



深圳市泰晶太阳能科技有限公司

MACSUN SOLAR ENERGY TECHNOLOGY CO., LIMITED

[WWW.MACSUNSOLAR.COM](http://WWW.MACSUNSOLAR.COM)  
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# COMPANY PROFILE

## 关于泰晶



深圳市泰晶太阳能科技有限公司是一家专业生产太阳能组件的先进企业。公司是拥有先进的全自动生产线、电池片分选测试仪器、全自动串焊机、自动排版机、全自动层压机，先进的EL测试仪器等设备。我们采用优质电池片、EVA、TPT、钢化玻璃、硅胶等原材料进行生产。公司成功研制出的掺镓硅片，能使光伏组件的衰减率在10年内控制在5%以下，20年内控制在10%以下，显著缩短了客户对光伏电站的投资回报期和发电效率。泰晶太阳能的太阳能电池片达到800MW的产能，太阳能组件达到900MW的产能。我们采用国际先进的生产设备和工艺技术来生产硅片、电池片和组件，自动焊接机和带EL自动检测仪的自动封装线，使产品的质量和产量得到可靠保证！

作为新能源产业的一员，泰晶人在追求发展的同时，十分注重产品质量和品牌建设，重视环境与经济协调发展，为客户创造价值并履行社会责任。企业目前已通过ISO9001、ISO14001、OHSMS18001认证，公司产品通过TUV、UL、MCS和KEMCO等国际权威机构的认证，并通过多家保险公司的审核，建立了良好的合作关系。我们严格遵循“绿色使命”，我们参加了作为光伏循环的一部分，欧洲国际光伏组织PV CYCLE积极致力于建立废旧太阳能组件的自愿收集和回收系统。为了确保您对光伏组件的投资安全，泰晶的产品都经过独立的质量实验室的检测，确保了客户的利益。

我们拥有人力资本和原材料双重价格优势，产品远销欧洲、北美、澳大利亚、非洲和其它亚洲国家。公司位于中国经济最发达的珠江三角洲地区—深圳现代工业园内，这里环境优美、风景秀丽、地理条件优越。交通十分便捷。离香港很近。我们在深圳和香港都有自己的仓库。欢迎国内外客户参观来访。

Macsun Solar is a brand-new PV factory founded in 2004, under the flag of the Ruixin Group (since 1986), Macsun Solar has built a vertically integrated solar product value chain, with an overall annual capacity of approximately 800MW of Solar Cells and 900MW of solar panels. The company has a number of experienced professionals who have been engaged in the fields of solar photovoltaic product development, production and marketing for years.

The company has furthermore established technical research cooperation with couples of colleges and universities as well as research institutes, therefore it enjoys strong technical support, which enables its product technical indexes could maintain the leading position domestically. The company owns production lines for solar cell, solar module and system application products, and main products include solar module, solar street light, solar power generation system, etc.

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

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

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



# 156.75mm Mono & Poly Crystalline Solar Cells

## 156.75mm 单晶硅/多晶硅太阳能电池片



泰晶太阳能电池片生产线采用德国，意大利等进口设备，严格控制产品质量。致力于高效、低成本新型电池的研发，是国内最先掌握国际先进光伏技术——P/N型硅片高效电池，并将该技术大规模产业化的团队之一。

### INTRODUCTION

Macsun Solar imported the advanced producing lines from Germany, Italy and others, with strict quality controlling. Our R & D center dedicated to efficient, low-cost new solar cell research and development, is the first to master the international advanced photovoltaic technology - P/N-type silicon efficient solar cells, and the technology of large-scale industrialization of the team.

### 156.75mm Mono Crystalline Solar Cells

### 156.75mm 单晶硅太阳能电池片

#### FEATURES 特点

- 寿命长，可靠性强 Long Life, High Reliability;
- 高电荷吸收能力 Highly charged absorption capacity
- 高效率，低衰减 High efficiency, PID Free



#### PROPERTIES 特性

产品型号 Product model	156.75mm单晶硅太阳能电池片电性能 156.75mm Mono Crystalline solar cell datasheet			
	Impp(A)	Umpp(V)	Isc(A)	Uoc
21.60% 5.28W	9.29	0.568	9.76	0.667
21.50% 5.25W	9.26	0.567	9.73	0.666

21.40% 5.23W	9.24	0.566	9.72	0.665
21.30% 5.20W	9.22	0.564	9.69	0.664
21.20% 5.18W	9.20	0.563	9.67	0.663
21.10% 5.16W	9.19	0.562	9.66	0.662
21.00% 5.13W	9.16	0.560	9.64	0.661
20.90% 5.11W	9.14	0.559	9.62	0.660
20.80% 5.08W	9.12	0.557	9.60	0.658
20.60% 5.03W	9.07	0.555	9.56	0.656
20.40% 4.98W	9.03	0.552	9.52	0.654
20.20% 4.94W	8.99	0.550	9.49	0.652

## 156.75mmmm Poly Crystalline Solar Cells

### 156.75mmmm 多晶硅太阳能电池片

#### FEATURES 特点

- 寿命长，可靠性强 Long Life, High Reliability;
- 高荷电吸收能力 Highly charged absorption capacity
- 高效率，低衰减 High efficiency, PID Free

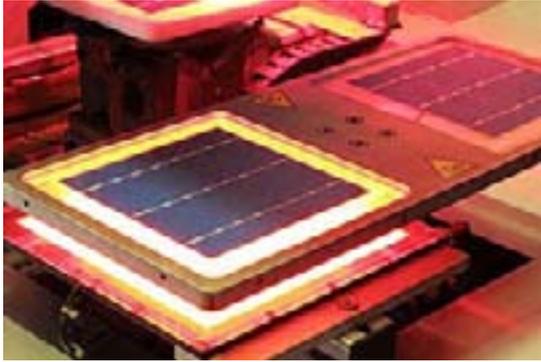


#### PROPERTIES 特性

产品型号 Product model	156.75mmmm多晶硅太阳能电池片电性能 156.75mmmm Poly Crystalline solar cell datasheet			
	Impp(A)	Umpp(V)	Isc(A)	Uoc
19.8%4.86W	8.679	0.560	9.198	0.659
19.6% 4.81W	8.651	0.556	9.182	0.655
19.4%4.77W	8.631	0.552	9.154	0.651
19.2% 4.72W	8.609	0.548	9.126	0.647
19.00% 4.67W	8.54	0.547	8.99	0.645
18.80%4.62W	8.49	0.544	8.96	0.643
18.60% 4.57W	8.45	0.541	8.92	0.640
18.40% 4.52W	8.40	0.538	8.89	0.638
18.30% 4.50W	8.38	0.537	8.87	0.637
18.20% 4.47W	8.36	0.535	8.85	0.635
18.10%4.45W	8.34	0.534	8.83	0.634
18.00% 4.42W	8.31	0.532	8.81	0.632

# Solar Module Producing Lines

## 太阳能组件生产设备 >>>>



# Mono Crystalline Solar Modules

## 单晶硅太阳能组件 >>>

MS-SP6-72M Mono Crystalline Solar Module 72 cells, 350-385 W

MS-SP6-72M 单晶硅太阳能组件 72片电池片, 350-385W

### FEATURES 特点

- 泰晶太阳能生产的72片电池片封装的MS-SP6-72M单晶硅太阳能组件更适用于大型的电力工程，输出效率更高。（普通的单晶硅太阳能组件可以达到350Wp到385Wp, 黑色组件也可以达到385Wp。）

The 72-celled MS-SP6-72M monocrystalline modules produced by Macsun Solar (power output 350Wp up to 385Wp, black modules up to 385Wp) are best deployed in larger installations requiring higher power outputs.

- MS-SP6-72M系列太阳能组件符合国际标准的高功率产品输出，具有25年线性的输出效率保障，进一步保证了你的投资回报的增长。具有EN 60068-2-68认证，它能抵抗沙尘的影响，因此，在挑战性的恶劣环境项目中具有更高选择价值。

The MS-SP6-72M series is compliant to high international standards and features a 25-year linear warranty on product outputs which further ensures your return on investments over time. Certified according to EN 60068-2-68, it is resistant to the impact of sand and dust and is thus a valuable choice for projects in challenging environments.

- 高转换效率，可达到19.84% High module efficiency, up to 19.84%
- 行业领先的25年线性输出功率保证 Industry-leading 25-year linear warranty on outputs

- 高电性能输出 Higher power outputs

### WARRANTIES 质保

- 10年生产工艺售后保障。10 years on materials workmanship warranty
- 25年输出效率保障：在25年以内，首年3.5%效率衰减，然后按0.68%效率衰减。25 years output warranty (monocrystalline): 3.5% in the 1st year, thereafter 0.68% per year ending with 80% in the 25th year



## ELECTRICAL CHARACTERISTICS AT STC 太阳能组件电性能

型号 TYPE		MSM72S01-370/PR	MSM72S01-375/PR	MSM72S01-380/PR	MSM72S01-385/PR
最大功率 Maximum Power	Pmax(W)	370W	375W	380W	385W
最大功率公差 Tolerance Value for Power	%	0~+5%	0~+5%	0~+5%	0~+5%
最高电压 Maximum Power Voltage	Vmpp(V)	39.45	39.75	40.03	40.29
最大电流 Maximum Power Current	Impp(A)	9.38	9.44	9.50	9.56
开路电压 Open Circuit Voltage	Voc(V)	48.18	48.45	48.71	48.98
短路电流 Short Circuit Current	Isc(A)	9.91	9.98	10.05	10.11
组件光转换效率 Module Efficiency	$\eta$	>19.07%	>19.33%	>19.60%	>19.84%

