



Keemal photovoltaic
Powering Possibilities

建筑光伏



奇茂科技有限公司
keemal Technology Co.,Ltd

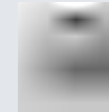
地址：浙江省（绍兴市）外国高端人才集聚区东区11栋3层、4层
Add: 3rd and 4th floors, Building 11, East District, Foreign High
end Talent Cluster Zone, Shaoxing City, Zhejiang Province

电话：13809686114

Tel: +8613809686114

邮箱：Nicole.li2018@outlook.com

E-mail: Nicole.li2018@outlook.com



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奇茂科技有限公司成立于2006年，主要从事光伏及相关新能源产品的制造、研发、技术服务、系统工程EPC等。公司是国家高新技术企业，荣获浙江名牌、浙江出口名牌、浙江制造认证等荣誉。系列产品通过TUV、UL、CEC、JET、J-PEC、MCS、CE、CSA、CQC、金太阳等全球多个国家市场的专业认证，并通过ISO9001:2015质量管理体系标准、ISO14001:2015环境管理体系标准认证、GB/T28001-2011职业健康安全管理体系认证，以及SA8000:2014社会责任管理体系认证。公司客户分布广，产品远销欧洲、美洲、非洲、亚洲等100多个国家和地区，品牌影响力较大。

多年来，公司着力差异化战略引领，持续研发、生产各种大小版型以及多应用场景下的光伏组件，以及微电网系统、车载能源系统、光伏水泵系统等。全黑、防水、房车、BIPV双玻、瓦片、柔性、异型等个性化定制组件深受客户青睐，特别在欧洲等高端光伏屋顶市场有较高的市占率。公司设备先进、可生产产品版型覆盖全面，具备很强的多品类定制化组件的制造能力。

Founded in 2006, Keemal Technology is mainly engaged in manufacturing, R&D, technical services, EPC of photovoltaic industry and other related new energy products. The company is a national high-tech enterprise, won the honor of Zhejiang famous brand, Zhejiang export brand, Zhejiang Made certification and so on. The series of products have passed the professional certification of TUV, UL, CEC, JET, J-PEC, MCS, CE, CSA, CQC, Golden Sun and other global markets, and also passed the ISO9001:2015 quality management system standard, ISO14001:2015 environmental management system standard certification, GB/T28001-2011 occupational health and safety management system certification, and SA8000:2014 social responsibility management system certification. Our customers are widely distributed and our products are exported to more than 100 countries and regions in Europe, America, Africa and Asia, etc. Over the years, the company has focused on differentiation strategy to lead, continue to develop and produce various sizes of versions and multi-application scenarios of photovoltaic modules, as well as micro-grid systems, vehicle energy systems, photovoltaic water pumping systems, etc. All-black, RV, BIPV, Solar tile, flexible and other customized PV modules are favored by customers, especially in Europe and other high-end photovoltaic roof market has a high market share. The company has advanced equipment and comprehensive coverage of product versions, with strong manufacturing capability of multi-category customized modules.

关于奇茂科技 —— 业界先锋，始于2006

About Keemal Technology- Industry Pioneer Since 2006



定制组件，定义生活

奇茂科技
致力于成为优秀的
定制光伏组件制造商
智慧能源解决方案提供商

Keemal Technology is committed to become an excellent manufacturer of customized PV modules and a provider of distributed intelligent energy solutions.

100⁺ 个国家
Countries

截止2023年，
合作伙伴遍及全球100⁺个国家
Our customers all
over 100 countries as of 2023

13GW⁺

向全球累计销售13GW⁺
Accumulative global sales
reach 13GW

前5位 Top 5

在8⁺个国家销量名列前5位
Rank top 5 in 8 countries

10⁺ 种产品权威认证
Product Certification

全球各国及领域通过10⁺种产品权威认证
More than 10 certificates
for global market

全球首家
World First

通过TUV认证的全黑系列光伏组件
World first TUV certificate
for all black PV module

16⁺ 年
Years

在绿色可持续道路上坚持了16⁺年
16 Years on green & sustainable
development

我们的技术优势 Our Technical Advantages

我司拥有国际领先的 HJT、CIGS 等高效电池及组件研发的关键技术，同时在建筑设计、钢结构设计与施工领域有丰富的经验，核心技术团队由行业资深专家组成，可以广泛且深入的为 BIPV 系统工程的实施提供技术支持与服务，为项目实现产业化保驾护航。

Perlight boasts internationally leading and key R&D technologies in high-efficiency batteries and modules such as HJT and CIGS, and we own rich experience in architectural design as well as steel structure design and construction. By virtue of the core technical team composed of industry senior experts, we are able to, in an extensive and in-depth manner, offer technical support and service for implementing the BIPV system engineering and facilitate the industrialization of projects.

时效性 Timely

全自动化产线结合完善的制程工艺、高效的生产管理系统，实现稳定的规模化产能，产品交付周期缩短了50%。

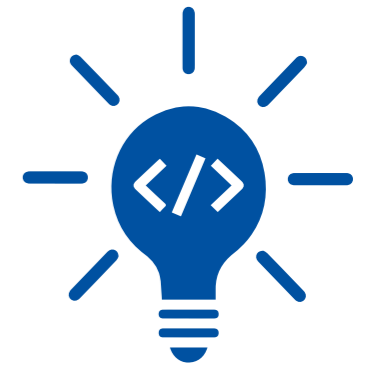
The full-automation production line, combined with perfect process technologies and efficient production management system, can realize stable large-scale capacity and reduced product delivery cycle by 50%.



