

195-72M

Revolutionary Product —Selective Emitter™ Solar Module Same module size. Same exposure time, More power output!

Made of CSUN SE high efficiency solar cells*, CSUN SE modules can deliver you 10% higher efficiency**. Especially, you could benefit MORE from the excellent performance under the low light condition and low hot spot effect, and get LESS degradation under light exposure.



MORE - LESS =? You know how to choose!

Features

- High conversion efficiency;
- Low power tolerance of ±3%;
- Excellent performance under low lighting conditions;
- Low hot spot effect, due to low reverse current density;
- Low degradation under light exposure;
- Low cell performance mismatch during encapsulation, our SE module demonstrates high power output, which is very close to the power generated by the whole cells before encapsulation;
- Passing mechanical load test of 5400Pa according to IEC 61215 (advanced test);
- Tested to withstand hails with maximum diameter of 25mm and impact speed of 23m/s;
- Blacksheet is also available.

- 5-year hardware warranty;
- 25-year power output warranty***.
- Certifications:

Certification Authority	Test Standard	Power Range
TÜV Rheinland	IEC61215	40W-200W
ASU-PTL	IEC61215	155W-185W
VDE	IEC61215 IEC61730-1/2	155W-180W
CSA	UL1703	155W-190W









- Average efficiency of 17.5%, up to 18%.
- ** Compared to modules with the same size, made of normal P-type solar cells , average efficiency of which is 16%.
- *** 10 years at 90% of the minimal rated power output, 25 years at 80% of the minimal rated power output.



Specifications

Туре	205-72M	200-72M	195-72M	190-72M	185-72M
Peak Power (Pmpp)	205	200	195	190	185
Open Circuit Voltage (Voc)	45.6	45.3	45.1	45.0	44.8
Short Circuit Current (Isc)	5.82	5.72	5.63	5.56	5.48
Optimum operating Voltage (Vmpp)	38.0	37.6	37.0	36.5	35.8
Optimum operating Current (Impp)	5.40	5.32	5.28	5.21	5.17
Module efficiency	16.06%	15.67%	15.27%	14.88%	14.49%
Maximum system voltage [V]	1000(IEC)/60	0(UL)			
Voltage temperature coefficient	-0.307%/K				
Current temperature coefficient	+0.039%/K				
Power temperature coefficient	-0.423%/K				
Series fuse rating[A]	10				
Cells	6×12 pieces monocrystalline solar cells series strings				
Cells	125mm×125mm (5inch)				
Junction box	with 3 bypas	with 3 bypass diodes			
Cable	length 900 mm (35.4inch), 1×4 mm ² (0.16inch ²)				
Front glass	white toughened safety glass, 3.2 mm (1/8inch)				
Cell encapsulation	EVA (Ethylene-Vinyl-Acetate)				
Back sheet	composite film				
Frame	anodised aluminium profile				
Dimensiona	^a 1580×808×35mm (L×W×H) [62.2×31.81×1.38inch]				
Dimensions	^b 1580×808×50mm (L×W×H) [62.2×31.81×1.97inch]				
Weight	^a 15.6kg (34.4lbs) ^b 16kg (35.3lbs)				

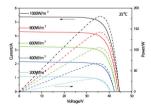
The electrical data relates to standard test conditions [STC]: $1,000 \text{ W/m}^2$; AM 1,5; 25°C . Performance deviation of Pmpp: \pm 3%; Performance deviation of Voc, Isc, Vmp and Imp: \pm 10%. Certified in accordance with IEC 61215, IEC 61730-1/2.