## MECHANICAL SPECIFICATIONS 组件规格

电池片规格 Solar Cells	单晶硅6寸(6X12片) 156.75x156.75mm Monocrystalline cell, 6" (6x12)
接线盒 Junction box	IP67, 3个二极管 IP67, combined with 3 by-pass diodes
钢化玻璃 Front Glass Thickness	高透明度, 低铁, 钢化玻璃3.2毫米(氟气涂层) High transparency, low iron, tempered glass 3.2 mm (AR-coating)
连接线/接头 Connecting Cable/Connector	兼容MC4接头配置/4mm <sup>2</sup> 1200mm连接线4 mm <sup>2</sup> , 1200 mm Cable, MC4-compatible
铝框规格 Frame Dimension	1960 × 991 × 40, 黑色或者白色铝合金边框 Anodized aluminum alloy. Frame in alu or black, backside in white or black
重量 Weight	26.7 kg±5%
每集装箱最大装货量 Quantity in FCL Containers	26片一托盘, 每40尺柜572片 26 pcs/ pallet, 572 pcs per 40GP Container

## MS-SP6-60M Mono Crystalline Solar Module 60 cells, 300-320 W

## MS-SP6-60M 单晶硅太阳能组件60片电池片, 300-320W

## ELECTRICAL CHARACTERISTICS AT STC 太阳能组件电性能

型号 TYPE		MS-SP6-60-305M	MS-SP6-60-310M	MS-SP6-60-315M	MS-SP6-60-320M
最大功率 Maximum Power	Pmax(W)	305W	310W	315W	320W
最大功率公差 Tolerance Value for Power	%	0~+5%	0~+5%	0~+5%	0~+5%
最高电压 Maximum Power Voltage	Vmpp(V)	32.57	32.84	33.16	33.48
最大电流 Maximum Power Current	Impp(A)	9.37	9.44	9.50	9.56
开路电压 Open Circuit Voltage	Voc(V)	40.05	40.30	40.53	40.80
短路电流 Short Circuit Current	Isc(A)	9.85	9.91	9.98	10.05
组件光转换效率 Module Efficiency	$\eta$	>18.67%	>18.98%	>19.28%	>19.59%

## MECHANICAL SPECIFICATIONS 组件材料规格

电池片规格 Solar Cells	单晶硅6寸 (6X10片) 156.75x156.75mm Monocrystalline cell, 6 "(6x10)
接线盒 Junction box	IP67, 3个二极管 IP67, combined with 3 by-pass diodes
钢化玻璃 Front Glass Thickness	高透明度, 低铁, 钢化玻璃3.2毫米 (氟气涂层) High transparency, low iron, tempered glass 3.2 mm (AR-coating)
连接线/接头 Connecting Cable/Connector	兼容MC4接头配置/4mm <sup>2</sup> 900mm连接线 4 mm <sup>2</sup> , 900 mm, MC4-compatible
铝框规格 Frame Dimension	1650 × 991 × 35 mm, 黑色或者白色铝合金边框 Anodized aluminum alloy. Frame in alu or black, backside in white or black
重量 Weight	19.3KG±5%
每集装箱最大装货量 Quantity in FCL Containers	26片每托盘, 728片每40尺柜 26 pcs/pallet, 728 pcs per 40GP Container



## Poly Crystalline Solar Modules

## 多晶硅太阳能组件 &gt;&gt;&gt;&gt;

MS-SP6-72P Poly Crystalline Solar Module 72 cells, 315-335 W

MS-SP6-72P 多晶硅太阳能组件 72片电池片, 315-335W

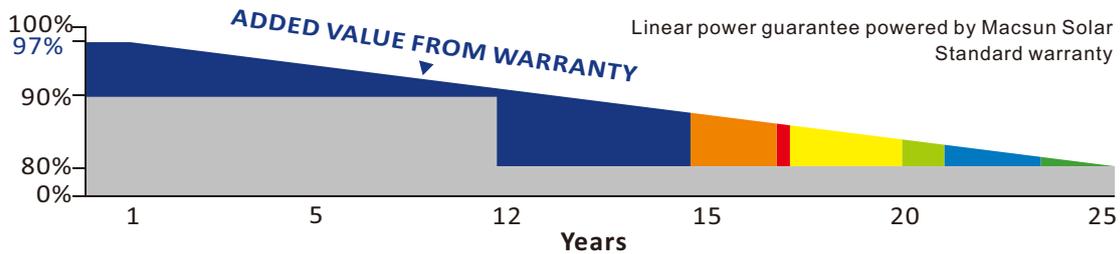
## FEATURES 特点

- 低日照强度下, 组件性能良好 Excellent Performance During Low Solar Radiation
- 组件最大功率公差为0~+5% Guaranteed Positive Tolerance 0 to +5% For Each Module
- 组件质保 (25年) 25 Year Linear Power Guarantee

## WARRANTIES 质保

- ▶ 10年生产工艺售后保障。10 years on materials and workmanship
- ▶ 25年输出效率保障: 在25年以内, 首年3.5%效率衰减, 然后按0.68%效率衰减。  
25 years output warranty (poly crystalline): 3.5% in the 1st year, thereafter 0.68% per year ending with 80% in the 25th year





## ELECTRICAL CHARACTERISTICS AT STC 太阳能组件电性能

型号 TYPE		MS-SP6-72-320P	MS-SP6-72-325P	MS-SP6-72-330P	MS-SP6-72-335P
最大功率 Maximum Power	Pmax(W)	320W	325W	330W	335W
最大功率公差 Tolerance Value for Power	%	0~+5%	0~+5%	0~+5%	0~+5%
最高电压 Maximum Power Voltage	Vmpp(V)	37.28	37.39	37.65	37.83
最大电流 Maximum Power Current	Impp(A)	8.58	8.69	8.77	8.87
开路电压 Open Circuit Voltage	Voc(V)	9.09	9.17	9.28	9.35
短路电流 Short Circuit Current	Isc(A)	9.00	9.06	9.12	9.18
组件光转换效率 Module Efficiency	$\eta$	>16.49%	>16.75%	>17.00%	>17.26%

## MECHANICAL SPECIFICATIONS 组件材料规格

电池片规格 Solar Cells	单晶硅6寸(6X12片) 156.75x156.75mm 5BB Monocrystalline cell, 6 "(6x12)
接线盒 Junction box	IP67, 3个二极管 IP67, combined with 3 by-pass diodes
钢化玻璃 Front Glass Thickness	高透明度, 低铁, 钢化玻璃3.2毫米(氟气涂层) High transparency, low iron, tempered glass 3.2 mm (AR-coating)
连接线/接头 Connecting Cable/Connector	兼容MC4接头配置/4mm <sup>2</sup> 1200mm连接线 4 mm <sup>2</sup> , 1200 mm, MC4-compatible
铝框规格 Frame Dimension	1960 × 991 × 40mm, 黑色或者白色铝合金边框 Anodized aluminum alloy. Frame in alu or black, backside in white or black
重量 Weight	26.7 kg±5%
每集装箱最大装货量 Quantity in FCL Containers	26片一托盘, 每40尺柜572片 26 pcs/pallet, 572 pcs per 40GP Container



## MS-SP6-60P Poly Crystalline Solar Module 60 cells, 260-280 W

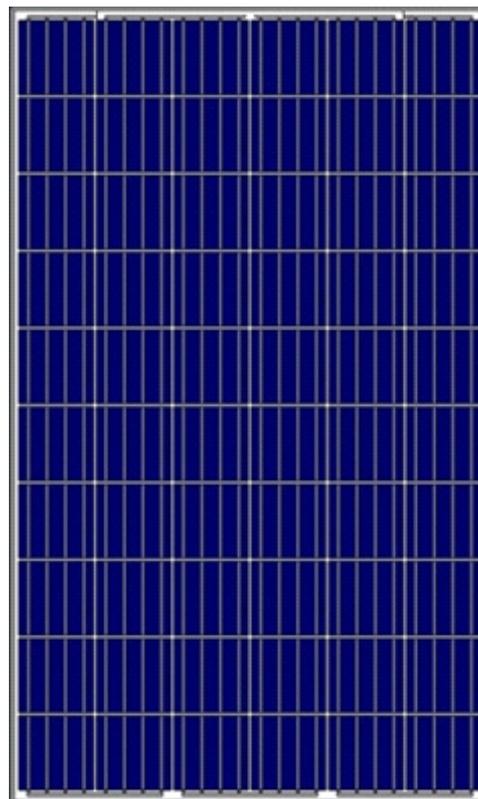
## MS-SP6-60P 多晶硅太阳能组件 60片电池片, 260-280W

## ELECTRICAL CHARACTERISTICS AT STC 太阳能组件电性能

型号 TYPE		MS-SP6-60-265P	MS-SP6-60-270P	MS-SP6-60-275P	MS-SP6-60-280P
最大功率 Maximum Power	Pmax(W)	265W	270W	275W	280W
最大功率公差 Tolerance Value for Power	%	0~+5%	0~+5%	0~+5%	0~+5%
最高电压 Maximum Power Voltage	Vmpp(V)	30.9	31.13	31.3	31.6
最大电流 Maximum Power Current	Impp(A)	28.57	8.67	48.77	18.86
开路电压 Open Circuit Voltage	Voc(V)	37.95	38.17	38.38	38.65
短路电流 Short Circuit Current	Isc(A)	9.11	9.18	9.29	9.37
组件光转换效率 Module Efficiency	$\eta$	>16.30%	>16.53%	>16.83%	>17.14%

