

Target: Produce Top-class Products

做一流产品



合肥中南光电有限公司
CHINALAND SOLAR ENERGY CO., LTD

ChinaLand

Build Reputable Brand

樹百年品牌



Operating Concept: Be concise and pursue excellence.
经营理念：精益求精，追求卓越。



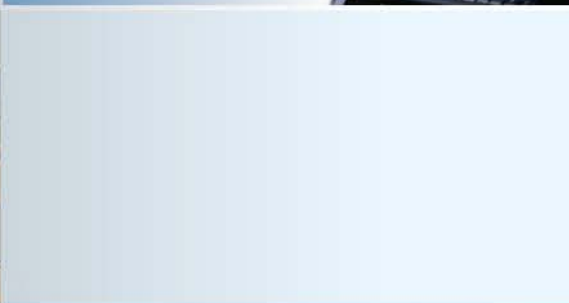
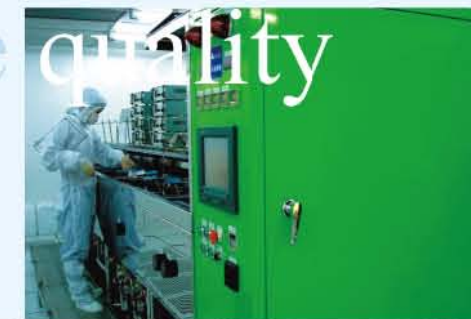
Managing Guideline: Honesty, cooperation, innovation and passion.
管理方针：诚信、合作、创新、激情。



Pursuing the quality 品质追求



Pursuing the quality



Company profile

公司简介

Chinaland Solar Energy Co., Ltd is a hi-tech company engaged in development, research, production, sales and service of crystalline silicon wafers, solar cells, solar panels, and photovoltaic systems.

The newly-built Photovoltaic Industrial Park is a several-hundred-million RMB project invested by Chinaland Solar Energy Co., Ltd., located at Feidong New City Economic Development Zone of Hefei City with convenient traffic. For the first phase, the building area is 60000M2. After its completion, the annual output will be over 80 million pieces of silicon wafers, 200MW cells, and 200MW panels.

Chinaland Solar Energy Co., Ltd. is dedicative and professional in the line. It has 5 divisions: Solar Energy Photovoltaic Research Institute, Crystalline Silicon Wafers Division, Solar Cells Division, Solar Power Panels Division, and Photovoltaic Power Generation Systems Engineering Division. Each division has a team of professional engineers and management people. Through high investment in technical research and development, we guarantee superior performance and reliable quality products, and gradually reduce the cost on solar photovoltaic power generation, and realize our target let Chinaland Solar Energy power generation products widely used in families all over the world.

Chinaland Solar Energy Photovoltaic Research Institute

Chinaland Solar Energy Co., Ltd. enhances its science and technology, cooperates with domestic and international research institute, based on the basic research and application development of photovoltaic technologies, to provide strong talent reservation and technical support for the target of good and fast development of photovoltaic industry of our country. The research institute has established three research centers: Research Center on Solar Cells, Research Center on PV Components and Research Center on PV System Integration & Application Technology; meanwhile a Management Center was set up to carry out scientific and technical management and service.

Chinaland Solar Energy Photovoltaic Research Institute aims at building a system platform for technology, market, management, talents and information, effectively cooperating with domestic and international organizations in this field, to make Anhui Province bigger and powerful in photovoltaic industry in the future.



Certificate 企业证书



Why choose Chinaland?

为何选择中南光电



- 1 As a member of the world photovoltaic family, through our fine quality product, masterly technology, and prefect service, we can supply advanced, green, clean solar PV module to the people all over the world continuously, and make more profit for your investment in solar application.

一 中南光电作为世界光伏产业大家庭中的一员，能以优质的产品，精湛的技术，完善的服务，为全球客户持续供应先进 绿色 清洁的太阳能电池组件，增加您在太阳能应用方面的投资回报。

- 2 Chinaland has production framework of diversification.
 - (1) The power of solar panels can range from 1w to 310w.
 - (2) The type of solar panels: mono-crystalline 125, mono-crystalline 156, poly-crystalline 156.
 - (3) The number of solar cells in the panel:36 54 60 72 96.
 - (4) The color of the panel: light blue, dark blue, and black.
 - (5) The kind of panels: TPT (TPE) panels, aluminum back panels, double glazing panels.

二 中南光电有着多元化的产品结构：

- 1 组件的功率能从1W至310W
- 2 组件的类型：单晶125 单晶156 多晶156
- 3 组件的串数(片数):36 54 60 72 96
- 4 组件的颜色：浅蓝 深蓝 黑色
- 5 组件的种类：TPT(TPE)组件 铝背板组件 BIPV组件

- 3 Chinaland uses advanced manufacturing craft, decreasing the resistance of the panels, enhancing the fill-factors after the series welding, consequently, gets good Low-light performance.

三 中南光电采用先进的生产工艺，能使电池组件内部串联电阻降低，使得串焊后的填充因子提高，从而获得卓越的弱光性能。

- 4 Chinaland tries its best to research the matching of electrical properties of panels, greatly bringing down the reverse leakage current, prolonging the life of the panels, making unique anti-declining property.

四 中南光电着力研究电池片电性能的匹配性，最大限度降低反向漏电流，在光照下性能衰退少，延长组件寿命。



Why choose chinaland?

- 5 Chinaland launches a new product ceremoniously, chinaland NO.1 solar PV module, enhancing the convert efficiency. It makes the dramatic decrease of the cost in both human and material resources. According to the authority, if the convert efficient enhances 1%, it will cut 5% investment cost. If you become one of the Chinaland partners, you will get more and more return on investment.

五 中南光电隆重推出产品—中南1号光伏组件。产品的转化率得到提升，无论在人工成本上或土地成本上都能获得显著地降低。经测算太阳能产品每提高1%的转化效率将能降低5%的投资成本，如您愿成为中南合作伙伴中的一员，可以获得更高的投资回报。

- 6 Completed solar industrial system in Chinaland. Chinaland Solar Energy Co., Ltd is a company engaging in R&D, producing the industrial chains of crystalline ingot—crystalline wafer—crystalline cell—crystalline panels, meanwhile, it is trying best to cultivate best centre of R&D and Experiment Center and production control center, all of these can make Chinaland have continuous Competitiveness in technology, craftsmanship, and quality, and offer important insurance to the development of our business partner.

六 完整的产业链，中南光电致力于从硅棒—硅锭—切片—电池片—电池组件—封装—系统应用整个产业链的研发、生产，并着力打造顶级的研发中心、实验中心、产品控制中心，让中南光电的产品在技术、工艺、品质拥有持续竞争力，也为我们商业合作伙伴的发展提供重要保障。

Why choose chinaland?

- 7 Along with the extending in business, our sale network service has reached to all over the world. We have set up more than ten Overseas proxy service providers. We are now trying best to make the preparation for the center of European sale, service, and storage. I hope we can come into being "One base, Two centers" in 2011, that means, make China the R&D, producing, sale, service base, make Euro and North America two centers of sales service and storage, thereby, we can supply more complete, thoughtful, fast service to our business partners in the world.

七 中南光电在业务上不断拓展，我们的营销服务网络辐射全球各地。我们建立数十家海外代理商，公司现正在筹备欧洲地区营销、服务仓储中心，在期于2011年形成以一基地二中心，即以中国为研发、生产、销售、服务基地，以欧洲地区、北美地区为销售、服务、仓储的二个中心，从而为我们全球的合租伙伴提供更加完善、周到、快捷的服务。

- 8 We make continuous efforts to supply better products and service to our customers, try our best to know the requirements of the customers from several channels, and polish our customer service continuously, work out the customers' problems fast and in time. We want to strengthen the communication between us and partners, and active listen to the precious advice from the partners.

八 中南光电一直在努力，为我们的客户提供优质的产品及服务，努力多渠道了解客户的需求，不断完善我们的服务工作，快速及时的为客户提供解决方案，我们诚心地与合作伙伴加强交流，倾听合作伙伴给我们提出的宝贵意见。

Chinaland Solar Energy Photovoltaic Research Institute

中南光伏研究院

With the investment of RMB6,000,000.00, Chinaland solar energy plans to enhance its science and technology, cooperating with domestic and international research institute, based on the basic research and application development of photovoltaic technologies, to provide strong talent reservation and technical support for the target of good and fast development of photovoltaic industry of China. The research institute has established three research centers: Research Center on Solar Cells, Research Center on PV Components and Research Center on PV System Integration & Application Technology; meanwhile a Management Center was set up to carry out scientific and technical management and service.

Chinaland Solar Energy Photovoltaic Research Institute aims at building a system platform for technology, market, management, talents and information, effectively cooperation with domestic and international organizations in this field, makes Anhui Province big and powerful in photovoltaic industry in the future.

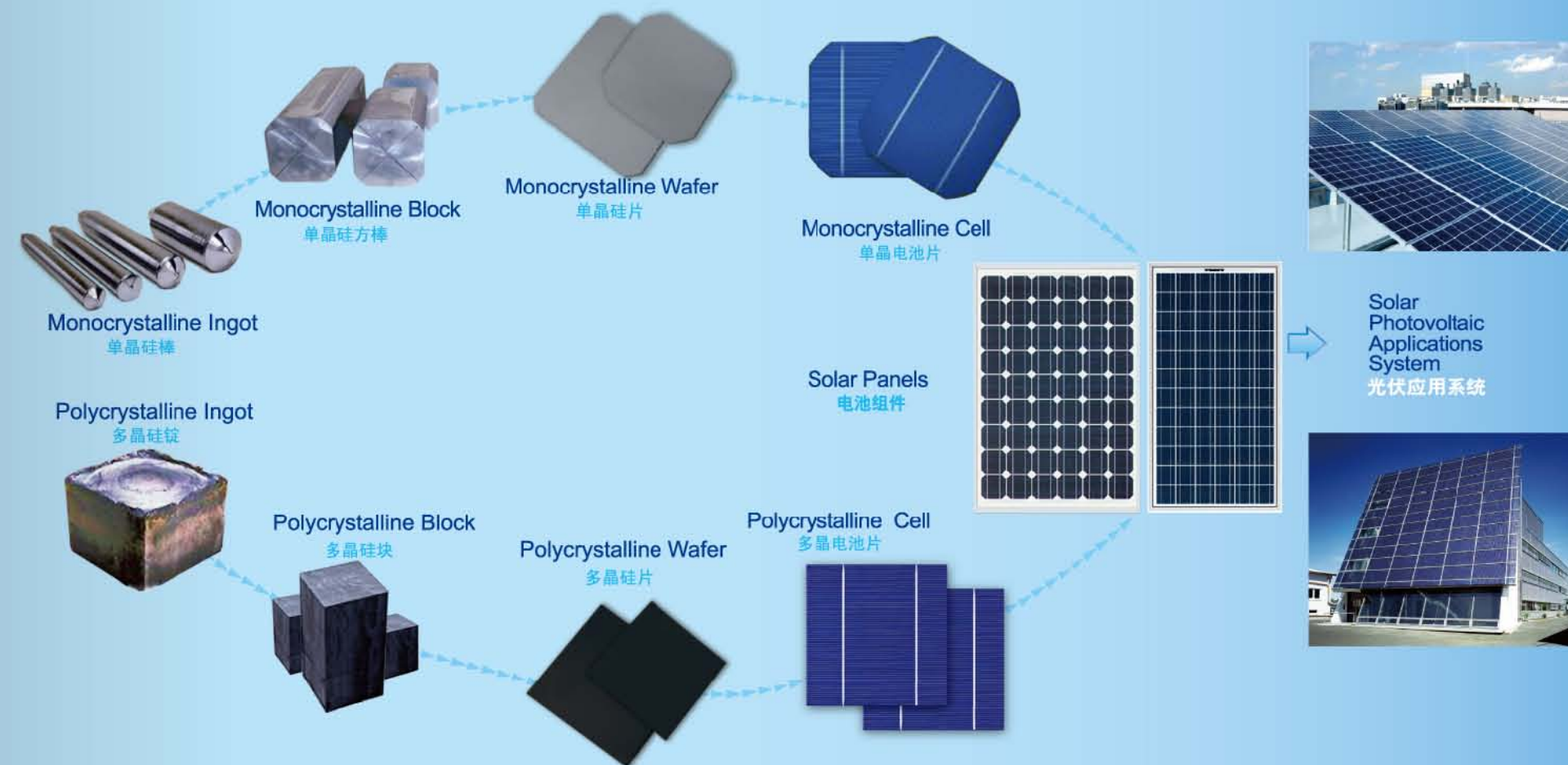
合肥中南光电有限公司拟投资600万元，以提高科技创新能力为主线，联合国内外科研机构，立足光伏领域前沿技术的基础研究和应用开发，为实现全国光伏产业“又好又快”的发展目标，提供强有力的人才储备和技术保障。研究院建有3个研究中心：太阳电池研究中心、光伏组件研究中心、光伏系统集成及应用技术研究中心；同时建立一个管理中心，以开展科技管理和科技服务工作。

