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Offices：East China:Wuxi, Hefei,Qingdao,Liaocheng;
Southwest China:Guiyang,Kunming,Chengdu;
Northwest China：Baoji,Yulin

WeChat official Account

WeChat Channel

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Helios Power
赫里欧新能源

为所有建筑穿上安全发电的衣服

Safety BRPV Everyehere on Every Building



HELIOS PRODUCT LIST

BRPV：Building Reinforced PhotoVoltaic


Light Steel Structure Industrial Buildings BRPV


BRPV Concrete Roofs & Walls


Flexible Roofing-integrated BRPV


BRPV (slope protection) with Steel Backsheet


CNPC LNG Refueling Station


Parking Lots Integrated PV + Storage+ Charging (PSC) System

赫里欧新能源有限公司

致力于成为全球领先的建筑综合能源系统提供商

Helios Power Co., Ltd.

Committed to being a global leading provider
in Building-Integrated Energy System

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ABOUT HELIOS

Headquartered in Xi'an, Shaanxi Province, is a national high-tech enterprise specializing in BuildingReinforced Photovoltaic Systems (BRPV®) . The company is dedicated to the R&D manufacturing, andcommercialization of intelligent, low-voltage PV building materials that prioritize intrinsic safety,fire-resistant, and waterproof. It provides comprehensive BRPV solutions for various applications.

With a Portfolio of over 200 intellectural property rights covering 70+ invention patents and 20+significant certifications. Helios provides end-to-end solutions from R&D, design, manufacutring, sales,installation, intelligent operation and investment. Recognized as a National-Level "Little Giant"Specialized and Innovative Enterprise, a Shaanxi Province based "Specialized and Innovative"Enterprise, and a "National High-Tech Enterprise", we operate two major manufacturing bases inShandong and Yunnan Province. Helios has successfully delivered more than 300 projects to date. Oneof the major manufacturing bases has an annual production of 2,000,000 m BRPV systems with over100,000 micro-inverters.

Helios - Derived from the God of Sun in Ancient Greek.

Company Positioning

Industry-leading enterprise providing the full lifecycle of building new energy system design, R&D, manufacturing, customisation, installation, operation, and services.

Mission and Responsibility

To help all buildings put on safe power-generating system;
To make green energy buildings and lea a zero-carbon life.

Company Vision

Committed to becoming a globally leading supplier of integrated building energy systems.

Main Products

Industry-leading HelioTile, HelioWall, prefabricated photo voltaic carports, low-voltage inverters, building energy storage system products and so forth.

Helios' BRPV system has obtained various international certifications. Notably, it has achievedthe 3A fire rating certifications simultaneously meeting both building material and PV standards:China's Class A2 building fire rating, the US standard UL790 Class A fire rating, and theEuropean standard TUV Class A certification.

The complete BRPV system features sevenreliability functions: Fire resistance, Waterproofing, Walkability (anti-crack), Wind upliftresistance, Shading mitigation, Anti-glare, and Anti-dust accumulation.

Helios' main product portfolio currently includes: New Intelligent PV Tile Systems, New PV WallSystems, Isolated Safe Low-Voltage Micro Inverters, DC-DC PV Optimizer, New PV CarportSystems, New PV Highway Slope Protection Systems, Building Energy Storage Systems,Containers with Building Integrated PV Systeatong with corresponding application solutionsfor each scenario.

Helios - Development Path

2017
In Shanghai, it was established as Sino-American joint venture Helios Renewable Energy Technology (Shanghai) Co., Ltd. and set up a R&D team.

2019
New smart photovoltaic tiles successfully developed.

2020
Xi'an High-tech Zone registers Helios New Energy Co., Ltd. as the parent company.

2023
Shaanxi Province "Specialized, Refined, Distinctive, and Innovative" Enterprise,
Leading Enterprise in Green Power-Generating Building Materials,
National Top 500 in the "Maker China" Competition,
First Place in Shaanxi in the China Innovation and Entrepreneurship Competition.

2024
Ministry of Industry and Information Technology Smart Photovoltaic Demonstration Enterprise,
Leading Enterprise in Green Power-Generating Building Materials, Patent-Intensive Product Certification

2025
Recognized as a National "Little Giant" Enterprise、
Ranked in the Top 500 of the "Maker China" Competition Named "、
2025 Top BIPV Company"

Core Qualifications



System

- ISO9001 QMS Certification
- ISO45001 OHSMS Certification
- ISO14001 EMS Certification
- Integration of IT & OT Management System Certification
- IP Compliance Management System Certification
- PICC Insurance provides coverage

Patents

- Over 200 applications
- Over 150 authorized patents
- 16 software copy-rights
- Over 70 invention patents
- 3 PCT patents

Qualifications & Certifications

- National-level Specialized, Sophisticated, Unique and Novel "Little Giant" Enterprise
- High-tech Enterprise
- National Pilot and Demonstration Enterprise of Intelligent Photovoltaics
- Enterprise Included in the National Catalogue of Energy-Saving and Carbon-Reducing Technologies in the Industrial Field
- Class B Qualification for New Energy Power Generation Design (Design)
- Class II Qualification for General Contracting of Electric Power Engineering (Construction)
- Class III License for Undertaking the Installation, Maintenance and Test of Electric Power Facilities (Operation and Maintenance)
- China Building Materials Class A2 Fire Resistance
- TÜV-A (in accordance with UL790-A USA)
- CQC Certified Products
- China Green Building Materials Products
- Work Safety License
- Patent-Intensive Products
- Participated in compiling 4 national standards and 3 local standards

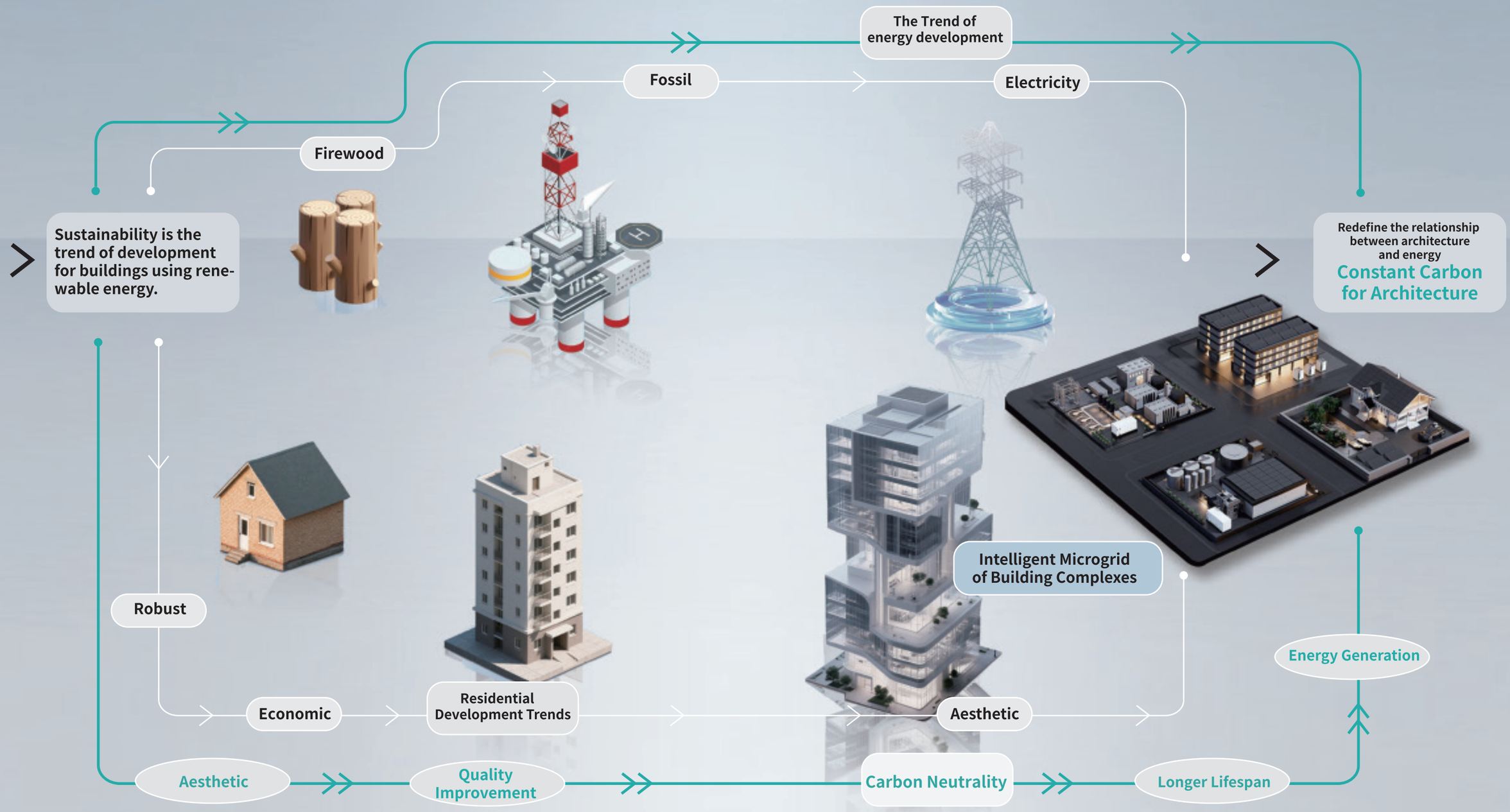
Service

- Design
- R&D
- Manufacture
- Customisation
- Installation
- Operation
- Service

Enterprise Value

Green building materials, renwable power generation formed buildings from "energy consumers" to "energy producers".

As the construction industry shifts from "energy consumers" to "energy producers",
Helios empowers buildings with a new standard: Energy Autonomy.
By deeply integrating photovoltaics with structural building materials, our solutions transform static roofs and walls into active power generators. This integration enhances building aesthetics and durability while delivering a "Smart Microgrid" that ensures energy security and significantly reduces carbon footprints over the building's lifecycle.



Global Layout



Successful Application Projects **300+**

Annual Energy Output of BRPV System **2000000㎡**

Micro-inverter Energy Generation **100000+**

Achieve annual carbon balance **RE100**

Production Base



Qujing Heneng New Energy Co.,Ltd

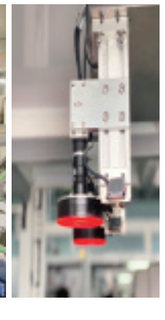
Completed in 2024 and put into operation in March 2024
Building clean energy construction: 3.2 MW power generation on the roof and south wall
Annual power generation of 3.6 million kWh, with the first-phase production line consuming 3.3 million kWh of electricity annually





Helios Xi'an Headquarters —Shaanxi Pilot Workshop











Helios Power (Feicheng) Co.,Ltd

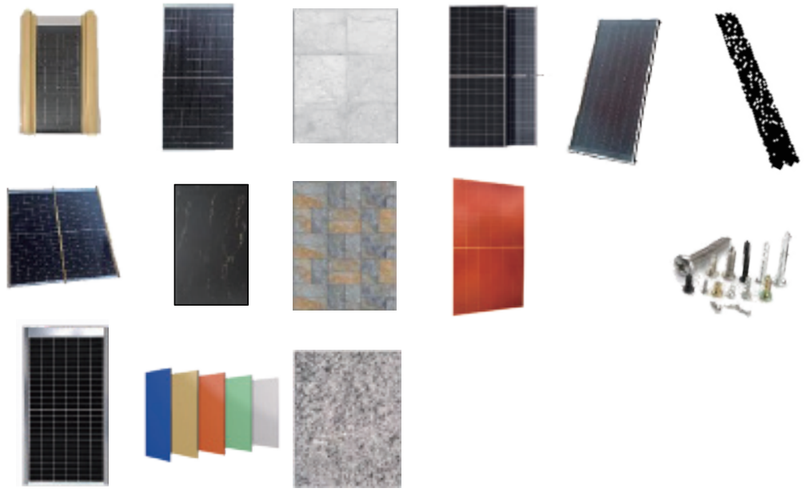
Completed in 2022 and put into operation in February 2023
Building clean energy construction: 2.8 MW power generation on the roof and south wall
Annual power generation of 3.5 million kWh, with the first-phase production line consuming 3.2 million kWh of electricity annually