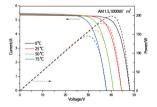
Operating Condition & Packaging

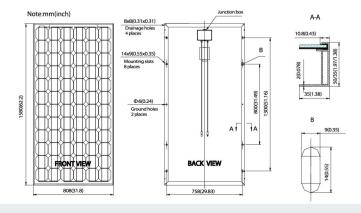
Maximum surface load capacity	tested up to 2,400 Pa according to IEC 61215 ^a tested up to 5,400 Pa according to IEC 61215 (advanced test) ^b
Hail	maximum diameter of 25 mm with impact speed of 23 m/s (51.2mph)
Temperature range	- 40 °C to + 85 °C

(Dimensions(L×W×H)	Container 20'	Container 40'	Container 40HC'
	1580×808×35mm	360	840	952
	1580×808×50mm	258	602	686

IV-Curves





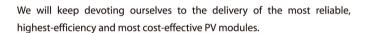




245-60M

Our standard modules are designed, developed and manufactured for both residential and commercial, rooftop and ground-mounted, as well as on-grid and off-grid photovoltaic projects.

Quality is the life of our product. We select the best raw materials and conduct highly regular testing to ensure that it meets our rigorous quality standards. Every module will be tested before delivery to make sure the efficiency tolerance is in a narrow range. Each link is strictly controlled to ensure the benefit of our customers.





Features

- 60 High-Efficiency Monocrystalline Solar Cells;
- Passing mechanical load test of 5400Pa according to IEC 61215(advanced test);
- Tested to withstand hails with maximum diameter of 25mm with impact speed of 23m/s;
- Reinforced Solar Glass The high-transparency low-iron tempered glass allows maximum light permeability while enhancing stiffness and impact resistance;
- Advanced Cell Encapsulation The interconnected cells are embedded in ultra transparent EVA with multilayer backsheets for additional weather protection;
- Integrated bypass diodes to protect the solar cell circuit from hot spots during partial shadowing;
- Our module technology ensures that there are no problems of water freezing and warping;
- Low power tolerance of ±3%;
- Blacksheet is also available.

- Designed to Meet the Unique Needs of Our Customers.
- 5-year hardware warranty;
- 25-year power output warranty.*
- Certifications:

Certification Authority	Test Standard	Power Range
TÜV Rheinland	IEC61215 IEC61730-1/2	130W-305W
Intertek	UL1703	200W-300W
CEC	IEC61215	200W-285W







^{* 10} years at 90% of the minimal rated power output, 25 years at 80% of the minimal rated power output.



Specifications

Туре	260-60M	255-60M	250-60M	245-60M	240-60M
Peak Power (Pmpp)	260	255	250	245	240
Open Circuit Voltage (Voc)	37.6	37.5	37.3	37.2	37
Short Circuit Current (Isc)	8.93	8.86	8.78	8.69	8.62
Optimum operating Voltage (Vmpp)	30.3	30.2	30.1	30.0	29.8
Optimum operating Current (Impp)	8.58	8.45	8.31	8.17	8.06
Module efficiency	16.02%	15.71%	15.40%	15.09%	14.78%
Maximum system voltage [V]	1000				
Voltage temperature coefficient	-0.307%/K				
Current temperature coefficient	+0.039%/K				
Power temperature coefficient	-0.423%/K				
Series fuse rating[A]	15				
Cells	6×10 pieces r	monocrystallin	e solar cells ser	ies strings	
Cells	156mm×156i	mm (6inch)			
Junction box	with 6 bypass	diodes			
Cable	length 900 m	m (35.4inch), 1	×4 mm² (0.16iı	nch²)	
Front glass	white toughened safety glass, 3.2 mm (1/8inch)				
Cell encapsulation	EVA (Ethylene-Vinyl-Acetate)				
Back sheet	composite film				
Frame	anodised aluminium profile				
Dimensions	1640×990×50mm (L×W×H) [64.57×38.98×1.97inch]				
Weight	19.8kg (43.7lb	os)			

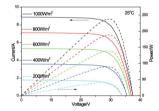
The electrical data relates to standard test conditions [STC]: 1,000 W/m²; AM 1,5; 25°C. Performance deviation of Pmpp: \pm 3%; Performance deviation of Voc, Isc, Vmp and Imp: \pm 10%. Certified in accordance with IEC 61215, IEC 61730-1/2.