创新性 Innovative

通过工艺、产品和装备的创新设计及研发，在一条自动化产线上实现光伏幕墙、平面光伏瓦产品并线加制造，节约设备成本。

With innovative design and development of processes, products and equipment, we are able to process and manufacture diversified BIPV products for saving cost on a single automated production line.



唯一性 Unique

全球首条高标准建筑光伏一体化产品全自动化生产线，可实现多规格产品订制加工,可提供高质量、高稳定性、高效率的建筑光伏产品。

Boasting the first high standard fully automated BIPV production line in the world, we can realize custom-made processing of products with multiple specifications and can deliver building photovoltaic products with high quality, high stability and high efficiency.



新一代主流电池平台技术

New-generation Mainstream Battery Platform Technology

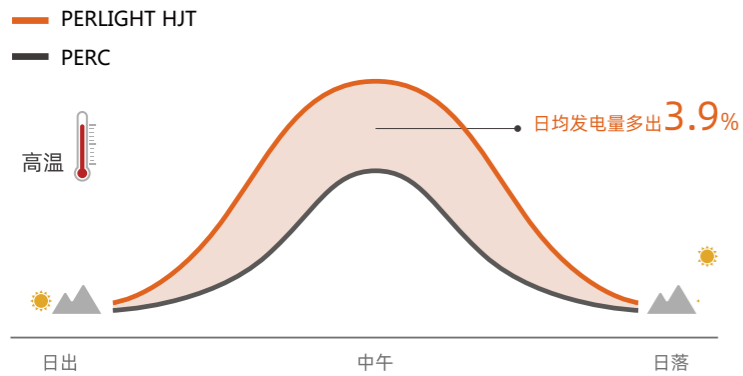
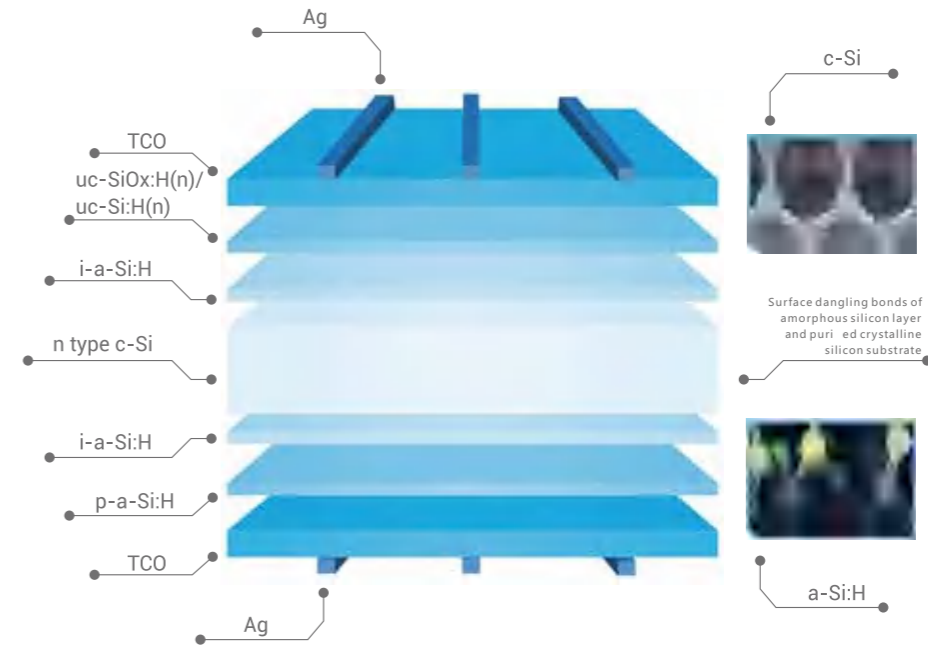
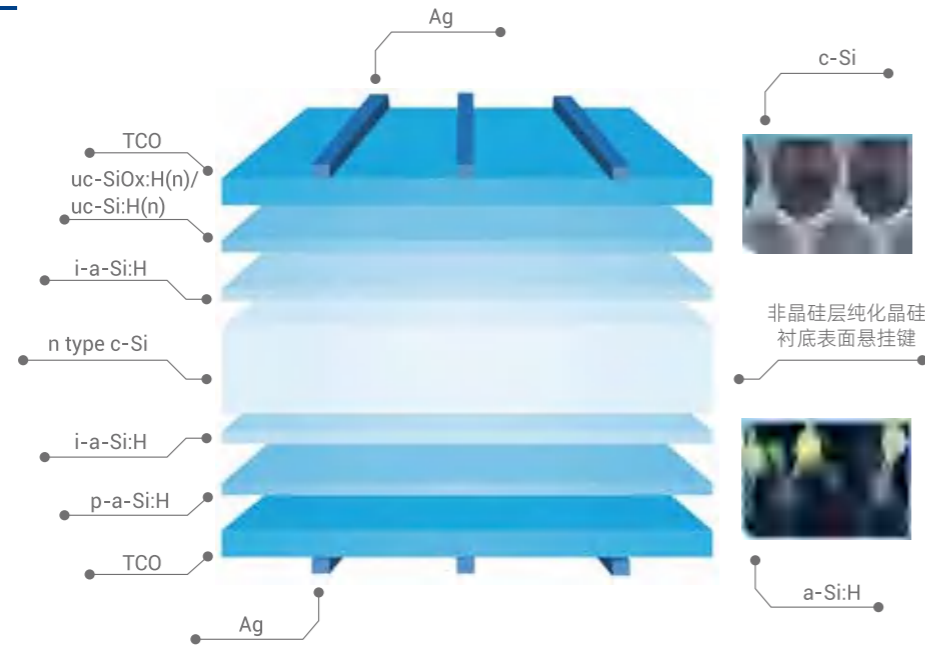
异质结电池结合了晶体硅和非晶硅薄膜技术的优点具有优异的光吸收和钝化效果，在效率和性能上均优于PERC技术，是当前太阳能行业提高转换率和功率输出到最高水平的电池技术之一，也代表着新一代电池平台技术的发展方向。