中南光伏技术研究院旨在构建技术、市场、管理、人才与信息的系统平台，有效对接世界及国内兄弟省、市的行业组织，共同打造安徽光伏大省、光伏强省的产业未来。



Complete solar industrial system in chinaland

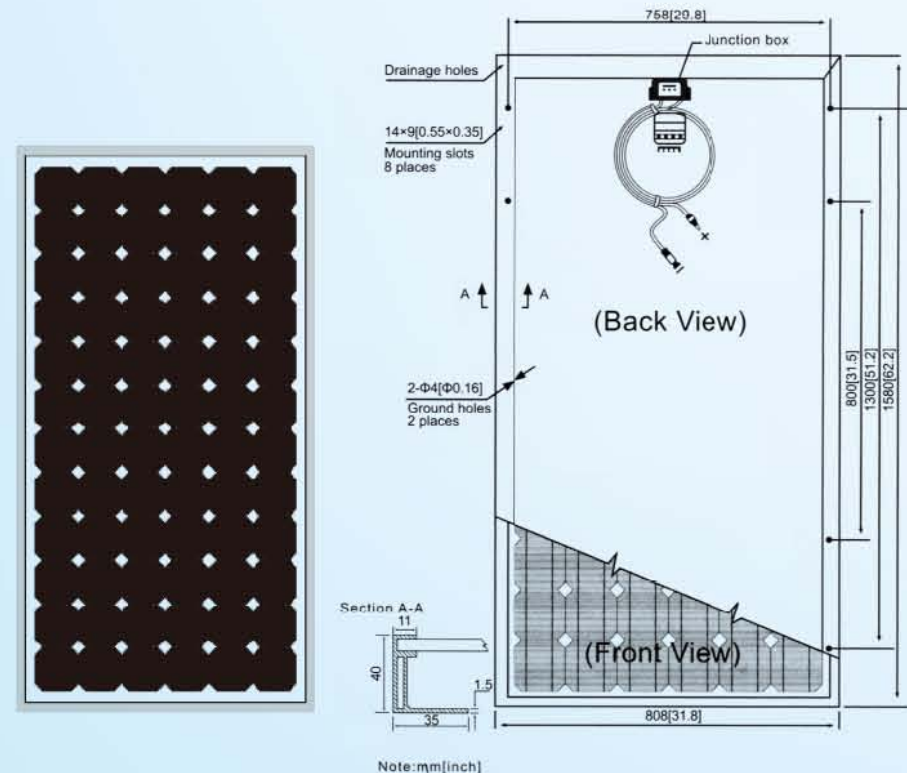
中南完整光伏产业系统



Chinaland NO.1 which is the global leader in the industry

领先全球行业的中南1号(125 72pcs) 200W问世

mono solar panels 125(72pcs) 200W



Characteristics 特征

Model 型号	Maximum power at STC(P _m) 最大功率	Open circuit voltage(V _{oc}) 开路电压	Optimum operating voltage(V _{mp}) 最佳工作电压	Optimum operating current(I _{mp}) 最佳工作电流	Short circuit Current(I _{sc}) 短路电流
CHN200W-72M	200W	45V	37V	5.41A	5.8A

Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶太阳能电池片 125mm*125mm
No.of cells and connections 电池片数量及串接	72(6×12)
Dimension of module(mm) 尺寸	1580×808×40
Weight 重量	16kg

Limits 限度

Operating temperature 工作温度	-40 to +85°C
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度	45°C ± 2°C	
Current temperature coefficient 电流温度系数	%/k	0.06 ± 0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155 ± 10)
Power temperature coefficient 功率温度系数	%/k	-(0.5 ± 0.05)

NOCT: Nominal Operation Cell Temperature

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm ²)
Asymmetrical lengths 非对称长度	900mm(-) and 800mm(+)
Connection 连接	Type IV

Solar panel of CHINALAND NO. 1 中南1号

1. According to the increasing depletion of traditional energy sources, the green clean and inexhaustible solar energy gradually walks into the people's lives. In order to develop the solar panels with more efficiency, lower cost, better quality and faster return, CHINALAND NO.1 solar panels open a "win-win cooperation economy " good chapter in the life!

1.传统能源日益枯竭的今天，取之不竭、绿色洁净的太阳能逐渐走进百姓的生活，我们从未停止过追逐太阳的步伐，效率更高，成本更低，品质更好，回报高效太阳能电池板中南1号，开启了“多赢 合作 节约”的美好生活篇章！

2. In the same size of solar panels, the output power of CHINALAND NO.1 increased by 10% comparing with the normal standard solar panel. CHINALAND NO.1 can store more energy, maximize solar resource.

2.在组件面积相同的条件下，中南1号电池组件输出功率比原先普通电池组件提高了10%，中南1号能使组件存储更多的能量，最大限度地获取太阳资源。

3. In the same installed power generation systems, the use of CHINALAND NO.1 can save 10% quantity of solar panels, thereby saving installation time.

3.在安装相同的发电系统中，使用中南1号，能节省10%的组件数量，从而节省安装的时间。

4. In the same power generation system, the use of CHINALAND NO.1, not only saves the quantity of solar panels, but also reduces the space or ground area required to install, as a result it reduces the use of space and land-use costs.

4.在相同发电系统中，使用中南1号使得组件数量的节省，也减少了要安装组件所需的空间或地面面积，从而达到降低使用空间或者土地的使用成本。

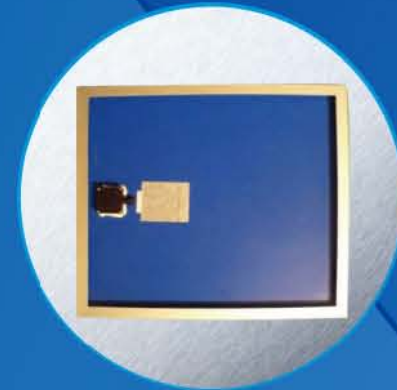
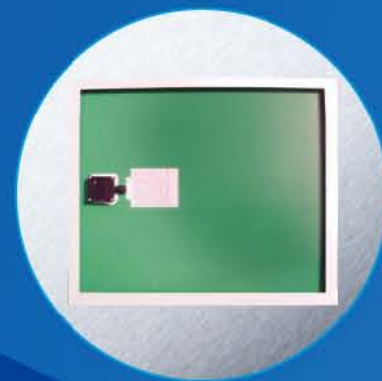
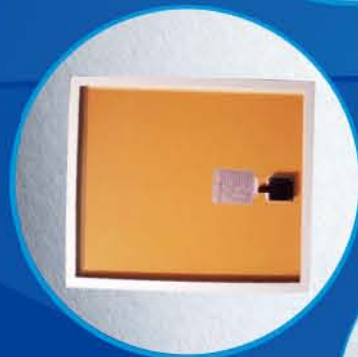
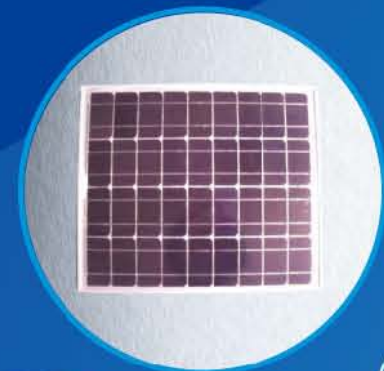
5. In the same power generation system, in the later maintenance of CHINALAND NO.1, logistics cost, installation cost, or labor cost of maintenance and cleaning can be reduced greatly.

5.在相同发电系统中，中南1号组件在后期的维护中，无论在物流成本或者是后期安装施工，产品的维护 清洁等方面的人工成本都能得到大大的降低。

N New Release 新品发布

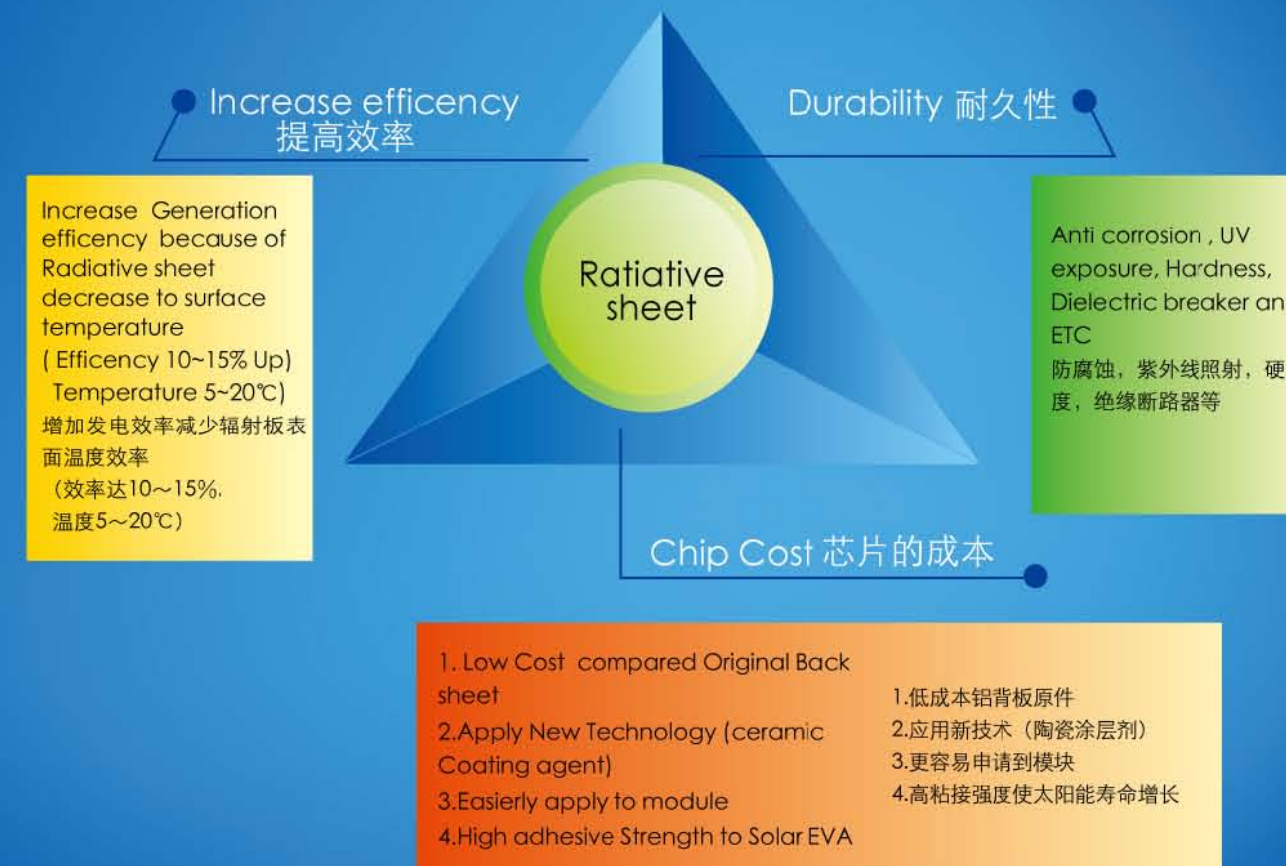
Aluminum Backplane

铝背板



Aluminum backplane parameter and description

铝背板参数及说明



SPECIAL RECOMMENDATION

特别推荐

■ poly solar panels 156 (230w-300w) 72pcs

■ poly solar panels 156 (210w-240w) 60pcs

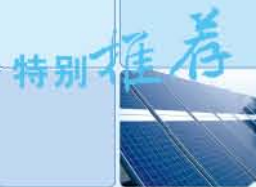
■ mono solar panels 125 (200w-260w) 96pcs

■ mono solar panels 125 (150W-200W) 72pcs

■ mono solar panels 156 (240W-310W) 72pcs

■ mono solar panels 156 (200W-260W) 60pcs

SPECIAL RECOMMENDATION
poly solar panels 156 (230w-300w) 72pcs
多晶156电池板 (230w-300w) 72片串



Specifications 规格

Cell 电池片	Polycrystalline silicon solar cells 多晶硅太阳能电池 156mm×156mm
No.of cells and connctions电池片数量及串接	72(6×12)
Dimension of module(mm) 尺寸	1950×990×50
Weight 重量	23kg

Limits 限度

Operating temperature 工作温度	-40 to+85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT额定运行电池温度	45℃±2℃	
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

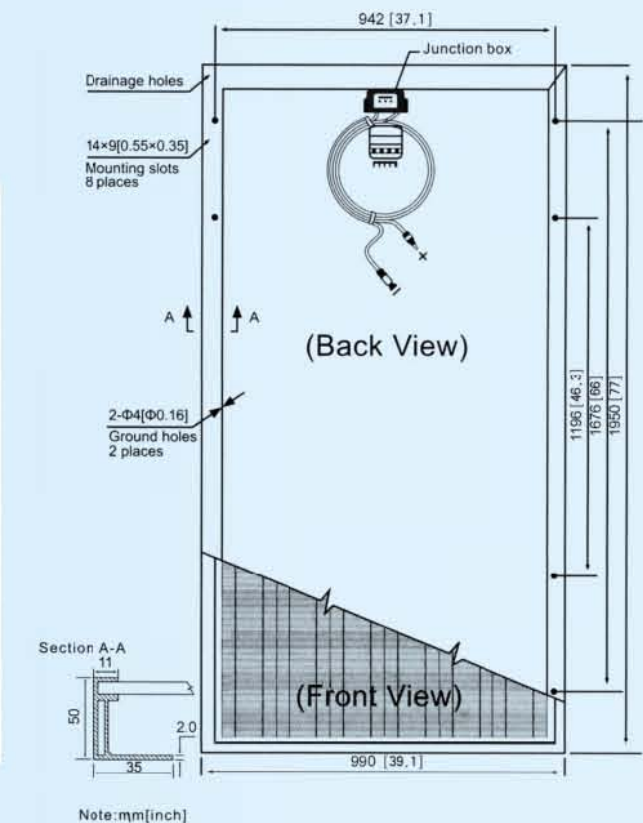
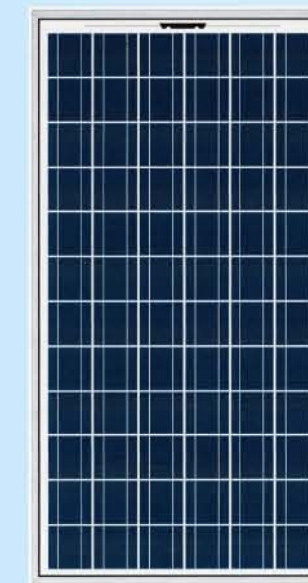
NOCT:Nominal Operation Cell Temperature

