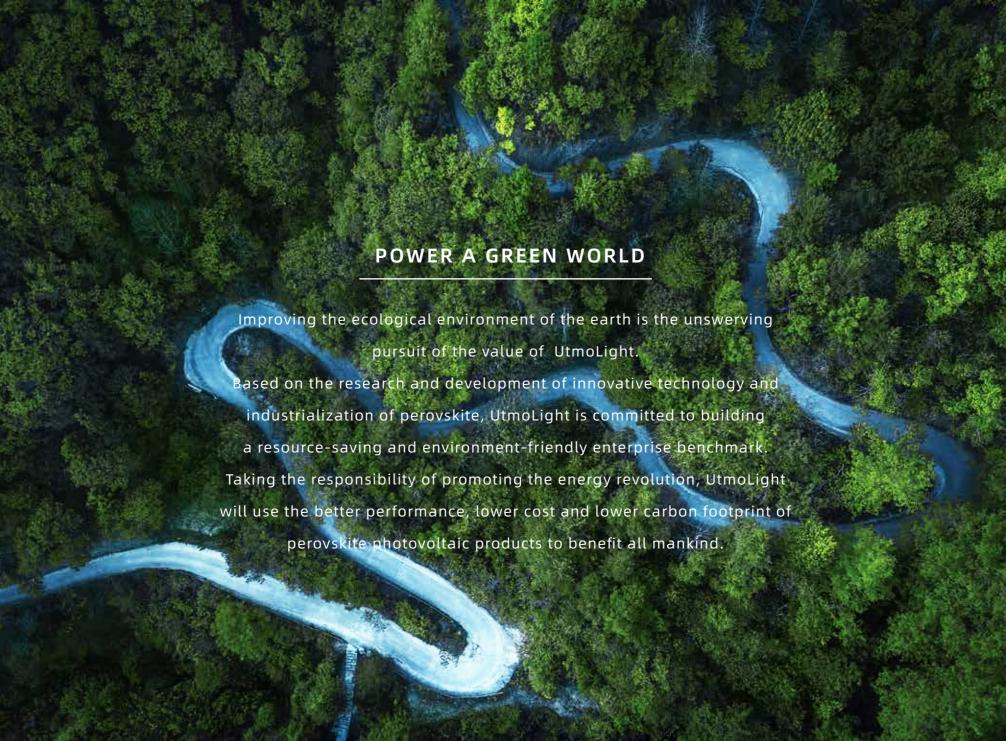
极电光能 UtmoLight



THE GLOBAL LEADER
IN PEROVSKITE INDUSTRIALIZATION



Catalogue

01-02 03-04 05-16 17-28 **About us Technology Development Products Project Case** Overview Advantages of Perovskite Technology Product Profile Milestones Industrial R&D Capabilities Perovskite Photovoltaic Modules **BIPV Series** • Utmoglory-Wall-S Series Power Generation Stone • Utmoglory-Wall-M Series Power Generation Curtain Wall • Utmoglory-Tile-W Series PV Tile • Utmoglory-Roof-Commercial and Industrial Integrated Roofing

Overview

UtmoLight Co., Ltd. (Utmolight), originating from Great Wall Holding Group, was established in Wuxi in 2020. As a global leader in perovskite photovoltaics, the company specializes in the R&D, production and sales of perovskite photovoltaic modules.

UtmoLight holds unique national distinctions in the perovskite sector including: "Specialized and Sophisticated SME Giant" "Intelligent Photovoltaic Pilot Demonstration Enterprise" "Perovskite Photovoltaic Module Pilot Platform". It also maintains exclusive provincial recognition as the "Perovskite Engineering Research Center". The company has been recognized as a China Potential Unicorn Enterprise.

The company has commissioned a 150MW perovskite pilot line and the world's first GW-scale mass production line. Its certified modules (TUV/COC/CCC compliant) with industry-leading performance have been deployed in commercial applications across multiple cities including HeiLongjiang, Chengdu, Shanghai, Wuxi, Guangzhou, Hefei, and Baoding, while achieving the industry's first overseas deployment.