异质结电池的天然双面结构，能够有效提升组件产品的背面发电能力，增加发电收益，极低的温度系数使得组件即使在高温环境下也能够保有稳定的发电性能；卓越的弱光发电能力，增加组件发电时长，进一步提升发电收益。

HJT cells combine the advantages of crystalline silicon and thin film technologies, with excellent light absorption and passivation effects, and are superior to PERC in efficiency and performance. It is one of the solar cell technologies that increase conversion efficiency and power output to the highest level and also represents the development direction of the new generation of cell platform technology.

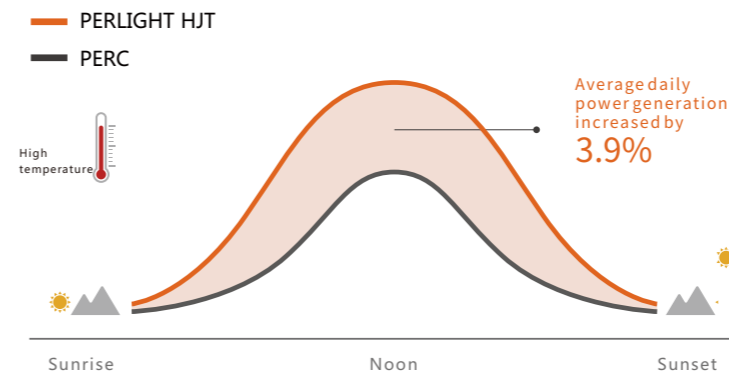
The natural bifacial symmetrical structure of HJT cells can effectively improve the power generation capacity on module's backside. The extremely low temperature coefficient enables modules to maintain stable power generation performance in high temperature environments. Excellent low-light performance increases modules' power generation period and further improves power output.





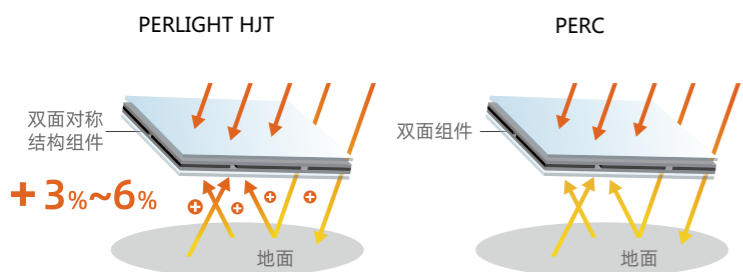
-0.26%/°C 极致温度系数

异质结电池温度系数约-0.26%/°C，在高温环境下双面异质结电池的发电量较双面PERC电池最多可高出3.9%。



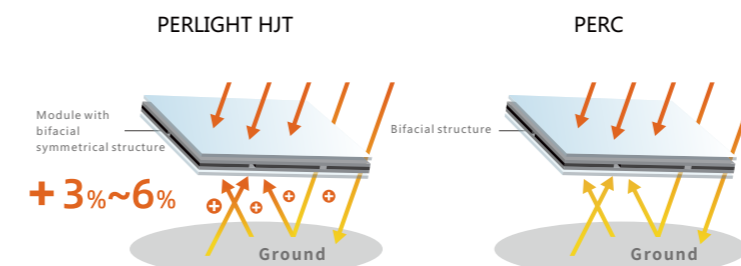
-0.26%/°C
Temp.Co-efficient

-0.26%/°C Temperature coefficient means HJT solar panels generate about 3.9% MORE electricity than PERC panels in a hot climate.