## MECHANICAL SPECIFICATIONS 组件材料规格

电池片规格 Solar Cells	单晶硅6寸(6X10片) 156.75x156.75mm 4BB/5BB Monocrystalline cell, 6"(6x10)
接线盒 Junction box	IP67, 3个二极管 IP67, combined with 3 by-pass diodes
钢化玻璃 Front Glass Thickness	高透明度, 低铁, 钢化玻璃3.2毫米(氟气涂层) High transparency, low iron, tempered glass 3.2 mm (AR-coating)
连接线/接头 Connecting Cable/Connector	兼容MC4接头配置/4mm <sup>2</sup> 900mm连接线 4 mm <sup>2</sup> , 900 mm Cable, MC4-compatible
铝框规格 Frame Dimension	1650 × 991 × 35mm, 黑色或者白色铝合金边框 Anodized aluminum alloy. Frame in alu or black, backside in white or black
重量 Weight	19.3 kg±5%
每集装箱最大装货量 Quantity in FCL Containers	26片每托盘, 728片每40尺柜 26 pcs/pallet, 728 pcs per 40GP Container r



MS-SP6-BIPV60 BIPV Mono Crystalline Solar Module 60 cells, 300-320 W

MS-SP6- BIPV60 BIPV单晶硅太阳能组件 60片电池片 , 300-320W

## ELECTRICAL CHARACTERISTICS AT STC 太阳能组件电性能

型号 TYPE		MS-SP6-60-305M	MS-SP6-60-310M	MS-SP6-60-315M	MS-SP6-60-320M
最大功率 Maximum Power	Pmax(W)	305W	310W	315W	320W
最大功率公差 Tolerance Value for Power	%	0~+5%	0~+5%	0~+5%	0~+3%
最高电压 Maximum Power Voltage	Vmpp(V)	32.57	32.84	33.16	33.78
最大电流 Maximum Power Current	Impp(A)	9.37	9.44	9.50	9.56
开路电压 Open Circuit Voltage	Voc(V)	40.05	40.30	40.53	40.80
短路电流 Short Circuit Current	Isc(A)	9.85	9.91	9.98	10.05
组件光转换效率 Module Efficiency	$\eta$	>18.67%	>18.98%	>19.28%	>19.59%

Front Side



Back Side



## MECHANICAL SPECIFICATIONS 组件材料规格

电池片规格 Solar Cells	单晶硅6寸(6X10片) 156.75x156.75mm 5BB Monocrystalline cell, 6 "(6x10)
接线盒 Junction box	IP67, 3个二极管 IP67, combined with 3 by-pass diodes
钢化玻璃 Front Glass Thickness	高透明度, 低铁, 钢化玻璃3.2毫米(氟气涂层), 双面玻璃 High transparency, low iron, tempered glass 3.2 mm (AR-coating), Double Class
连接线/接头 Connecting Cable/Connector	兼容MC4接头配置/4mm <sup>2</sup> 900mm连接线 4 mm <sup>2</sup> , 900 mm Cable, MC4-compatible
尺寸 Dimension	1660*992*6.5 mm
重量 Weight	24 kg±5%
每集装箱最大装货量 Quantity in FCL Containers	36片每托盘, 1008片每40尺柜 36 pcs/ pallet, 1008 pcs per 40GP Container r



# Concentrated Photovoltaic ( CPV ) Solar Modules

## 聚光 ( CPV ) 太阳能组件

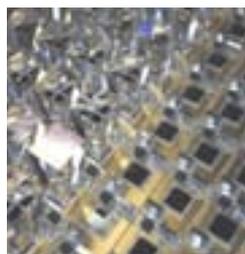
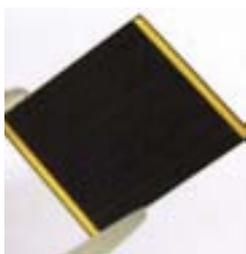
MS-CPV-360W Concentrated Photovoltaic ( CPV ) Solar Modules 360W

MS-CPV-360W 聚光太阳能组件 360W



### FEATURES 特点

- 聚光光伏组件由12个独立的聚光接收器模块、一块阵列式平板透镜和铝材框架组成。宽泛的入射角容差设计，有效的降低了追日追踪器等平衡系统的成本。从组件到追踪器，全方位密封设计确保产品对可靠性的要求，实现防水延年。聚光光路设计中，入射光通过三级聚光部件进行聚光。其中初级光学器件—菲涅尔非成像玻璃透镜装配到组件框架结构上，二三级光学器件装配到聚光接收器模块上。这种设计可提供是一个非常宽的入射接收角（ $\pm 0.86^\circ$ ），并能够对发生色散的光线提高均匀度。有效的提高功率和效率，降低了成本。



#### ● Features and Benefits

Macsun Solar CPV technology combines GaAS multi-junction solar cells into a high concentration flat fresnel lens design. At over 1000 times sunlight, the module achieves greater than 27% conversion efficiency, establishing a new IEC benchmark for CPV systems.

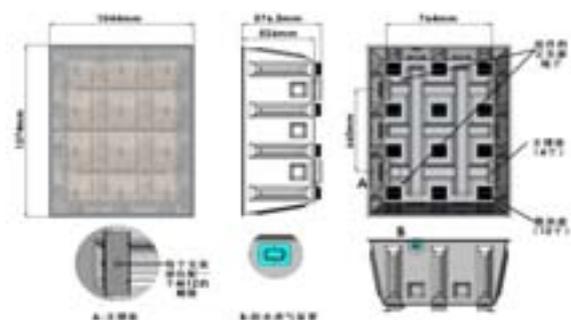


#### ● More Power

- Enabled by advanced triple junction cells self-manufactured
- Less than half the degradation in power output due to temperature of silicon panels
- Employs refractive, non-imaging optical lens and multilevel concentrator parts which avoids chromatic aberration

#### ● Reliable & Robust Design

- Proven materials, partially tempered front glass and a sturdy anodized frame allowed module to operate reliably in multi-array mounting configurations.
- Enclosed modular assembly –no exposed cables and circuits avoids fire hazards.
- No moving parts inside –avoids mechanical failure and keeps Transportation Security.
- Glass-based concentrator is immune to UV degradation.





cell via a tertiary, non-imaging optical glass.

This design offers a wide insolation acceptance angle ( $\pm 0.86^\circ$ ) and this concentrating profile improving power, efficiency and cost.

● **Low Cost**

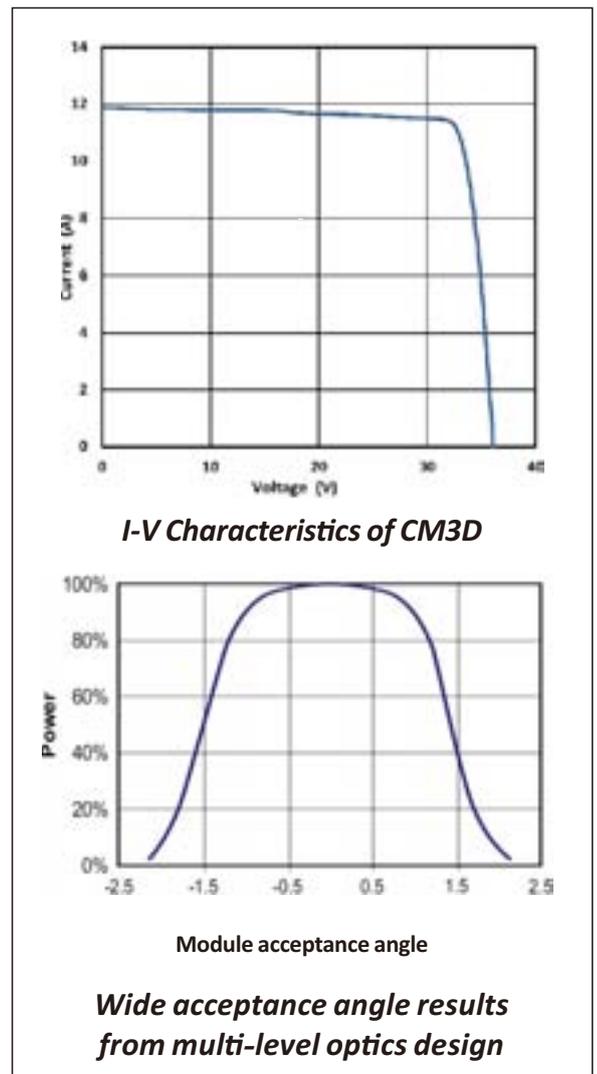
More power per module means fewer modules per installation.

Macsun Solar's CPV systems are designed to be used in conjunction with Macsun Solar's high precision dual axis trackers in order to optimize system performance.