Looking ahead, UtmoLight will enhance its innovation capabilities and production capacity to accelerate large-scale commercialization of perovskite PV modules. The company aims to deliver premium smart energy solutions for Building-Integrated Photovoltaics (BIPV), distributed PV systems, ground-mounted power plants, and other innovative applications, while fostering new industrial ecosystems.

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Brand Mission

Power a green world

Brand Vision

Build the world's leading green energy technology company

Core Value

Struggle, Innovation, Win-win

Milestones

2018-2019	2020	2021	2022	2023	2024	2025
Form a project team	Company Incorporation	Global launch of 'Utmorigin' mass production technology of Perovskite	150MW of Perovskite production line launched	Groundbreaking for GW-grade perovskite industrial base	Mass production line put into production	GW-scale mass production line commissioned
Cell efficiency 22.74%@1cm²	Calcium-Titanium Innovation Centre put into operation	Module efficiency 20.1 @64cm ² broke world record	Module efficiency 18.2%@756cm ² broke world record	Module efficiency 19.5%@810cm² broke the world record	Academician Nazeeruddin joined the company full time	Module efficiency 18.1%@0.72m² broke world record
Module efficiency 19.2%@64cm²	Pilot line put into operation	Started the construction of the 150MW Perovskite production line	GW-grade Perovskite industrial base settled in Xishan	0.72m²commercial grade module efficiency 17.18% and 18.2% broke the world record consecutively	Module Efficiency 20.7%@810cm² broke the world Record	2.8m² module achieves world-record-breaking 480.5W power output
			Module efficiency 18.8%@810cm² broke world record	0.72m ² commercial grade module passed IEC61215、 IEC61730 standard certification	Recognized as National "Specialized and Sophisticated SME Giant"	
			Selected as a potential unicorn in China Start of industrialization	Selected as 'Intelligent PV Pilot Demonstration Enterprise' by the Ministry of Industry and Information Technology of the People's Republic of China	Successfully commissioned world's first GW-scale perovskite production line with inaugural module outpu	ıt

Advantages of Perovskite Technology

Perovskite has obvious advantages and is a 'disruptive' photovoltaic technology



33%

Higher efficiency ceiling

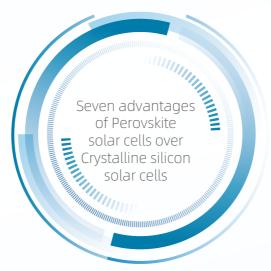
Designable material system and adjustable band gap



↓50%

Low cost

No need for precious materials, low material consumption, low purity requirements, perfect domestic supply chain



1/4

Lower carbon footprint

No need for high temperature during the whole life cycle of the production process, energy consumption is only 1/4 of Crystalline silicon solar cells



45₉

Higher efficiency

Stacked cells can be stacked with Crystalline silicon solar cell to achieve higher efficiency





4 → **1**

Low industry chain investment

With lower investment, shorter industry chain and easier steps, all processes canbe completed in a single plant.
In the future, the investment in

In the future, the investment in single GW equip ment will be reduced to CNY 400 million.



High power generation per watt





Photovoltaic + Everything

Translucent, color-adjustable, aesthetically pleasing and versatile for a wide range of applications such as BIPV, PV agriculture, furniture applications, etc



Industrial R&D Capabilities

UtmoLight leads the industry in perovskite industrialization and commercialization progress.

Pioneered the "Utmorigin+" Perovskite Industrialization Solution, resolving technical bottlenecks in perovskite solar cell mass production. 9-time world record holder for perovskite module conversion efficiency.

Four-in-One Stability Solution: Integrated technical protocols for long-term module reliability.

Three-Dimensional Certification Framework: Accelerates commercial adoption through rigorous testing standards.

Industry-first TUV-certified perovskite PV products. Pioneered multi-climate outdoor validation with superior field performance.