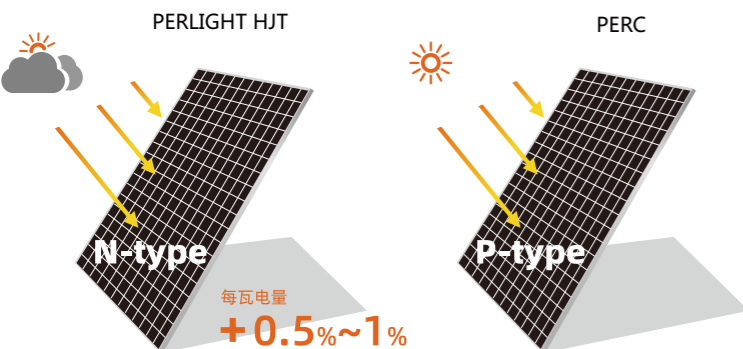
85%双面率

异质结天然的双面对称结构使得双面率达85%以上。异质结电池每瓦发电量较双面PERC电池高出约3%~6%。



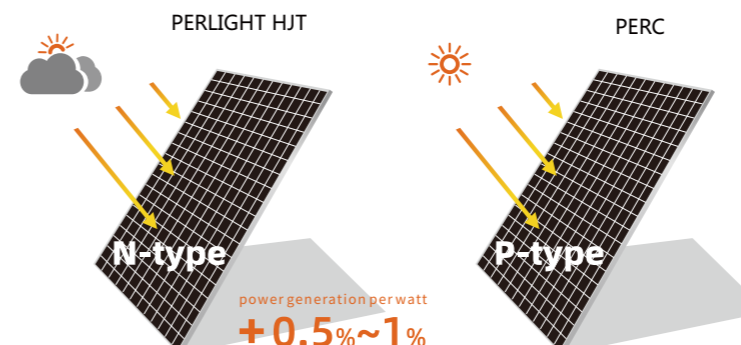
85%
Bifaciality factor

The natural bifacial symmetrical structure of the heterojunction battery can make the bifaciality factor up to 85%. The power generation per W of the heterojunction battery is about 3%~6% higher than the bifacial PERC battery.



+0.5~1%弱光发电

异质结电池的N型单晶硅片相比PERC电池的P型单晶硅片拥有更优异的弱光效应，贡献到每瓦发电量高出双面PERC电池约0.5~1%。

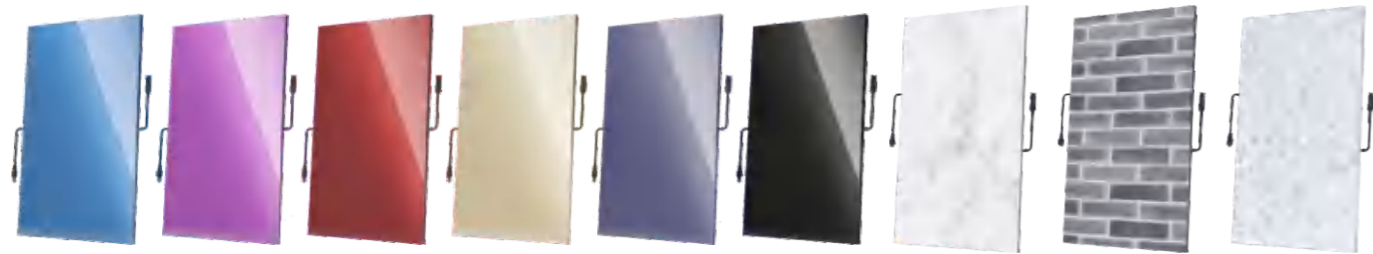


+0.5~1%
Energy yield in weak light environment

Compared with the P-type monocrystalline silicon wafer, the N-type wafer has a better low-light effect, which contributes about 0.5~1% energy yield to the power generation per watt.

光伏幕墙组件

PV Curtain Wall Module



标准产品

组件功率：120W-130W
尺寸：1200x600x7.5mm

Standard product

Module power: 120W-130W
Size: 1200x600x7.5mm



产品优势

1. 功率大，散热好，低热斑效应。
2. 结构强度高，双层玻璃，耐冲击，耐机械载荷。
3. 可靠性高，耐腐蚀性好，运输无风险。
4. 寿命周期长，无微小裂纹，功率衰减小。
5. 建筑安全，符合幕墙标准，防火等级高。
6. 建筑一体化，符合建筑一体化设计标准。
7. 符合建筑美学，一体化精心设计。
8. 定制化，尺寸、厚度、形状、透明度、颜色均可定制。

