	16.8	17.2	17.4	17.6	17.8
Module Efficiency	(%)	14.4	14.6	14.9	15.2	15.5	15.7	16
Max.Series Fuse	(A)	15						
P <sub>m</sub> Temperature Coefficients	(%/°C)	-0.44						
I <sub>sc</sub> Temperature Coefficients	(%/°C)	0.06						
V <sub>oc</sub> Temperature Coefficients	(%/°C)	-0.34						
NOCT Nominal Operating Cell Temperature		45±2°C						

Maximum load rating: 5400Pa

## Mechanical Specifications



## I-V Curve



I-V Curves at different Irradiances (AM1.5 25 $^{\circ}\text{C}$ )

Specifications included in this datasheet are subject to change without prior notice

## Mechanical Characteristics

Cable type, Diameter and Length	4mm <sup>2</sup> , TUV certified, 1250mm
Type of Connector	Compatible Type IV
Number, type and arrangement of cells	72pcs, Poly-Crystalline Silicon(6x12)
Cell Size (mm)	156x156
Dimension (mm)	1956x992x50
Weight (Kg)	24
NO.of Draining Holes in Frame	10
Glass, Type and Thickness	High Transmission, Low Iron, Tempered Glass 4.0mm

## Absolute Ratings

Dielectric Insulation Voltage	3000V
Operating Temperature ( $^{\circ}\text{C}$ )	-40~+85
Storage Temperature ( $^{\circ}\text{C}$ )	-40~+85



# PV SYSTEM (OFF-GRID)

## HDSS500W-10000W

### 500-10000W Off-grid Solar Power System

		HDSS500	HDSS1000	HDSS3000	HDSS5000	HDSS10000
<b>Inverter</b>	Rated Capacity	700VA	1500VA	4000VA	6000VA	12000VA
	Rated Output Power	560W	1200W	3200W	4800W	9600W
	Rated Output Current	3.2A	5.5A	14.5A	21.8A	43.63A
	Shape of Output Wave	Pure Sine Wave				
	Precision of Output Voltage	220V±3%				
	Precision of Output Frequency	50HZ±0.1%				
	Dynamic Response Time	5%				
	Power Factor	0.8				
	Over-Loading Capacity	120%,30Sec				
Invert Efficiency	> 85%					
<b>Controller</b>	Voltage and current	24V/20A	48V/20A	48V/60A	48V/100A	48V/200A
<b>Solar panel</b>	Max Output Power of Solar Panel	500Wp	1000Wp	3000Wp	5000Wp	10000Wp
	Optimum Operation Current of Solar Panel	14.3A	14.3A	42.9A	71.4A	142.8A
<b>Battery</b>	Rated Voltage of Accumulator	24V	48V	48V	48V	48V
	Rated Capacity of Accumulator	200AH	200AH	600AH	1000AH	2000AH
<b>Volume</b>		1.5CBM	1.8CBM	3.2CBM	6CBM	12CBM
<b>Net Weight</b>		500KG	1000KG	2000KG	4000KG	8000KG

## Function

A PV system consists of solar module,solar controller and battery(Group).If the output power is 220V AC or 110V AC,the inverter should be added into the configuration.

## Solar Module

Solar module,the most indispensable and valuable part of the solar power system,plays a role to convert the sunshine into electrical energy,which will be stored into battery and promote the working for loads.

## Solar Controller

The role of solar controller is to control the working statement of the system and provide over-charging and over discharging protection for the storage battery.The controller should also has the function of compensating temperature in areas and light-control switch,time-control switch,etc.