The module incorporates 12 individual modular receivers and achieves an acceptance angle of  $\pm 0.86$  degree which is the widest among CPV design, lowering tracker and balance of system cost. Reliability is achieved with fully-enclosed design. In this concentrator design pattern, incident solar radiation is concentrated using three optical elements. Primary and secondary glassware arranged in a frame structure that directs sunlight to the

**ELECTRICAL CHARACTERISTICS 太阳能组件电性能**

Performance Characteristics at 1000W/m <sup>2</sup> DNI 性能参数	
Model 型号	MS-CPV360W
Power(Pmax)* 组件功率	360W $\pm$ 5%
Max Power Voltage(Vmp) 最大功率点电压	32.85 V
Max Power Current(Imp) 最大功率点电流	10.96 A
Open Circuit Voltage(Voc) 开路电压	36.79 V
Short Circuit Current(Isc) 短路电流	11.97 A
Module Efficiency 组件效率	27.5%
Acceptance Angle 接收角度	$\pm 0.86^\circ$
Optimized Work Temperature 最佳工作温度	-40 to 50°C
Temperature Coefficient 温度系数	
Power 功率	-0.2%/°C
Voltage 电压	-65 mV/°C
Current 电流	1.35 mA/°C
Mechanical Specification 机械性能	
Dimension(L×W×D) 尺寸 (长×宽×高)	1.38 m×1.05 m×0.58 m
Weight 重量	42 kg
Connector Termination 插接件	4 mm <sup>2</sup> Plug & Play Connector 4 mm <sup>2</sup> 即插即用连接器
Material 材料	Al
Fresnel Lens 菲涅尔透镜	Silicone on Glass(SOG) 玻璃硅橡胶 (SOG)
Standard 标准	
Qualification 质量证书	IEC 62108
Safety 安全证书	IEC 62688
Electrical 电性能证书	IEC 62670



## MS-CPV-200W Concentrated Photovoltaic ( CPV ) Solar Modules 200W

### MS-CPV-200W 聚光太阳能组件 200W

#### FEATURES 特点



● 聚光光伏CPV是利用光学部件将太阳光聚焦到一个较小面积的高效光伏电池上，从而提高光伏转换效率并可达节省成本之目的。

深圳市泰晶太阳能科技有限公司基于新颖的光学设计（玻璃反射镜&光导二次镜）在1000X的聚光情况下模组光电转换效率可达28%。新型的散热装置（氮化铝陶瓷基底&无空泡焊接工艺）确保在干燥、强日照的环境下正常运行。CPV模组环保可靠，99%以上的材料由玻璃和铝构成。

深圳市泰晶太阳能科技有限公司基于新颖的光学设计（玻璃反射镜&光导二次镜）在1000X的聚光情况下模组光电转换效率可达28%。新型的散热装置（氮化铝陶瓷基底&无空泡焊接工艺）确保在干燥、强日照的环境下正常运行。CPV模组环保可靠，99%以上的材料由玻璃和铝构成。

#### ● More Power

Basic idea of CPV is saving cost by focusing sunlight onto high efficiency solar cells through optical devices that are less costly than the solar cells.

Based on the novel optics design (glass reflector & wave-guide secondary optics), Macsun Solar provides CPV modules with 1000 times sunlight concentration and 28% power efficiency. Low thermal resistance solar cell package solution (ceramic substrate and void-free solar cell soldering) ensures the CPV module thermal performance and long-term stability. Our CPV module is environmental friendly, with 99% of the module material are glass and aluminum.



#### SPECIALITY 特性

- 高倍聚光(1000X); High Concentration (1000X)
- 反射镜&光导聚光; Novel optics design
- 全玻璃光学元件(环保、可靠); All glass design (green & stable)
- 薄型化设计(透镜设计的一半); Slim form factor (Half of Fresnel lens design)
- 大角度容忍度(±1.2°), 降低对追踪器的要求; High tolerance(+/-1.2degree)
- 低热阻封装技术(氮化铝基底&无空泡焊接)。Solar cell package (ceramic substrate and void-free soldering)

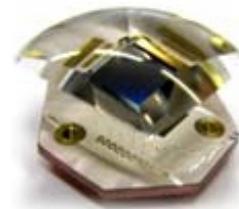


#### ELECTRICAL CHARACTERISTICS 太阳能组件电性能

Parameters 性能参数	UL-SUB-8703(3) Testing Condition 测试条件	Standard Testing Condition 标准测试条件
DNI (W/m2)	900	1000
Air Mass 大气质量	AM1.5D	AM1.5D
Solar Cell T (degree C) 电池温度	-	25
Air T (degree C) 环境温度	20	-
Wind Speed (m/s) 风速	4	-
Power Output (Wdc) 峰值功率	178	205



Module Performance 组件规格、性能	
Module Efficiency 组件效率	~28% power efficiency 光电效率
Weight (kg)/Module 重量(kg)/单个组件	25
Module Dimension (m) 模组尺寸	1.48×0.61×0.25
Solar Cell Dimension (mm <sup>2</sup> ) 电池片尺寸	10×10
Concentration Ratio 聚光倍数	1000 times 1000倍
Angle Tolerance (degree) 角度容忍度(°)	+/- 1.2
Open-circuit Voltage (V) 开路电压	24
Short-circuit Current (A) 短路电流	9.47



Module Thermal Performance 组件温度参数	
T Coefficient (Voltage) 电压温度参数	0.21 V/°C
T Coefficient (Current) 电流温度参数	0.00037 A/°C
T Coefficient (Power) 功率温度参数	-0.165% /°C

## MS-HCPV-120W Concentrated Photovoltaic ( HCPV ) Solar Modules 120W

### MS-HCPV-120W 高倍聚光太阳能组件 120W

#### FEATURES 特点



- 芯片面积小，热输入量小，贴装容易，不需要强制散热  
胶厚度薄，材料用量少，变形量小  
焦距短，模组薄，用材省，成本低，运输方便  
重量轻，支架与追日系统设计难度降低  
一致性高，适合标准化自动化大批量生产，且人工投入少



- MACSUN SOLAR HCPV achieves a high efficiency of solar radiation energy harvesting and conversion and improves the adaptability of the module to the environment through the unique design of Fresnel lens and delicate design of secondary optical device.

A) Light concentration efficiency: relying on the self-designed lens, the average light concentration efficiency of the Fresnel lens has exceeded 85% and even up to 89% maximally, which is far more than that of the products of the similar kinds;

B) Radiation distributing performance: by introducing secondary optical elements, the unevenness of radiation energy distributed on the chip surface has been greatly reduced, burden on partial of the chip been reduced, the overall conversion efficiency of the chip been enhanced, and working life of the chip been effectively extended;

C) Temperature adaptability: the impact on the laser efficiency of optical system from low and high temperature has been reduced due to the combinational optimization of Fresnel lens and secondary optical device, and the conversion efficiency of the module has been improved

either at high or low temperature;

D) Thickness of the module: the thickness of the module has been reduced to only about 100mm through optimization of the optical design, which has lowered the transportation cost and installation difficulty;

E) Light transmittance performance: because the front and back of the module are both made of glass, the scattered light can penetrate the module, which enhances the light at the shade of the module and does good to the plant growth inside the environment.

Characteristic data of the module (850DNI, AM1.5D) 模块的特征数据(850DNI, AM1.5D):



Model 型号	MS-CPV120W
Max Power Voltage ( $V_{mp}$ )	24.5V
Max Power Current ( $I_{mp}$ )	4.9A
Open Circuit Voltage( $V_{oc}$ ) 开路电压	26.5 V
Short Circuit Current( $I_{sc}$ ) 短路电流	5.7 A
Size of the module 模组尺寸	830X630X104mm

## Thin Film Solar Modules

### 双结非微晶硅太阳能组件 >>>>

MS-SDXXX Thin Film Solar Modules 120-140W

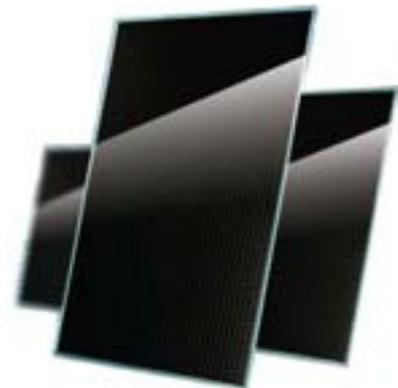
MS-SDXXX 非微晶硅太阳能组件 120-140W

ELECTRICAL CHARACTERISTICS AT STC 太阳能组件电性能

型号 TYPE		MS-SD120	MS-SD125	MS-SD130	MS-SD135	MS-SD140
最大功率 Maximum Power	$P_{max}(W)$	120W	125W	130W	135W	140W
最大功率公差 Tolerance Value for Power	%	0~+5%	0~+5%	0~+5%	0~+5%	0~+5%
最高电压 Maximum Power Voltage	$V_{mpp}(V)$	51.50	52.74	53.94	55.56	56.91
最大电流 Maximum Power Current	$I_{mpp}(A)$	2.33	2.37	2.41	2.43	2.46
开路电压 Open Circuit Voltage	$V_{oc}(V)$	72.45	72.96	73.42	73.97	74.41
短路电流 Short Circuit Current	$I_{sc}(A)$	2.68	2.72	2.76	2.81	2.86

MECHANICAL SPECIFICATIONS 组件材料规格

电池片规格 Solar Cells	Tandem Junction Cell (a-Si/uc-Si) 双结非微晶
接线盒 Junction box	IP67, 3个二极管 IP67, combined with 3 by-pass diodes
前玻璃厚度 Front Glass Thickness	浮法玻璃, 3.2毫米厚 Float Glass, Extra White, 3.2mm
连接线/接头 Connecting Cable/Connector	兼容MC4接头配置/4mm <sup>2</sup> 900mm连接线 4 mm <sup>2</sup> , 900 mm, MC4-compatible

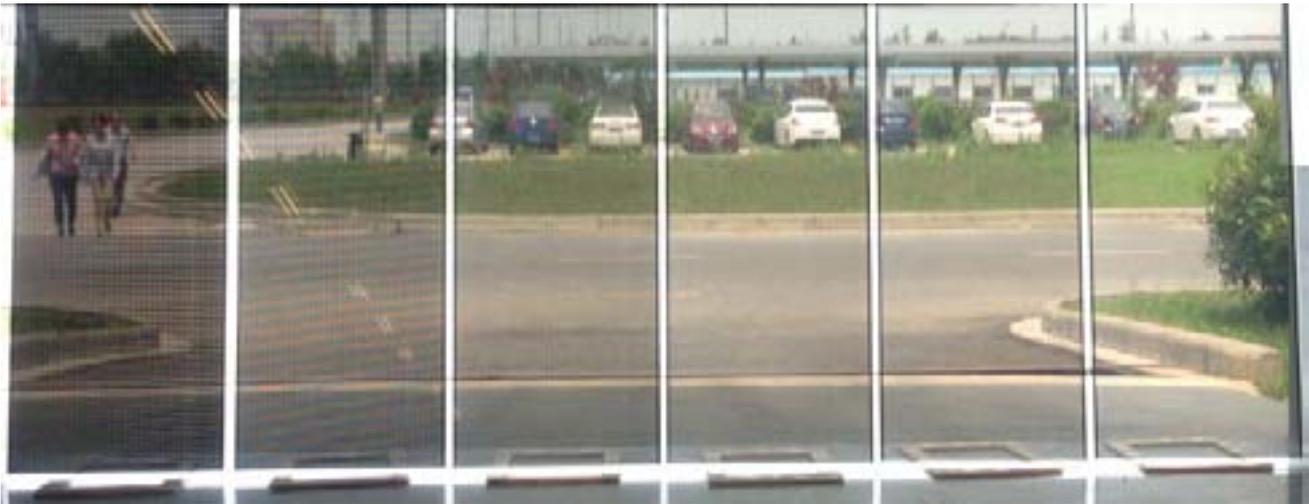


尺寸 Size	1300 × 1100 × 6.8 mm, 不带接线盒 Size without junction box
重量 Weight	25KG
每集装箱最大装货量 Quantity in FCL Containers	462片每20尺柜, 1008片每40尺柜 462 pcs per 20 GP or 1008 pcs per 40GP Container