Helios Product Matrix

Helios Documents Download

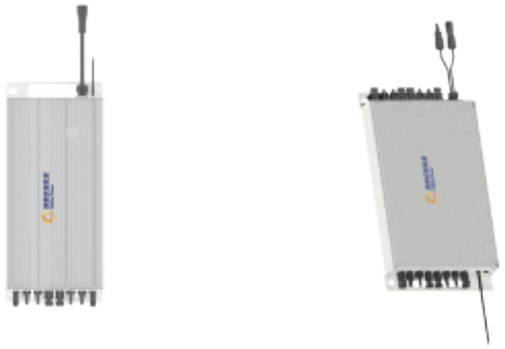
Green PV building materials

PV Tiles | PV Walls | PV Floor Tile | PV Module | BIPVT | Auxiliary Materials



Power Electronics

Inverter | DC/DC



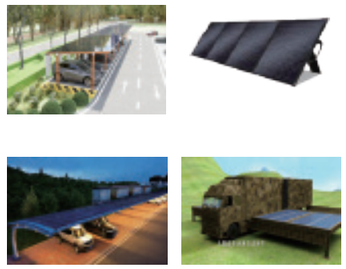
Building Energy Storage

Small-Scale Energy Storage | C&I Energy Storage



Solutions

PV Carport | Portable PV Power Supply



PV Tiles™ Series

Basic Model

- Flat Tile
- VW Lock-seam Tile

Tile Series

- Oriental Han-style Tile
- Metal Flat Tile for Luxury Villas

Lightweight Products

- Lightweight Tile
- Ultra-lightweight Tile

Wall Panel PV ™ Series

Imitation Stone Curtain Wall Series

- Tianshan White
- Hetian Green
- Luoyue Gray

Metal Curtain Wall Series

- Flat Metal Wall Panel
- Flat Metal Wall Panel-C

Colorful Functional Curtain Wall Series

- Transparent Series
- Oriental Han Wall

Power Electronics

Three-phase Microinverter

DC-DC Coupler

Building Energy Storage

Distributed BuildingEnergy Storage System

HELIOS BRPV

PV Tiles™ Series - Basic Model

PV Tile 650W

PVTiles™Series BRPV-PLUS

- 120V safe low voltage
- Highly efficient and leading
- Steady Returns
- Rest assured, worry-free

24% Highest Conversion Efficiency	**Class Afireproof** Fire Rating	**1%** First-year Power Degradation
High-strength Alu-Zinc steel sheet Backplane	**30Y** Service Life	**10Y** Product Warranty

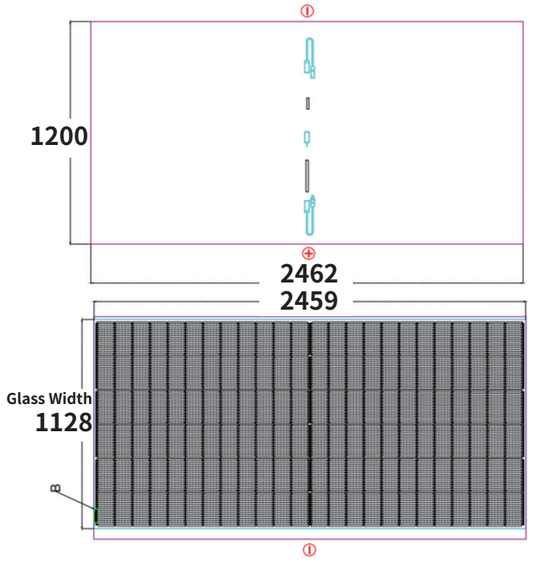


Horizontal laying type

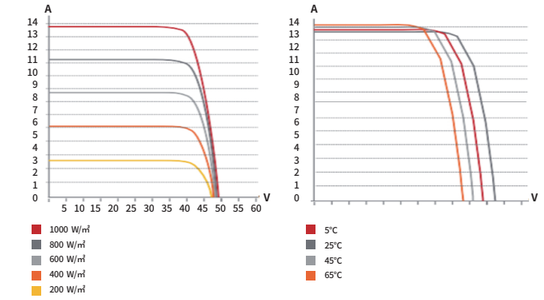
PV Tile 650W-Specifications

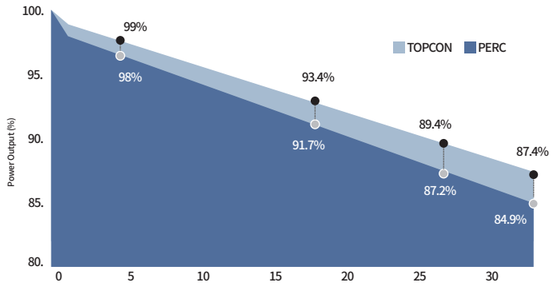
Note: Construction Drawing Set QB/T 9003-2023© ®

Dimensional drawing (±5mm tolerance)



I-V curve





Mechanical specs	PV Tile 650W
Model	HBV156 640/645/650/655N
External dimensions (±5mm)	2462*1200*3.9 mm
Installation dimensions (±5mm)	2480*1150mm (Design and Layout Matrix)
Thickness (±0.5mm)	3.9mm
Gross weight (±1kg)	30kg
Glass size	2459*1128mm
Cable	1×4.0mm² PV cable, 300mm (customizable)
Connector	Direct connection/MC4
Cell type	Monocrystalline silicon cell, TOPcon
Cell arrangement	156 pcs
Front glass	2.0mm anti-reflective coated thermally tempered glass
Backsheet	0.5mm high-grade galvanized aluminum steel sheet
Fire rating (building)	TÜV-A / UL790-A / Class A2 fire rating*
Packing info	36 pcs/pallet, 720 pcs/40ft high cube container 864 pcs/17.5m flatbed truck
Linear Warranty	30-years
Product Warranty	10-years

* TÜV-A fire rating based on UL790-A test; Class A2 fire rating based on GB8624

Electrical specs	PV Tile 650W
Model	HBV156 640/645/650/655N
Test conditions	STC*
Max power (Pmax/W)	640/645/650/655
Open circuit voltage (Voc/V)	55.85/55.93/56.86 /57.02
Short circuit current (Isc/A)	13.97/13.98/13.90/13.92
Voltage at max power (Vmp/V)	48.05/48.33/48.40/48.56
Current at max power (Imp/A)	13.33/13.36/13.44/13.51
Module efficiency (%)	23.07%/23.25%/23.43%/23.61%

*Standard Test Conditions (STC): Irradiance=1000W/m², Cell Temperature=25°C, AM=1.5
*Test Tolerance (±3.0%)

Operating specs	PV Tile 650W
Model	HBV156 640/645/650/655N
Max static load front/snow load	5400Pa
Max static load back/wind load	2400Pa
Hail test passed	25mm dia, 23m/s impact speed

Temp coefficient (STC)	PV Tile 650W
Model	HBV156 640/645/650/655N
Temp. Coeff. (Pmax)	0.05%/°C
Temp. Coeff. (Voc)	-0.23%/°C
Temp. Coeff. (Isc)	-0.280%/°C

HELIOS BRPV

PV Tiles™ Series - Basic Model

PV Tile 600W

PVTiles™Series BRPV-F

- 120V safe low voltage
- Highly efficient and leading
- Steady Returns
- Rest assured, worry-free

24% Highest Conversion Efficiency	**Class Afireproof** Fire Rating	**1%** First-year Power Degradation
High-strength Alu-Zinc steel sheet Backplane	**30Y** Service Life	**10Y** Product Warranty

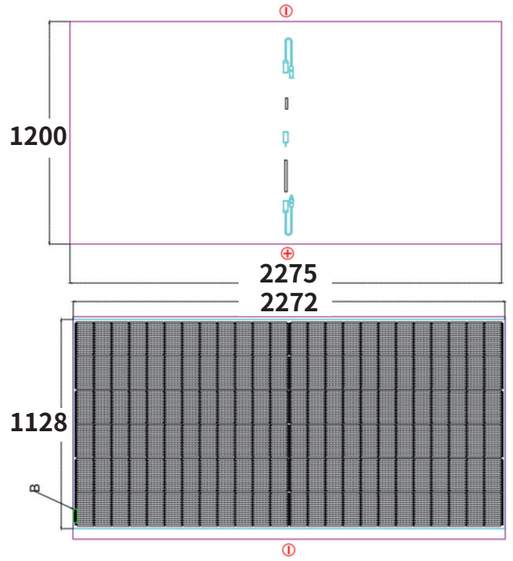


横铺型

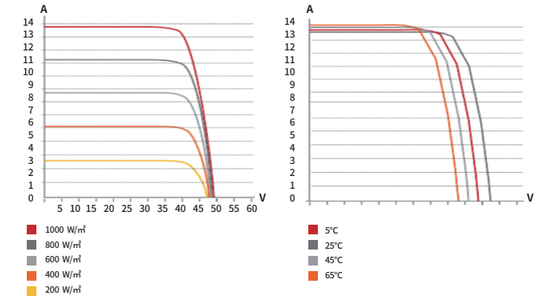
PV Tile 600W-Specifications

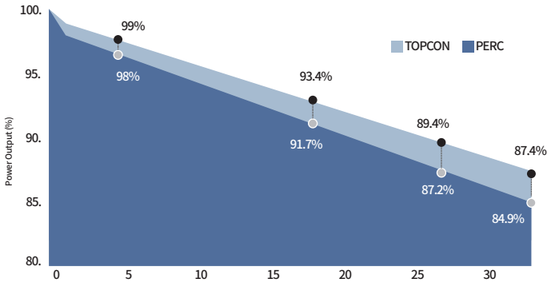
Note: Construction Drawing Set QB/T 9003-2023© ®

Dimensional drawing (±5mm tolerance)



I-V curve





Mechanical specs	PV Tile 600W
Model	HBV144 590/595/600/605N
External dimensions (±5mm)	2275*1200*3.9 mm
Installation dimensions (±5mm)	2300*1150mm (Design and Layout Matrix)
Thickness (±0.5mm)	3.9mm
Gross weight (±1kg)	28kg
Glass size	2272*1128mm
Cable	1×4.0mm² PV cable, 300mm (customizable)
Connector	Straight/MC4
Cell type	Monocrystalline silicon, TOPCon
Cell arrangement	144
Front glass	2.0mm AR-coated heat-strengthened glass
Backsheet	0.5mm high-strength Alu-Zinc steel sheet
Fire rating (building)	TÜV-A / UL790-A / Class A2 fire rating*
Per pallet	36 pcs (China) / 23 pcs (Overseas)
Per 40ft HC container	576 pcs (China) / 690 pcs (Overseas)
17.5m flatbed (load)	1008 pcs
Linear Warranty	30-years
Product Warranty	10-years

* TÜV-A fire rating based on UL790-A test; Class A2 fire rating based on GB8624

Electrical specs	PV Tile 600W
Model	HBV144 590/595/600/605N
Test conditions	STC*
Max power (Pmax/W)	590/595/600/605
Open circuit voltage (Voc/V)	53.52/53.72/53.92/5 4.12
Short circuit current (Isc/A)	14.22/14.28/14.34/14.40
Voltage at max power (Vmp/V)	42.97/43.12/43.26V/43.40
Current at max power (Imp/A)	13.73/13.80/13.87/13.94
Module efficiency (%)	23.02%/23.22%/23.41%/23.61%

*Standard Test Conditions (STC): Irradiance=1000W/m², Cell Temperature=25°C, AM=1.5
*Test Tolerance (±3.0%)

Operating specs	PV Tile 600W
Model	HBV144 590/595/600/605N
Max static load front/snow load	5400Pa
Max static load back/wind load	2400Pa
Hail test passed	25mm dia, 23m/s impact speed

Temp coefficient (STC)	PV Tile 600W
Model	HBV144 590/595/600/605N
Temp. Coeff. (Pmax)	-0.29%/°C
Temp. Coeff. (Voc)	-0.25%/°C
Temp. Coeff. (Isc)	0.045%/°C
NMOT	41±3°C

HELIOS BRPV

PV Tiles™ Series - Basic Model

VW Folded Edge Tile 600W

PVTiles™Series BRPV-VW

- 120V safe low voltage
- Highly efficient and leading
- Steady Returns
- Rest assured, worry-free

24% Highest Conversion Efficiency	**Class Afireproof** Fire Rating	**1%** First-year Power Degradation
High-strength Alu-Zinc steel sheet Backplane	**30Y** Service Life	**10Y** Product Warranty