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV

Characteristics 特征

Model 型号	CHN230-72P	CHN240-72P	CHN245-72P	CHN250-72P	CHN255-72P	CHN260-72P	CHN265-72P	CHN270-72P	CHN275-72P	CHN280-72P	CHN285-72P	CHN290-72P	CHN300-72P
Open circuit voltage(Voc) 开路电压	42.50V	42.80V	43.0V	43.0V	43.0V	43.40V	43.70V	43.80V	44.30V	44.50V	44.50V	44.50V	44.60VV
Optimum operating voltage(Vmp) 最佳工作电压	34.10V	34.50V	34.6V	34.80V	35.00V	35.20V	35.60V	35.90V	36.10V	36.40V	36.50V	36.50V	36.70V
Short circuit Current(Isc) 短路电流	7.53A	7.73A	7.79A	7.99A	8.04A	8.12A	8.17A	8.27A	8.33A	8.55A	8.63A	8.74A	8.75A
Optimum operating current(Imp) 最佳工作电流	6.74A	6.96A	7.08A	7.18A	7.29A	7.38A	7.43A	7.52A	7.62A	7.67A	7.81A	7.94A	8.17A
Maximum power at STC(Pm) 最大功率	230Wp	240Wp	245Wp	250Wp	255Wp	260Wp	265Wp	270Wp	275Wp	280Wp	285Wp	290Wp	300Wp



SPECIAL RECOMMENDATION

poly solar panels 156 (210w-240w) 60pcs

Specifications 规格

Cell 电池片	Polycrystalline silicon solar cells 多晶硅太阳能电池 156mm×156mm
No.of cells and connections 电池片数量及串接	60(6×10)
Dimension of module(mm) 尺寸	1640×990×40
Weight 重量	15.5kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

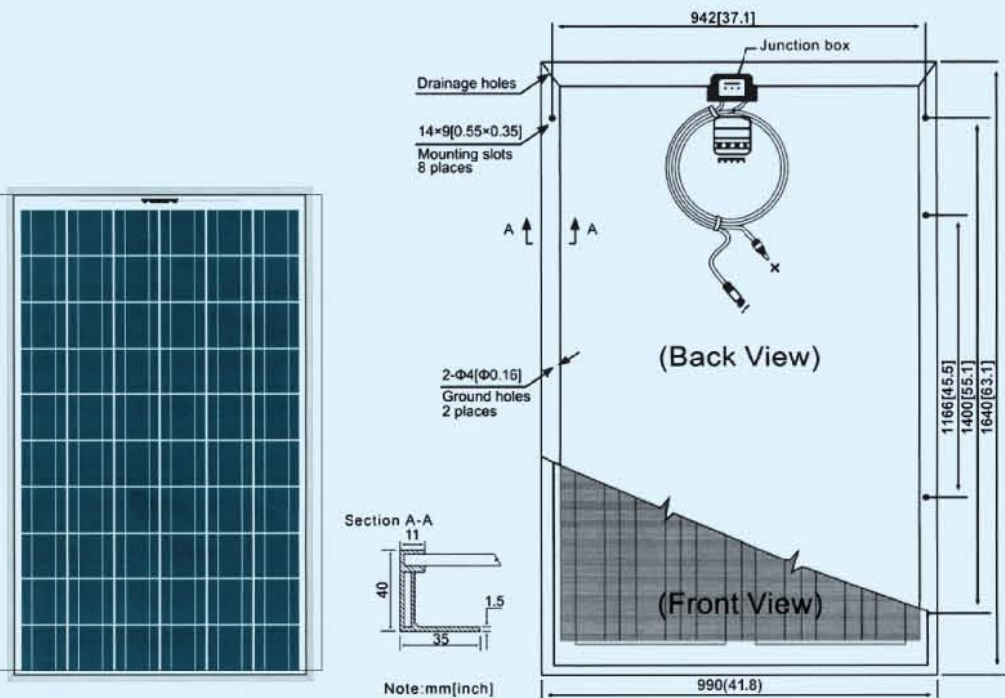
Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度	45℃±2℃	
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155±10)
Power temperature coefficient 功率温度系数	%/k	-(0.4±0.05)

NOCT:Nominal Operation Cell Temperature

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV



Characteristics 特征

Model 型号	CHN210-60P	CHN215-60P	CHN220-60P	CHN225-60P	CHN230-60P	CHN235-60P	CHN240-60P
Open circuit voltage(Voc) 开路电压	35.50V	35.90V	36.20V	36.50V	36.90V	37.20V	37.40V
Optimum operating voltage(Vmp) 最佳工作电压	29.10V	29.30V	29.60V	29.80V	30.20V	30.60V	30.70V
Short circuit Current(Isc) 短路电流	7.98A	8.04A	8.17A	8.25A	8.31A	8.55A	8.65A
Optimum operating current(Imp) 最佳工作电流	7.22A	7.34A	7.43A	7.55A	7.62A	7.68A	7.82A
Maximum power at STC(Pm) 最大功率	210W	215W	220W	225W	230W	235W	240W

SPECIAL RECOMMENDATION

mono solar panels 125 (200w-260w) 96pcs

单晶125电池板(200w-260w) 96片串

Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶硅太阳能电池 125mm×125mm
No.of cells and connection 电池片数量及串接	96(8×12)
Dimension of module(mm) 尺寸	1580×1062×50
Weight 重量	20.0kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度	45℃±2℃	
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

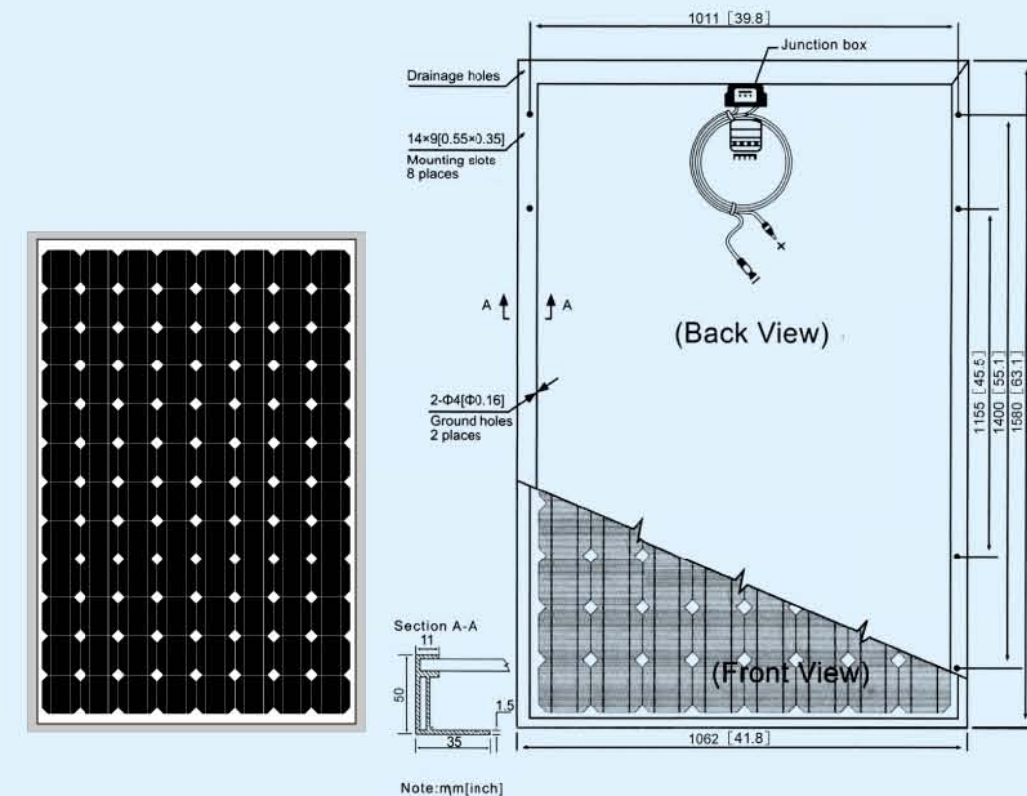
NOCT:Nominal Operation Cell Temperature

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV

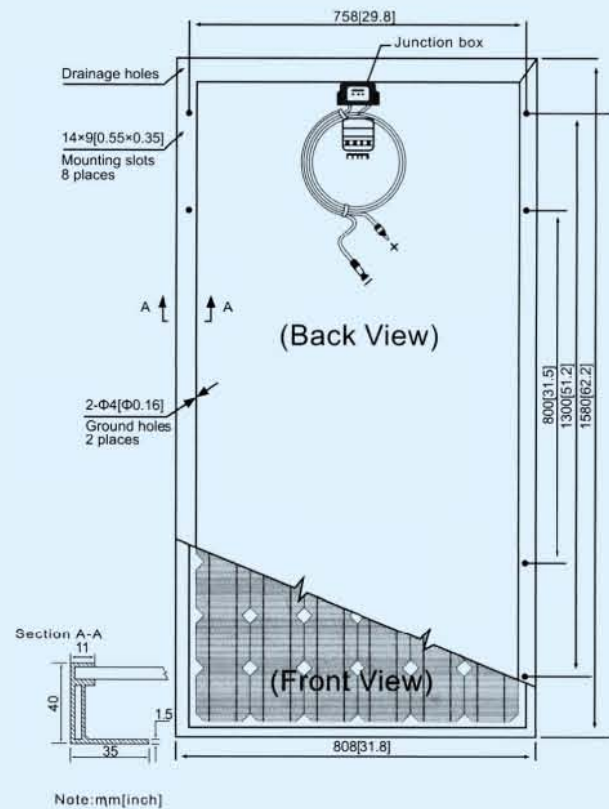
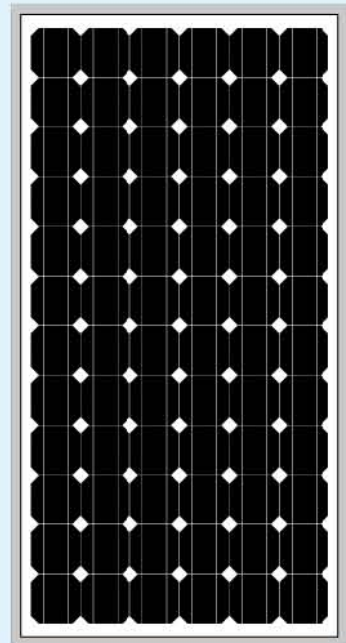
Characteristics 特征

Model 型号	CHN200-96M	CHN205-96M	CHN210-96M	CHN215-96M	CHN220-96M	CHN225-96M	CHN230-96M	CHN235-96M	CHN240-96M	CHN245-96M	CHN250-96M	CHN255-96M	CHN260-96M
Open circuit voltage(Voc) 开路电压	57.50V	57.60V	57.70V	57.90V	58.10V	58.20V	58.40V	58.50V	58.70V	58.70V	58.90V	59.10V	59.20V
Optimum operating voltage(Vmp) 最佳工作电压	46.10V	46.20V	47.00V	47.70V	47.80V	48.00V	48.20V	48.40V	48.60V	48.60V	48.80V	49.00V	49.10V
Short circuit Current(Isc) 短路电流	4.77A	4.80A	4.84A	4.95A	5.01A	5.07A	5.11A	5.15A	5.23A	5.36A	5.51A	5.61A	5.67A
Optimum operating current(Imp) 最佳工作电流	4.34A	4.43A	4.46A	4.51A	4.60A	4.69A	4.77A	4.86A	4.93A	5.04A	5.12A	5.21A	5.31A
Maximum power at STC(Pm) 最大功率	200W	205W	210W	215W	220W	225W	230W	235W	240W	245W	250W	255W	260W



SPECIAL RECOMMENDATION

mono solar panels 125 (150W-200W) 72pcs



Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶硅太阳能电池 125mm×125mm
No. of cells and connections 电池片数量及串接	72(6×12)
Dimension of module(mm) 尺寸	1580×808×40
Weight 重量	16kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度 45℃±2℃		
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

NOCT: Nominal Operation Cell Temperature

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm²)
Symmetrical length 对称长度	900mm
Connection 连接	Type IV