## Battery

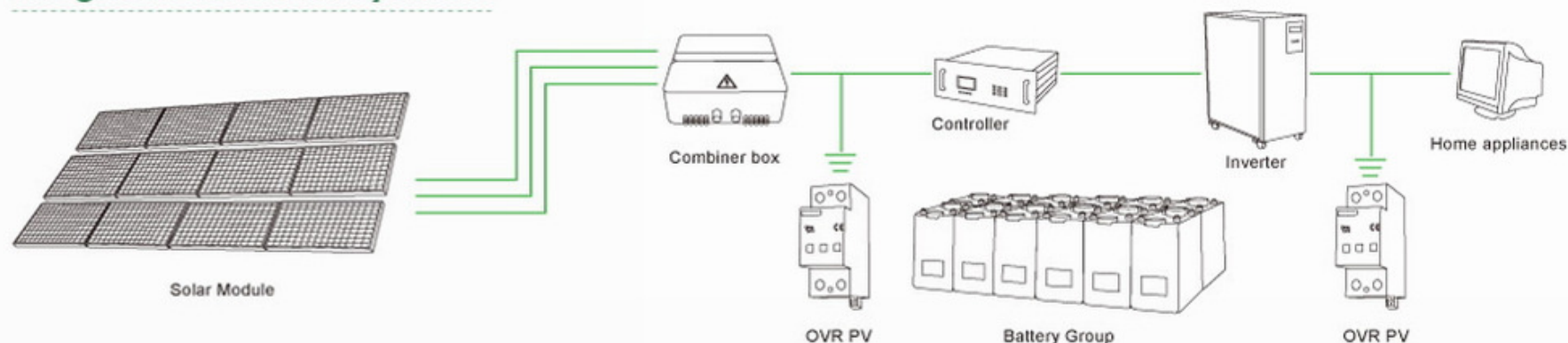
Usually battery is lead-acid type,its function is to store up the electricity generated from solar module and release it when in need.

## Inverter

The outputs of solar module are generally 17VDC or 35VDC,when supplying power for 220VAC or 110VAC loads,DC-AC inverter is used to convert DC solar power to AC power.In some cases,when comes to a variety of voltage load,DC-DC inverter is needed,e.g. Convert the 24VDC power into power of 5VDC.



## Off-grid Solar Power Systems



### Main Technical Parameters of 500 to 10000W Off-grid Solar Power System

Model	loads	Power	working Time/day(h)	Configuration
500W System	A 29"Colour TV Set	120 W	6	800W Sine Wave Inverter 220V Output
	Fans	40 W	8	
	Energy-saving Lamps	11 W×3	6	
1000W System	A 29"Colour TV Set	120 W	6	1200W Sine Wave Inverter 220V Output
	Fans	70 W	10	
	Electric Cookers	800 W	0.5	
	Energy-saving Lamps	15 W×4	6	
3000W System	A 29"Colour TV Set	120 W	6	3500W Sine Wave Inverter 220V Output
	A 150L Icebox	100 W	24	
	A 1HP Air Conditioner	800 W	4	
	Electric Cookers	800 W	0.5	
	A Computer With LCD Screen	100 W	6	
5000W System	Energy-saving Lamps	15 W×4	6	5500W Sine Wave Inverter 220V Output
	A 34"Colour TV Set	150 W	6	
	A 150L Icebox	100 W	24	
	A 1HP Air Conditioner	800 W	8	
	Electric Cookers	800 W	1	
10000W System	A Computer With LCD Screen	100 W	6	10000W Sine Wave Inverter 220V Output
	Energy-saving Lamps	20 W×4	6	
	A 42"Colour TV Set	200 W	8	
	A 250L Icebox	150 W	24	
	A 2HP Air Conditioner	1500 W	8	
10000W System	Electric Cookers	800 W	2	
	A Computer With LCD Screen	100 W	10	
	Energy-saving Lamps	40 W×4	6	

Remark: The system contains solar modules, control system, batteries, inverters.

All the Systems are under over charging, over loading and short circuit protection. All the listed home appliances can be run at the same time.



# Solar Industrial Tile HDS150T

## Electrical Characteristics

All specified Parameters at STC 25°C Ambient, 1000W/m<sup>2</sup> irradiance and AM 1.5

Type		HDS150T
Max-Power Pm	(W)	150
Power Tolerance	(W)	±3
Max-Power Voltage	Vm(V)	18.64
Max-Power Current	Im(A)	8.03
Short-Circuit Current	Isc(A)	8.57
Open-Circuit Voltage	Voc(V)	22.46
Max-System Voltage	(VDC)	600V/1000V(IEC)
Cell Efficiency	(%)	18.5
Module Efficiency	(%)	14
Max.Series Fuse	(A)	10
Pm Temperature Coefficients	(%/°C)	-0.44
Isc Temperature Coefficients	(%/°C)	0.06
Voc Temperature Coefficients	(%/°C)	-0.34
NOCT Nominal Operating Cell Temperature		45±2°C