Product Superiority

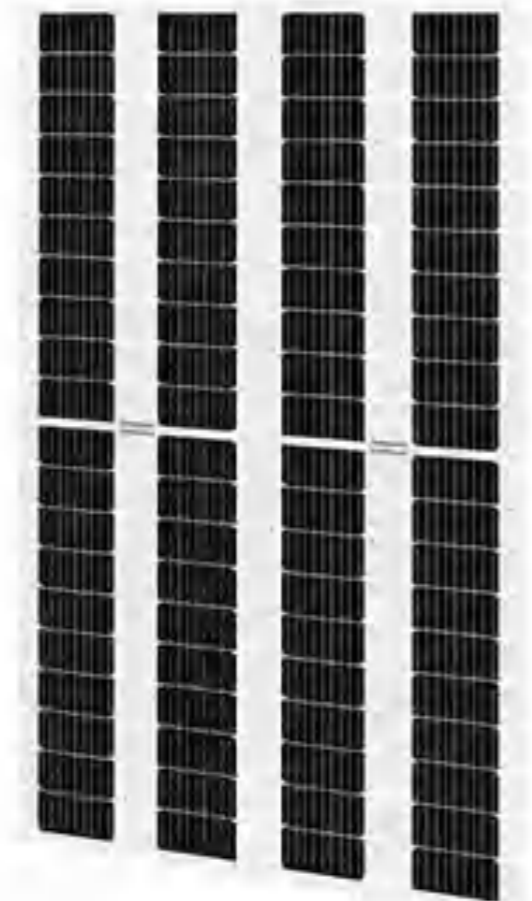
1. High power ,good heat dissipation ,less hot spot effect.
2. High structural strength ,double glass ,impact resistance ,mechanical load resistance.
3. High Reliability ,excellent corrosion resistance ,no risk in transportation.
4. Long life cycle ,no micro crack ,low power degradation.
5. Building safety,meet curtain wall standard ,high fire rating.
6. Building integration ,design according to building integration standard.
7. Architecture aesthetics ,elaborate design and integrated.
8. Customized ,size, thickness, shape, transparency and color could be customized.





透光组件

Transmission Panel



标准产品

组件功率：270W

尺寸：1722×1134×30mm

Standard product

Module power: 270W

Size: 1722×1134×30mm

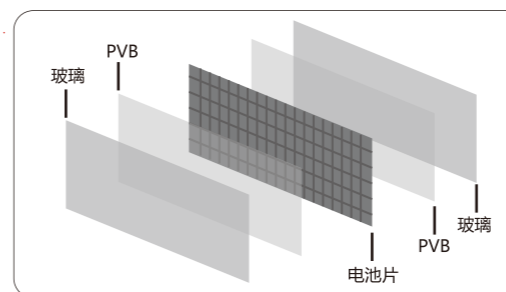


产品优势

- 1、可应用于农业大棚顶、光伏围栏、隔声障等;
- 2、代替传统建材装饰面板，为建筑提供绿色能源;
- 3、高可靠性封装材料寿命长达30年;
- 4、间隔透光率可根据客户需求订制;
- 5、符合建筑体系标准,安装便捷;
- 6、现代科技与建筑完美结合。

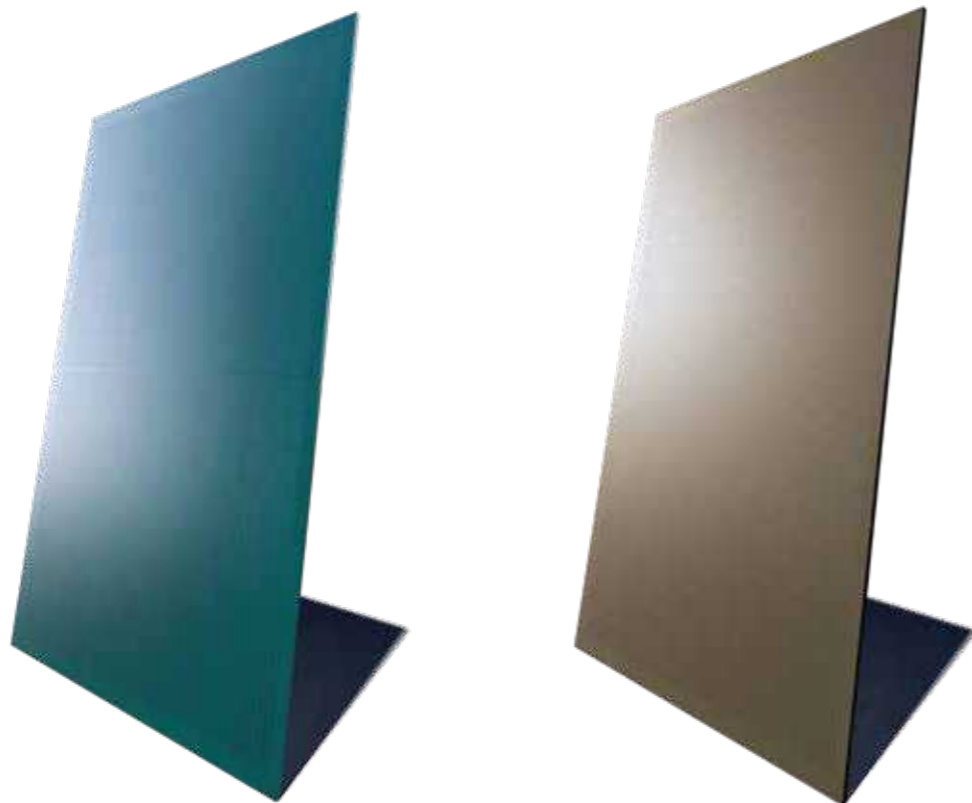
Product superiority

- 1, can be used in agricultural greenhouse roof, photovoltaic fence, sound barrier, etc.;
- 2, instead of traditional building materials decorative panels, to provide green energy for the building
- 3, high reliability packaging material life of up to 30 years;
- 4, interval transmittance can be customized according to customer needs;
- 5, in line with building system standards, convenient installation;
6. Perfect combination of modern technology and architecture.