500+ core patents filed 70% invention patent ratio

160+ technical specialists 60% hold master's/doctoral degrees

complete mass-production tech system R&D industrialization platforms

manuf n bases

2 20000_{m²} R&D

R&D innovation hub





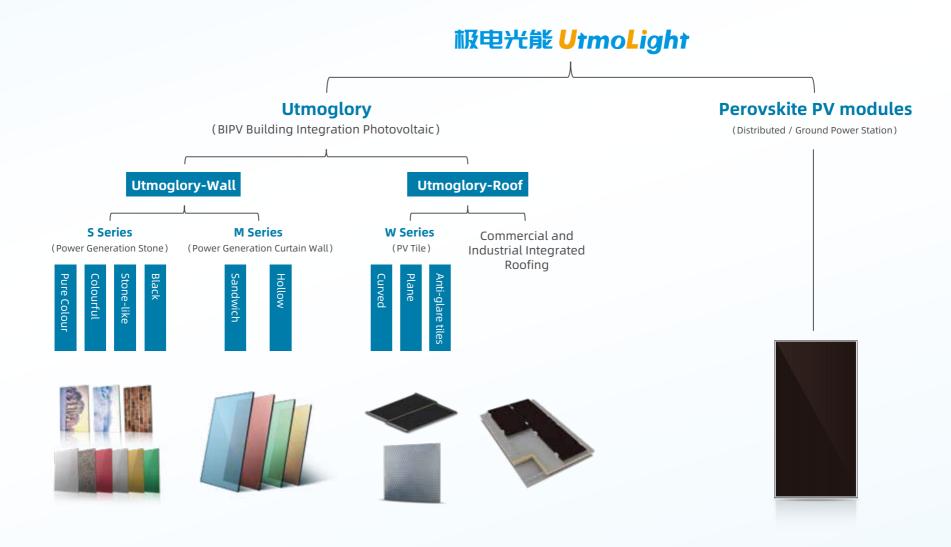


Prof. M.K. Nazeeruddin

Chief Scientist, UtmoLight

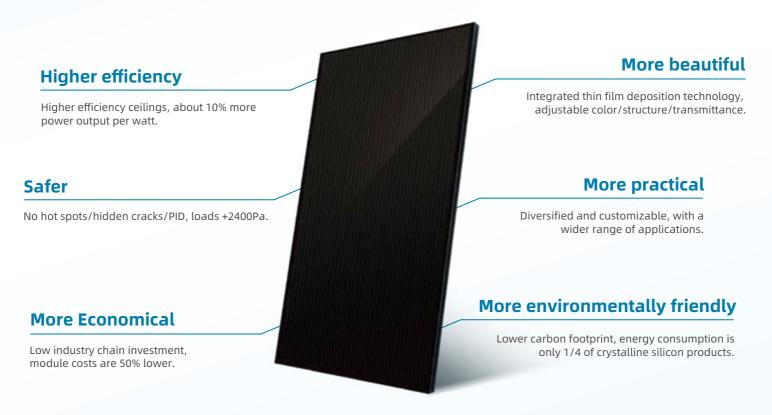
Member, European Academy of Sciences
Fellow, Royal Society of Chemistry
Former Chair Professor, EPFL (Switzerland)
Ranked among TOP 10 perovskite scientists globally
#5 Most Cited Chemist (2018-2023)
Clarivate™ Highly Cited Researcher (11 consecutive years)

Products of UtmoLight



Perovskite PV Modules

Premier Pioneer & Enabler of High-Efficiency, High-Reliability Perovskite Modules



10-year product warranty/25-year linear power output guarantee

Perovskite PV Modules

Electrical Performance Parameters (STC)

Model	UL-M12-G1-110	UL-M12-G1-115	UL-M12-G1-120	UL-M12-G1-125	UL-M12-G1-130
Maximum rated power Pmax(W)	110	115	120	125	130
Working voltage at maximum power point Vmpp(V)	69.1	71.2	74.1	75.8	77.2
Working current at maximum power point Impp(A)	1.63	1.63	1.64	1.65	1.69
Open circuit voltage Voc(V) ±10%	81.1	82.5	83.3	84.1	85.2
Short-circuit current IsC(A) ±5%	1.75	1.76	1.77	1.78	1.79
Module efficiency(%)	15.3	16.0	16.7	17.4	18.1
Output Power Tolerance	0~5W	0~5W	0~5W	0~5W	0~5W