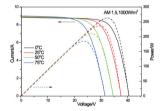
Operating Condition & Packaging

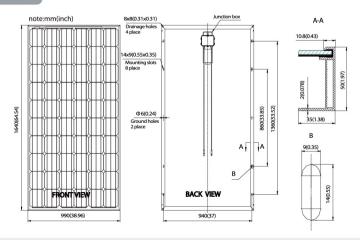
Maximum surface load capacity	tested up to 5,400 Pa according to IEC 61215
Hail	maximum diameter of 25 mm with impact speed of 23m/s (51.2mph)
Temperature range	- 40 °C to + 85 °C

Dim	ensions(L×W×H)	Container 20'	Container 40'	Container 40HC'
1640	0×990×50mm	240	560	602
[64.5	57×38.98×1.97inch]	240	300	002

IV-Curves





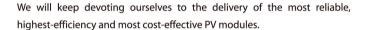




295-72M

Our standard modules are designed, developed and manufactured for both residential and commercial, rooftop and ground-mounted, as well as on-grid and off-grid photovoltaic projects.

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Features

- 72 High-Efficiency Monocrystalline Solar Cells;
- Passing mechanical load test of 5400Pa according to IEC 61215(advanced test);
- Tested to withstand hails with maximum diameter of 25mm with impact speed of 23m/s;
- Reinforced Solar Glass The high-transparency low-iron tempered glass allows maximum light permeability while enhancing stiffness and impact resistance;
- Advanced Cell Encapsulation The interconnected cells are embedded in ultra transparent EVA with multilayer backsheets for additional weather protection;
- Integrated bypass diodes to protect the solar cell circuit from hot spots during partial shadowing;
- Our module technology ensures that there are no problems of water freezing and warping;
- Low power tolerance of ±3%;
- Blacksheet is also available.

- Designed to Meet the Unique Needs of Our Customers;
- 5-year hardware warranty;
- 25-year power output warranty.*
- Certifications:

Certification Authority	Test Standard	Power Range
TÜV Rheinland	IEC61215 IEC61730-1/2	130W-305W
Intertek	UL1703	200W-300W
CEC	IEC61215	200W-285W







^{* 10} years at 90% of the minimal rated power output, 25 years at 80% of the minimal rated power output.



Type Peak Power (Pmpp) Open Circuit Voltage (Voc)	305-72M 305 44.9	300-72M 300	295-72M 295	290-72M	285-72M
2			295	200	
Open Circuit Voltage (Voc)	44.9			290	285
3 - (44.8	44.6	44.5	44.4
Short Circuit Current (Isc)	8.87	8.80	8.73	8.67	8.60
Optimum operating Voltage (Vmpp)	36.2	36.1	35.9	35.8	35.7
Optimum operating Current (Impp)	8.43	8.32	8.22	8.11	7.99
Module efficiency	15.75%	15.49%	15.23%	14.98%	14.72%
Maximum system voltage [V]	1000				
Voltage temperature coefficient	-0.307%/K				
Current temperature coefficient	+0.039%/K				
Power temperature coefficient	-0.423%/K				
Series fuse rating[A]	15				
Cells	6×12 pieces n	nonocrystallin	e solar cells ser	ies strings	
Cells	156mm×156n	nm (6inch)			
Junction box	with 6 bypass	diodes			
Cable	length 900 m	m (35.4inch), 1	×4 mm² (0.16ir	1 ²)	
Front glass	white toughened safety glass, 3.2 mm				
Cell encapsulation	EVA (Ethylene-Vinyl-Acetate)				
Back sheet	composite film				
Frame	anodised aluminium profile				
Dimensions	1956×990×50mm (L×W×H) [76.98×38.98×1.97inch]				
Weight	23.8kg (52.4lb	os)			

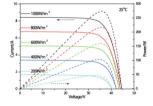
The electrical data relates to standard test conditions [STC]: 1,000 W/m²; AM 1,5; 25°C. Performance deviation of Pmpp: \pm 3%; Performance deviation of Voc, lsc, Vmp and Imp: \pm 10%. Certified in accordance with IEC 61215, IEC 61730-1/2.