防眩光板 Anti-glare version



标准产品

功率范围：180~380Wp

尺寸：1790×1080×14.4mm
(32mm,含接线盒厚度)

Standard product

Power range: 180~380Wp

Size: 1790×1080×14.4mm
(32mm, Including junction box thickness)

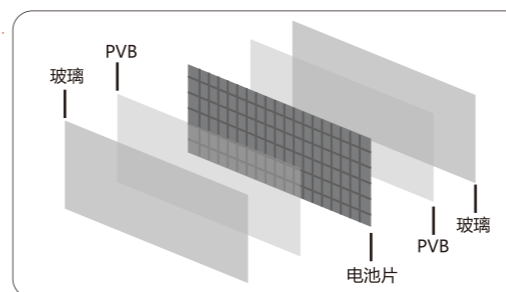


产品优势

- 1、可应用于建筑东、西、南面;
- 2、代替传统建材装饰面板，为建筑提供绿色能源;
- 3、高可靠性封装材料寿命长达30年;
- 4、间隔透光率可根据客户需求订制;
- 5、符合建筑体系标准,安装便捷;
- 6、现代科技与建筑完美结合；
- 7、颜色图案可根据客户需求订制；
- 8、防眩光，减少光污染。

Product superiority

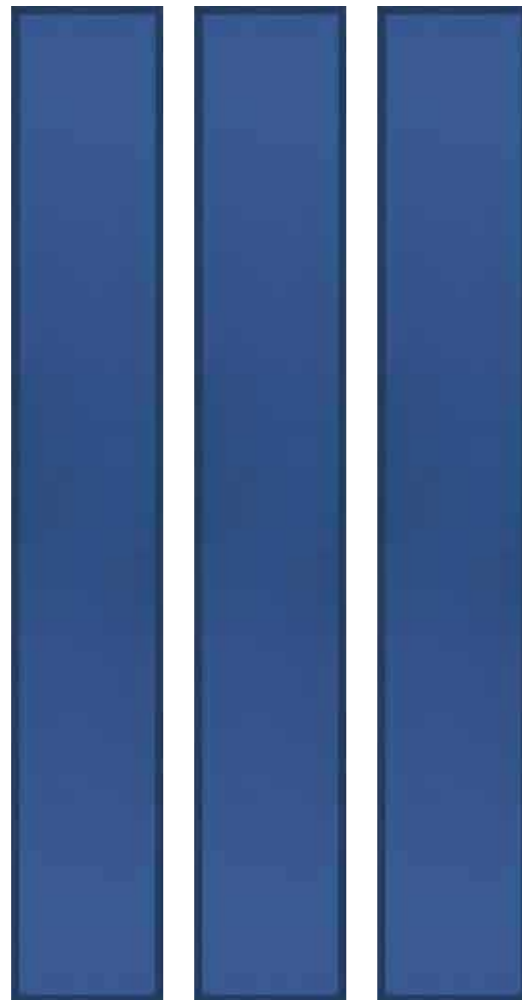
- 1, can be applied to the east, west and south of the building;
- 2, instead of traditional building materials decorative panels, to provide green energy for the building
- 3, high reliability packaging material life of up to 30 years:
- 4, interval transmittance can be customized according to customer needs:
- 5, in line with building system standards, convenient installation:
6. Perfect combination of modern technology and architecture;
- 7, the color pattern can be customized according to customer needs;
- 8, anti-glare, reduce light pollution.