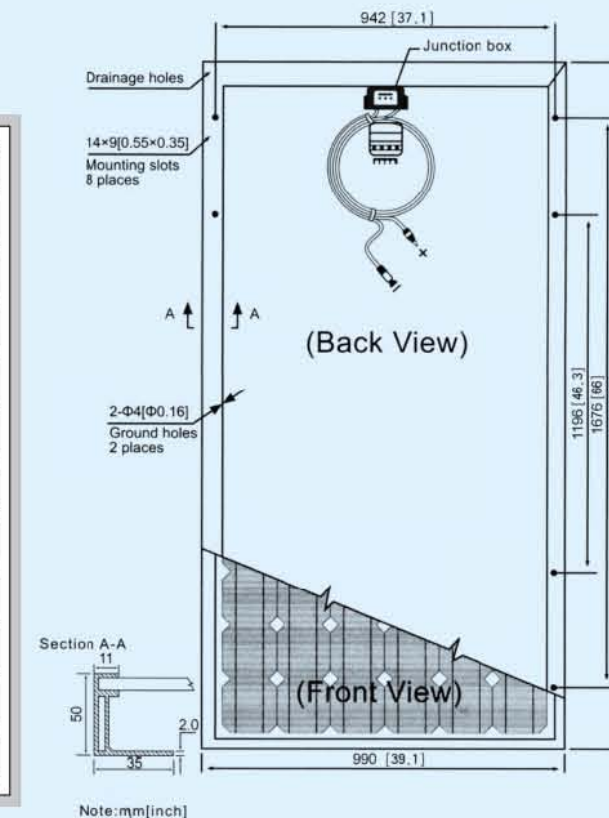
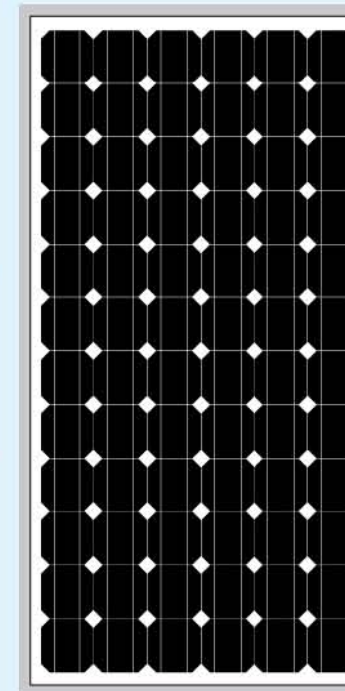
Characteristics 特征

Model 型号	CHN150-72M	CHN160-72M	CHN170-72M	CHN180-72M	CHN185-72M	CHN190-72M	CHN195-72M	CHN200W-72M
Open circuit voltage(Voc) 开路电压	43.90V	44.60V	44.60V	44.60V	44.20V	44.30V	44.60V	45.00V
Optimum operating voltage(Vmp) 最佳工作电压	35.30V	36.00V	36.70V	38.20V	37.00V	37.10V	37.00V	37.00V
Short circuit Current(Isc) 短路电流	4.77A	4.95A	5.11A	5.23A	5.44A	5.60A	5.72A	5.80A
Optimum operating current(Imp) 最佳工作电流	4.27A	4.43A	4.67A	4.74A	5.01A	5.12A	5.30A	5.41A
Maximum power at STC(Pm) 最大功率	150W	160W	170W	180W	185W	190W	195W	200W

SPECIAL RECOMMENDATION

mono solar panels 156 (240W-310W) 72pcs

单晶156电池板(240W-310W) 72片串



Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶硅太阳能电池 156mm×156mm
No. of cells and connections 电池片数量及串接	72(6×12)
Dimension of module(mm) 尺寸	1950×990×50
Weight 重量	23kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度 45℃±2℃		
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

NOCT: Nominal Operation Cell Temperature

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm²)
Symmetrical length 对称长度	900mm
Connection 连接	Type IV

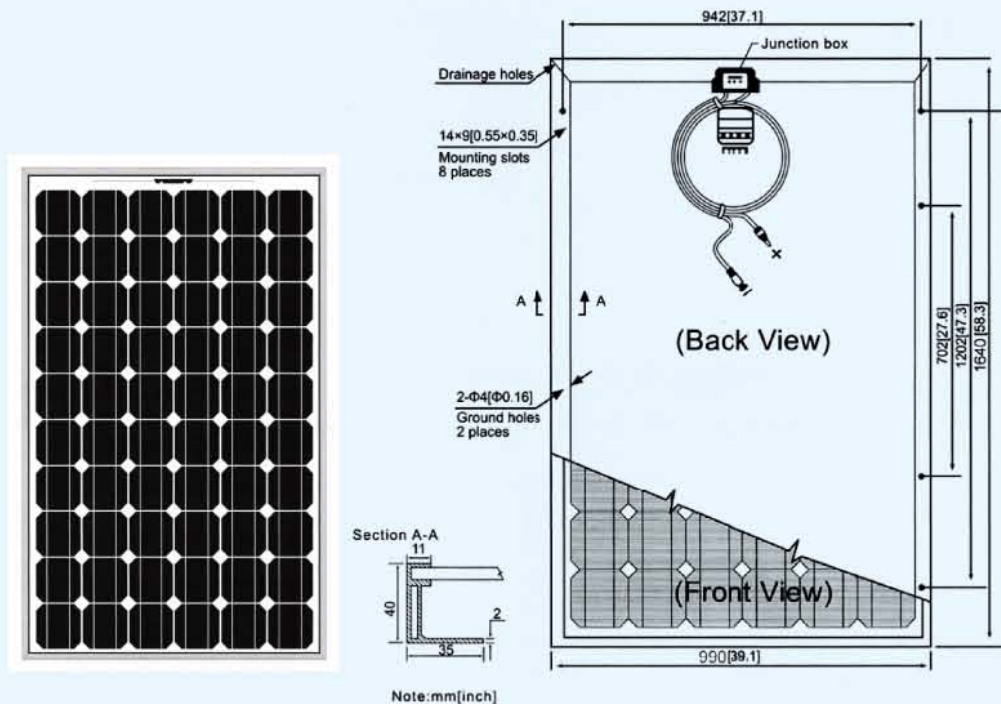
Characteristics 特征

Model 型号	CHN240-72M	CHN250-72M	CHN260-72M	CHN270-72M	CHN280-72M	CHN290-72M	CHN300-72M	CHN305-72M	CHN310-72M
Open circuit voltage(Voc) 开路电压	43.50V	43.80V	44.00V	44.10V	44.20V	44.50V	44.60V	44.10V	45.30V
Optimum operating voltage(Vmp) 最佳工作电压	34.50V	35.20V	35.90V	36.10V	36.70V	37.40V	38.10V	36.80V	37.00V
Short circuit Current(Isc) 短路电流	8.10A	8.17A	8.23A	8.30A	8.39A	8.46A	8.52A	8.80A	9.00A
Optimum operating current(Imp) 最佳工作电流	6.96A	7.10A	7.24A	7.48A	7.63A	7.75A	7.87A	8.30A	8.37A
Maximum power at STC(Pm) 最大功率	240W	250W	260W	270W	280W	290W	300W	305W	310W

SPECIAL RECOMMENDATION

mono solar panels 156 (200W-260W) 60pcs

特别推荐 单晶156电池板(200W-260W) 60片串



Characteristics 特征

Model 型号	CHN200-60M	CHN210-60M	CHN220-60M	CHN230-60M	CHN240-60M	CHN250-60M	CHN255-60M	CHN260-60M
Open circuit voltage(Voc) 开路电压	36.10V	36.30V	36.60V	36.80V	37.10V	37.20V	37.20V	37.80V
Optimum operating voltage(Vmp) 最佳工作电压	29.10V	29.40V	30.00V	30.60V	31.20V	31.80V	30.50V	30.90V
Short circuit Current(Isc) 短路电流	8.10A	8.17A	8.27A	8.36A	8.42A	8.52A	8.90A	9.05A
Optimum operating current(Imp) 最佳工作电流	6.87A	7.14A	7.33A	7.52A	7.69A	7.86A	8.40A	8.41A
Maximum power at STC(Pm) 最大功率	200W	210W	220W	230W	240W	250W	255W	260W

Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶硅太阳能电池 156mm×156mm
No.of cells and connections 电池片数量及串接	60(6×10)
Dimension of module(mm) 尺寸	1640×990×40
Weight 重量	15.5kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度		45℃ ± 2℃
Current temperature coefficient 电流温度系数	%/k	0.06 ± 0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155 ± 10)
Power temperature coefficient 功率温度系数	%/k	-(0.5 ± 0.05)

NOCT:Nominal Operation Cell Temperature

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm ²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV

Specifications 规格

Cell 电池片	Polycrystalline silicon solar cells 多晶硅太阳能电池 156mm×156mm
No.of cells and connections 电池片数量及串接	54(6×9)
Dimension of module(mm) 尺寸	1480×990×40
Weight 重量	14kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度		45℃±2℃	
Current temperature coefficient 电流温度系数	%/k	0.06±0.01	
Voltage temperature coeffcient 电压温度系数	mV/k	-(115±10)	
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)	

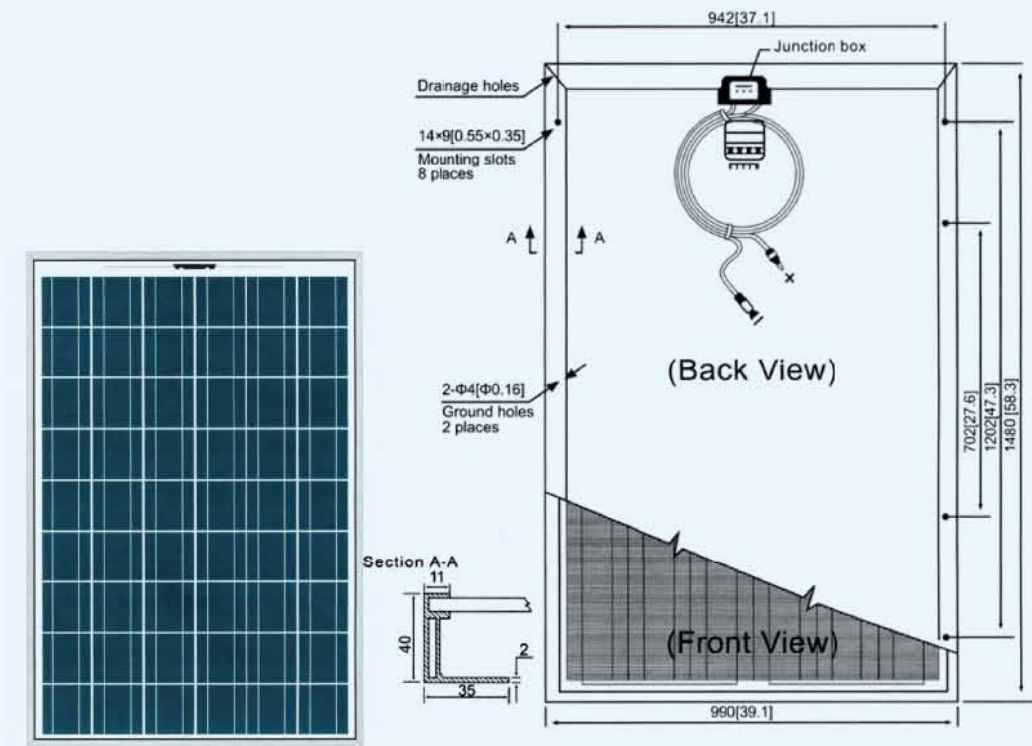
NOCT:Nominal Operation Cell Temperature

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm ²)
Symmetrical length 对称长度	900mm
Connection 连接	Type IV

Characteristics 特征

Model 型号	CHN190-54P	CHN195-54P	CHN200-54P	CHN205-54P	CHN210-54P	CHN215-54P
Open circuit voltage(Voc) 开路电压	32.40V	32.90V	32.90V	33.00V	33.20V	33.40V
Optimum operating voltage(Vmp) 最佳工作电压	26.30V	26.40V	27.00V	27.00V	27.00V	27.50V
Short circuit Current(Isc) 短路电流	8.00A	8.12A	8.17A	8.33A	8.46A	8.65A
Optimum operating current(Imp) 最佳工作电流	7.22A	7.41A	7.43A	7.59A	7.78A	7.82A
Maximum power at STC(Pm) 最大功率	190W	195W	200W	205W	210W	215W





Model 型号	CHN100-36P	CHN110-36P	CHN120-36P	CHN130-36P	CHN140-36P
Open circuit voltage(Voc) 开路电压	21.20V	21.40V	21.60V	21.90V	22.30V
Optimum operating voltage(Vmp) 最佳工作电压	17.10V	17.10V	17.20V	17.60V	18.30V
Short circuit Current(Isc) 短路电流	7.39A	7.46A	7.73A	8.12A	8.46A
Optimum operating current(Imp) 最佳工作电流	5.85A	6.43A	6.98A	7.39A	7.65A
Maximum power at STC(Pm) 最大功率	100W	110W	120W	130W	140W

Specifications 规格

Cell 电池片	Polycrystalline silicon solar cells 多晶硅太阳能电池 156mm×156mm
No.of cells and connections 电池片数量及串接	36(4×9)
Dimension of module(mm) 尺寸	1480×670×30
Weight 重量	12kg

Limits 限度

Operating temperature 工作温度	-40 to +85°C
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT额定运行电池温度	45℃±2℃	
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(178±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm ²)
Symmetrical length 对称长度	900mm
Connection 连接	Type IV