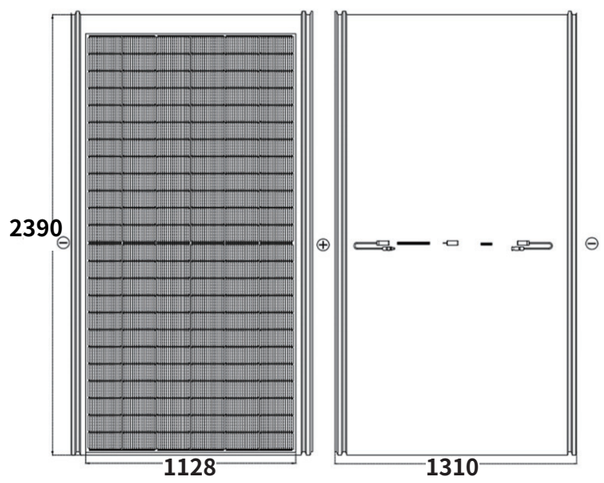


竖铺型

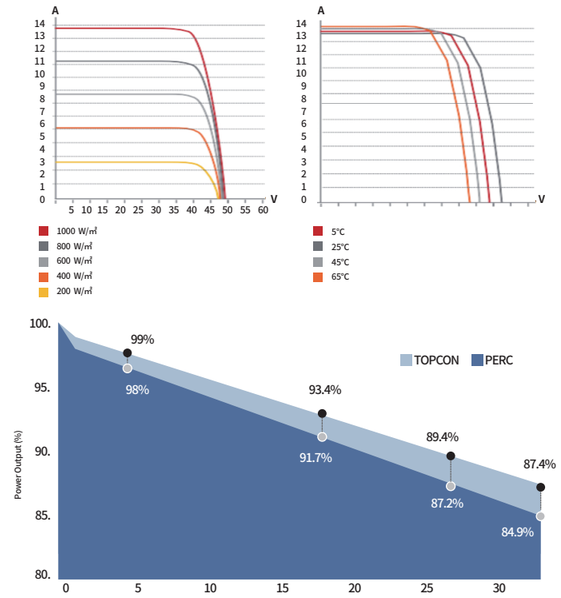
VW Folded Edge Tile 600W-Specifications

Note: Construction Drawing Set QB/T 9003-2023© ®

Dimensional drawing (±5mm tolerance)



I-V curve



Mechanical specs	VW Folded Edge Tile 600W
Model	HBV144 590/595/600/605N
External dimensions (±5mm)	2390*1310*3.9 mm
Installation dimensions (±5mm)	2300*1260mm (Design and Layout Matrix)
Thickness (±0.5mm)	3.9mm
Gross weight (±1kg)	30kg
Glass size	2272*1128mm
Cable	1×4.0mm² PV cable, 300mm (customizable)
Connector	Straight/MC4
Cell type	Monocrystalline silicon, TOPCon
Cell arrangement	144
Front glass	2.0mm AR-coated heat-strengthened glass
Backsheet	0.5mm high-strength Alu-Zinc steel sheet
Fire rating (building)	TÜV-A / UL790-A / Class A2 fire rating*
Per pallet	32 pcs (China) / 23 pcs (Overseas)
Per 40ft HC container	512 pcs (China) / 276 pcs (Overseas)
17.5m flatbed (load)	960 pcs
Linear Warranty	30-years
Product Warranty	10-years

* TÜV-A fire rating based on UL790-A test; Class A2 fire rating based on GB8624

Electrical specs	VW Folded Edge Tile 600W
Model	HBV144 590/595/600/605N
Test conditions	STC*
Max power (Pmax/W)	590/595/600/605
Open circuit voltage (Voc/V)	53.52/53.72/53.92/54.12
Short circuit current (Isc/A)	14.22/14.28/14.34/14.40
Voltage at max power (Vmp/V)	42.97/43.12/43.26/43.40
Current at max power (Imp/A)	13.73/13.80/13.87/13.94
Module efficiency (%)	23.02%/23.22%/23.41%/23.61%

*Standard Test Conditions (STC): Irradiance=1000W/m², Cell Temperature=25°C, AM=1.5
*Test Tolerance (±3.0%)

Operating specs	VW Folded Edge Tile 600W
Model	HBV144 590/595/600/605N
Max static load front/snow load	5400Pa
Max static load back/wind load	2400Pa
Hail test passed	25mm dia, 23m/s impact speed

Temp coefficient (STC)	VW Folded Edge Tile 600W
Model	HBV144 590/595/600/605N
Temp. Coeff. (Pmax)	-0.29%/°C
Temp. Coeff. (Voc)	-0.25%/°C
Temp. Coeff. (Isc)	0.045%/°C
NMOT	41±3°C

Helios micro inverter

Three-phase Microinverter

HINV3T4000B / HINV3T4800B

· Suitable for all building power generation & low-voltage DC scenarios.

- 25-year lifespan
- Electrolytic capacitor-free design
- IGBT with SiC
- 4 independent MPPT
- GB/GC explosion-proof rating*
- Physical isolation
- Easy installation, plug-and-play
- Grid "4K" capability*
- Works with Helios Power B-EMS

* Compliant with GB50058(Code for Design of Electrical Installations in Explosive Atmospheres) for Zone 2 equipment protection level (EPL) GB, GC technical standards
* Observable, measurable, adjustable, controllable, compliant with NEA (Distributed PV Development and Construction Management Measures)





Three-phase Microinverter-Specifications

PV INPUT	HINV3T4000B	HINV3T4800B
Max PV input voltage	120V	130V
Max PV input voltage range	50~120V	50~120V
Full load voltage range	60~110V	60~110V
Rated input voltage	72V	85V
MPPT tracking range	60~120V	60~120V
MPPT max current	20A	20A
Max short-circuit current	25A	25A
Number of MPPTs	4	4



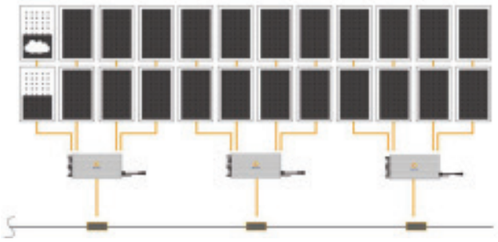
AC PORT	HINV3T4000B	HINV3T4800B
Rated output power	4.0kW	4.8kW
Max output power	4.5kW	5.3kW
Rated output current	6.6A	7.3A
Rated output voltage	400Vac,3P	400Vac,3P
Rated output voltage range	323~423Vac	323~423Vac
Rated output frequency	50Hz	50Hz
Output frequency range	45~55Hz	45~55Hz
Power factor	-0.9~+0.9	-0.9~+0.9

EFFICIENCY	HINV3T4000B	HINV3T4800B
Max efficiency	97.30%	97.60%
Euro/CEC efficiency	NA	NA
MPPT efficiency	99.80%	99.90%

GENERAL DATA	HINV3T4000B	HINV3T4800B
Operating temp.	-40°C~65°C	-40°C~65°C
Storage temp.	-40°C~85°C	-40°C~85°C
Isolation	High Frequency Isolation	High Frequency Isolation
Protection class	IP67	IP67
DC night loss	0W	0W
AC night loss	50mW	50mW
Cooling	Natural Convection	Natural Convection
Dimensions	218*46*385mm	218*46*385mm
Weight	7.2kg	7.2kg
Warranty	10 years/25years	10 years/25years

CERTIFICATE	HINV3T4000B	HINV3T4800B
Grid-connection certification	NBT32004-2018, and 2025 State Grid “Four Capabilities” Requirements.	
Safety certification		
EMC		

COMM.	HINV3T4000B	HINV3T4800B
Communication methods	RS485	RS485



*Technical parameters in this document may contain inaccuracies, and Helios does not guarantee their complete accuracy. Due to continuous innovation, R&D, and product improvements, Helios reserves the right to modify the information in this technical document at any time without prior notice. When entering into a contract, customers should obtain the latest version of the technical parameter document and incorporate it as a binding part of the agreement between the parties.

HELIOS DC-DC

DC-DC Coupler

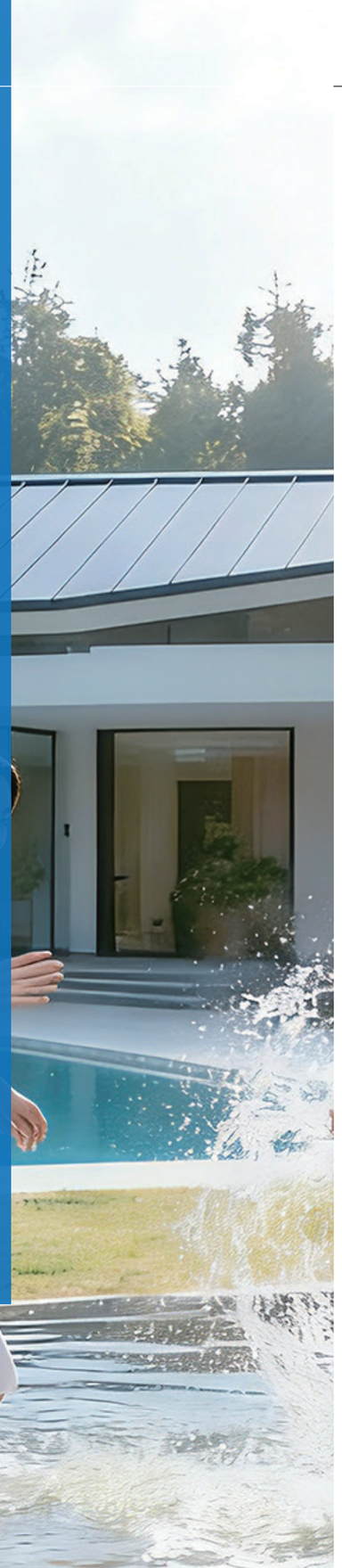
HP-DCDC-10000A / HP-DCDC-10000B

· Suitable for all building power generation & safe low-voltage DC scenarios.

- 25-year lifespan
- High efficiency
- High oversizing ratio
- 8 MPPT
- GB/GC explosion-proof rating*
- No series loss
- Physical isolation
- Easy installation, plug-and-play
- Works with Helios Power B-EMS

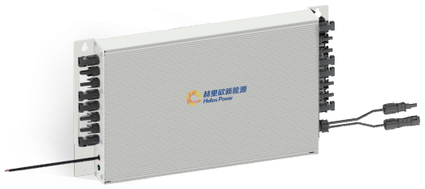
*Complies with GB50058 Zone 2 equipment protection level (EPL) GB, GC standards.





DC-DC Coupler - Specifications

PV/PV INPUT	HP-DCDC-10000A	HP-DCDC-10000B
Max PV input voltage	130V	130V
Max PV input voltage range	60~130V	60~130V
Full load voltage range	60~100V	60~100V
Rated input voltage	80V	80V
MPPT tracking range	60~120V	60~120V
MPPT max current	20A	20A
Max short-circuit current	25A	25A
Number of MPPTs	8	8



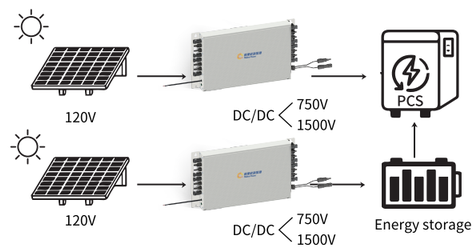
AC PORT	HP-DCDC-10000A	HP-DCDC-10000B
Rated output power	10kW	10kW
Max output power	11kW	11kW
Rated output current	12.3A	12.3A
Rated output voltage	820V	1100V
Rated output voltage range	700~950V	900~1300V

EFFICIENCY	HP-DCDC-10000A	HP-DCDC-10000B
Max efficiency	97.50%	97.50%
MPPT efficiency	>99%	>99%

GENERAL DATA	HP-DCDC-10000A	HP-DCDC-10000B
Operating temp.	- 40 °C ~ 65 °C	- 40 °C ~ 65 °C
Storage temp.	- 40 °C ~ 85 °C	- 40 °C ~ 85 °C
Isolation	Transformer isolation	Transformer isolation
Protection class	IP67	IP67
DC night loss	0W	0W
Cooling	Natural cooling	Natural cooling
Dimensions	272*57.9*412mm	272*57.9*412mm
Weight	11.4kg	11.4kg
Warranty	10 years / 25 years	10 years / 25 years

CERTIFICATE	HP-DCDC-10000A	HP-DCDC-10000B
Grid-connection certification	NBT32004-2018, and 2025 State Grid "Four Capabilities" Requirements.	
Safety certification		
EMC		

COMM.	HP-DCDC-10000A	HP-DCDC-10000B
Communication methods	RS485	RS485



*Technical parameters in this document may contain inaccuracies, and Helios does not guarantee their complete accuracy. Due to continuous innovation, R&D, and product improvements, Helios reserves the right to modify the information in this technical document at any time without prior notice. When entering into a contract, customers should obtain the latest version of the technical parameter document and incorporate it as a binding part of the agreement between the parties.