STC (Standard Test Conditions): Irradiance 1000W/m², Cell Temperature 25°C, Atmospheric mass AM1.5

Mechanical Parameters

PV module dime	ension 1200mm*600mm±2mm
Thickness	7.0mm±0.2mm
Area	0.72m²
Weight	12±0.5kg
Cable	Length 800 (0~+50) mm, Wire Diameter 2.5mm²
Bypass Diode	1PCS
Connector Type	05-8,UTX,EVO2, RHC2xyzu(Compatible MC4)
Front Glass	3.2mm TCO Glass
Backsheet	3.2mm Tempered Glass
Encapsulated	PIB&POE

Operating Parameters

Operating Temperature	-40°C∽+85°C
Maximum System Voltage	1500V
Maximum static load	±2400Pa
Fuse Current	2.5A
Fire Rating	Class C
Protection class	IP68

Temperature Coefficient

Module Operating Temperature	42.3±2℃
Maximum power temperature coefficient	-0.003%/℃
Temperature coefficient of open circuit voltage	-0.001%/℃
Temperature coefficient of short-circuit	+0.000%/°C
25-Year Linear Power Warranty	3% initial degradation (Year 1), 0.5% annual





Rating: A2 | IEC/EN 61215 IEC/EN 61730



Perovskite PV Modules

Electrical Performance Parameters (STC)

Model	UL-M23-430	UL-M23-440	UL-M23-450	UL-M23-460	UL-M23-470	UL-M23-480	UL-M23-490	UL-M23-500
Maximum rated power Pmax(W)	430	440	450	460	470	480	490	500
Working voltage at maximum power point Vmpp(\	_{/)} 136.9	138.6	140.3	142.1	143.8	145.5	147.2	148.9
Working current at maximum power point Impp(A) 3.15	3.17	3.21	3.24	3.27	3.31	3.33	3.36
Open circuit voltage Voc(V) ±10%	166.3	166.6	166.9	167.1	167.4	167.7	168.0	168.3
Short-circuit current IsC(A) ±5%	3.52	3.53	3.54	3.55	3.56	3.58	3.59	3.60
Module efficiency(%)	15.4	15.7	16.1	16.4	16.8	17.1	17.5	17.9
Output Power Tolerance	0~5W	0~5W	0~5W	0~5W	0~5W	0~5W	0~5W	0~5W

STC (Standard Test Conditions): Irradiance 1000W/m², Cell Temperature 25°C, Atmospheric mass AM1.5

Mechanical Parameters

PV module dime	ension 1220*2306±2mm	
Thickness	35±0.5mm	
Area	2.82m²	
Weight	41.5±1kg	
Cable	Length 800 (0~+50) mm, Wire Diameter 2.5mm²	
Bypass Diode	1PCS	
Connector Type	05-8,UTX,EVO2,RHC2xyzu(Compatible MC4)	
Chip glass	3.2mmFTO glass	
Backsheet 2.0mm Tempered Glass		
Encapsulated PIB&POE		

Operating Parameters

Operating Temperature	-40°C∽+85°C
Maximum System Voltage	1500V
Maximum static load	±2400Pa
Fuse Current	5A
Fire Rating	Class C
Protection class	IP68

Temperature Coefficient

Module Operating Temperature	42.3±2℃
Maximum power temperature coefficient	-0.003%/℃
Temperature coefficient of open circuit voltage	-0.001%/°C
Temperature coefficient of short-circuit	+0.000%/°C
25-Year Linear Power Warranty	3% initial degradation (Year 1), 0.5% annual









BIPV Series



Utmoglory-Wall-S Series



Better performance

- Higher power generation capacity due to the Quantum Dot Gain technology.
- Better low-light performance for longer effective power generation time.
- Low temperature coefficient makes high temperature power generation performance superior.
- Intelligent temperature monitoring system is optional.

Better appearance

- Dazzling color technology, special stone-like pattern.
- Aesthetic and practical at the same time.
- Patterns and colors can be customized for a variety of choices, and have a light-emitting function.
- Integral design, perfectly match with architectural needs.