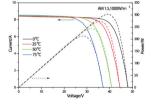
Operating Condition & Packaging

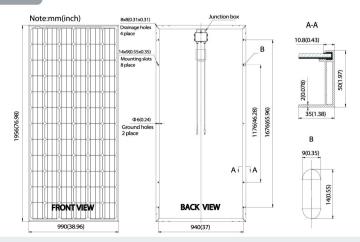
Maximum surface load capacity	tested up to 5,400 Pa according to IEC 61215
Hail	maximum diameter of 25 mm with impact speed of 23m/s (51.2mph)
Temperature range	– 40 °C to + 85 °C

Dimensions(L×W×H)	Container 20'	Container 40'HC
1956×990×50mm		
[76.98×38.98×1.97inch]	160	480

IV-Curves





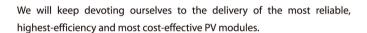




230-60P

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Features -

- 60 High-Efficiency Polycrystalline Solar Cells;
- Passing mechanical load test of 5400Pa according to IEC 61215(advanced test);
- Tested to withstand hails with maximum diameter of 25mm with impact speed of 23m/s;
- Reinforced Solar Glass The high-transparency low-iron tempered glass allows maximum light permeability while enhancing stiffness and impact resistance;
- Advanced Cell Encapsulation The interconnected cells are embedded in ultra transparent EVA with multilayer backsheets for additional weather protection;
- Integrated bypass diodes to protect the solar cell circuit from hot spots during partial shadowing;
- Our module technology ensures that there are no problems of water freezing and warping;
- Low power tolerance of ±3%;
- Blacksheet is also available.

- Designed to Meet the Unique Needs of Our Customers;
- 5-year hardware warranty;
- 25-year power output warranty.*
- Certifications:

Certification Authority	Test Standard	Power Range
TÜV InterCert	IEC61215 IEC61730-1/2	115W-295W
Intertek	UL1703	200W-300W
CEC	IEC61215	200W-285W



^{* 10} years at 90% of the minimal rated power output, 25 years at 80% of the minimal rated power output.



Туре	245-60P	240-60P	235-60P	230-60P	225-60P
Peak Power (Pmpp)	245	240	235	230	225
Open Circuit Voltage (Voc)	37.1	36.9	36.8	36.7	36.6
Short Circuit Current (Isc)	8.74	8.67	8.59	8.52	8.40
Optimum operating Voltage (Vmpp)	29.7	29.6	29.5	29.4	29.2
Optimum operating Current (Impp)	8.25	8.11	7.97	7.83	7.71
Module efficiency	15.09%	14.78%	14.47%	14.17%	13.86%
Maximum system voltage [V]	1000				
Voltage temperature coefficient	-0.292%/K				
Current temperature coefficient	+0.045%/K				
Power temperature coefficient	-0.408%/K				
Series fuse rating[A]	15				
C-III-	6×10 pieces polycrystalline solar cells series strings				
Cells	156mm×156mm (6inch)				
Junction box	with 6 bypass diodes				
Cable	length 900 mm (35.4inch), 1×4 mm ² (0.16inch ²)				
Front glass	white toughened safety glass, 3.2 mm (1/8inch)				
Cell encapsulation	EVA (Ethylene-Vinyl-Acetate)				
Back sheet	composite film				
Frame	anodised aluminium profile				
Dimensions	1640×990×50mm (L×W×H) [64.57×38.98×1.97inch]				
Weight	19.8kg (43.7lbs)				

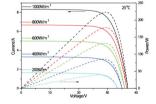
The electrical data relates to standard test conditions [STC]: $1,000 \text{ W/m}^2$; AM 1,5; 25°C . Performance deviation of Pmpp: \pm 3%; Performance deviation of Voc, Isc, Vmp and Imp: \pm 10%. Certified in accordance with IEC 61215, IEC 61730-1/2.