HELIOS BRPV

Integrated PV-ESS-Charging Carport Solution

· Suitable for all building power generation parks & outdoor parking scenarios.

Addresses core residential pain points, meets international high standards.

Adapts to high-frequency carport usage, reduces maintenance costs.*

Balances aesthetics with scenario adaptation.

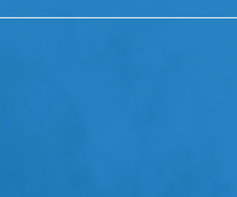
Lowers operational barriers for residential applications.



Two-column, 12-space PV carport



Single-column, 12-space PV carport.

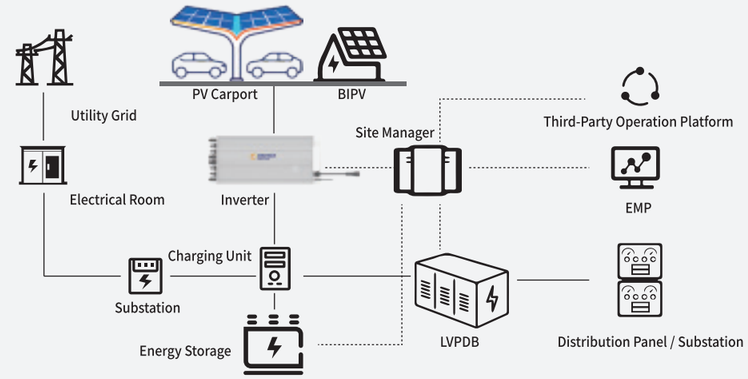


Y-column, 12-space PV carport.

PV Carport - Specifications

	Two-column, 12-space PV carport	Single-column, 12-space PV carport	Y-column, 12-space PV carport
Carport model	RX-N-12	RX-T-12	RX-Y-24
Carport material	Steel Structure	Steel Structure	Steel Structure
number of parking spaces	12 spaces	12 spaces	24 spaces
Parking space size	2.8m×5.5m	2.6m×5.5m	2.6m×5.5m
floor area	232.5m²	224.7m²	449.5m²
Carport height/angle	2.7m min. ht. / 5° tilt	2.7m min. ht. / 5° tilt	3.2m min. ht. / 5° tilt
column spacing	5.5m	5.2m	5.2m
PV Module Specs	PVTiles™ Series BRPV-P PVTiles™ Series BRPV-P PVTiles™ Series BRPV-P (Smart)	PVTiles™ Series BRPV-P PVTiles™ Series BRPV-P PVTiles™ Series BRPV-P Smart	PVTiles™ Series BRPV-P PVTiles™ Series BRPV-P PVTiles™ Series BRPV-P Smart
Qty (pcs)	90 pcs	87 pcs	174 pcs
Capacity	52.2 kWp	50.46 kWp	100.92 kWp
Annual Gen.	52.2 MWh/year	50.5 MWh/year	101 MWh/year
charging pile	(Reference config.)	(Ref. config.)	(Ref. config.)
Charging pile specification	DS720-720LCNA1 ×1 DT250N2-CNA15 ×5 DT600L1-CNA12 ×2	DS720-720LCNA1 ×1 DT250N2-CNA15 ×5 DT600L1-CNA12 ×2	DS720-720LCNA1 ×1 DT250N2-CNA15 ×5 DT600L1-CNA12 ×2
Grid (AC)	(Reference config.)	(Ref. config.)	(Ref. config.)
Inverter	SUN2000-40KTL-M3	SUN2000-40KTL-M3	SUN2000-40KTL-M3
Voltage/Range/Freq	400V/360-440VAC/50-60Hz	400V/360-440VAC/50-60Hz	400V/360-440VAC/50-60Hz
LiFePO4 (Opt.)	(Reference config.)	(Ref. config.)	(Ref. config.)
ES Model	LUNA2000-200KWH	LUNA2000-200KWH	LUNA2000-200KWH

Topology Diagram





Two-column, 12-space PV carport



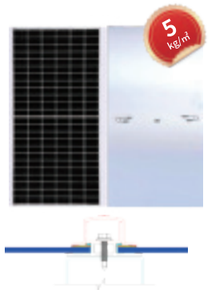
Single-column, 12-space PV carport



Y-column, 12-space PV carport

PV Tiles™ Series

Lightweight products



Light-weight Tile

Lightweight BRPV Flat Metal PV Tile（2.00mm reinforced glass+PET backboard）

Model/Power	HBV144 590/595/600/605N
External Dimensions (±5mm)	2274*1200mm
Installation Dimensions (±5mm)	2300*1150mm (Design and Layout Matrix)
Thickness(±0.5mm)	2.8mm
Gross Weight(±1kg)	12.5kg
Electrical Performance	Same as the base model (Page 14)
Fire Rating	Class C
Linear Warranty	30-Year
Product Warranty	10-Year



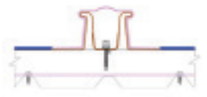
Ultra-lighweight Tile

Ultra-lighweight BRPV Flat Metal PV Tile
(Ultra-thin Flexible Glass+aluminum alloy backboard)

Model/Power	HBV144 590/595/600/605N
External Dimensions (±5mm)	2274*1200mm
Installation Dimensions (±5mm)	2300*1150mm (Design and Layout Matrix)
Thickness(±0.5mm)	2.2mm
Gross Weight(±1kg)	6.8kg
Electrical Performance	Same as the base model (Page 14)
Fire Rating	Class C
Linear Warranty	30-Year
Product Warranty	10-Year

Colorful Tile Series





Side View of fixing



Oriental Han Tile

V+V Construction（Galvanized steel plate+reinforced glass）

Model	HBVT075-310
Maximum Power (Pmax/W)	310
Open Circuit Voltage (Voc/V)	17.66
Short Circuit Current (Isc/A)	20.97
Peak Power Voltage (Vmp/V)	15.49
Peak Power Current (Imp/A)	20.04
Component Efficiency (%)	22.57%
External Dimensions (±5mm)	2500*665mm
Installation Dimensions (±5mm)	2400*650mm
Thickness(±0.5mm)	3.9mm
Gross Weight(±1kg)	17kg
Fire Rating	TÜV-A/UL790-A/Class A2 Fireproof*
Linear Warranty	30-Year
Product Warranty	10-Year

* TÜV-A fire rating based on UL790-A test; Class A2 fire rating based on GB8624
Note: Side-outlet PV tile wall-integrated product © ®

Beautify Villa Metal Flat PV Roof Tile

Horizontal & Vertical Layout Structures（Galvanized steel plate+reinforced glass）

Model	HBV036 150N
Maximum Power (Pmax/W)	150
Open Circuit Voltage (Voc/V)	7.9
Short Circuit Current (Isc/A)	20.1
Peak Power Voltage (Vmp/V)	7.2
Peak Power Current (Imp/A)	19.5
Component Efficiency (%)	21.98%
External Dimensions (±5mm)	1250*650mm
Installation Dimensions (±5mm)	1200*600mm
Thickness(±0.5mm)	3.8mm
Gross Weight(±1kg)	6.8kg
Fire Rating	TÜV-A/UL790-A/Class A2 Fireproof*
Linear Warranty	30-Year
Product Warranty	10-Year

* TÜV-A fire rating based on UL790-A test; Class A2 fire rating based on GB8624

Wall Panel PV ™ Series

Imitation Stone Curtain Wall Series



Tianshan White/Hetian Green/Fallen Moon Grey

Custom Texture

Maximum Power (Pmax/W)	110/60/60
Component Efficiency (%)	16.12%/8.79%/8.79%
Open Circuit Voltage (Voc/V)	6.25/3.4/3.4
Fire Rating	Class A
Module Dimensions (±5mm)	1200*600mm
Effective Paving Area	0.7㎡
Thickness (±0.5mm)	3.8mm
Gross Weight (±1kg)	9kg
Linear Warranty	30-Year
Product Warranty	10-Year

Metal Curtain Wall Series



Flat metal wall panel

Opaque TOP series，TBC series

Model	HBV75 310N
Maximum Power (Pmax/W)	310
Component Efficiency (%)	22.57%
Open Circuit Voltage (Voc/V)	17.66
Fire Rating	Class A
Module Dimensions (±5mm)	2400*600mm
Effective Paving Area	1.4㎡
Gross Weight (±1kg)	17kg
Linear Warranty	30-Year
Product Warranty	10-Year



Flat metal wall panel-C

Custom Texture + Largr-Foramt Custom

Model	HBV36 300N
Maximum Power (Pmax/W)	110
Component Efficiency (%)	16.12%
Open Circuit Voltage (Voc/V)	7~8.5
Fire Rating	Class A
Module Dimensions (±5mm)	1200*600mm
Effective Paving Area	0.7㎡
Gross Weight (±1kg)	9kg
Linear Warranty	30-Year
Product Warranty	10-Year

Colorful functional curtain wall series



Transparent Series (Optional)

Translucent CdTe & Perovskite Thin-Film Series

Model	HBVT-105
Rated power (Pm/W)	105
Open circuit voltage (Voc/V)	116
Short circuit current (Isc/A)	1.39
Operating voltage (Vm/V)	86.37
Operating current (Im/A)	1.22
Fire rating	Class A
Module Dimensions (±5mm)	1200*600mm
Gross weight (±1kg)	12kg



Eastern Han Wall (Optional)

PV-Insulation Integrated Building Tile

Model	HBVT-505
Rated power (Pm/W)	505
Open circuit voltage (Voc/V)	93.25
Short circuit current (Isc/A)	7.2
Operating voltage (Vm/V)	76.5
Operating current (Im/A)	6.6
Fire rating	Class A
Module Dimensions (±5mm)	2300*1215mm
Gross weight (±1kg)	44kg

Building Energy Storage & BIPVT PV-Thermal Hybrid System

Building Energy Storage



Distributed Building Energy Storage System

Rated Power	130kW
Voltage Range	728VDC~936VDC
Rated Voltage	380VAC(3W+N+PE)
Voltage Range	380VAC±15%
Protection Level	IP54
Fire Protection System	Perfluorohexanone
Cooling Method	liquid cooling
Charge Discharge Switching Time	⩽100ms
Communication Method	RS 485/PLC
System Efficiency	⩾ 90%
Operating Temperature	-20°C~+55°C
Operating Humidity	5%~95% RH (no condensation)
Size	1300mm*1400mm*2050mm
Weight	2800kg
Number Of Cycles	5000 times
Product Warranty	10-years

BIPVT PV-Thermal Hybrid System



BIPVT PV-Thermal Hybrid System

Total Power	1700W
Thermal Power	1150W
Glass Model	Ultra-Clear Tempered Glass
Glass Size	2272*1128*3.2mm
Product Dimensions	2279*1134*35mm
border Material	aluminum alloy
Work Pressure	<0.2Mpa
Board Core Material	stainless steel
Heat Transfer Area	2.56㎡
Heat Exchange Medium	PVT dedicated antifreeze
Heat Exchange Caliber	4-point external thread
Operating Temperature	-40°C~85°C
Thermal Insulation Material	EPP insulation
Component Weight	4.5KG
Linear Warranty	30-years
Product Warranty	10-years

Dual Energy Absorption with High Efficiency

Integrates PV-Thermal storage and heat pump technologies boost the comprehensive system efficiency by over 30%.

Smart Thermal Storage with Stable Supply

Features an embedded thermal storage module to capture surplus heat effectively mitigating solar intermittency issues and guaranteeing a continuous 24-hour energy supply.

Building Materials with Renewable Production

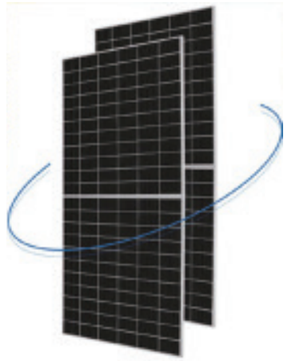
Innovative Building Integrated design that combines architectural aesthetics with power generation and heating capabilities, reducing installation costs and optimizing the space utilization of the rooftop.

Carbon Friendly and High Sustainability

Operates with zero carbon emissions and decreases lifecycle CO_2 emissions by over 40% against traditional systems, shortening the investment payback period to only 2 to 3 years (significantly improving the return on investment).