MS-SDXXX BIPV Thin Film Solar Modules 30-60W

MS-SDXXX 建筑一体化非微晶硅太阳能组件 30-60W



Module transmittance 组件透光率	5%	10%	15%	20%	25%	30%
Module power ( W) 组件功率	60	55	50	45	40	30

APPLICATION 应用



# CIGS Flexible Thin Film Solar Modules

## CIGS柔性非晶硅太阳能组件 >>>

### FEATURES 特点

Place of Origin: Shenzhen, China (Mainland)  
 Brand Name: Macsun Solar  
 Model Number: MS-FLEX-TSP275  
 Type: CIGS Thin Film Solar Module  
 Max. Power: 275W  
 Size: 5745\* 494\*3.5mm  
 Working condition: Sunny, Cloudy, or even Rainy days  
 Special Feature: Good performance in diffuse light or low-lux condition



### Electrical Specifications 电性能 :

Capacity rating	Pmax	275 W
Tolerance of Pmax	%	+10 / -7%
Module aperture area efficiency	%	12.5%
Rated voltage	Vmpp	51.5 V
Rated current	Imp	5.3 A
Open circuit voltage	Voc	67.6 V
Short circuit current	Isc	6.3 A

### Mechanical Specifications 规格 :

Dimensions	5745 x 494 x <3 mm (226 x 19.4 x <0.12 in)
Weight	7.2 kg without adhesive (2.5 kg/m <sup>2</sup> ); 9.3 kg with adhesive (3.3 kg/m <sup>2</sup> )
Junction Box - Top Mounted	TE Connectivity SOLARLOKTM Micro Junction Box
Cables	4 mm <sup>2</sup> dual rated with SOLARLOKTM connectors
Junction Box - Bottom Mounted	MC-JM/FM (MC4 Connectors)
Front Sheet	Non-stick ETFE
Solar Cells	108 CIGS cells (210 x 100 mm)
Adhesive	ADCO HelioBondTM PVA 600BT butyl mastic
Hot Spot Protection	Bypass diodes at each cell; 1 at junction box
Materials	Lead free and exempt from RoHS requirements
Maximum Series Fuse Rating	10 Amp
Color Options	Black (B) or White (W) backsheet behind cells
Temperature Range	-40°C to +85°C
Maximum System Voltage	1000VDC IEC, 600VDC UL
Warranty	Materials and workmanship - 25years; Power output - 25 years (90% @ 10 yrs; 80% @ 25 yrs) Limited Warranty

# Commercial Vertical Axis Maglev Wind Turbines

## 磁悬浮风力发电机 >>>

### FEATURES 特点



- 没有震动，你可以安装在任何地方，包括在你的屋顶。 No Vibration-Means you can mount anywhere including on your house roof
- 没有噪音，可以安静的享受生活。 No Noisy-Means quiet enjoyment of living
- 没有摩擦，设备可以持续工作而不会有磨损和撕裂。 No Friction-Means the equipment lasts longer due to no wear & tear
- 低启动风速，可以更高的平均功率输出。 Low start-up wind speed-Means higher average power output
- 使用铝合金材料，不会生锈，采用达克罗技术处理。 No rust - use Aluminum Alloy material, technical treatment by DACROMAT
- 抗氧化处理后无褪色。 No fade- after anti-oxidation treatment

● 适用性强，可用于陆地、滩涂、海上风弱区域、照明等。 Strong adaptability-means can be used for land, beaches, weak offshore wind regional power, lighting etc.

### ELECTRICAL CHARACTERISTICS AT STC 风力发电机电性能

Type 型号	MS-MWT200	MS-MWT300	MS-MWT600	MS-MWT1000	MS-MWT3000
Rated Power 额定功率	200W	300W	600W	1000W	3000W
Size(Height / Diameter) 风机尺寸 (高度/直径)	1035/1150mm	1090/1240mm	1320/1540mm	2200/2400mm	3370/3700mm
Turbine Weight 风机重量	22.5KG	31KG	49KG	180KG	415KG
Blades Material 叶片材质	Aluminum alloy 铝合金	Aluminum alloy 铝合金	Aluminum alloy 铝合金	Aluminum alloy 铝合金	Aluminum alloy 铝合金
Blades Qty. 叶片数量	3	3	3	3	3
Start-up wind speed 启动风速	1m/s	1.3m/s	1.3m/s	1.5m/s	1.5m/s
Cut in wind speed 切入风速	2m/s	3m/s	3m/s	5m/s, 3.5m/s	3.5m/s
Rated Wind Speed 额定风速	13m/s	12m/s	13m/s	13m/s	13m/s
Cut out Wind Speed 切离风速	16m/s	15m/s	15m/s	15m/s	15m/s
Survival Wind Speed 可耐风速极限	60m/s	65m/s	65m/s	60m/s	60m/s
Generator Type 发动机类型	AC,3 phases 三相交流电	AC,3 phases 三相交流电	AC,3 phases 三相交流电	AC,3 phases 三相交流电	AC,3 phases 三相交流电
Controller output voltage 控制器输出电压	DC12V	DC24V/12V	DC24V/12V/48V	DC48V/24V	DC48/96V
Controller output current 控制器输出电流	<12Amp	<20Amp	<30Amp	<50Amp	<130Amp
Controller braking system 控制器制动系统	3-Phase /short circuit protection/ NFB/Manual break or automatic brake optional 三相/短路保护/NFB/可选手动或自动控制。				
Ambient Temperature 工作温度	-30~50 ℃	-40~50 ℃	-40~50 ℃	-40~50 ℃	-40~50 ℃

# Horizontal Axis Wind Turbines

## 水平轴风力发电机 >>>>

3KW Wind Turbine MS-WT3KW

3KW 风力发电机 MS-WT3KW

### FEATURES 特点



- 根据风机螺旋桨的结构及技术设计的，低噪音，高强度  
Blade Design according to the structure and technology of airplane propeller, low noise and high strength
- 电机使用钕铁硼高永磁材料  
Generator adopt NdFeB strong permanent magnetic materials
- 使用滑环输出功率，防止绞线  
Adopt slip ring for power output, to prevent the cables twisted
- 使用特殊滑环能承载大电流  
Special slip ring can allow big current
- 最新高科技PMW控制器  
Newest high technology PWM controller
- 特殊防腐处理  
Special anti-corrosion treatment

### Technical Data Sheet 技术参数

Rated Power ( W ) 额定功率 ( W )	3000	Blade material 叶片材料	Fiberglass/FRP 玻璃钢纤维/FRP
Rated wind speed(m/s) 额定风速(m/s)	8	Speed mode 限速方式	Passive & active brake pitch 被动变桨&主动刹车
Start up wind speed(m/s) 启动风速(m/s)	2	Generator type 发电机型式	Three-phase permanent magnet alternator 永磁三相交流发电机
Work wind speed(m/s) 工作风速(m/s)	3~25	Tower height 塔架高度	8M(Can be customized) 8M(可按要求定制)
Safety wind speed(m/s) 安全风速(m/s)	50	Stop mode 停车方式	Manual or automatic 手动或自动
Rated speed(r/min) 额定转速(r/min)	300	Weight 主机重量	190kg
Wind wheel diameter(m) 风轮直径(m)	5.6	Voltage ( v ) 输出电压	DC120V/AC220V



# MW Series Wind Turbine Generators

## MW 系列风力发电机组 >>>>

1.5/2.0/3.0/4.0/5.0/6.0MW Series Wind Turbine Generator

1.5/2.0/3.0/4.0/5.0/6.0MW系列风力发电机组

### FEATURES 特点



●根据不同风况条件与气候特征，我公司研发出具有自主知识产权的1.5MW-6MW风机系列，确保机组安全性的条件下，实现机组“两高一低”的目标（即高发电量、高利用率、低度电成本）。

Based on the conditions of different wind regimes and climatic characteristics, we develops 1.5MW-6MW series of wind turbine of independent intellectual property rights, which attain the goals of "two high and one low" (namely, high generating capacity, high utilization rate and low cost) while their safety is ensured.