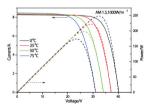
Operating Condition & Packaging

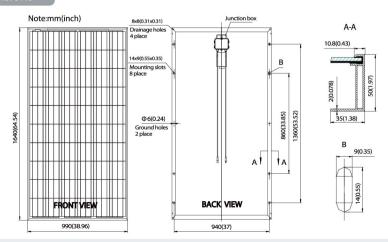
Maximum surface load capacity	tested up to 5,400 Pa according to IEC 61215	
Hail	maximum diameter of 25 mm(1inch) with impact speed of 23 m/s (51.2mph)	
Temperature range	− 40 °C to + 85 °C	

Dimensions(L×W×H)	Container 20'	Container 40'	Container 40HC'	1
1640×990×50mm	240	560	602	1
[64.57×38.98×1.97inch]	240	300	002	J

IV-Curves





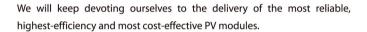




275-72P

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Features -

- 72 High-Efficiency Polycrystalline Solar Cells;
- Passing mechanical load test of 5400Pa according to IEC 61215(advanced test);
- Tested to withstand hails with maximum diameter of 25mm with impact speed of 23m/s; Reinforced Solar Glass - the high-transparency low-iron tempered glass allows maximum light permeability
- while enhancing stiffness and impact resistance; Advanced Cell Encapsulation - The interconnected cells are embedded in ultra transparent EVA with multilayer
- backsheets for additional weather protection; Integrated bypass diodes to protect the solar cell circuit from hot spots during partial shadowing;
- Our module technology ensures that there are no problems of water freezing and warping;
- Low power tolerance of ±3%;
- Blacksheet is also available.

- Designed to Meet the Unique Needs of Our Customers;
- 5-year hardware warranty;
- 25-year power output warranty.*
- Certifications:

Certification Authority	Test Standard	Power Range
TÜV InterCert	IEC61215 IEC61730-1/2	115W-295W
Intertek	UL1703	200W-300W
CEC	IEC61215	200W-285W







^{* 10} years at 90% of the minimal rated power output, 25 years at 80% of the minimal rated power output.



Туре	290-72P	285-72P	280-72P	275-72P	270-72P
Peak Power (Pmpp)	290	285	280	275	270
Open Circuit Voltage (Voc)	44.3	44.1	44.0	43.8	43.7
Short Circuit Current (Isc)	8.75	8.67	8.58	8.48	8.40
Optimum operating Voltage (Vmpp)	35.6	35.4	35.3	35.2	35.0
Optimum operating Current (Impp)	8.15	8.05	7.94	7.82	7.72
Module efficiency	14.98%	14.72%	14.46%	14.20%	13.94%
Maximum system voltage [V]	1000				
Voltage temperature coefficient	-0.292%/K				
Current temperature coefficient	+0.045%/K	+0.045%/K			
Power temperature coefficient	-0.408%/K	-0.408%/K			
Series fuse rating[A]	15				
C-11-	6×12 pieces	6×12 pieces polycrystalline solar cells series strings			
Cells	156mm×15	156mm×156mm (6inch)			
Junction box	with 6 bypa	with 6 bypass diodes			
Cable	length 900	length 900 mm (35.4inch), 1×4 mm ² (0.16inch ²)			
Front glass	white tougl	white toughened safety glass, 3.2 mm (1/8inch)			
Cell encapsulation	EVA (Ethyle	EVA (Ethylene-Vinyl-Acetate)			
Back sheet	composite	composite film			
Frame	anodised al	anodised aluminium profile			
Dimensions	1956×990×	1956×990×50mm (L×W×H) [76.98×38.98×1.97inch]			
Weight	23.8Kg (52.4lbs)				

The electrical data relates to standard test conditions [STC]: 1,000 W/m²; AM 1,5; 25°C. Performance deviation of Pmpp: ± 3%; Performance deviation of Voc, Isc, Vmp and Imp: ±10%. Certified in accordance with IEC 61215, IEC 61730-1/2 and UL 1703.

Operating Condition & Packaging

Maximum surface load capacity	tested up to 5,400 Pa according to IEC 61215	
Hail	maximum diameter of 25 mm with impact speed of 23m/s (51.2mph)	
Temperature range	– 40 °C to + 85 °C	

Dimensions (L×W×H)	Container 20'	Container 40'HC
1956×990×50mm [76.98×38.97×1.97inch]	160	480

IV-Curves