TOPCON Double-sided Double-glazed Module

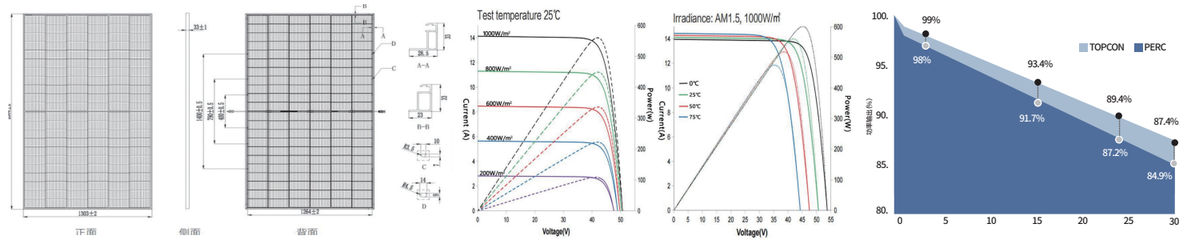
High-efficiency TOPCON Double-sided Double-glazed Module



Electrical Performance Parameters | STC*

Model	HPV115 635N	HPV115 640N	HPV115 645N	HPV115 650N	HPV115 665N
Max power (Pmax/W)	635	640	645	650	655
Voltage at max power (Vmp/V)	47.98	48.05	48.21	48.32	48.44
Current at max power (Imp/A)	13.24	13.33	13.39	13.45	13.53
Open circuit voltage (Voc/V)	55.69	55.85	56.00	56.08	56.24
Short circuit current (Isc/A)	13.93	13.97	14.01	14.06	14.10
Efficiency	22.89%	23.07%	23.25%	23.43%	23.61%

*STC (Standard Test Conditions): Irradiance of 1000W/m², cell temperature at 25°C, and spectrum of 1.5
*Test tolerance (±3.0%)

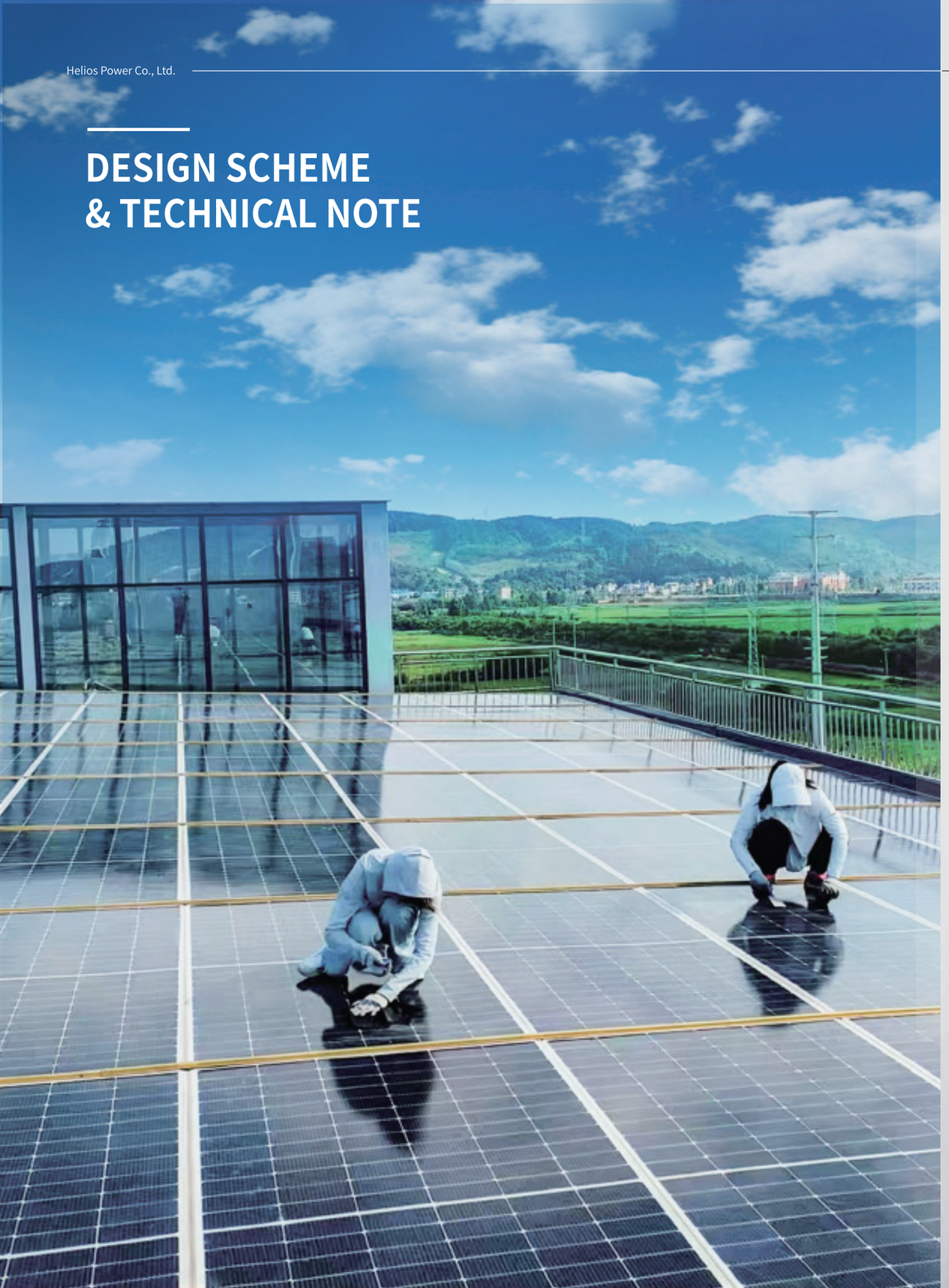


Plan View　　I-V Curve

Mechanical properties

Cell Type	N-type monocrystalline silicon 182x91mm
Number Of Half-cut Cells	156(6x26)
Component Size	2465mmx1134mmx30mm
Weight	34.6kg
Front And Back Glass	2.0mm/2.0mm (tempered glass)
Border	aluminum alloy
Junction Box	IP68 standard (3 bypass diodes)
Output Cable	TUV/4mm2/-200mm/+300mm
Connector	Compatible with MC4
Safety Protection Level	Class II
Fire Rating Of Components	ClassC

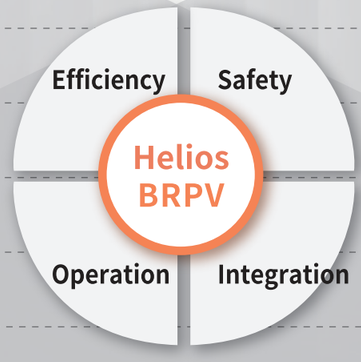
DESIGN SCHEME & TECHNICAL NOTE



HELIOS BRPV design concept

Building

- Fireproof, Explosion-proof, Waterproof.
- BRPV
- Load-bearing, Walkable.
- Wind Uplift Resistance.
- Aesthetic, Highly Compatible.



Photovoltaic

- Safe Low Voltage Anti-Arcing
- Shading Resistance
- High Efficiency Low Loss
- No PID Degradation
- Grid Compliant High Yield

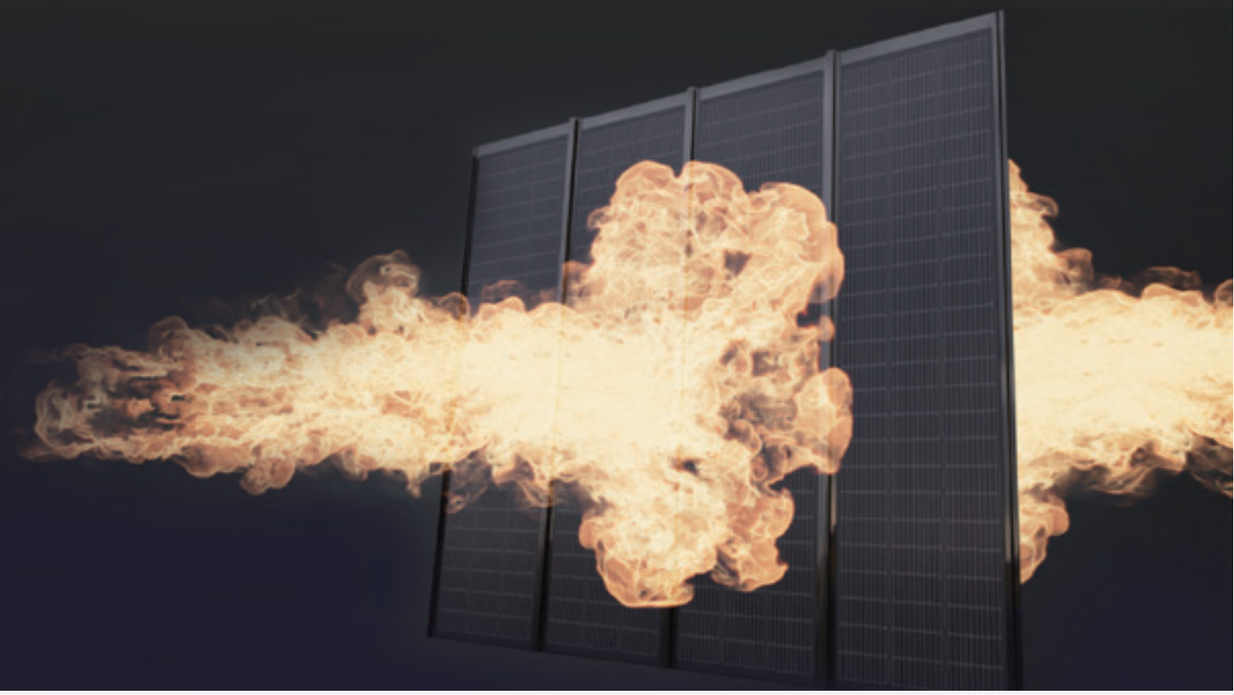
- DC Low Voltage Safety
  Micro-String Parallel Circuit.
- Metal Backsheet Technology
  Composite Reinforced.
- A2 Fire Rating Certification
  Monolithic Molding.
- No Potential-Induced Degradation
  DC/AC Boost Inverter.
- Independent Module Operation
  Smart Interconnection.
- Building Standard Certification
  Maintenance-Free Design.

Intrinsic Safety

Helios BRPV is the first in the worldwide to achievetriple A fire ratings certification.

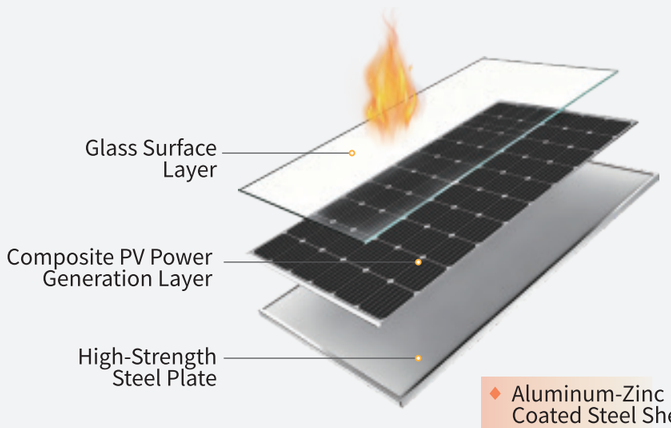
- China Building Material A-class Fire Certification
- UL790 (USA)
- TÜV-A (EU)

IEC 61730 | Class A Certification | UL790-A | GB-8624 / GB/T 20284



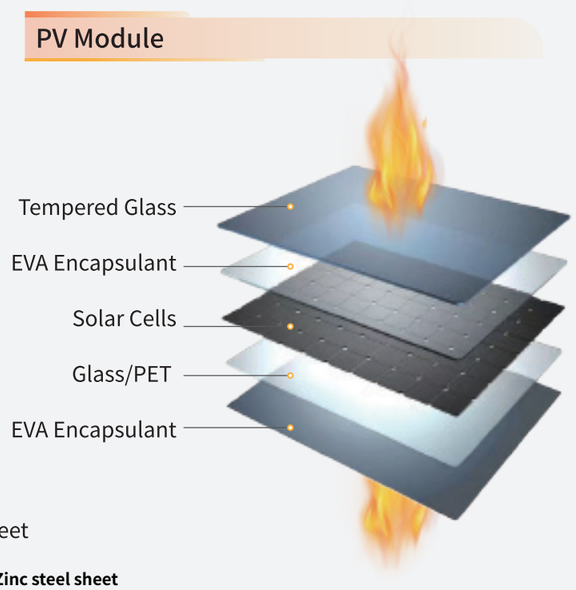
BRPV Module Burning Spatter Test

BRPV Module



- Aluminum-Zinc Coated Steel Sheet
- **High-strength Alu-Zinc steel sheet**

PV Module



Fire Test Content

PV test

- Flame Spread Test — Flame spread test: a. CLASS A <1.83m, b. CLASS B <2.40m, c. CLASS C <3.90m
- Cyclic Burn Test — Burning spatter test: Class A - No dripping, no burn-through, no ignition of combustibles.
- Burning Spatter Test — Cyclic burn test: Class A - 15 cycles.