●采用上风向、三叶片、独立电动变桨、双馈式变速发电机方案；

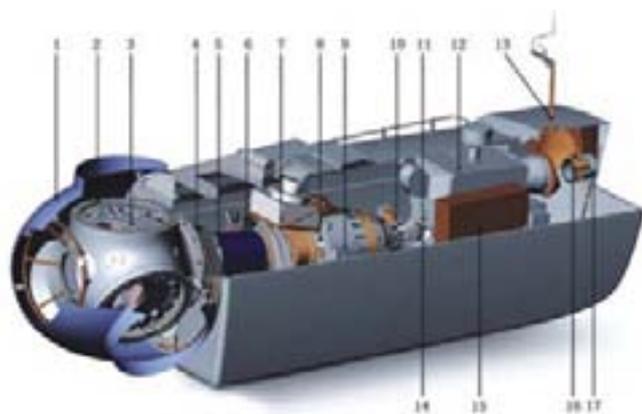
The scheme of upwind, three-blade, double fed variable-speed generator of independent electric pitch system is taken;

●专门针对中国各地区不同气候条件而设计了多种型号机型，如耐低温型、防沙型、抗台风型、耐高温型、高海拔型等；

Many models are designed for different climatic conditions of all regions in China, for example, anti-low temperature resistant models, anti-sand models, anti-Typhoon models, high temperature resistant models, high altitude models, and so on;

●已取得劳埃德(GL)认证、wintest测试认证及鉴衡认证。

The products have passed Germanyischer Lloyd (GL) certification, wintest test certification and scale certification.



- 1-nose cone
- 2-pitch bearing
- 3-wheel hub
- 4-bearing support
- 5-principal axis
- 6-hydraulic pressure station
- 7-Air cooling radiator
- 8-gear box
- 9-Gear box with elastic support
- 10- brake
- 11-coupling
- 12-generator
- 13-Anemometer mast
- 14-Slip ring system
- 15-Engine room control cabinet
- 16-Engine room crane
- 17-axial flow fan;

Profile of products

## 3 Phase PV Grid-Connected Inverters

### 三相组串型并网逆变器 >>>

MS-STI30KW 3Phase PV Grid- Connected Inverter 30KW

MS- STI30KW 三相组串型并网逆变器 30KW

#### FEATURES 特点



- 输入电压高达1000V DC input voltage up to 1000V
- 效率高达98.2% Maximum efficiency of 98.2%
- 内置直流开关 Internal DC switch
- 无变压器设计 Transformerless
- 结构紧凑安装简单 Compact design, Easy installation
- 多路MPP控制 Multi MPP controller
- 可选WI-FI及LAN通信 Optional Bluetooth/ RF technology/ WiFi/LAN Communication
- 声控显示屏 Sound control Screen

Other Kinds of Grid-Connected Soar Inverter (String Inverter and Center Inverter)

其他各种并网太阳能逆变器 (组串式逆变器和集中式逆变器)



# Combiner boxes / Smart PV Convergence Boxes

## 汇流箱/光伏智能汇流箱 >>>>

Smart PV Convergence Box MS-CBSXXX

光伏智能汇流箱 MS-CBSXXX

### FEATURES 特点



- 光伏汇流箱用于连接光伏阵列及逆变器，提供防雷及过流保护，并监测光伏阵列的单串电流、电压及防雷器状态，短路器状态。PV convergence boxes are used to connect PV arrays and inverters for lightning protection and over current protection. It is also used to monitor single string current, voltage, and lightning protection device status in PV arrays as well as circuit breaker status.
- 专业的电气设计，元件选型，可以保证长时间的稳定运行，本公司拥有专业大型屏柜厂及独有的生产工艺，保证了可靠、耐用的户外箱体。Special electrical design and component selection can ensure long time reliable operation. Large screen cabinets developed with unique processes by our own plant ensure reliable and durable outdoor use.
- 结构，安全、简洁、美观的内部布线，便于现场接线及维护。Additionally, they are easy to maintain with easy wiring on site thanks to their safe, simple and well-arranged internal wiring.

### ELECTRICAL CHARACTERISTICS AT STC 汇流箱电性能

Model and specification 型号规格	MS-CBS4	MS-CBS8	MS-CBS16
Max. input number 最大输入数	4-way 4路	8-way 8路	16-way 16路
Max. voltage 最大电压	1000V DC		
Subcircuit fuse rated current (can be replaced) 支路熔断器额定电流 (可更换)	12A/16A/20A		
Output terminal size 输出端子大小	PG21		
Protection class 防护等级	IP65		
Ambiance temperature/humidity 环境温度/湿度	-25°C~+80°C/0~99%		
Width x Height x Depth 宽×高×深	400×400×150(mm)	500×450×190(mm)	750×500×190(mm)
Weight 重量	12 kg (approx.)	15kg (approx.)	20kg (approx.)
Housing material 箱体材料	Cold-rolled steel/stainless steel/PC 冷轧钢板/不锈钢/PC材质		
Communication 通信方式	RS485/wireless RS485/无线		
Monitoring modular power supply 测控模块供电方式	220VAC/24VDC/self-powered 220VAC/24VDC/自供电		

# Rooftop On-grid Solar Power System

## 屋顶并网太阳能发电系统 >>>

1KW-1MW Rooftop On-grid Solar power Systems MS-SPSXXX

1KW-1MW屋顶并网太阳能发电系统 MS-SPSXXX

### FEATURES 特点

#### 10KW ON GRID SOLAR SYSTEM EQUIPMENT LIST

Model and specification型号规格	Description 描述	Quantity 数量
MS-SP6-60-260P	385W Poly solar panel; Size:1960*991*40mm; Weight:26.5kg	26
10KW on grid inverter; Single phase	Output Voltage: 220/230V; Size: 406*406*192mm; Weight: 21kg	1 set
WIFI Module	Monitoring device	1 pc
Mounting Structure	Whole set mounting structure for solar panel for 26 pcs solar modules	1 set
PV Cable	4mm <sup>2</sup> PV cable	300m
MC4 Connector	Rated voltage:1500V	8pairs

#### 1, Solar Panels

- 1, Solar Panels
- > 25 years Warranty
- > Highest conversion efficiency of 19.84%
- > Anti-reflective and anti-soiling surface power loss from dirt and dust
- > Excellent mechanical load resistance
- > PID Resistant, High salt and ammonia resistance

#### Grid Tie Inverters

- > 5 years standard warranty
- > Max. Efficiency 99.6%,European efficiency 99%;
- > Integrated DC switch for added safety protection;
- > Power factor continuously adjustable
- >Transformer-less design and high power density, off lighter and more convenient installation
- > Flexible communication connection, support RF WIFI

#### Accessories

- > PV Cable 4mm<sup>2</sup> 6mm<sup>2</sup>
- > AC Cable
- > DC Switches
- > AC Breaker
- > AC/DC Combiner box



# MPPT Solar Charge Controllers

## MPPT太阳能控制器 >>>>

MS-SC-MPPT10KW 10KW MPPT Solar Charge Controllers

MS-SC-MPPT10KW 10KW MPPT太阳能控制器



### FEATURES 特点

- 具有过热、过载、短路、过流等全自动保护功能  
With the automatic protection function of overheating, overload, short circuit, over current, etc.
- 功率器件选用原装进口器件 Power device selection of imported devices
- 主控芯片选用Microchip工业级MCU，全数字化电路设计。  
Main control chip is selection of Microchip industrial grade MCU, and with all digital circuit design.
- 全部采用工业级芯片，能在寒冷、高温、潮湿环境正常运行  
All adopt the industrial chips, can be normally operated in the cold, high temperature, wet environment.
- 标准RS-232通讯，可选GPRS、以太网等多种通讯方式，最大化地满足不同场合的需求。  
With the Standard RS-232 communication, optional GPRS, Ethernet and other means of communication, to maximize meet the needs of different occasions

### ELECTRICAL CHARACTERISTICS 太阳能控制器电性能

型号 Type	MS-SC-MPPT10KW
A端电压范围 A Interface voltage range	0-200V
B端电压范围 B Interface voltage range	0-150V The maximum voltage value of A point must be less than the minimum voltage value of B point 0-150V, 使用时B端电压最大值小于A端电压最小值。
A端电流范围 A Pole Current Range	0-200A
B端电流范围 B Pole Current Range	0-200A
控制方式 Control Mode	A pole or B pole. Constant voltage and limit current A端或B端 恒压限流
最大效率 Maximum Efficiency	>97%
自耗电 Self Power Consumption	<10W
保护功能 Protection Function	overheating, overload, short circuit, over current, etc. 过流、短路、过热、过载、直流过欠压等。
通讯接口 Communication Interface	RS232
工作温度 Working Temperature	-20℃~+55℃
相对湿度 Relative Humidity	0~95%
海报高度 Poster Height	≤2000m 不大于2000米
冷却方式 Cooling Mode	Forced Air Cooling 强制风冷
噪音 Noise	≤60dB
防护等级 Protection Level	IP20 (Indoor) IP20 (室内)

# Gel Batteries

## 胶体铅酸蓄电池

### FEATURES 特点



- 胶体使用状态：密封反应效率大于99.9%。

Gel condition: The effect of sealed reaction is over 99.9%.

- 自放电极小：可长期带电存放达两年（20℃），存放时间是吸附式蓄电池的4倍，可不需充电立即投入运行。

Minor self-discharge: The gel battery can be stored almost two years with electrification, which is four times more than traditional AGM battery. It can be put into use without charging immediately.

- 失水率低：失水率仅为吸附式蓄电池的二分之一，有效缓解电解液早期干涸。

Low rate of loss of coolant: The rate of loss of coolant of gel battery is half of AGM battery, which can effectively slow up the dry of electrolyte.

- 超长使用寿命：设计寿命达12年以上，节省费用支出。

Long service life: The designed life is over twelve years.

- 深放电循环性能优良：特别适用于循环使用，100%深放电循环、寿命超过500次，大大高于吸附式蓄电池，有效地提高了系统可靠。

Good deep charge cycle performance: The gel battery specializes in cycle use, which can reach to 100% deep discharge cycle and long service life to five hundred times.

- 过放电后恢复性能卓越：过放电至“0”V，仍能良好恢复，以1CA放电保持21天后，电池恢复容量达100%。

Good over-discharging recovery performance: The gel battery can recover its capacity to 100% after it discharges at 1CA for twenty one days.