光伏金属板

PV Metal Wallboard



标准产品

功率范围：110~500Wp

尺寸：可接受定制

Standard product

Power range: 110~500Wp

Size: customization acceptable



产品优势

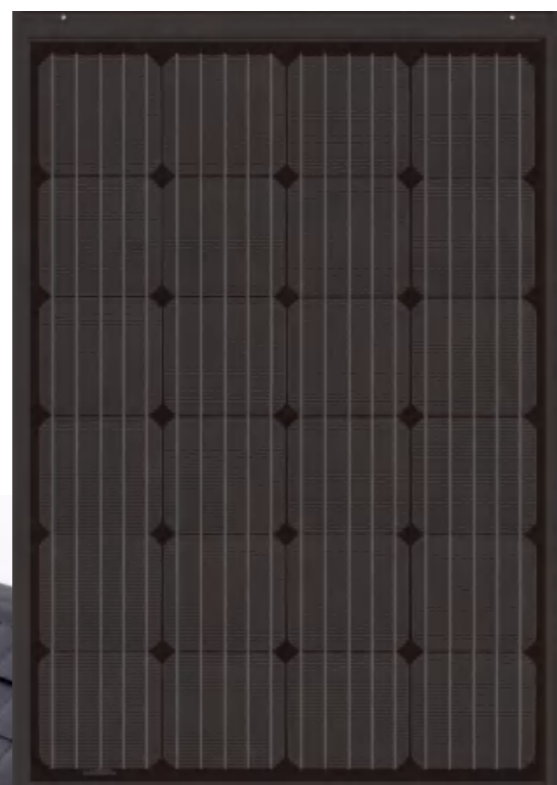
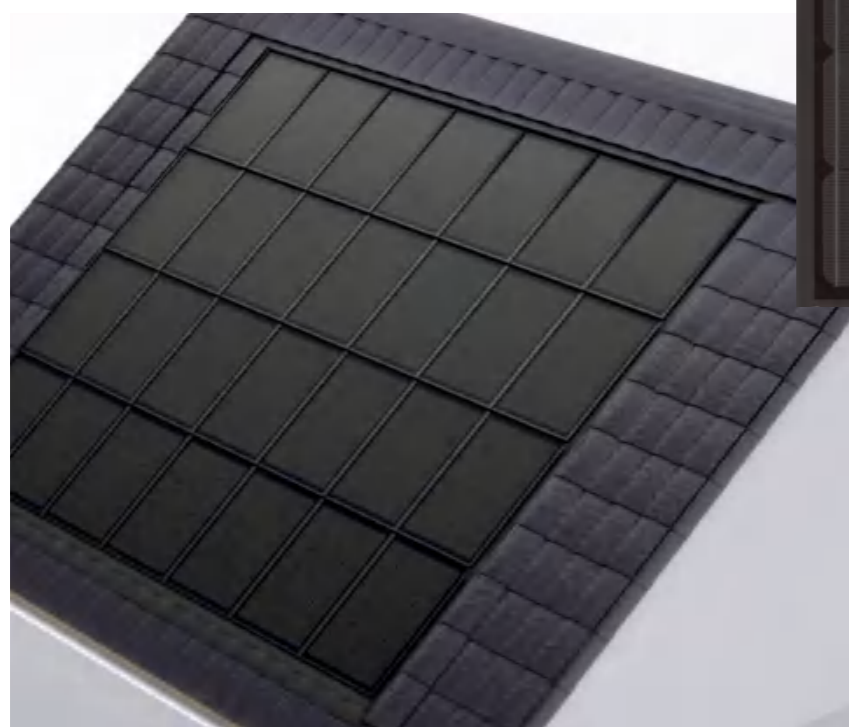
- 1、符合建筑体系标准 ,安装便捷 ;
- 2、现代科技与建筑完美结合 ;
- 3、高可靠性封装材料 ,高安全、长寿命 ;
- 4、应用于工商业建筑、大型场馆、钢构建筑立面等。

Product superiority

1. It conforms to the building system standards and is easy to install;
2. The perfect combination of modern technologies and buildings;
3. High-reliability packaging material, with high safety and long service life;
4. It is applicable to facades of industrial and commercial buildings, large stadiums, steel structure buildings, etc.



IRT组件 INTEGRATED ROOF TILE



标准产品

组件功率：125W

尺寸：1036x701x24.5mm

Standard product

Module power: 125W

Size: 1036x701x24.5mm

产品优势

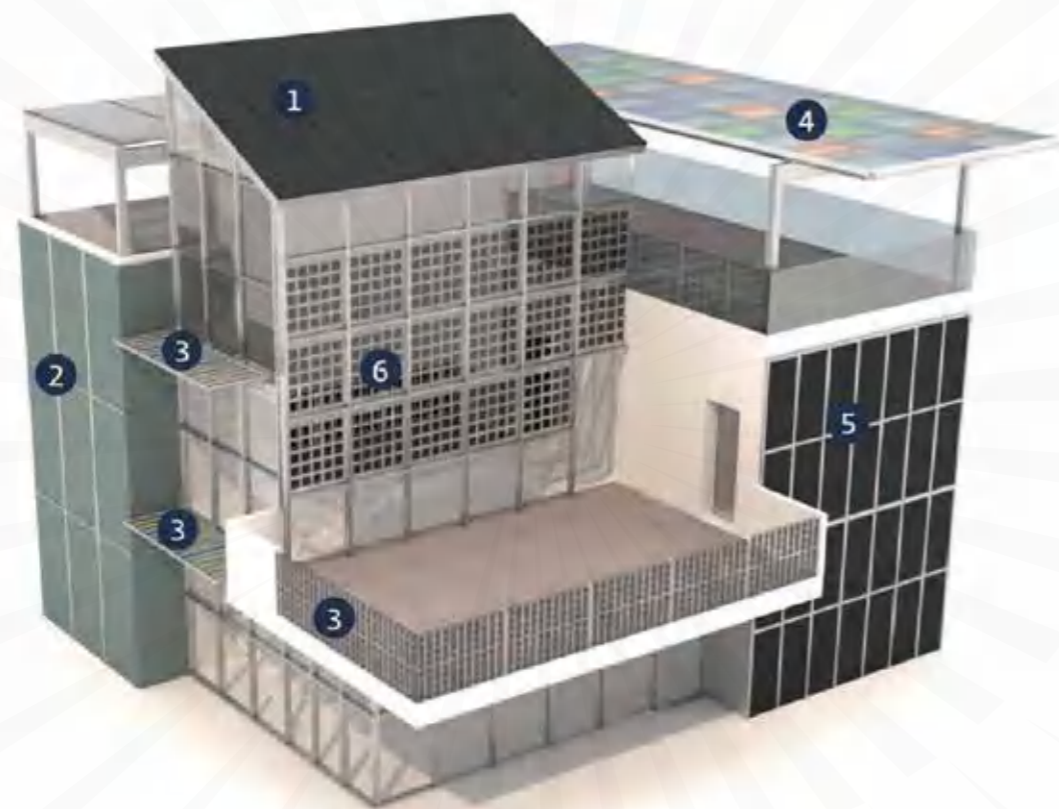
1. 防水组件的创新连接设计体现了高保护及技术精准，外观创新，线条利落。
2. 每块防水组件的重量仅为8.95公斤，安装或拆卸每块组件用时不到1分钟，同时有着高强度和卓越的抗风能力。
3. 安全第一，防水组件的防火等级符合屋顶(T4)标准，这是欧洲屋顶最高防火等级标准。
4. 防水组件的创新设计经久耐用，风雨不透，使用寿命超过25年。
5. 通用防水板，适用于所有常见的屋顶瓦片，包括石板和混凝土材质。
6. SA8000®认证是一个全球标准，展示我司致力于公平对待工人。