Material test

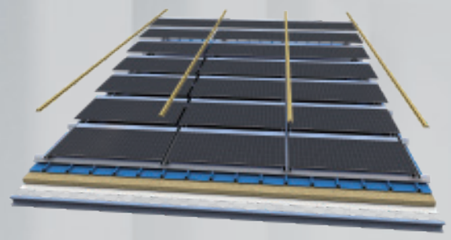
- Heat of Combustion Test — Complies with heat of combustion; FIGRA; THR600s.
- Single Burning Item (SBI) Test. — Class d0: Meets the requirement of no burning droplets/particles within 600 seconds.

Fire Certification Certificates.

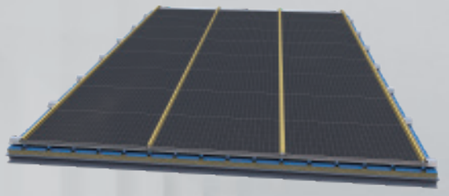


Passed UL790 Class A Wood-Shake Test

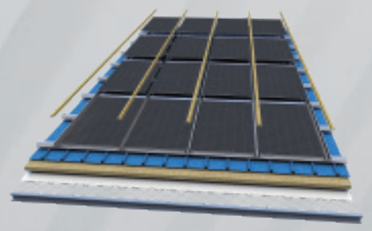
HELIOS BRPV Hierarchical Structure



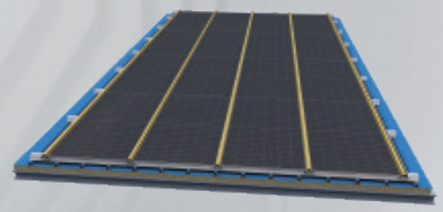
Flat Tile Vertical Installation Diagram



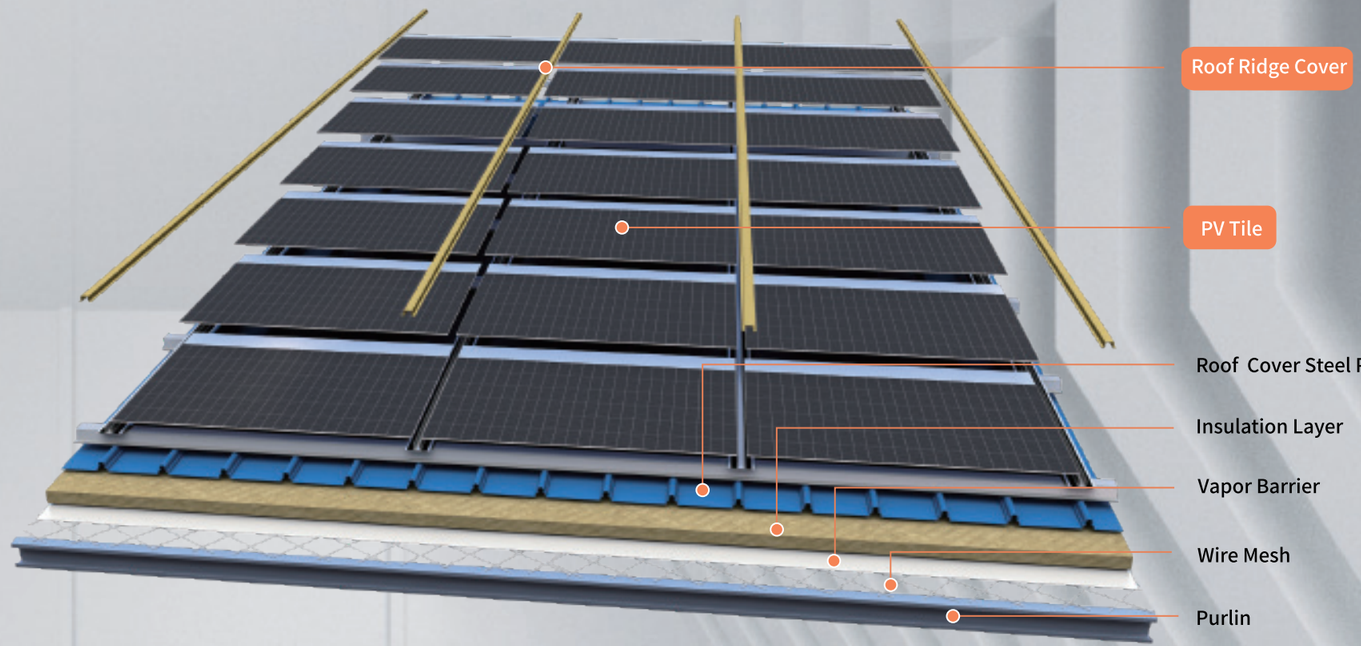
Flat Tile Vertical Installation Finished Product Diagram

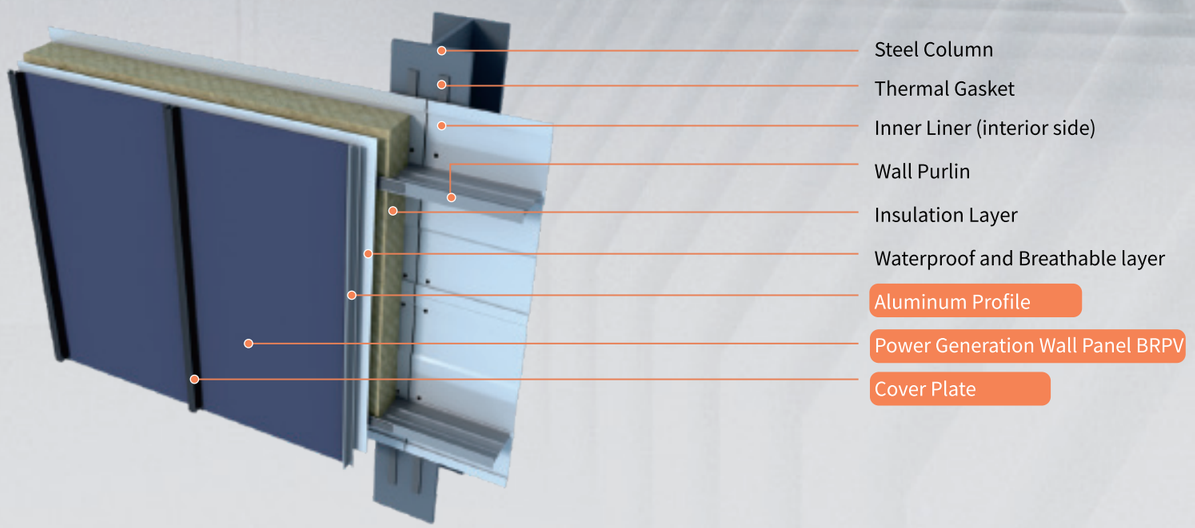


Flat Tile Horizontal Installation Diagram



Flat Tile Horizontal Installation Finished Product Diagram





Weight	Weight is approx. 70% of conventional modules.	**Waterproof,**	Industrial-grade waterproof rating
Power	Meets the national “Top Runner” technical standards.	**Fire-resistant**	Certified as Class A for building fire protection GB-8624 GB/T 20284
Certification Standard	Has obtained TÜV/CQC certification.	**Windproof**	GB36584-2018 Level 15

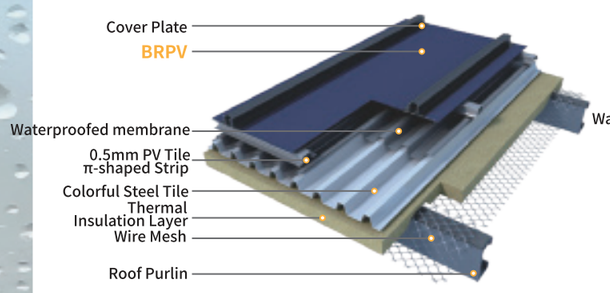
Product Certification

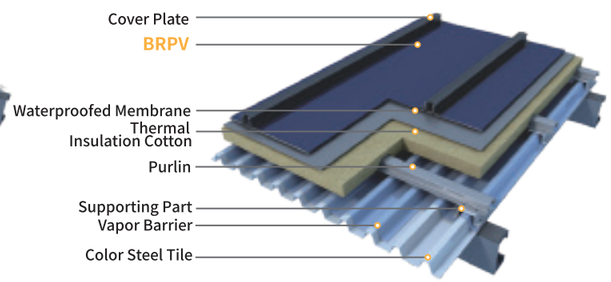
IEC 61215-1:2021	IEC 61215-2:2021	IEC 61730-2:2023	EN IEC 61215-1-1:2021	EN IEC 61730-1:2018
IEC 61215-1-1:2021	IEC 61730-1:2023	EN IEC 61215-1:2021	EN IEC 61215-2:2021	EN IEC 61730-2:2018

*There are different certification requirements in various market regions, so the component products you order or use will not have all the certifications listed in this specification at the same time. If you need to know which certifications are applicable to your product and market region, please consult your local Helios sales representative.

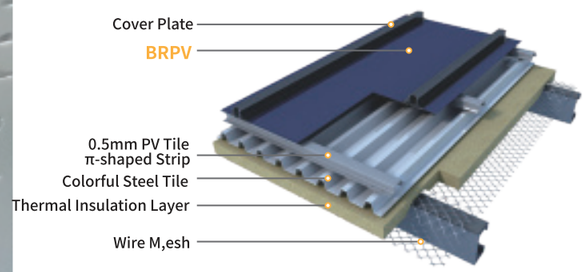
WATERPROOF CONSTRUCTION METHOD

Grade I waterproof roof structure

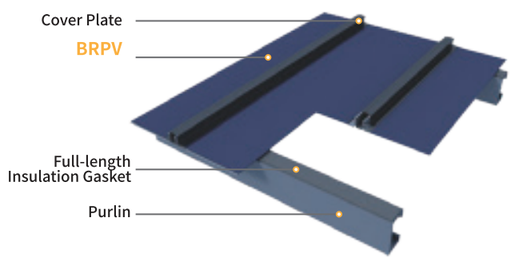




Secondary waterproof roof construction

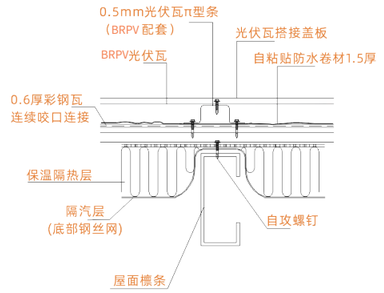


Three-level waterproof roof structure



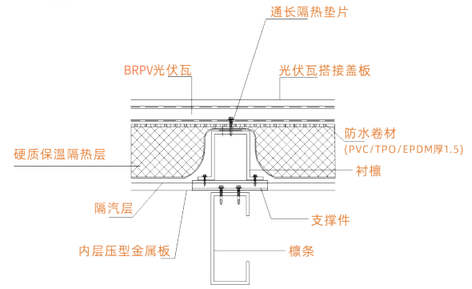
Grade I waterproofed roof structure

1.1 Soft Thermal Insulation Roof



1.1 Applicable to newly constructed roofs as well as overlay installations on existing aged roofs, enhancing the waterproofing grade. (Note: Where BIPV is recognized as a functional waterproofing layer, the Grade I waterproofing configuration comprises a three-layer roof waterproofing system)

1.2 Soft Thermal Insulation Roof



1.2 Applicable to newly constructed roofs and overlay installations on TPO flexible roofing, enhancing the waterproofing grade. (Note: Where BIPV is recognized as a functional waterproofing layer, the Grade I waterproofing configuration consists of TPO plus one additional roof waterproofing layer)

Secondary waterproofed roof structure

2.1 Non-insulated Roof

2.1 Applicable to newly constructed roofs as well as overlay installations on existing aged roofs, enhancing the waterproofing grade. (Note: Where BIPV is recognized as a functional waterproofing layer, the Grade II waterproofing is achieved via a double-sided roof structure)

2.2 Insulated Roof

2.2 Applicable to newly constructed roofs and overlay installations on existing aged roofs, enhancing the waterproofing grade.

Three-level waterproofed roof structure

3.1

3.1 Applicable to newly constructed roofs as well as overlay installations on existing aged roofs, enhancing the waterproofing grade.

3.2

3.2 Applicable to newly constructed roofs with a purlin spacing of 1.2 m. Designed to pair with PV tiles using structural sloping, ensuring a drainage gradient of no less than 5%.