Specifications 规格

Cell 电池片	monocrystalline silicon solar cells 单晶太阳能电池 125mm×125mm
No. of cells and connections 电池片数量及串接	60(6×10)
Dimension of module(mm) 尺寸	1320×808×30
Weight 重量	13.5kg

Limits 限度

Operating temperature 工作温度	-40 to +85 °C
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度		45℃ ± 2℃
Current temperature coefficient 电流温度系数	%/K	0.06 ± 0.01
Voltage temperature coefficient 电压温度系数	mV/K	-(155 ± 10)
Power temperature coefficient 功率温度系数	%/K	-(0.5 ± 0.05)

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm ²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV

Characteristics 特征

Model 型号	CHN130-60M	CHN140-60M	CHN150-60M	CHN160-60M
Open circuit voltage(Voc) 开路电压	36.60V	36.80V	37.00V	37.20V
Optimum operating voltage(Vmp) 最佳工作电压	28.80V	30.20V	30.70V	30.90V
Short circuit Current(Isc) 短路电流	4.84A	5.03A	5.23A	5.60A
Optimum operating current(Imp) 最佳工作电流	4.51A	4.64A	4.89A	5.18A
Maximum power at STC(Pm) 最大功率	130W	140W	150W	160W

mono solar panels 125 (130w-160w) 60pcs
单晶125电池板(130w-160w) 60串



mono solar panels 125 (110W-145W) 54pcs

单晶125电池板 (110W-145W) 54串

Specifications 规格

Cell 电池片	monocrystalline silicon solar cells 单晶硅太阳能电池 125mm×125mm
No.of cells and connections 电池片数量及串接	54(6*9)
Dimension of module(mm) 尺寸	1200×808×30
Weight 重量	12kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

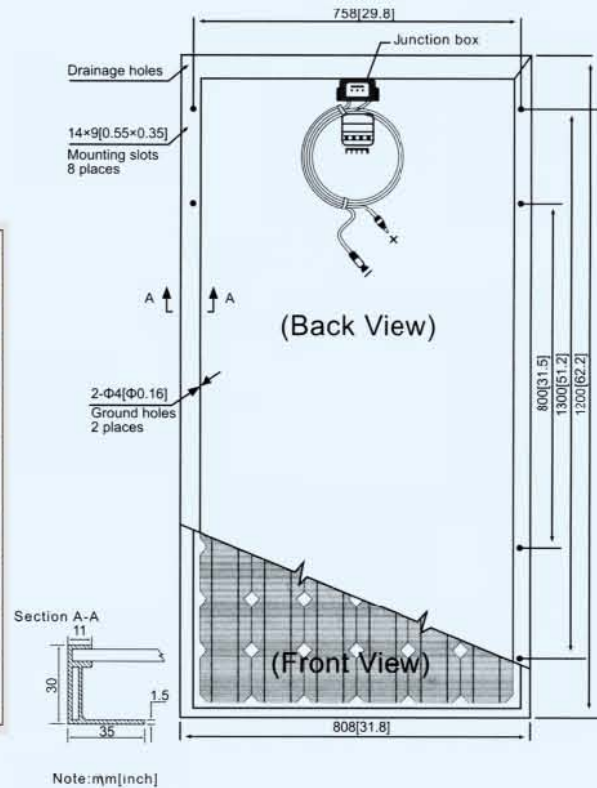
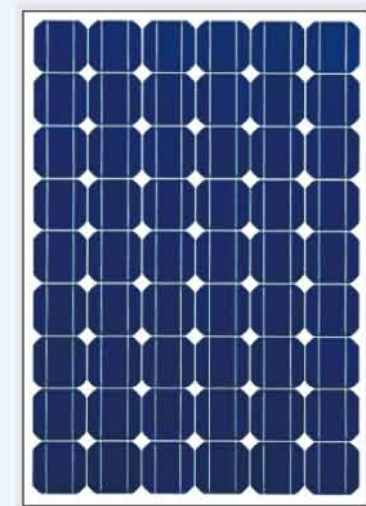
Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度		45℃±2℃
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

NOCT: Nominal Operation Cell Temperature

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm ²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV



Characteristics 特征

Model 型号	CHN110-54M	CHN120-54M	CHN130-54M	CHN140-54M	CHN145-54M
Open circuit voltage(Voc) 开路电压	32.60V	32.80V	33.00V	33.20V	33.40V
Optimum operating voltage(Vmp) 最佳工作电压	26.10V	26.40V	27.50V	27.60V	27.80V
Short circuit Current(Isc) 短路电流	4.77A	4.90A	5.15A	5.52A	5.68A
Optimum operating current(Imp) 最佳工作电流	4.21A	4.55A	4.73A	5.07A	5.21A
Maximum power at STC(Pm) 最大功率	110W	120W	130W	140W	145W

mono solar panels 125 (60w-95w) 36pcs

单晶125电池板(60w-95w)36串

Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶硅太阳能电池 125mm×125mm
No.of cells and connections 电池片数量及串接	36(4×9)
Dimension of module(mm) 尺寸	1200×540×30
Weight 重量	8kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度		45℃±2℃
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

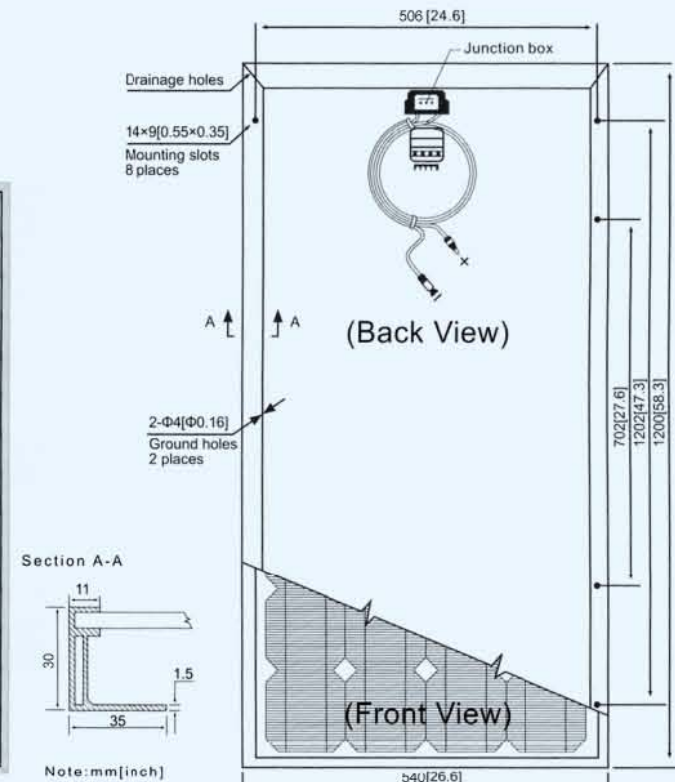
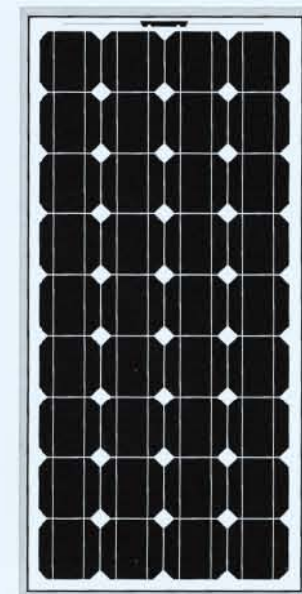
Output 输出

NOCT: Nominal Operation Cell Temperature

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm ²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV

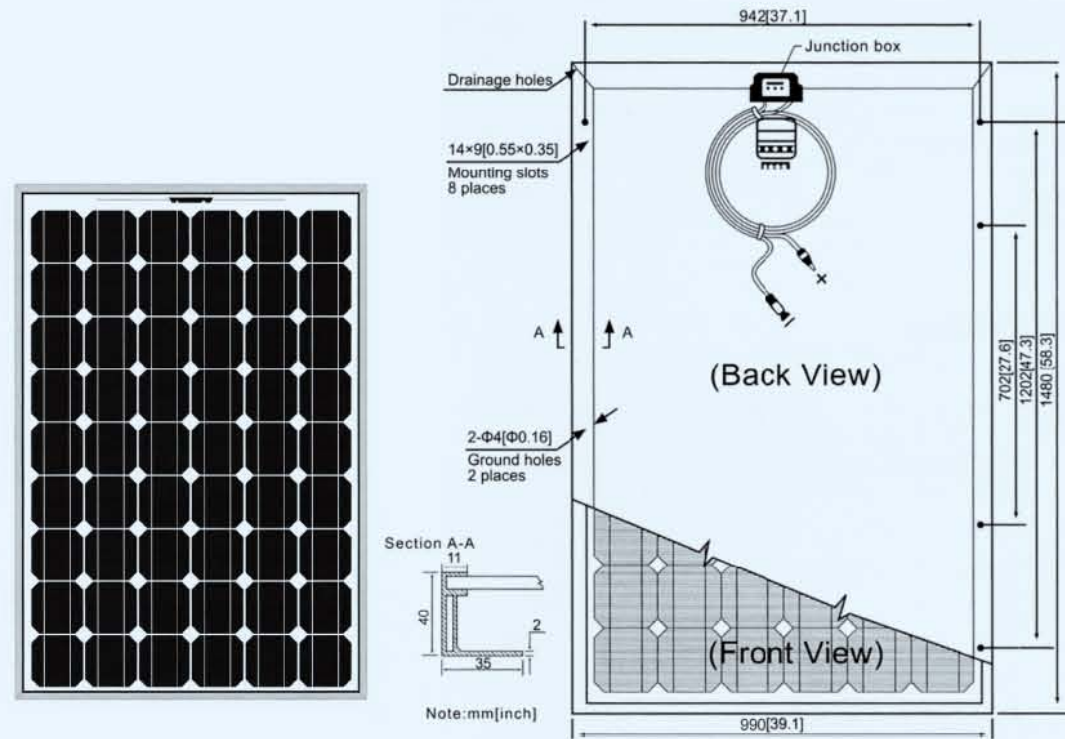
Characteristics 特征

Model 型号	CHN60-36M	CHN70-36M	CHN80-36M	CHN90-36M	CHN95-36M
Open circuit voltage(Voc) 开路电压	21.60V	21.60V	21.60V	22.30V	22.30V
Optimum operating voltage(Vmp) 最佳工作电压	17.20V	17.20V	17.60V	18.70V	18.80V
Short circuit Current(Isc) 短路电流	4.74A	4.91A	4.95A	5.36A	5.60A
Optimum operating current(Imp) 最佳工作电流	3.52A	4.11A	4.55A	4.81A	5.05A
Maximum power at STC(Pm) 最大功率	60W	70W	80W	90W	95W



mono solar panels 156 (180w-220w) 54pcs

单晶156电池板 (180w-220w) 54串



Characteristics 特征

Model 型号	CHN180-54M	CHN190-54M	CHN200-54M	CHN210-54M	CHN220-54M
Open circuit voltage(Voc) 开路电压	32.50V	32.80V	33.10V	33.20V	33.40V
Optimum operating voltage(Vmp) 最佳工作电压	25.90V	26.50V	27.20V	28.10V	28.60V
Short circuit Current(Isc) 短路电流	8.10A	8.17A	8.27A	8.39A	8.49A
Optimum operating current(Imp) 最佳工作电流	6.95A	7.17A	7.35A	7.47A	7.69A
Maximum power at STC(Pm) 最大功率	180W	190W	200W	210W	220W

Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶硅太阳能电池 156mm×156mm
No.of cells and connections 电池片数量及串接	54(6×9)
Dimension of module(mm) 尺寸	1480×990×40
Weight 重量	16.8kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT额定运行电池温度 45℃±2℃		
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(116±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV

Model 型号	CHN180-54M	CHN190-54M	CHN200-54M	CHN210-54M	CHN220-54M
Open circuit voltage(Voc) 开路电压	32.50V	32.80V	33.10V	33.20V	33.40V
Optimum operating voltage(Vmp) 最佳工作电压	25.90V	26.50V	27.20V	28.10V	28.60V
Short circuit Current(Isc) 短路电流	8.10A	8.17A	8.27A	8.39A	8.49A
Optimum operating current(Imp) 最佳工作电流	6.95A	7.17A	7.35A	7.47A	7.69A
Maximum power at STC(Pm) 最大功率	180W	190W	200W	210W	220W

mono solar panels 156 (120w-150w) 36pcs

单晶156电池板(120w-150w) 36片串

Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶硅太阳能电池 156mm×156mm
No.of cells and connections 电池片数量及串接	36(4×9)
Dimension of module(mm) 尺寸	1480×670×30
Weight 重量	12kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