Safe and low carbon

- Construction-grade materials can adapt to all kinds of harsh environments and have the same life span as the building.
- With the support of green technology, it can achieve the goal of economic energy saving, cleanliness and environmental protection.
- Short industry chain, abundant raw materials, and greatly reduced production energy consumption.

Utmoglory-Wall-S Series

Electrical Performance Parameters (STC)

Model		Pure Colour/Colourful	Stone-like	Black
Maximum rated power	Pmax (W)	85~105	75~95	110~130
Working voltage at maximum power point	Vmpp (V)	66.7~71.1	65.4~70.3	68.4~72.7
Working current at maximum power point	Impp(A)	1.29~1.47	1.13~1.34	1.61~1.79
Open circuit voltage	Voc(V)	81.4~86.6	81.4~86.6	81.4~86.6
Short-circuit current	Isc(A)	1.52~1.63	1.33~1.49	1.90~1.98
Module efficiency	%	11.93~14.51	10.25~13.12	15.29~18.09

STC (Standard Test Conditions): Irradiance 1000W/m², Cell Temperature 25°C, Atmospheric mass AM1.5

Mechanical Parameters

Component Size	1200mm*600mm,Other sizes available on request
Thickness	10.6/20.5/22.5mm (±0.8mm)
Front Panel Glass	3.2/5/6mm Colored tempered glass, colors on request
Back Panel Glass	3.2/5/6mm tempered glass
Weight	19/27.5/32kg (±1kg)
Wire	Wire Length 800mm , Wire Diameter 1.5/2.5mm², customizable
Connector Type	MC4 / MC4 Compatible

Operating Parameters

Maximum System Voltage	e 1000V
Fuse Current	2.5A
Fire Rating	Class C
Operating Temperature	-40°C∽+85°C
Maximum static load	±2400Pa/±5400Pa
Protection class	IP67

Temperature Coefficient

Module Operating Temperature (NMOT)	42.3±2℃
Maximum power temperature coefficient (Pmax)	-0.003%/°C
Temperature coefficient of open circuit voltage (Voc)	-0.001%/°C
Temperature coefficient of short-circuit (Isc)	+0.000%/°C



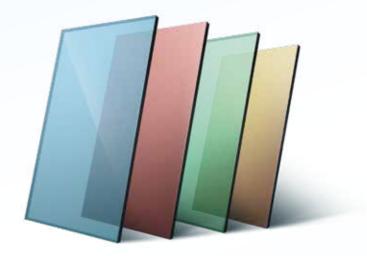






⊘ IEC/EN 61215 IEC/EN 61730/CCC

Utmoglory-Wall-M Series





Comparison of light transmission effect under different technology process

Better performance

- Replacement of traditional hollow and laminated glass with power generation function
- Better efficiency, good low light performance, more power generation, higher return rate

Better appearance

- Colors can be customized to match modern architectural aesthetics
- Aesthetic and practical at the same time
- Standardized modular design, easy to install, perfectly matching architectural needs
- Good light transmission and adjustable transmittance

Safe and low carbon

- Construction-grade materials can be adapted to all kinds of harsh environments
- A green technology, clean, low cost and environmental friendly
- Short industrial chain, abundant raw materials and greatly reduced energy consumption in production

Utmoglory-Wall-M Series

Electrical Performance Parameters (STC)

型 号	UL-JYQ-YB-T10	UL-JYQ-YB-T20	UL-JYQ-YB-T30	UL-JYQ-YB-T40	UL-JYQ-YB-T50
Transmittance (%)	10	20	30	40	50
Maximum rated power Pmax(W)	95~100	85~90	75~80	65~70	50~55
Working voltage at maximum power point Vmpp (V)	68.71~69.94	68.71~69.9	68.71~69.94	68.71~69.94	68.7~69.94
Working current at maximum power point Impp (A)	1.43~1.47	1.27~1.30	1.11~1.14	0.95~0.98	0.80~0.82
Open circuit voltage Voc (V)	84.2~84.75	84.22~84.7	84.2~84.7	84.2~84.7	84.2~84.7
Short-circuit current Isc (A)	1.56~1.59	1.38~1.42	1.21~1.24	1.04~1.06	0.86~0.88
Module efficiency (%)	13.66~14.25	12.14~12.67	10.62~11.08	9.10~9.50	7.59~7.92