7) 适用环境广：可以在-40℃-60℃温度范围内使用，性能大大超过吸附式电池。

Widely working environment: The gel battery can be used at widely difference in temperature from subzero 40℃ to 60℃.

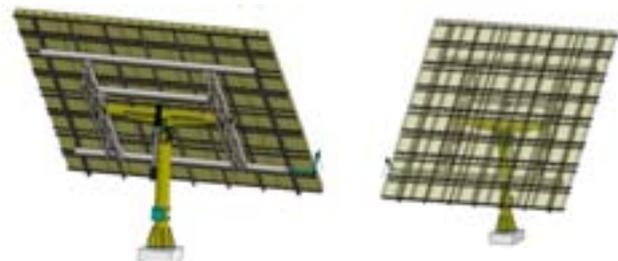
### ELECTRICAL CHARACTERISTICS 性能

Model NO.	Nominal Voltage (V)	Rated Capacity(AH) 20hrs/25°C	Approx. Weight		Dimensions(mm)								Terminal Type
			kg	lbs	Length		Width		Height		Total Height		
					mm	inch	mm	inch	mm	inch	mm	inch	
MS-SB12-40Ah	12	40	13.0	28.7	197	7.73	166	6.54	174	6.85	181	7.13	T14
MS-SB 12-80Ah	12	80	23.4	51.5	260	10.	169	6.65	211	8.3	215	8.46	T14
MS-SB 12-100Ah	12	100	29.8	65.56	331	13.03	173	6.81	213	8.39	233	9.17	T10
MS-SB 12-150Ah	12	150	42.5	93.5	484	19.1	171	6.73	241	9.49	241	9.49	T11
MS-SB 12-180Ah	12	180	56.5	124	522	20.6	240	9.45	216	8.50	240	9.45	T9
MS-SB 12-200Ah	12	200	60	132	522	20.6	240	9.45	216	8.50	240	9.45	T11
MS-SB 12-220Ah	12	220	64	141	522	20.6	240	9.45	216	8.50	240	9.45	T9
MS-SB 12-250Ah	12	250	73.0	161	520	20.5	268	10.55	220	8.66	243	9.57	T11
MS-SB 2-1000Ah	2	1000	63.0	138.9	475	18.72	175	6.90	330	13.00	356	14.03	T20
MS-SB 2-2000Ah	2	2000	120	264	401	15.8	351	13.8	342	13.51	369	14.54	T20
MS-SB 2-2500Ah	2	2500	165	363.8	710	27.97	352	13.87	342	13.47	369	14.54	T20
MS-SB 2-3000Ah	2	3000	195	429.9	710	27.97	352	13.87	342	13.47	369	14.54	T20

# Flat Dual-Axis Trackers / Automatic Solar Tracking System

## 平双轴跟踪器/全自动太阳能跟踪系统 >>>

### FEATURES 特点



- 阳光能源有最好的转换时，直接对太阳能电池的角度，一般的光伏模块，例如有更广泛的接受光角度的规范，使CPV具有更窄的接受角度。太阳能跟踪系统是一种装置，定向的方向朝向太阳的太阳能电池板/组件，这样做可以得到最好的能量转换。这里是一个不同的跟踪器相对于安装纬度有关的固定型，它们的输出增益%更高。由于接受角度窄，CPV一般要求双轴跟踪精度高（DA），而光伏PV发电可以安装在单轴（SA）和双轴（DA）跟踪器上。
- Dual axis tracker can be used to mount PV & CPV modules.

PV Module in general requires less accurate light-source, typically within 10 degree range, whereas the higher efficiency HCPV modules requires 0.5 ~ 1 degree of accuracy depends on the design. Our systems make use of light-sensor tracking + historic tracking (auxiliary); when light source is unstable.

DAT is expected to increase output efficiency by 25- 45%. Our MS-ST 400 series for example can produce up to 15kw with tracking precision within 0.2°.

### ELECTRICAL CHARACTERISTICS 太阳能控制器电性能

型号 Model	MS-ST400	MS-ST300	MS-ST200
最大安装面积 Max. Aperture Area	52 m <sup>2</sup>	22 m <sup>2</sup>	6 m <sup>2</sup>
预估可安装容量 Estimate OP Power	7~15kWp	3~7kWp	1-3kWp
模组承载重量 Total Module Weight	1500kg	760kg	180kg
支架重量(不含模组) Bracket Weight (exclusive Module)	2000kg	500kg	200kg
追日方法 Tracking Method	混合式(光传感器为主, 历史轨迹为辅) Hybrid (Light sensor as main, historic track as auxillary)		
支架材质 Bracket Material	热浸镀锌钢, 铝轨 Galvanized steel; Aluminum rail		
追日精度 Tracking Accuracy	≤0.1° (Using Green Mountain Device, generally 0.1° under good weather condition)		
方位角容许范围 Azimuth Angle Range	270° / 450°		
仰角容许范围 Tilting Angle Range	-5° ~ 80°		
保护装置 Protection	软体: 极限保护程序/ 硬体: 马达内建极限保固开关 Software: Limit setting / Hardware: Limit Switch		
抗风设计 Anti-Gale Wind	依各地环境条件(依设置地点50年一遇风荷载标准) Setting depends on site location (Using condition once every 50 years as standard)		
保固 Warrantee Period	传动机构18个月, 跟踪器结构5年 Actuator & Transmission 18 Month, Tracking Structure 5 Years		

### SOLAR TRACKING SYSTEM APPLICATIONS 太阳能跟踪系统应用



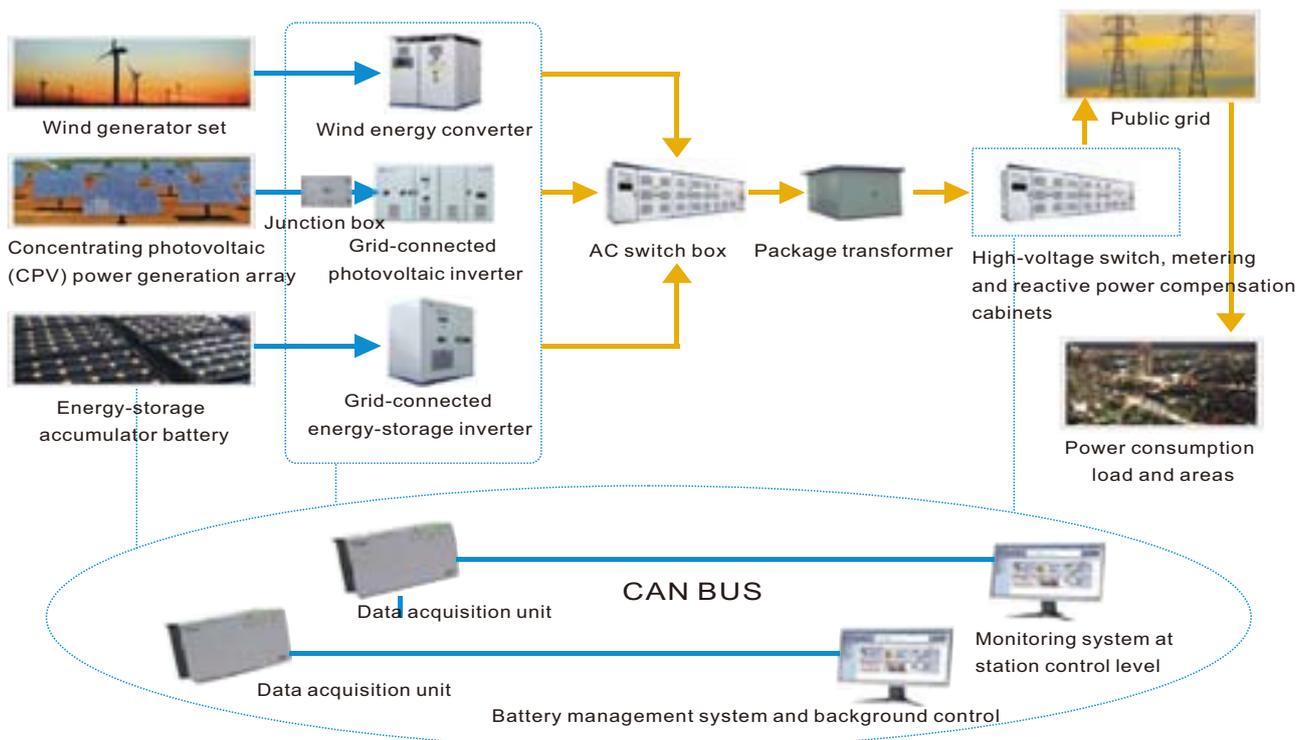
# Wind Solar Storage Power System Integrated Overall Solution 新能源整体解决方案

## Structural of WSS Units 风光储能发电系统各单元子系统结构

- 风力并网发电系统 Grid-connected wind power system
- 太阳能并网发电系统 Grid-connected solar power system
- 储能并网系统 Grid-connected energy-storage system
- 风光储能一体化监控控制系统等 Integrated monitoring control system of wind, solar and energy-storage systems

## Application fields 应用领域

- 10-30  
Capable of supplying quality clean electric energy to town communities, and villages and towns with a population of 100-300 thousands as an independent substation;
- 能实现为一些大中型工业企业提供生产和生活电源；  
Capable of being power supply to production and living of some large- and medium-sized industrial enterprises;
- 能实现为军工设施、军工场所、边防哨所、军事基地等提供电源；  
Capable of being power supply to military industry facilities, military industry locations, border posts, military bases and so on;
- 能实现为海岛、边远地区等提供电源；  
Capable of being power supply to islands, outlying areas and so on;
- 能建造装机容量规模更大的风光储综合发电站，或者多个中小型风光储综合发电站集中或者分布式的发电并网应用，将优质电能直接输送公共电网。  
Capable of setting up hybrid wind, solar and energy-storage power stations of larger scale of installed capacity, or centralized or distributed grid-connected power generation of many small- and medium-sized hybrid wind, solar and energy-storage power stations to directly deliver the quality electric energy to the public grid.