Product Superiority

1. Perlite IRT interlocking design provides supreme protection from the elements as well as peerless precision, clean lines and innovative appearance.
2. Each IRT weighs only 8.95kg and can be installed or removed in under one minute per tile, whilst the interlocking design provides superior strength and wind rating.
3. Safety first, perlite IRT is fire rated to broof (T4) standard the highest possible european fire rating for roofs.
4. IRT innovative interlocking design is durable, weather-tight and built to last for over 25 years.
5. Universal flashing, works with all common roof tiles, including slate and concrete.
6. Proud to be SA8000® standard .SA8000 certification is a global standard for organizations to demonstrate their dedication to the fair treatment of workers.

可应用场景

Applicable Scenario



BIPV建材在建筑美学、尺寸、强度、安全等方面更符合建筑应用的特殊要求,真正实现与建筑完美融合,最大限度在不额外占用土地资源的情形下创造资源,达到保护环境、减少污染的生态效果,促进人与自然的和谐共生。

In terms of architectural aesthetics, size, strength and safety, BIPV building materials are better suited to the special requirements of architectural applications, thus truly achieving perfect integration with buildings, maximumly creating resources without taking up additional land resources, as well as achieving the ecological effect of protecting the environment and reducing pollution, so as to promote the harmonious coexistence between humans and nature.

① 光伏屋顶

光照面积大,从发电角度看经济性最佳;

② 光伏雨幕

光伏与防雨板结合,保护建筑物外墙免受雨水和其他天气损害;

③ 光伏遮阳板

作为建筑本体遮阳结构安装,可采纳不同形式的光伏组件;

④ 光伏天窗

具备透光性,同时可起到防雨、保温作用;

⑤ 预制光伏板

安装于建筑外立面或屋顶平面;

⑥ 光伏幕墙

和屋顶比偏离最佳安装角度,但表面积大可弥补因缺少光照减少的电力。

① PV roof

With a large lighting area, it is economically optimal from the perspective of power generation;

② PV rain curtain

The combination of PV and flashing board can protect the exterior walls of buildings from damages caused from rain and other weathers;

③ PV sun shield

It is installed as a sunshade structure of the building body, and different forms of PV modules can be adopted.

④ PV skylight

It has light transmittance, and can also provide rain protection and heat preservation;

⑤ Pre-fabricated PV panel

It is installed on the facades of buildings or roof plans;

⑥ PV curtain wall

Though it is deviated from the best installation site compare with the roof, its large surface area can make up for the loss of power due to lack of light.

远景规划 Long-term Plan

我司全面推进BIPV设计、生产、安装一体化发展,为广大客户提供低碳、绿色、节能等综合性产品,将为客户提供集光伏发电、储能、直流配电、柔性用电于一体的“光储直柔”BIPV产品解决方案及售后服务。

贯彻新发展理念,助力“碳达峰、碳中和”伟大战略,发挥绿色工厂的带头示范作用,推动行业绿色低碳安全高质量发展。成为世界一流的绿色建筑集成服务商。

根据国家社会经济发展长远规划的方针、政策,在预测分析市场需求变化的基础上,确定本行业发展的指导思想、发展目标、产业政策、结构变化、布局规模等改革与发展的方向,制定实施的总体方案和指标,使公司在国民经济中更好地做出贡献,引领新能源行业健康、有序发展。

We will comprehensively promote the integrated development of BIPV design, production and installation to provide customers with comprehensive products that are low-carbon, green and energy-saving. We will provide customers with BIPV product solutions that integrate PV power generation, energy storage, DC power distribution and flexible power consumption and after-sales services.

We will implement the new development concept, facilitate the great strategy of "carbon peaking and carbon neutrality" and play a leading role as a green factory to promote the green, low-carbon, safe and high-quality development of the industry. We are committed to becoming a world-class integrated service provider of green buildings.

According to the guidelines and policies of the long-term planning of national socio-economic development, we will determine the direction of reform and development such as guiding ideology, development goals, industrial policies, structural changes and layout scale of the industrial development based on the forecast and analysis of market demand changes, and formulate the overall plan and indicators for implementation, so that our Company can better contribute in the national economy and lead the healthy and orderly development of the new energy industry.

建筑光伏 引领未来建筑 BIPV is Leading the Future Buildings