STC (Standard Test Conditions): Irradiance 1000W/m², Cell Temperature 25°C, Atmospheric mass AM1.5

Mechanical Parameters

Component Size	1200mm*600mm,Other sizes available on request		
Thickness	11mm (±0.5mm)		
Area	0.72m²		
Weight	20kg(±0.5kg),Can be customized		
Wire	Wire Length 300mm,Wire Diameter 2.5-4mm²/Can be customized		
Connector Type	MC4 / MC4 Compatible		
Front Panel Glass	3.2mm Ultra-white, high-transparency tempered glass, can be customized		
Back Panel Glass	3.2mm Ultra-white, high-transparency tempered glass, can be customized		
Encapsulated	PIB Sealing & PVB		

Temperature Coefficient

Module Operating Temperature (NMOT)	42.3±2°C
Maximum power temperature coefficient (Pmax)	-0.003%/°C
Temperature coefficient of open circuit voltage (Voc)	-0.001%/°C
Temperature coefficient of short-circuit (Isc)	+0.000%/°C







Utmoglory-Tile-W Series

Better performance

- Better low light performance, near-zero temperature coefficient, more suitable for the roof applications
- In essence, it has all the functions of traditional tiles, whether in terms of material, modelling or overall performance, and is also superior to traditional tiles in terms of safety, waterproofing and service life

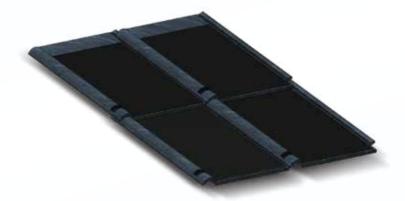
Better appearance

- The appearance and modelling show a unique curved surface, and the crystal clear glass material makes the roof even more beautiful
- The appearance and modelling can be customized in variety of colors and shapes.
- Standardized modular design, easy to install, perfectly match the needs of the building

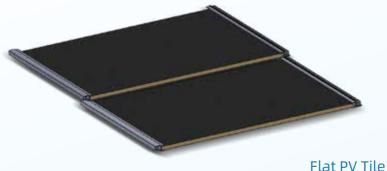
Energy saving and environmental protection

- Construction-grade materials can be adapted to various harsh environments
- With the support of green technology, it can achieve the goal of economic energy saving, cleanliness and environmental protection
- Short industrial chain, abundant raw materials and greatly reduced energy consumption in production





Curved PV tiles



Utmoglory-Tile-W Series

10-year product warranty/25-year linear power output guarantee

Perovskite Anti-Glare Scale Tile



Better performance

- Structured pattern, better light trapping effect, more power generation
- Combined with perovskite Quantum Optical Conversion Technology, the power generation efficiency is better

Better appearance

- Architectural grade polymer film, softer optical effect
- The surface pattern and color can be customized to closely match the architectural aesthetics

Safer and more reliable

 The weather-resistant soft film on the surface can absorb hail and wind pressure stress and reduce the impact on the internal power generation chip, making the product more impact-resistant

Good self-cleaning ability

 The architectural grade polymer film has a low coefficient of friction and is easy to be cleaned by rainwater after staining, featuring a strong self-cleaning ability

Mechanical Parameters

Component Size	822*822mm		
Thickness	9.2-13.2mm (Junction box included 24.7mm)		
Area	0.67m²		
Weight	13-17Kg (±0.5kg)		
Wire	Wire Length 300mm±10mm,Wire Diameter 4mm²,Can be customized		
Connector Type	MC4 / MC4 Compatible		
Front Panel Glass	3.2mm Ultra-white, high-transparency tempered glass		
Back Panel Glass	3.2mm Ultra-white, high-transparency tempered glass		
Encapsulated	PIB Sealing & PVB		