# Solar Power Plants / Solar Power System Projects

## 太阳能发电站/ 太阳能并网系统工程项目 >>>



**中国深圳 Shenzhen, China, 10KWp**  
 大楼平台固定, 与市电互补示范  
 Roof-Mounted & Grid-Tied  
 2009 年 06 月建成  
 Completion Year in June,2009



**捷克 Czech Republic, 450KWp**  
 地面固定并网  
 Ground-Mounted & Grid-Tied  
 2010 年 10 月建成  
 Completion Year: Oct.,2010



**意大利 Italy, 13.34KWp**  
 屋顶并网  
 Roof-Mounted & Grid-Tied  
 2011 年 04 月建成  
 Completion Year: April,2011



**意大利 Italy, 99.36KWp**  
 市电并网, 使用自动追踪系统  
 Grid-Tied,with solar tracking system  
 2011 年 04 月建成  
 Completion Year: April,2011



**上海 Shanghai, 20KWp**  
 大楼平台固定, 与市电互补示范  
 Roof-Mounted & Grid-Tied  
 2012 年 06 月建成  
 Completion Year: June, 2012



**山东 Shandong, 10KWp**  
 太阳能车棚  
 Solar Car Shelter & Grid-Tied  
 2013 年 10 月建成  
 Completion Year: October, 2013



**青海,海南 Hainan, Qinghai, 20MWp**  
 市电并网, 使用薄膜太阳能组件  
 Grid-Tied, with Thin Film Solar Panels  
 2014 年 04 月建成  
 Completion Year: April, 2014



**南京 Nanking, 20KWp**  
 大楼平台固定, 与市电互补示范  
 Roof-Mounted & Grid-Tied  
 2015 年 02 月建成  
 Completion Year: February, 2015



**内蒙古 Inner Mongolia, 1MWp**  
 聚光太阳能, 太阳能跟踪系统, 市电并网  
 CPV Solar System, Tracking System & Grid-Tied  
 2015 年 11 月建成  
 Completion Year: November, 2015

# Solar Street Lights / Solar Wind Hybrid Street Lights

## 太阳能路灯/ 风光互补太阳能路灯 >>>

Solar Street Light MS-SLXXX 15-240W LED Lamps

太阳能路灯 MS-SLXXX 15-240W LED路灯

### FEATURES 特点



- 产品型号: MS-SL480 Model: MS-SL480
- 太阳能组件效率480WP Solar module power: 480Wp
- 工作电压: 36VDC Working voltage: 36VDC
- 蓄电池: 高稳定性, 免维护胶体蓄电池, 容量420AH  
Storage battery: Highly reliable and maintenance free gel battery, capacity 420AH
- 光源: 120W LED灯头 到地面的照明度为25lux  
Light source: 120W LED lamp, 120W on ground brightness 25lux
- 太阳能控制系统: 微电脑智能控制器  
Control system: Solar light special micro-computer intelligent controller
- 工作稳定: -30~70度 Working temperature: -30 to 70 degrees
- 照明时间: 10小时 Lighting time: 10 hours a day
- 灯杆高度: 11米 Pole height: 11m
- 可工作的连续阴雨天: 多于7天 Continuously rainy: More than 7 days
- 太阳能组件寿命: 25年 Solar panel life time: more than 25 years
- LED灯使用寿命: 50,000小时 LED lamps lifespan: 50,000 Hours

### SOLAR STREET LIGHT PROJECTS 太阳能路灯工程实例



# 80W All In One Solar Street Lights

## 80W一体化太阳能路灯 >>>>

All-In-One Solar Street Light MS-SLAXXX 5-120W LED Lamps

一体化太阳能路灯 MS-SLAXXX 5-120W LED路灯

### FEATURES 特点

All In One Solar Street Light: Integrated design/Free maintenance/Easy installation/Environmental Friendly



- Model No. : MS-SLA080
- LED Power : 24V 80W
- Lifespan: 50,000hrs
- Color : Silver
- Luminous Flux: 11200Lm(TYP)
- Solar Panel Power : 36V 110W (High efficiency monocrystalline silicon)
- Battery Type : Lithium LiFePO4 Battery
- Infrared sensor : Available
- Beam Angel: 150x70°
- Charging Time: 6-8 hours
- Lighting Time(Full Power): 12-14hours
- Lighting Time(30% saving mode): 39 hours (3~5 rainy days)
- Color temperature: 2700~6500K Port Of Dispatch : Shenzhen
- Original Region : China
- Lead Time : 3~5 days for samples;15~20 days for bulk

### Packaging Details:

Model No.	Product size	Packing Size	N.W.	G.W.	Qty/Ctn	20" Container	40" Container
MS-SLA080	1608*405*112mm	1680*480*180mm	32kg	40kg	1 set	120 sets	260 sets
Fitting	620*300*360mm	620*300*360mm	9kg	12kg	1 set	/	/



# PV Application

## 光伏应用产品 >>>

### Solar Traffic Lights 太阳能交通信号灯



### Solar Yard Lights 太阳能庭院灯



### Solar Lawn Lights 太阳能草坪灯



### Portable Solar Power Systems 离网型太阳能发电系统



### Solar Pumping Systems 太阳能水泵系统



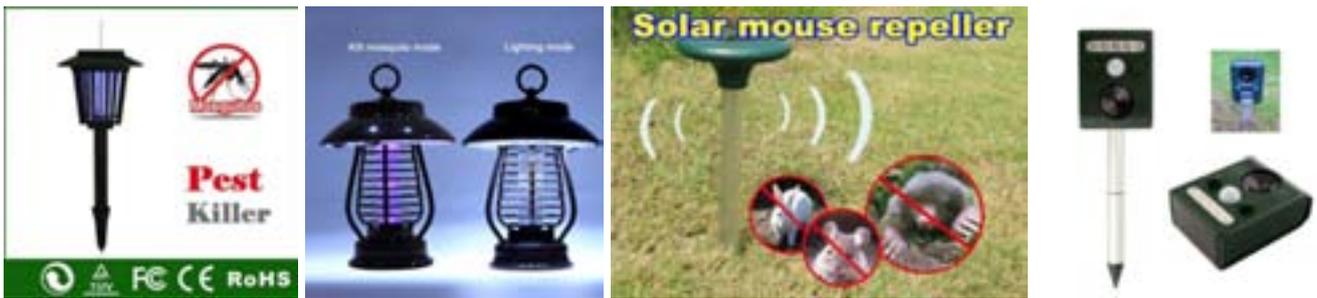
### Solar Lanterns 太阳能手提灯



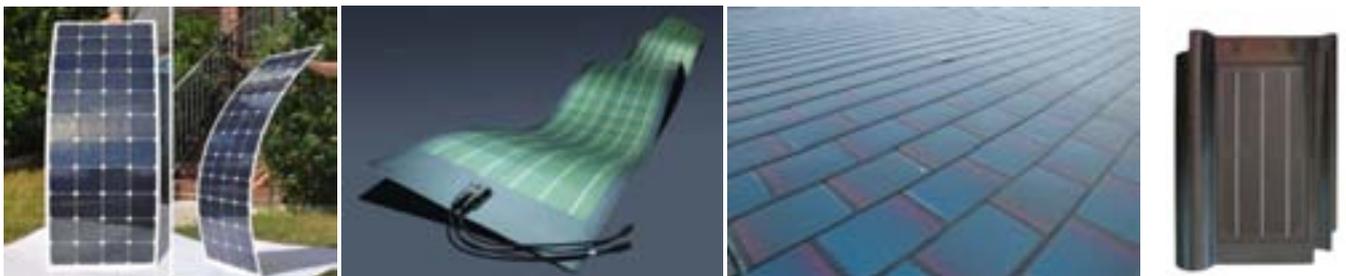
### Solar Bird Repellers 太阳能驱鸟器



### Solar Pest Repellers 太阳能驱虫器



### Special Solar Panels 奇特太阳能组件



### Solar Chargers 太阳能充电器



## Exhibition Promotions 国内外展会推广



## Speech of President 董事长致辞



对太阳能行业的深厚感情，让我决定进一步投身于开发太阳能新产品的事业中去，为各界朋友排忧解难、提供便利，共图发展，研发出更高品质的太阳能产品，这是我的初衷。

深圳市泰晶太阳能科技有限公司成立十几年来，我始终坚持对朋友要诚信以待，对客户要奉为上宾，对企业要用心经营，对员工要关怀备至。这些信念指引着我的行动，也为我赢得了忠实的员工、优秀的客户，成为公司发展壮大不可或缺的宝贵财富。

今后，深圳市泰晶太阳能科技有限公司愿继续与各界朋友携手并进、与全体员工共同努力，为中国生产的品牌太阳能产品的发展做出更大的贡献！

For the feeling of Solar Energy industry, let me desire to invest more in the Solar Energy venture. Serve well to every friend from different areas, offer more convenient for every customer, and develop together with our partners. All those are my goals.

After the company set up many years ago, I always keep the faith: Keep integrity to friends, treat customers as god, manage the enterprise wholehearted and take care our employee carefully. That faith leads my action, and it helps me hold the loyal employee and super customers. The faith has to be the wealth to take the company developing quickly.

In the future, with all our Macsun Solar people's hard work, I would like to continue to develop our company together with every friend, to contribute more in the Solar Energy business.



# 用太阳能照亮全世界 Solar Your World!

## 深圳市泰晶太阳能科技有限公司

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Macsun Solar Wechat  
泰晶太阳能公众号

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