Showcases Zero-carbon Park



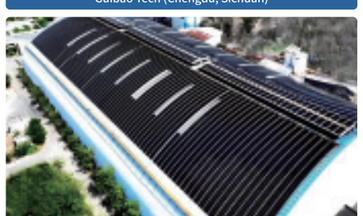
四川成都硅宝科技
Guibao Tech (Chengdu, Sichuan)



山东装配式生产基地40000㎡
Shandong Prefabricated PV Manufacturing Base 40000㎡



聊城北科42000㎡
Liaocheng42000㎡



内蒙双欣32000m²
Inner Mongolia Shuangxin 32000㎡



山东泰安凤凰产业园项目
Phoenix Industrial Park PV



肥城城资晟润新型材料BRPV项目
Feicheng Chengzi Shengrun New Material BRPV Project



鄂尔多斯零碳产业园区
Ordos Zero Industry Park



金牛重工30000m²
Jinniu Heavy Industry 30000㎡



肥城凤凰绿色节能建筑产业园BRPV项目
BRPV Project, Phoenix Green Energy-saving Building Industrial Park



贵州六盘水110000㎡
Liupanshui,Guizhou 110000㎡



望皓新能源分布式光伏建设项目
Wanghao New Energy Distributed PV Construction Project



六枝零碳工业园
Liuzhi Zero Carbon Industrial Park



特锐德（胶州）工业园
TGOOD (Jiaozhou) Industrial Park



航天模塑BRPV项目
Aerospace Molding BRPV Project



山东泰安赫里欧肥城工厂
Shandong Tai an Helios Factory



中石油加油站、加气站光伏发电项目
CNPC Gas Stations and CNG/LNG Stations



西凤酒厂酿酒车间产业园屋顶BRPV项目
BRPV project on the roof of Xifeng Brewing Workshop Industrial Park

Showcases Zero-carbon Park



山东肥城精致盐厂分布式项目
ShandongFeicheng RefinedSsalt Factory



新华印刷厂
Xinhua Printing Factory



渭南市白水县雷公绿色低碳循环产业园
Weinan Baishui Leigong Industrial Park



青岛平度绿色新型建材产业园
Qingdao Pingdu New Material Industrial Park



崇明岛智慧谷项目
Chongming Island Smart Valley Project



国网变电站项目
State Grid Substaion Project



望皓新能源分布式光伏建设项目
Wanghao New Energy Distributed PV Project



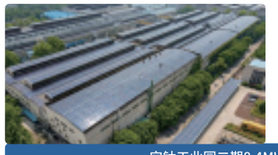
宁夏农垦集团
Ningxia Agricultural Reclamation



中央电视台报道江苏国网项目
CCTV-Cocered Jiangsu State Grid PV Project



陕西西安秦汉新城有色文体中心项目
Qinhan New City Nonferrous Metals Sports & Cultural Center PV Project



宝钛工业园二期8.4MW 分布式BRPV屋顶
Baotai Phase II 8.4MW Distributed BRPV Rooftop





宝钛工业园区一期BRPV分布式光伏
Baotai Phase I Distributed BRPV Rooftop



华安炉具厂项目BRPV项目
Hua'an Stove Factory BRPV Project



陕西兴平火车轨道超轻BRPV项目
Shaanxi Xingping Railway Ultralight BRPV



贵州屋顶超轻BRPV项目
Guizhou Ultralight BRPV Roof Project



内蒙超轻煤棚BRPV项目
Inner Mongolia ultra-light coal shed BRPV project



保密项目 屋顶超轻BRPV项目
[CONFIDENTIAL] Rooftop Ultralight BRPV

Showcases City Landmark







山东肥城南高速出入口迎宾墙BIPV项目
BRPV Project of Welcome Wall at the south entrance and exit of Feicheng



高速隔音屏障BRPV项目
Expressway Noise Barrier BRPV Project



高速隔音屏障BRPV项目
Expressway Noise Barrier BRPV Project



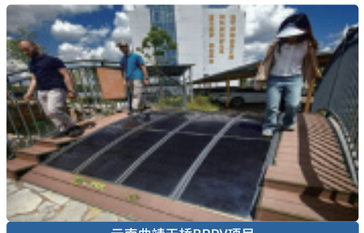
BRPV护坡(钢背板)
BRPV slope protection (steel back plate)



上海朱桥服务区BRPV项目
BRPV Project in Zhuqiao Service Station, Shanghai



高速路口“司机之家”服务站BRPV项目
Expressway “Drivers Home” Service Station



云南曲靖天桥BRPV项目
Yunnan Qujing Footbridge BRPV Project



西安市城建档案馆BRPV光伏发电项目
BRPV PV Generation Project of Xi'an Urban Construction Archives



厦门垒知博物馆BRPV项目
Xiamen Leizhi Museum BRPV Project



定边长庆油田公寓
Dingbian Changqing Oilfield Apartment

Showcases Urban & Traditional Architecture



河南南阳体育馆曲面型BRPV屋顶
Nanyang (Henan) Stadium Curved BRPV Roof



河南洛阳
Luoyang, Henan



光伏遮阳廊
PV Shade Pergola



河南洛阳
Luoyang, Henan







榆林一小区发电墙项目 (赫里欧改造前后对比)
Yulin Community Power Generation Wall Project (after renovation of Helios)



南方徽派建筑
Huizhou-style Architecture in Southern China



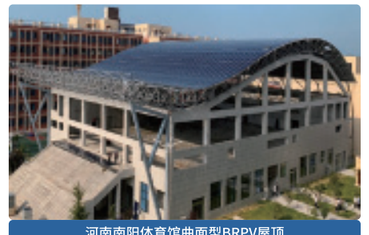
上海城市BPRV项目
Shanghai Urban BPRV Project



某售楼部外立面BRPV项目
BRPV Facade Project for a Sales Center



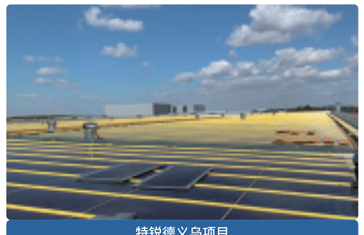
龙泉中建集团办公楼项目
Longquan CSCEC Office Building PV



河南南阳体育馆曲面型BRPV屋顶
Nanyang (Henan) Stadium Curved BRPV Roof



云南曲靖BRPV办公大楼
Yunnan Qujing BRPV Office Building Project



特锐德义乌项目
TGOOD Yiwu Project



碲化镉项目
Cadmium Telluride Project



碲化镉项目
Cadmium Telluride Project

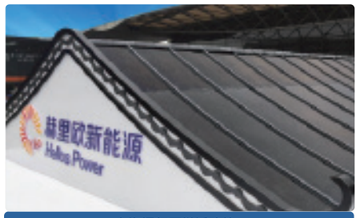


碲化镉项目
Cadmium Telluride Project

Showcases Household



江苏户用BRPV屋顶
Jiangsu Residential BRPV Eaves



上海闵行区徽派建筑
Minhang Shanghai-Style Arch



赫里欧BRPV别墅项目
Helios BRPV Villa Project



泰国别墅BRPV项目方案
Thailand Villa BRPV Project Proposal



屋顶功率66.5kW/户
Roof power 66.5kW/household



系统功率45kW
System power 45kW

车棚功率3.6kW
Carport power 3.6kW



陕西西安秦汉新城陕建大院BRPV彩色墙板应用项目(改造前)
BRPV Colored Wall Panel Application Project at Shaanxi Construction Compound, Qinhan New City, Xi'an, Shaanxi Province (before renovation)



河南开封仿古建筑
Kaifeng, Henan Historic BRPV Integration



陕西西安秦汉新城陕建大院BRPV彩色墙板应用项目(赫里欧BRPV使用后)
BRPV Colored Wall Panel Application Project at Shaanxi Construction Compound, Qinhan New City, Xi'an, Shaanxi Province (after renovation of Helios BRPV)



印尼新建户用豪宅项目
New Luxury Residential PV Project in Indonesia

Showcases Prefabricated Container



预制房项目 (改造前)
Prefabricated Housing Project (before renovation)





预制房项目 (赫里欧BRPV使用后)
Prefabricated Housing Project (after renovation of Helios BRPV)







BRPV 太空舱项目
Prefabricated Housing - Space Capsule Project







集装房项目 (赫里欧BRPV使用后)
Container House Project (after renovation of Helios BRPV)



双翼拓展房项目 (改造前/赫里欧BRPV使用后)
Double-wing Expansion Container Project (before renovation/after using Helios BRPV)



Expanded Dimension
L9000*W6220*H2480mm

Inner Dimension
L8540*W6060*H2200mm

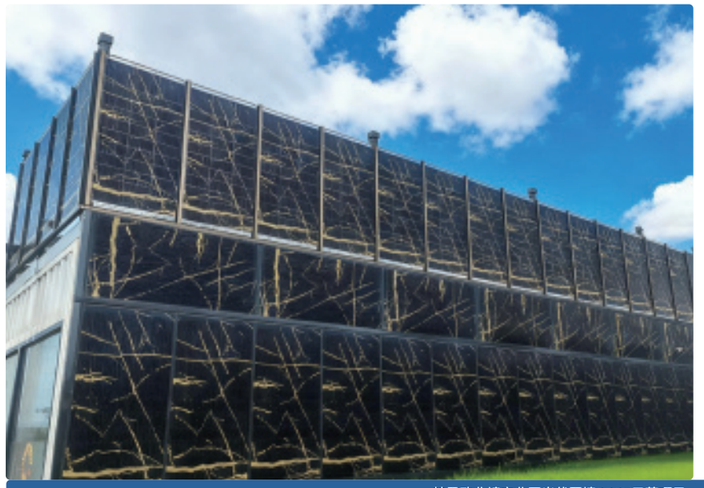
Folded Dimension
L9000*W2200*H2480mm

Cargo Capacity
one container per 40HQ cargo

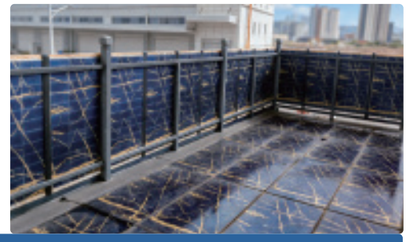
Volume
56 m^3



Showcases BRPV Wall / Fence







赫里欧曲靖产业园光伏围墙BRPV示范项目
BRPV Demonstration Project of Photovoltaic Fence in Helios Qujing Industrial Park



京能奉节光伏围栏项目
Beijing Energy Fengjie Photovoltaic Fence Project



光伏围墙示范项目
Photovoltaic Fence Demonstration Project



赫里欧曲靖产业园光伏围栏项目
Photovoltaic Fence Project of Helios Qujing Industrial Park





益源马铃薯蛋白 BRPV 光伏项目
Yiyuan Potato Protein BRPV Photovoltaic Project





Showcases BRPV Artistic Wall

艺术建筑、公共建筑等对美观要求要的场景，可以使用仿石材艺术发电建材产品
Artistic & Public Architecture Applications, Stone-Imitating Solar Cladding can be used for Power Generation as Buiding Materials



HPV-Z-01 深海蓝
HPV-Z-01 Abyssal Blue



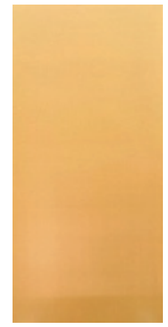
HPV-Z-02 金丝大理石
HPV-Z-02 Gold Vein Marble



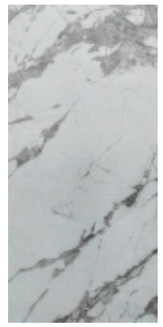
HPV-Z-03 金刚灰
HPV-Z-03 Titanium Gray



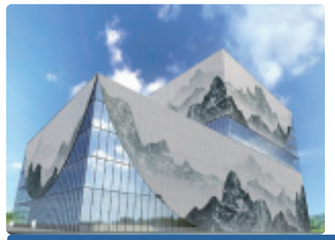
HPV-Z-04 赫能橙
HPV-Z-04 Helios Orange



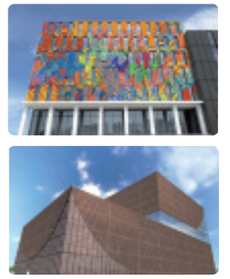
HPV-Z-05 阳光橙
HPV-Z-05 Sun Orange

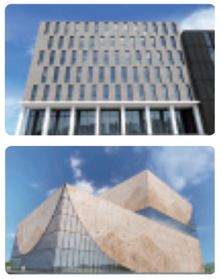


HPV-Z-06 象牙白
HPV-Z-06 Ivory White









赫里欧BRPV艺术墙面
Helios BRPV Artist Wall



赫里欧光伏幕墙项目
Helios Photovoltaic Curtain Wall Project



山东济宁中国华电电厂迎宾墙示范项目
Shandong Huadian PV Demonstration Project



赫里欧山东产业园墙面BRPV项目
BRPV project for the wall of Helios Mountain East Industrial Park