Operating Parameters

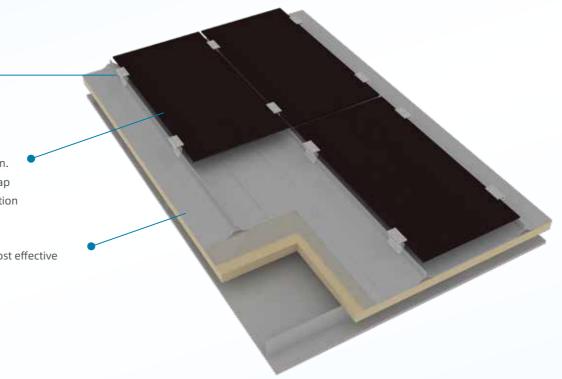
Maximum System Voltage	1500V
Fire Rating	Class C
Operating Temperature	-40°C∽+85°C
Module Operating Temperature (NMOT)	42.3±2℃
Safety Rating	CLASS II
Protection class	IP67

Utmoglory-Roof-Commercial and Industrial Integrated Roofing

360° clamping on standing seams for waterproof, quick non-destructive installation, easy maintenance and replacement

Safe under 3600Pa wind uplift, equal to level 13 typhoon.
Class A combustion and fire-resistance grade. >10cm gap
to the steel roof for bettter ventilation and heat dissipation

85% utilization of 625 width steel roll, cost effective



Test Items	Test Standard	Test Level	Test Result
Wind uplift test	GB/T 39794.1-2021	2800Pa & 3600Pa	Pass (Level 13 typhoon)
Air tightness test	GB/T 15227-2019 GB/T 21806-2007	≥2000Pa	Level 5 (highest level)
Water tightness test	GB/T 15227-2019 GB/T 21806-2007	Qa≤0.5 (Actual measured value 0.2)	Level 4 (highest level)

Project Name: Taihu Lake hydrology Station Project

Project Overview: The wall area around the top floor of the Taihu Lake Monitoring Station is equipped with light-transmitting perovskite modules developed by UtmoLight. Perovskite of this project adopts the way of thinning the film layer to realize light transmission, and the double-sided module adopts photovoltaic power generation to provide daily electricity for the Observatory.



Project Name: State Grid Wuxi Integrated PV-ESS Charging/Discharging Carport Project

Project Overview: The project has an installed capacity of 35.34 kW with an annual power generation of approximately 43,400 kWh, equivalent to reducing about 38,000 metric tons of carbon dioxide emissions annually and avoiding the consumption of nearly 17,000 tons of standard coal.



Project Name: Hefei CBD Building Facade project

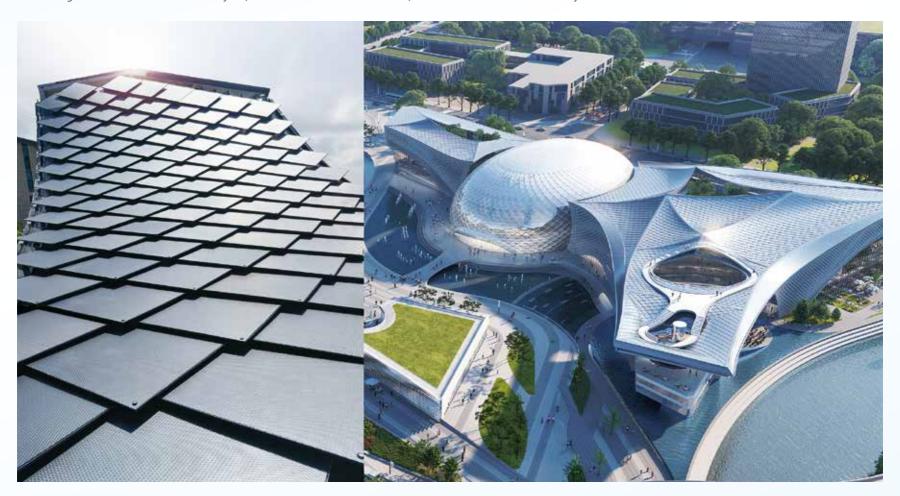
Project Overview: The inter-storey isolation zone of the south facade and the wall of the Feidong Financial Building adopt the black BIPV products of UtmoLight.