Maximum load rating: 5400Pa

## Application

- Grain, warehousing, to build zero-energy eco barn preservation
- Residential housing
- Factory
- New rural construction

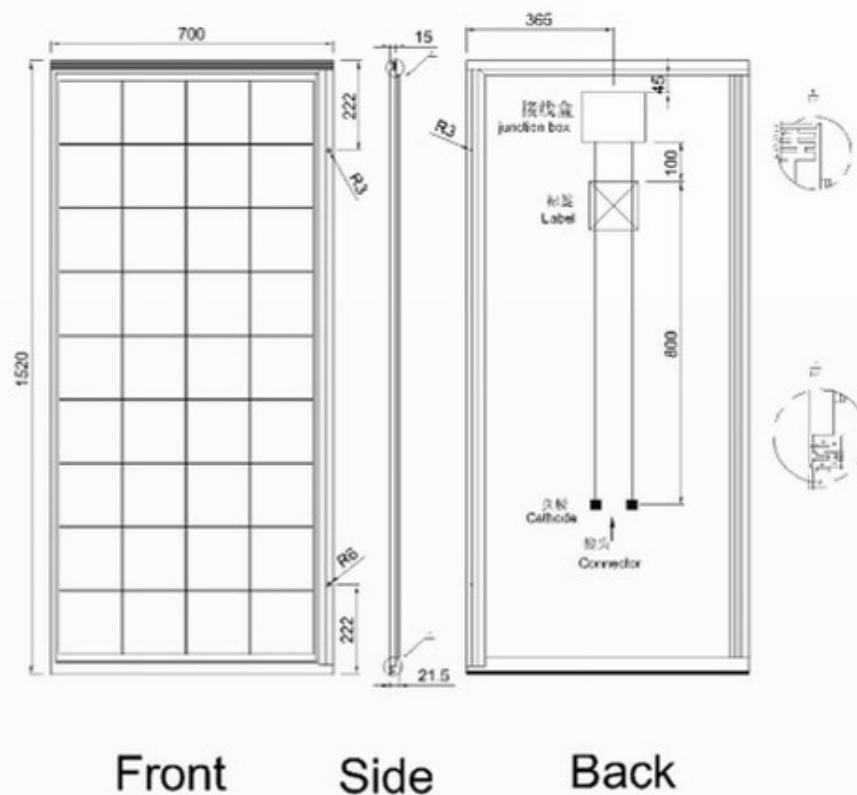
## Matching Tile



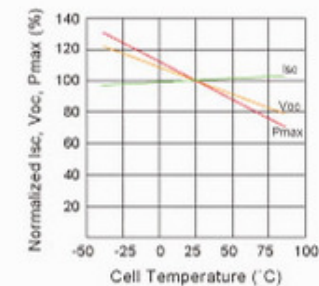
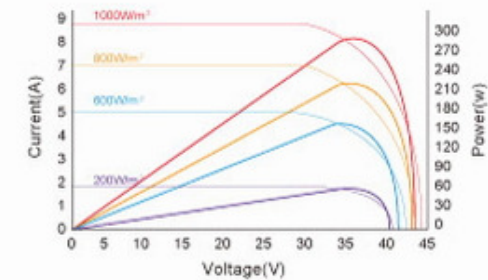
HD150M



## Mechanical Specifications



## I-V Curve



I-V Curves at different irradiances (AM1.5 25°C)

Specifications included in this datasheet are subject to change without prior notice

## Mechanical Characteristics

Cable type, Diameter and Length	4mm <sup>2</sup> , TUV certified, 900mm
Type of Connector	Compatible Type IV
Number, type and arrangement of cells	36pcs, Poly-Crystalline Silicon(4x9)
Cell Size (mm)	156x156
Dimension (mm)	1520x700x21.5
Weight (Kg)	13
NO.of Draining Holes in Frame	10
Glass, Type and Thickness	High Transmission, Low Iron, Tempered Glass 4.0mm

## Absolute Ratings

Dielectric Insulation Voltage	3000V
Operating Temperature (°C)	-40~+85
Storage Temperature (°C)	-40~+85



## PROJECT CASE

# HEDA

HIGH ENERGY DURABLE ACCESS





# ENGINEERING CASE





Reviewer



Isabel



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