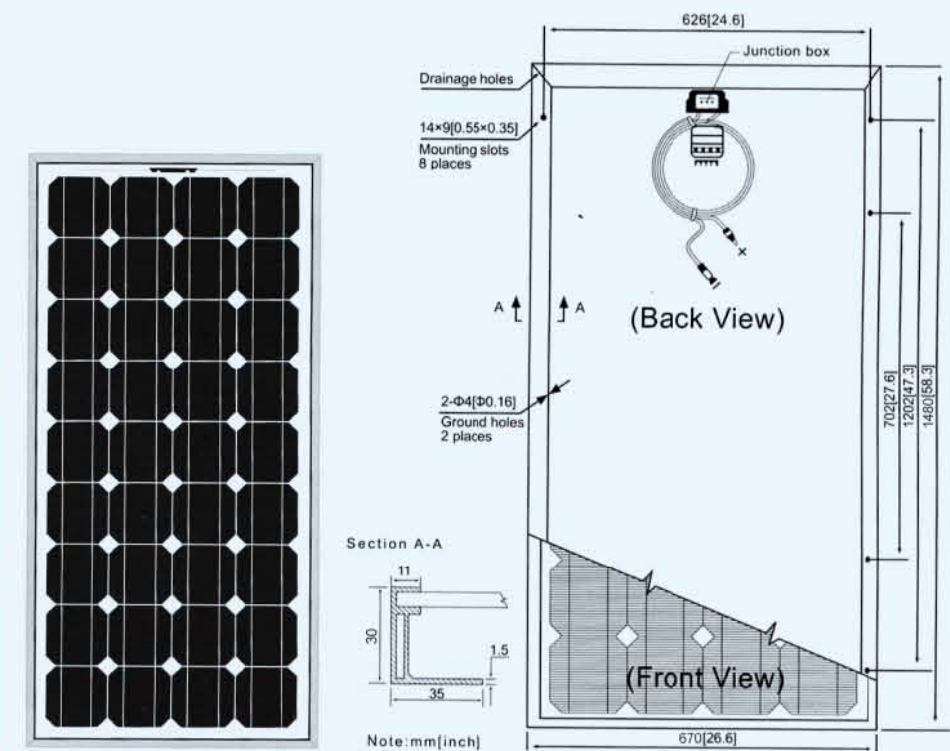
NOCT额定运行电池温度 45℃±2℃		
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(78±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

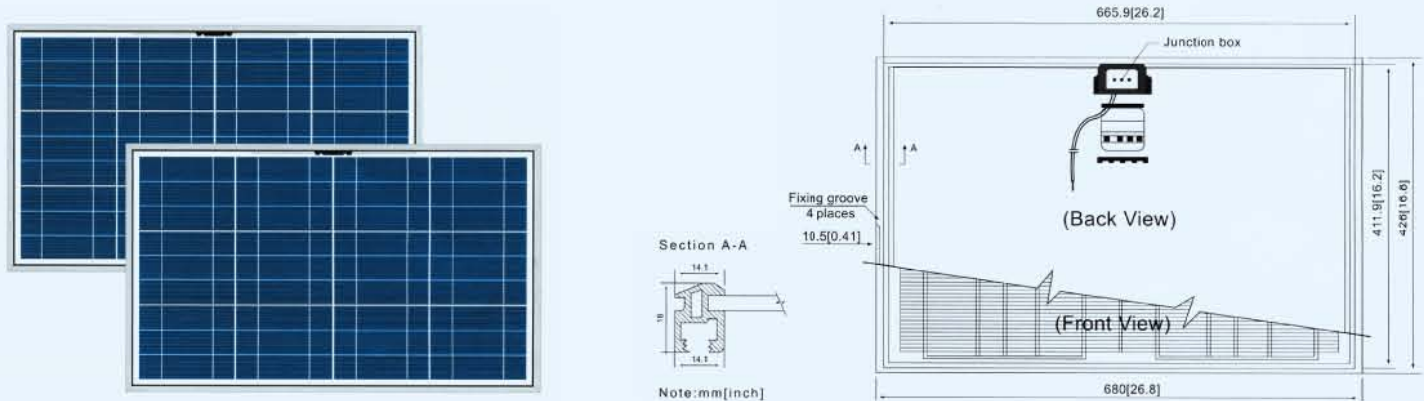
Output 输出

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV

Characteristics 特征

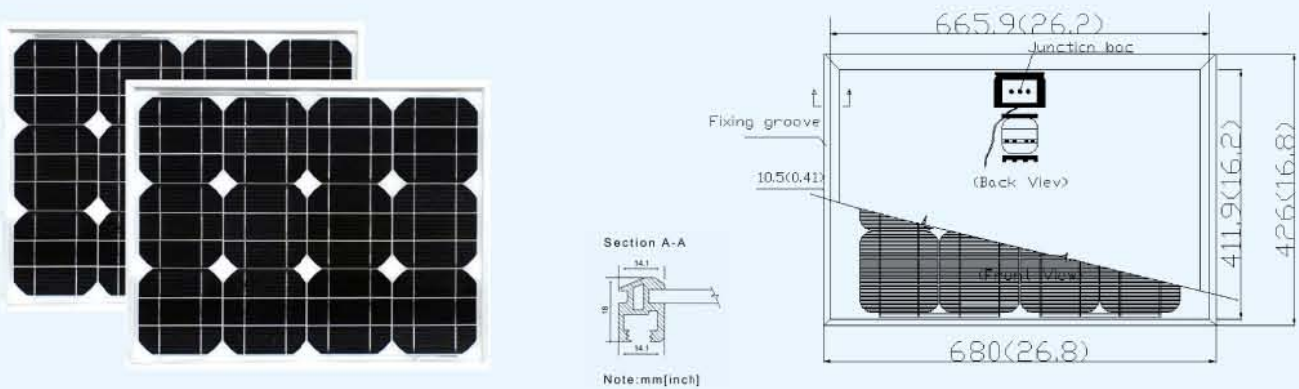
Model 型号	CHN120-36M	CHN130-36M	CHN140-36M	CHN150-36M
Open circuit voltage(Voc) 开路电压	21.70V	21.90V	22.10V	22.30V
Optimum operating voltage(Vmp) 最佳工作电压	17.20V	17.90V	18.30V	18.70V
Short circuit Current(Isc) 短路电流	8.10A	8.23A	8.39A	8.52A
Optimum operating current(Imp) 最佳工作电流	6.98A	7.22A	7.65A	8.02A
Maximum power at STC(Pm) 最大功率	120W	130W	140W	150W





Polycrystalline Solar Panel Specification (less than 60w) 多晶 60W以下组件相关参数

Size 尺寸	Maximum power at STC(P _m) 最大功率	Open circuit voltage(V _{oc}) 开路电压	Optimum operating voltage(V _{mp}) 最佳工作电压	Optimum operating current(I _{mp}) 最佳工作电流	Short circuit Current(I _{sc}) 短路电流
770×670×30	55W	21.60V	17.20V	3.22A	3.37A
770×670×30	50W	21.20V	17.20V	2.93A	3.69A
530×670×30	45W	22.30V	18.00V	2.54A	2.75A
530×670×30	40W	21.60V	17.20V	2.35A	2.57A
530×670×30	35W	21.60V	17.20V	2.05A	2.48A
410×670×30	30W	21.60V	17.20V	1.75A	1.93A
410×670×30	25W	21.20V	17.20V	1.48A	1.84A
530×350×30	20W	21.60V	17.20V	1.17A	1.28A
400×350×17	15W	21.60V	17.20V	0.88A	0.97A
400×350×17	12W	21.20V	17.20V	0.72A	0.92A
280×350×17	10W	21.60V	17.20V	0.61A	0.64A
280×350×17	8W	21.20V	17.20V	0.49A	0.61A
180×290×17	5W	21.60V	17.20V	0.31A	0.34A

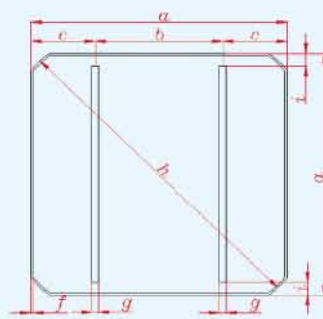
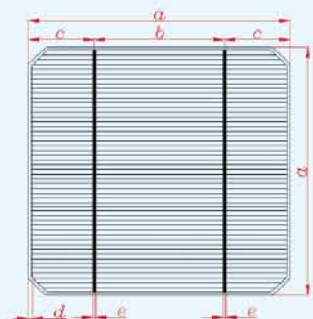
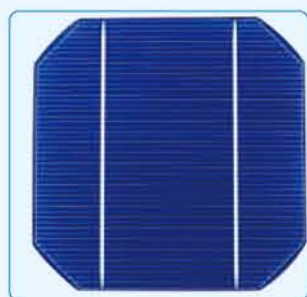


Monocrystalline Solar Panel Specification (less than 60w) 单晶 60W以下组件相关参数

Size 尺寸	Maximum power at STC(P _m) 最大功率	Open circuit voltage(V _{oc}) 开路电压	Optimum operating voltage(V _{mp}) 最佳工作电压	Optimum operating current(I _{mp}) 最佳工作电流	Short circuit Current(I _{sc}) 短路电流
540×840×30	50W	21.90V	17.20V	2.91A	3.18A
620×540×30	45W	22.30V	18.70V	2.43A	2.68A
620×540×30	40W	21.90V	18.00V	2.25A	2.48A
620×540×30	35W	21.90V	17.20V	2.05A	2.45A
620×540×30	30W	21.60V	17.20V	1.77A	2.37A
425×540×30	25W	21.90V	17.20V	1.47A	1.59A
620×290×17	20W	21.60V	17.60V	1.15A	1.24A
620×290×17	18W	21.60V	17.20V	1.02A	1.19A
425×290×17	15W	22.30V	18.30V	0.84A	0.89A
425×290×17	12W	21.90V	17.20V	0.72A	0.80A
330×290×17	10W	21.60V	17.60V	0.59A	0.62A
330×290×17	8W	21.00V	17.20V	0.48A	0.61A
240×290×17	5W	21.60V	17.20V	0.31A	0.40A

Monocrystalline Cells 125 Dia165

单晶125电池片 Dia 165



TYPE OF CELL	a(mm)	b(mm)	c(mm)	d(mm)	e(mm)	f(mm)	g(mm)	h(mm)	j(mm)
CHN 125-Dia165	125±0.50	62.50±0.05	31.25±0.50	1.51±0.25	1.80±0.05	1.0±0.25	3.30±0.05	165.0±1.0	6.5±0.50
Comments:	a--Side length of the cell; b--Center to center space for front busbars(backside electrodes); c--Space from front busbars((backside electrode)centers to cell edge; d--Space from front silver line edge to cell edge; e--Width of front busbars width; f--Space from Al edge to cell edge; g--Width of backside electrode width; h--Diagonal length of the cell; i--Space from backside electrode end to cell edge.								

Electric characteristics

Standard test conditions(STC)

Light intensity;Standard intensity 1000W/m²,Spectrum;AM1.5 spectrum;Temperature:25°C: Measurement method:IEC904-1

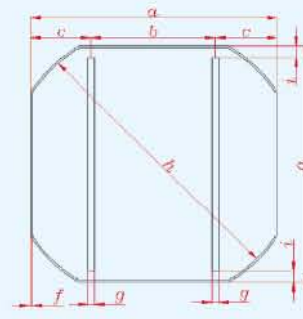
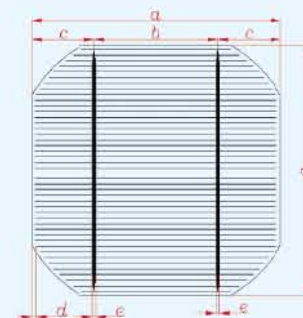
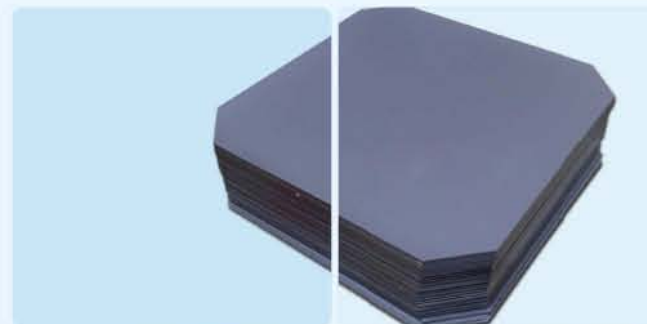
CHN 125-Dia165	Eff(%)	Pm(Wp)	Vm*(V)	Im*(A)	Voc*(V)	Isc*(A)
CHN 125-Dia165/1900	19.00	2.94	0.520	5.66	0.63	5.98
CHN 125-Dia165/1875	18.75	2.90	0.520	5.58	0.63	5.90
CHN 125-Dia165/1850	18.50	2.86	0.515	5.56	0.63	5.86
CHN 125-Dia165/1825	18.25	2.83	0.515	5.49	0.63	5.80
CHN 125-Dia165/1800	18.00	2.79	0.515	5.41	0.63	5.71
CHN 125-Dia165/1775	17.75	2.75	0.515	5.34	0.62	5.72
CHN 125-Dia165/1750	17.50	2.71	0.515	5.26	0.62	5.64
CHN 125-Dia165/1725	17.25	2.67	0.515	5.19	0.62	5.56
CHN 125-Dia165/1700	17.00	2.63	0.515	5.11	0.62	5.47
CHN 125-Dia165/1675	16.75	2.59	0.515	5.04	0.62	5.39
CHN 125-Dia165/1650	16.50	2.55	0.515	4.96	0.62	5.31
CHN 125-Dia165/1625	16.25	2.52	0.515	4.89	0.61	5.33
CHN 125-Dia165/1600	16.00	2.48	0.515	4.81	0.61	5.25
CHN 125-Dia165/1575	15.75	2.44	0.515	4.74	0.61	5.16
CHN 125-Dia165/1550	15.50	2.40	0.515	4.66	0.61	5.08
CHN 125-Dia165/1525	15.25	2.36	0.515	4.58	0.61	4.99
CHN 125-Dia165/1500	15.00	2.32	0.515	4.51	0.61	4.91
CHN 125-Dia165/1475	14.75	2.28	0.515	4.53	0.61	4.82
CHN 125-Dia165/1450	14.50	2.25	0.515	4.36	0.60	4.84
CHN 125-Dia165/1350	13.50	2.09	0.515	4.06	0.60	4.49
CHN 125-Dia165/1200	12.00	1.86	0.515	3.61	0.60	4.00

Note:Test condition are STC;Test method according to IEC904-1;Tolerance Efficiency 5% rel;Classify cells with the lap at the constant Uap=0.515V

*These columns give typical value of production performance. Just for reference.