The total installed capacity of the project is 540KW, with an average annual capacity of 480,000kwh, and all the photovoltaic power generation is used for the daily electricity consumption of the building. The access method of this project adopts the low-voltage side to connect to the national power grid.



Project Name: Wuxi Concert Hall Project

Project Overview: The world's first perovskite photovoltaic 'Dragon Scale' roof. The roof area of the project is 7,566 square meters, with an installed capacity of 1,240KW. According to the preliminary calculation of horizontal irradiation, the project can achieve an average annual power generation of 1.2 millionKWh/year, which is equivalent to a saving of 479 tons of standard coal/year, and an emission reduction of 1,043 tons of carbon dioxide CO₂/year.



Project Name: Chengdu Hard-tech Industrial Park Distributed Rooftop PV Project

Project Overview:The project has a total installed capacity of 382 kW and an annual power generation of about 350,000 kWh,

equivalent to reducing over 300,000 metric tons of carbon dioxide emissions annually and avoiding the consumption of nearly 140,000 tons of standard coal.



Project Name: Baoding Tech Innovation Park Project

Project Overview: The project deployed 3,900 perovskite PV modules (1200×600mm) with a total installed capacity of approximately 409 kW. The expected average annual power generation reaches 465,600 kWh, equivalent to reducing 398.32 metric tons of carbon dioxide emissions and saving 186.1 tons of standard coal consumption annually.



Project Name: Hebei Baoding "light storage and charging integration" super charging station Project

Project Overview: As a benchmark demonstration in the industry, it is the world's largest single-unit charging station with perovskite photovoltaic modules. The installed capacity of the project is 40KW, and the average annual power generation is expected to be 47,400 kWh.



Project Name: Hebei Province Commercial Residential Complex Curtain Wall Project

Project Overview: Semi-transparent perovskite BIPV panels were applied to the parapet glass curtain walls of 9 villas in Phase 1 and 14 high-rise buildings in Phase 2. The project has a total installed capacity of 420 kW and an annual power generation of 300,000 kWh, which is fully utilized for the fresh air systems in the residential buildings, with grid connection implemented through individual low-voltage integration per building.





Project Name: Shanghai Eye Hospital Distributed PV Project

Project Overview: The project has an installed capacity of approximately 25 kW with an expected first-year power generation of 25,000 kWh, equivalent to reducing 21.8 metric tons of carbon dioxide emissions and saving 10.2 tons of standard coal consumption.



Project Name: SPIC Daqing Centralized PV Plant

Project Overview: This project has an installed capacity of approximately 1 MW. The first-year power generation is estimated to reach 1.47 million kWh, equivalent to reducing carbon dioxide emissions by 1,167.3 tons and saving standard coal consumption by 545.5 tons.



Project Name: Wuxi Digital Park Curtain Wall Project

Project Overview: UtmoLight perovskite PV modules with 20% light transmittance were integrated into the interlayer curtain walls of Wuxi Digital Park, seamlessly combining the photovoltaic components with the building structure. The project has a total installed capacity of approximately 50 kW with an expected first-year power generation of 29,600 kWh, equivalent to reducing 25.3 metric tons of carbon dioxide emissions and saving 11.8 tons of standard coal consumption.





Project Name: Baoding Love Plaza Skylight Roof Project

Project Overview: UtmoLight perovskite PV modules, primarily sized at 1200×1800mm and custom-cut into over one hundred different sizes, were transformed into dome glass to construct the arched roof. With 20% light transmittance, approximately 3,000m² coverage (making it the world'slargest single perovskite PV roof structure), and an installed capacity of 320 kW, the project is expected to generate 347,000 kWh of electricity in its first year, equivalent to reducing 297.1 metric tons of carbon dioxide emissions and saving 138.9 tons of standard coal consumption.



Follow the UtmoLight official account to learn more.







Official WeChat Account Official WeChat Channel

Official TikTok Account