Monocrystalline Cells 125 Dia150

单晶125电池片 Dia150



Printing patterns and parameters

TYPE OF CELL	a(mm)	b(mm)	c(mm)	d(mm)	e(mm)	f(mm)	g(mm)	h(mm)	j(mm)
CHN 125-Dia150	125±0.50	62.50±0.05	31.25±0.50	1.80±0.25	1.80±0.05	1.0±0.25	3.30±0.05	150.0±1.0	4.9±0.50
Comments:	a--Side length of the cell; b--Center to center space for front busbars(backside electrodes); c--Space from front busbars((backside electrode)centers to cell edge; d--Space from front silver line edge to cell edge; e--Width of front busbars width; f--Space from Al edge to cell edge; g--Width of backside electrode width; h--Diagonal length of the cell; i--Space from backside electrode end to cell edge.								

Electric characteristics

Standard test conditions(STC)

Light intensity;Standard intensity 1000W/m²,Spectrum;AM1.5 spectrum;Temperature:25°C: Measurement method:IEC904-10.520

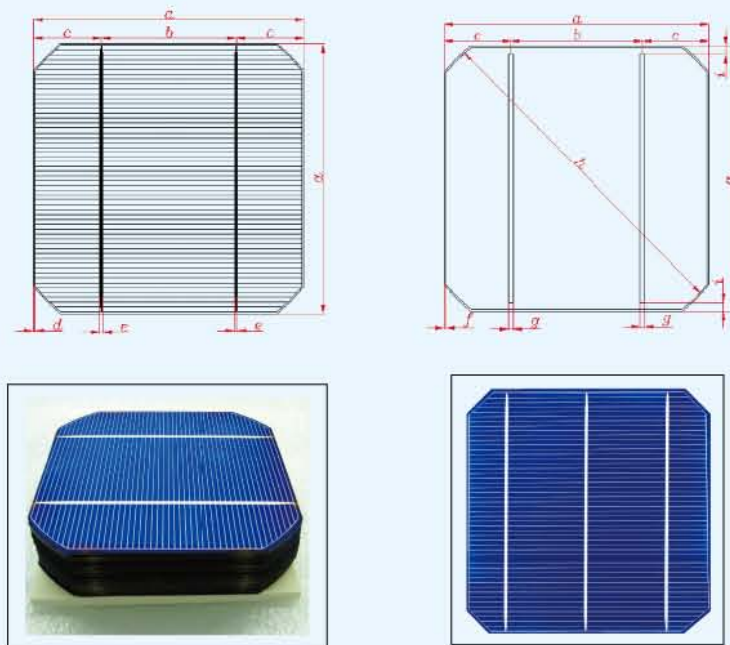
CHN 125-Dia150	Eff(%)	Pm(Wp)	Vm*(V)	Im*(A)	Voc*(V)	Isc*(A)
CHN 125-Dia150/1900	19.00	2.82	0.520	5.42	0.63	5.74
CHN 125-Dia150/1875	18.75	2.79	0.520	5.36	0.63	5.68
CHN 125-Dia150/1850	18.50	2.75	0.515	5.34	0.63	5.63
CHN 125-Dia150/1825	18.25	2.71	0.515	5.26	0.63	5.55
CHN 125-Dia150/1800	18.00	2.67	0.515	5.19	0.63	5.47
CHN 125-Dia150/1775	17.75	2.64	0.515	5.12	0.62	5.49
CHN 125-Dia150/1750	17.50	2.60	0.515	5.05	0.62	5.41
CHN 125-Dia150/1725	17.25	2.56	0.515	4.98	0.62	5.33
CHN 125-Dia150/1700	17.00	2.53	0.515	4.90	0.62	5.27
CHN 125-Dia150/1675	16.75	2.49	0.515	4.83	0.62	5.18
CHN 125-Dia150/1650	16.50	2.45	0.515	4.76	0.62	5.10
CHN 125-Dia150/1625	16.25	2.41	0.515	4.69	0.61	5.10
CHN 125-Dia150/1600	16.00	2.38	0.515	4.62	0.61	5.03
CHN 125-Dia150/1575	15.75	2.34	0.515	4.54	0.61	4.95
CHN 125-Dia150/1550	15.50	2.30	0.515	4.47	0.61	4.87
CHN 125-Dia150/1525	15.25	2.27	0.515	4.40	0.61	4.80
CHN 125-Dia150/1500	15.00	2.23	0.515	4.33	0.61	4.72
CHN 125-Dia150/1475	14.75	2.19	0.515	4.26	0.61	4.63
CHN 125-Dia150/1450	14.50	2.15	0.515	4.18	0.60	4.62
CHN 125-Dia150/1350	13.50	2.01	0.515	3.89	0.60	4.32
CHN 125-Dia150/1200	12.00	1.78	0.515	3.46	0.60	3.83

Note:Test condition are STC;Test method according to IEC904-1;Tolerance Efficiency 5% rel;Classify cells with the lap at the constant Uap=0.515V

*These columns give typical value of production performance. Just for reference.

Monocrystalline Cells 156 Dia 200

单晶156电池片 Dia 200



Electric characteristics

Standard test conditions(STC)

Light intensity;Standard intensity 1000W/m²,Spectrum;AM1.5 spectrum;Temperature:25°C; Measurement method:IEC904-1

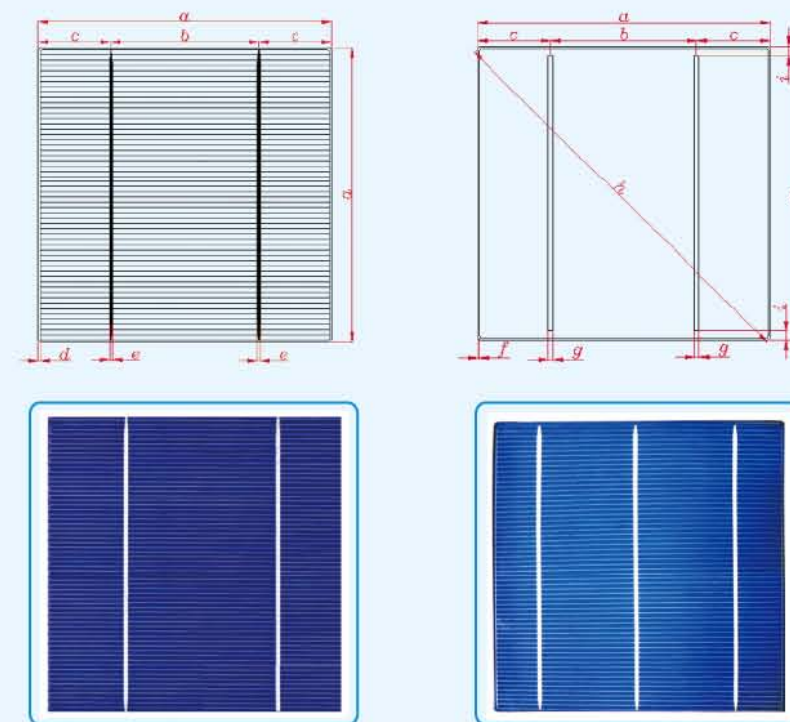
CHN 156-Dia200	Eff(%)	Pm(Wp)	Vm*(V)	Im*(A)	Voc*(V)	Isc*(A)
CHN 156-Dia200/1900	19.00	4.54	0.520	8.73	0.63	9.24
CHN 156-Dia200/1875	18.75	4.48	0.520	8.62	0.63	9.12
CHN 156-Dia200/1850	18.50	4.42	0.515	8.85	0.63	9.05
CHN 156-Dia200/1825	18.25	4.36	0.515	8.47	0.63	8.93
CHN 156-Dia200/1800	18.00	4.30	0.515	8.35	0.63	8.81
CHN 156-Dia200/1775	17.75	4.24	0.515	8.24	0.62	8.82
CHN 156-Dia200/1750	17.50	4.18	0.515	8.12	0.62	8.70
CHN 156-Dia200/1725	17.25	4.12	0.515	8.00	0.62	8.57
CHN 156-Dia200/1700	17.00	4.06	0.515	7.89	0.62	8.45
CHN 156-Dia200/1675	16.75	4.00	0.515	7.77	0.62	8.32
CHN 156-Dia200/1650	16.50	3.94	0.515	7.66	0.62	8.20
CHN 156-Dia200/1625	16.25	3.88	0.515	7.54	0.61	8.21
CHN 156-Dia200/1600	16.00	3.82	0.515	7.42	0.61	8.08
CHN 156-Dia200/1575	15.75	3.76	0.515	7.31	0.61	7.95
CHN 156-Dia200/1550	15.50	3.70	0.515	7.19	0.61	7.83
CHN 156-Dia200/1525	15.25	3.64	0.515	7.06	0.61	7.70
CHN 156-Dia200/1500	15.00	3.58	0.515	6.96	0.61	7.57
CHN 156-Dia200/1475	14.75	3.52	0.515	6.84	0.61	7.45
CHN 156-Dia200/1450	14.50	3.46	0.515	6.73	0.60	7.44
CHN 156-Dia200/1350	13.50	3.23	0.515	6.26	0.60	6.95
CHN 156-Dia200/1200	12.00	2.87	0.515	5.57	0.60	6.17

Note:Test condition are STC;Test method according to IEC904-1;Tolerance Efficiency 5% rel;Classify cells with the lap at the constant Uap=0.515V

*These columns give typical value of production performance. Just for reference.

Polycrystalline Cells 156 Dia 219

多晶156电池片 Dia 219



Electric characteristics

Standard test conditions(STC)

Light intensity;Standard intensity 1000W/m²,Spectrum;AM1.5 spectrum;Temperature:25°C; Measurement method:IEC904-1

CHN 156-Dia219	Eff(%)	Pm(Wp)	Vm*(V)	Im*(A)	Voc*(V)	Isc*(A)
CHN 156-Dia219/1750	17.50	4.26	0.500	8.52	0.62	8.98
CHN 156-Dia219/1725	17.25	4.20	0.500	8.40	0.62	8.86
CHN 156-Dia219/1700	17.00	4.14	0.500	8.27	0.62	8.73
CHN 156-Dia219/1675	16.75	4.08	0.500	8.15	0.62	8.60
CHN 156-Dia219/1650	16.50	4.02	0.500	8.03	0.62	8.48
CHN 156-Dia219/1625	16.25	3.95	0.500	7.91	0.61	8.46
CHN 156-Dia219/1600	16.00	3.89	0.500	7.79	0.61	8.34
CHN 156-Dia219/1575	15.75	3.83	0.500	7.67	0.61	8.21
CHN 156-Dia219/1550	15.50	3.77	0.500	7.54	0.61	8.08
CHN 156-Dia219/1525	15.25	3.71	0.500	7.42	0.61	7.95
CHN 156-Dia219/1500	15.00	3.65	0.500	7.30	0.61	7.82
CHN 156-Dia219/1475	14.75	3.59	0.500	7.18	0.61	7.69
CHN 156-Dia219/1450	14.50	3.53	0.500	7.06	0.60	7.69
CHN 156-Dia219/1425	14.25	3.47	0.500	6.94	0.60	7.56
CHN 156-Dia219/1400	14.00	3.41	0.500	6.81	0.60	7.43
CHN 156-Dia219/1300	13.00	3.16	0.500	6.69	0.60	6.88
CHN 156-Dia219/1200	12.00	2.92	0.500	6.57	0.60	6.36

Note:Test condition are STC;Test method according to IEC904-1;Tolerance Efficiency 5% rel;Classify cells with the lap at the constant Uap=0.515V

*These columns give typical value of production performance. Just for reference.

TYPE OF CELL	a(mm)	b(mm)	c(mm)	d(mm)	e(mm)	f(mm)	g(mm)	h(mm)	j(mm)
CHN 156-Dia219	156±0.50	78.0±0.05	39.0±0.50	1.80±0.25	1.80±0.05	1.0±0.25	3.30±0.05	219.0±1.0	4.90±0.50

Comments:

a--Side length of the cell;

b--Center to center space for front busbars(backside electrodes);

c--Space from front busbars((backside electrode)centers to cell edge;

d--Space from front silver line edge to cell edge;

e--Width of front busbars width;

f--Space from Al edge to cell edge;

g--Width of backside electrode width;

h--Diagonal length of the cell;

i--Space from backside electrode end to cell edge.

a.侧的长度;

b.中心为(背面电极)前端汇流排中心的空间;

c.空间,从(背面电极)前母线中心,元件边缘;

d.从前线太空银线边缘元件的边缘;

e.宽度宽度前母线;

f.从人工智能太空边缘细胞的边缘;

g.宽度背面电极的宽度;

h.单元格的对角线长度;

i.从背面电极结束太空元件边缘.

Monocrystalline Wafer 单晶硅片

Monocrystalline Wafer Dimension 单晶硅片尺寸

Type of Wafer 硅片类型	Side Length 边长a (mm)	Diagonal 对角 h (mm)
Monocrystalline Wafer 单晶硅片	125.0±0.5	150.0±1.0
	125.0±0.5	165.0±1.0
	156.0±0.5	200.0±1.0

Monocrystalline Wafer Technical Characteristic 单晶硅片技术特性

Item 项目	Parameter Requirements 参数要求	Parameter Requirements 参数要求	Parameter Requirements 参数要求
Diameter 直径尺寸	125×125mm±0.5mm	125×125mm±0.5mm	156×156mm±0.5mm
Diagonal Size 对角线尺寸	150mm	165mm	200mm
Orientation 晶向	<100>±3°	<100>±3°	<100>±3°
Resistivity 电阻率	0.5-6.0Ω.cm,6-10Ω.cm	0.5-6.0Ω.cm,6-10Ω.cm	0.5-6.0Ω.cm,6-10Ω.cm
Minority Carrier Lifetime 少子寿命	>10us	>10us	>10us
Radial Resistance Change 径向电阻变化	<25%	<25%	<25%
Oxygen Content 氧含量	≤1.0×10 ¹⁸ at/cm ³	≤1.0×10 ¹⁸ at/cm ³	≤1.0×10 ¹⁸ at/cm ³
Carbon Content 碳含量	≤5.0×10 ¹⁴ at/cm ³	≤5.0×10 ¹⁴ at/cm ³	≤5.0×10 ¹⁴ at/cm ³
TTV 硅片弯曲度	≤35μm	≤35μm	≤35μm
Thickness 厚度	200±20μm	200±20μm	200±20μm
Edge chip 崩边	≤2mm	≤2mm	≤2mm
Saw mark 线痕	15μm	15μm	15μm

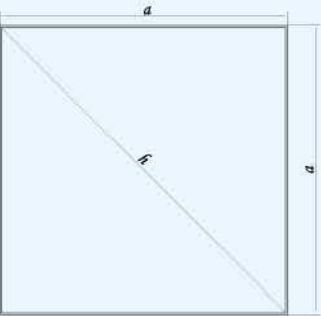
Polycrystalline Wafer 多晶硅片

Polycrystalline Wafer Dimension 多晶硅片尺寸

Type of Wafer 硅片类型	Side Length 边长a (mm)	Diagonal 对角 h (mm)
Polycrystalline 多晶硅片	156.0±0.5	219.2±1.0

Polycrystalline Wafer Technical Characteristic 多晶硅片技术特性

Item 项目	Parameter Requirements 参数要求
Diameter 直径尺寸	156×156mm±0.5mm
Diagonal Size 对角线尺寸	219mm
Orientation 晶向	<100>±3°
Resistivity 电阻率	0.5-0.3Ω.cm
Minority Carrier Lifetime 少子寿命	>2.0us
Radial Resistance Change 径向电阻变化	<25%
Oxygen Content 氧含量	≤1.0×10 ¹⁸ at/cm ³
Carbon Content 碳含量	≤5.0×10 ¹⁴ at/cm ³
TTV 硅片弯曲度	≤35μm
Thickness 厚度	200±20μm
Edge chip 崩边	≤2mm
Saw mark 线痕	15μm



Building Integrated PV 幕墙组件

Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶硅太阳能电池 125mm×125mm
No.of cells and connections 电池片数量及串接	36(4×9)
Dimension of module(mm) 尺寸	1200×540×30
Weight 重量	8kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

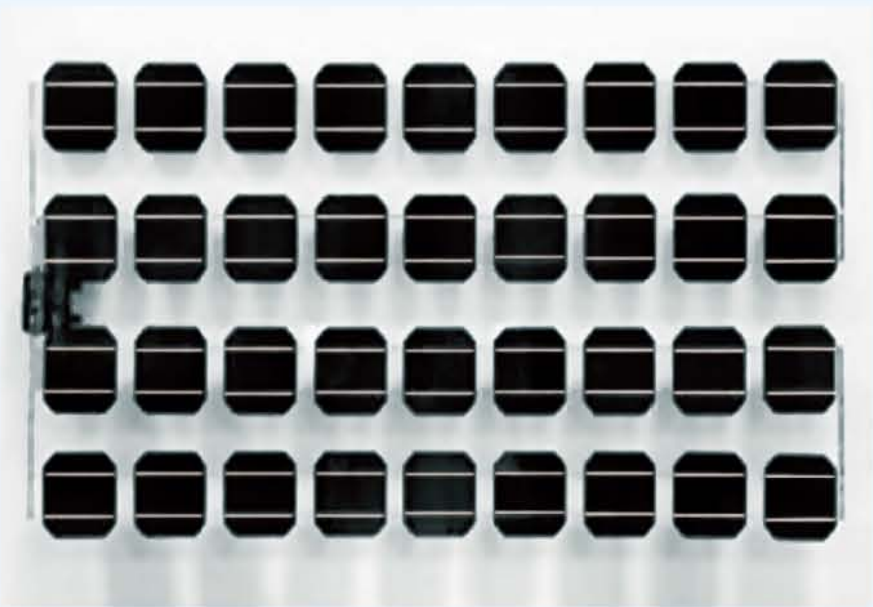
NOCT 额定运行电池温度		45℃±2℃
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

Output 输出 NOCT:Nominal Operation Cell Temperature

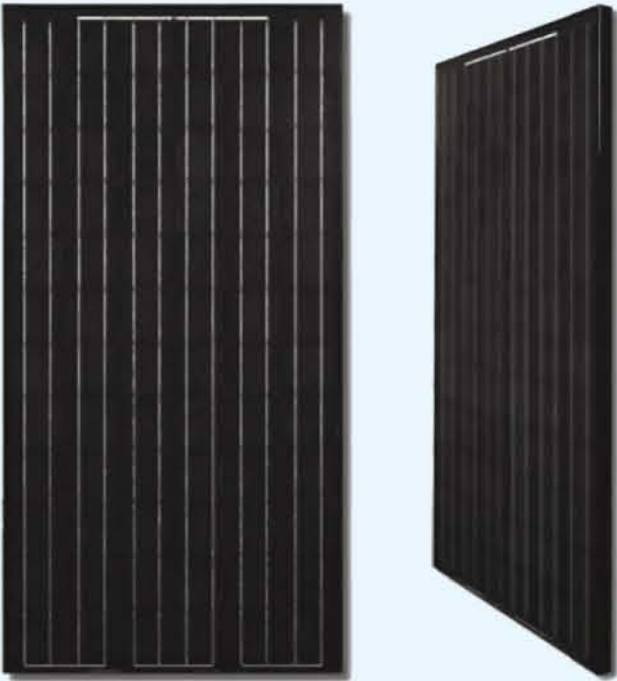
Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm²)
symmetrical length 对称长度	900mm
Connection 连接	Type IV

Characteristics 特征

Model 型号	CHN60-36M	CHN70-36M	CHN80-36M	CHN90-36M	CHN95-36M
Open circuit voltage(Voc) 开路电压	21.60V	21.60V	21.60V	22.30V	22.30V
Optimum operating voltage(Vmp) 最佳工作电压	17.20V	17.20V	17.60V	18.70V	18.80V
Short circuit Current(Isc) 短路电流	4.74A	4.91A	4.95A	5.36A	5.60A
Optimum operating current(Imp) 最佳工作电流	3.52A	4.11A	4.55A	4.81A	5.05A
Maximum power at STC(Pm) 最大功率	60W	70W	80W	90W	95W



Black solar panel 黑色背板组件



Characteristics 特征

Model 型号	CHN150-72M	CHN160-72M	CHN170-72M	CHN180-72M	CHN185-72M	CHN190-72M	CHN195-72M	CHN200W-72M
Open circuit voltage(Voc) 开路电压	43.90V	44.60V	44.60V	44.60V	44.20V	44.30V	44.60V	45.00V
Optimum operating voltage(Vmp) 最佳工作电压	35.30V	36.00V	36.70V	38.20V	37.00V	37.10V	37.00V	37.00V
Short circuit Current(Isc) 短路电流	4.77A	4.95A	5.11A	5.23A	5.44A	5.60A	5.72A	5.80A
Optimum operating current(Imp) 最佳工作电流	4.27A	4.48A	4.67A	4.74A	5.01A	5.12A	5.30A	5.41A
Maximum power at STC(Pm) 最大功率	150W	160W	170W	180W	185W	190W	195W	200W

Specifications 规格

Cell 电池片	Monocrystalline silicon solar cells 单晶硅太阳能电池 125mm×125mm
No.of cells and connections 电池片数量及串接	72(6×12)
Dimension of module(mm) 尺寸	1580×808×40
Weight 重量	16kg

Limits 限度

Operating temperature 工作温度	-40 to +85℃
Maximum system voltage 最大系统电压	1000 V DC

Temperature and Coefficients 温度及系数

NOCT 额定运行电池温度		45℃±2℃
Current temperature coefficient 电流温度系数	%/k	0.06±0.01
Voltage temperature coefficient 电压温度系数	mV/k	-(155±10)
Power temperature coefficient 功率温度系数	%/k	-(0.5±0.05)

Output 输出 NOCT:Nominal Operation Cell Temperature

Type of output terminal 输出端类型	Junction box 接线盒
Cable 电缆	LAPP(4.0mm²)
Symmetrical length 对称长度	900mm
Connection 连接	Type IV

Solar System

Photovoltaic Power Generation System is a system that converts solar power into electrical energy by making use of the photovoltaic effect.

The main components of Photovoltaic Power Generation System are solar cells, batteries, controllers and inverters.

Photovoltaic Power Generation System is divided into independent solar photovoltaic system and grid-connected solar photovoltaic system.

Independent solar photovoltaic power generation means that the solar photovoltaic power generation is not connected with the grid, and its typical characteristic is it requires batteries to store the energy for electricity at night. Independent solar photovoltaic power generation is mainly used in remote villages inside civil scope, such as home systems and village-level solar photovoltaic power stations; while in the industrial scope it is mainly for telecommunication, satellite radio & television, and solar water pump. It can also be composed into a mixed power generation system in areas with wind power and small-sized hydroelectric power, such as the complementary system with wind power / solar power generation.

Solar power generation system is made up of solar panels, solar controllers, and batteries (groups). If its output power is 220V or 110V alternating current, it also needs to be equipped with an inverter. The functions of each part are as follow:

(1) Solar Panel: Solar Panels are the core of the solar power generation system as well as the part with the highest value. Its role is to convert the sun's radiation into electrical energy or send the radiation to batteries for storage or promote the load performance. The quality and cost of Solar Panels will directly determine the quality and cost of the entire system.

(2) Solar Controller: The role of Solar Controller is to control the working status of the whole system, and protect batteries from being over-charged or over-discharged. In a place with large temperature difference, qualified controller should also have the function of temperature compensation.

(3) Battery: It is always lead-acid battery. In a small system, it can also be a nickel-hydrogen battery, nickel-cadmium battery or lithium battery. Its role is to store the electrical energy produced by Solar Panel at sunshine time and release it when needed.

(4) Inverter: In many occasions, it is required to provide the alternating power supply of 220VAC and 110VAC, because the direct outputs of solar power are generally 12VDC, 24VDC, 48VDC.

系统工程

光伏发电系统是将太阳能转换成电能的发电系统，利用的是光生伏打效应。

光伏发电系统的主要部件是太阳能电池、蓄电池、控制器和逆变器。

光伏发电系统分为独立太阳能光伏发电系统和并网太阳能光伏发电系统。

独立太阳能不需与电网连接，典型特征为需要蓄电池来存储夜晚用电的能量。主要用于边远的乡村民用范围，如家庭系统、太阳能光伏电站；在工业范围内主要用于电讯、卫星广播电视、乡村水平的太阳能水泵，在具备风力发电和小水电的地区还可以组成混合发电系统，如风力发电/太阳能发电互补系统等。

太阳能发电系统由太阳能电池组、太阳能控制器、蓄电池（组）组成。如输出电源为交流220V或110V，还需要配置逆变器。各部分的作用为：

（一）太阳能电池板：太阳能电池板是太阳能发电系统中的核心部分，也是太阳能发电系统中价值最高的部分。其作用是将太阳的辐射能力转换为电能，或送往蓄电池中存储起来，或推动负载工作。太阳能电池板的质量和成本将直接决定整个系统的质量和成本。

（二）太阳能控制器：太阳能控制器的作用是控制整个系统的工作状态，并对蓄电池起到过充电保护、过放电保护的作用。在温差较大的地方，合格的控制器还应具备温度补偿的功能。

（三）蓄电池：一般为铅酸电池，小微型系统中，也可用镍氢电池、镍镉电池或锂电池。其作用是在有光照时将太阳能电池板所发出的电能储存起来，到需要的时候再释放出来。

（四）逆变器：在很多场合，都需要提供220VAC、110VAC的交流电源。由于太阳能的直接输出一般都是12VDC、24VDC、48VDC。

Schematic Diagram of Photovoltaic Power Generation System
光伏发电系统示意图



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