赫里欧艺术墙面示范项目
Helios Art Wall Demonstration Project

Showcases PV Carport

Double-bracing/Single-bracing PV-storage-charging carport, various carports can be customized










Showcases Diversified Solutions








Zero-carbon Park

Standardization of solutions

For different types of buildings (factories, warehouses, carports, office buildings), Heliu provides a variety of standardized and building material-based BRPV product packages. The park can flexibly choose and match according to aesthetic, budget, and functional requirements, making decision-making simple and efficient

Helios efficient power generation building materials

Utilizing cutting-edge technologies such as Type N technology, photovoltaic modules are directly integrated as building materials, offering superior durability, fire resistance, and waterproofing. By replacing traditional roofing materials, this approach serves multiple purposes

Full coverage, safer

The roofs of large and medium-sized industrial parks, such as textile industrial parks, new material industrial parks, light and heavy industry industrial parks, chemical parks, logistics parks, and food processing parks, are equipped with Herion's power generation building materials, which have fire and explosion resistance properties and can be widely promoted

Coal Shed PV Integration

2.03 MW

Roof Bonding

Dedicated connection scheme | High degree of surface fitting

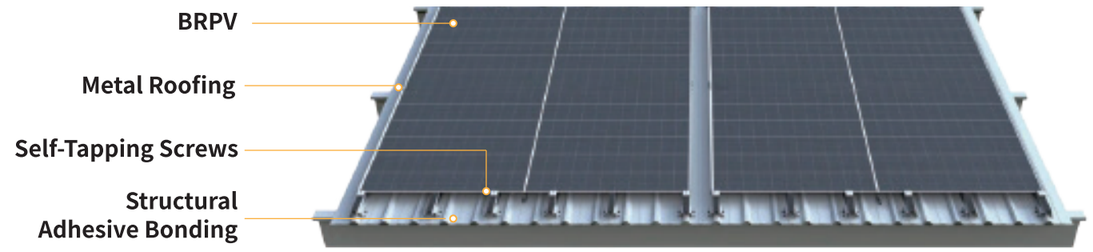
Roof Integration

Deep Roof Integration | PV Surface Power Generation
& Drainage Integration | Rain Self-Cleaning.

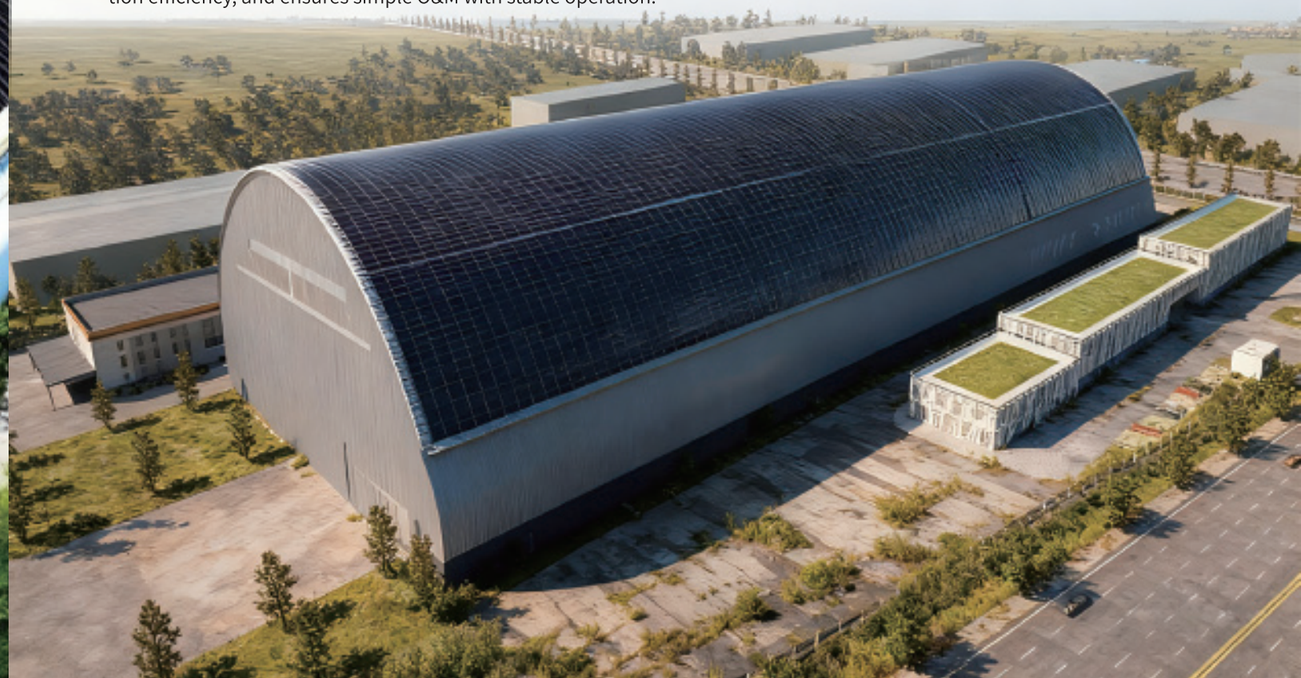
Helios BRPV Arched Roof Photovoltaic Solution.

Addressing challenges such as fitting to traditional arched roofs, load-bearing capacity, material strength, installation, and post-installation maintenance, Helios has launched a high-quality BRPV arched roof solution.

- Class A fire rating, safe and worry-free.
- Lightweight Design.
- Adapted for extreme environments, stable and secure.
- Excellent Heat Dissipation, Performance Ensured.
- Streamlined Implementation: Overcoming the challenges of arched roof construction and O&M.
- Combining Architectural Aesthetics with Practicality.



Concealed 304 Stainless Steel Self-Tapping Screws paired with High-Weather-Resistant Structural Adhesive enable flush mounting on corrugated roofing. The dual reliable connection method of "mechanical fixation + structural bonding" significantly enhances wind uplift resistance; The integrated overlapping design creates an efficient waterproof barrier; Combined with rain self-cleaning and an automatic spraying system, it effectively removes surface dust, maintains module power generation efficiency, and ensures simple O&M with stable operation.



Case Showcase Partial Achievements

Shaanxi

Project Address/Location.	Progress	Scale (kW)	Timeline (Y)	Type
Whitewater Industrial Park BIPV Project EPC Turnkey	Completed	1600	2019	New Construction
Chengji Hotel Rooftop PV Project	Completed	255	2020	Renovation
Xifeng Company PV Power Plant Construction Project	Completed	2780	2021	Renovation
Pangda Group Xi'an Modern 4S Store Project	Completed	243.36	2021	Renovation
Baoti Industrial Park Rooftop 13MWp Distributed BRPV PV Project	Completed	13000	2021	Renovation
Jintang Project	Completed	139.1	2021	Renovation
Cultural and Sports Center Project	Completed	223.6	2019	Renovation
Baoti Industrial Park Rooftop 12MWp Distributed PV Project	Completed	12000	2021	Renovation
Shaanxi Nonferrous Optoelectronics Technology Park BRPV System	Completed	6000	2019	Renovation
Xi'an Dianliang Industry Co Ltd BRPV Project	Completed	152.76	2023	Sales
Xi'an Chanba Auto Theme Park 260kW Distributed PV Project	Completed	260	2021	Renovation
PetroChina 1# Apartment Building Project	Completed	96.2	2023	Renovation
Changqing Fifth Oil Production Plant Project	Completed	106	2023	Renovation
Changqing High Research Office Building Project	Completed	40.14	2023	Renovation
Chuanqing Downhole Supervision Mobile Camp Project	Completed	136	2023	Renovation
Changqing Downhole Mobile Camp Project	Completed	47.04	2023	Renovation
Kaifeng Design Institute Project	Completed	173.66	2022	New Construction
Shaanxi Jingbian County Residential Rooftop PV Project	Completed	16	2023	Renovation
Wuding New Dormitory Building Rooftop BRPV PV Project	Completed	41.525	2023	New Construction
Changqing Cementing Company BRPV PV Project	Completed	131.2	2022	Renovation
Xi'an Yinglang PV Project	Completed	33.6	2023	New Construction
Baoti Phase II Carport BRPV PV Project	Completed	800	2024	New Construction
Shaanxi Goode BRPV Distributed PV Project	Completed	953.52	2024	New Construction
Shuangzhao Gas Station 52kW BRPV Rooftop Distributed PV Project	Completed	52	2025	New Construction
Baoji City Meixian County Taibai Ailan Hotel	Under Construction	90.86	2026	Sales
Xi'an Paiang Pharmaceutical BRPV PV Project	Under Construction	490	2026	Sales
Xi'an Urban Construction Archives BRPV PV Project	Under Construction	22.8	2026	Sales

Jiangsu

Project Address/Location.	Progress	Scale (kW)	Timeline (Y)	Type
Yancheng Jiangsu PV Roof BRPV Integrated Project	Completed	0.65	2021	New Construction
Wujiang Longlong Textile Distributed PV Project	Completed	950	2020	Renovation
Yancheng PV Carport Project	Completed	470	2020	New Construction
Tgood Xuzhou Garden Expo Park Distribution Room BRPV Project	Completed	90.75	2021	Renovation
Jiangyin Xinqiao Town Project	Completed	720	2021	Renovation
Nanjing Sen Ying Office Building Rooftop PV Project	Completed	480	2021	New Construction
Wuxi Yingrui Substation Project	Completed	135.2	2020	New Construction
Dongqiao 110kV Substation Rooftop BRPV Project	Completed	119.6	2020	New Construction
Liuqiao 110kV Substation Rooftop BRPV Project	Completed	110	2021	New Construction
Taike 220kV Substation Rooftop BRPV Project	Completed	220	2021	New Construction
Zhutang 110kV Substation Rooftop BRPV Project	Completed	110	2020	New Construction
Wuxi State Grid Equipment Workshop Renovation BRPV Project	Completed	1480	2021	Sales
Wuxi Smart Glass Display Greenhouse Project	Under Construction	109.44	2023	Sales
BRPV Projects for Jiangsu Province	Completed	86.4	2023	Sales
Jialong Environmental Technology Rooftop Distributed PV Project	Completed	1445.5	2024	New Construction

Shandong.

Project Address/Location.	Progress	Scale (kW)	Timeline (Y)	Type
Kangle Hotel Rooftop BRPV	Completed	103	2021	Renovation
Tgood Jiaozhou Aishan	Completed	15.6	2021	Renovation
Modular Substation Facade BRPV Pilot	Completed	14.275	2021	New Construction
Kangle Hotel Phase II	Completed	68.3	2021	Renovation
Tgood Longyuan Zhanhua Wind Farm	Completed	24.4	2020	New Construction
CR Jinan Workshop Rooftop BRPV Test	Completed	120	2021	Renovation
Tgood Multi-Station Integration Prototype	Completed	7.8	2020	New Construction
Tgood Guoji Smart Energy Station	Completed	50	2020	New Construction
Weifang Hua'an Stove Factory	Completed	320	2022	New Construction
Fenghuang Green Park BRPV	Completed	4000	2022	Renovation
Tai'an Gov't Building	Completed	673.96	2023	New Construction
Weifang BRPV	Completed	2162.16	2023	New Construction
Liaocheng Beike	Under Construction	5200	2024	New Construction
Feicheng BIPV EPC (Roofs 2, 3, 6)	Completed	2315.18	2023	Renovation
Feicheng BIPV EPC (Chengzi Shengrun)	Not Started	2788.94	2023	New Construction
Xinhua Printing BRPV	Completed	1150	2024	New Construction
Tgood E Workshop BRPV	Under Construction	6400	2024	New Construction
Jinniu Heavy Industry BRPV	Completed	4300	2023	New Construction
Aierpai Powder Tech PV	Completed	7500	2024	New Construction
Huadian Zhangqiu PV Curtain Wall	Completed	4000	2024	New Construction
Feicheng Refined Salt Factory	Completed	198	2024	New Construction
Pingdu Green Materials Park Rooftop	Completed	5040	2024	New Construction
Caijin Group	Under Construction	8245	2022	New Construction
Qingdao Metro Line 6 Zhuamashan	Under Construction	1200	2023	New Construction
Taixi Dongzheng Environmental	Completed	160.49	2023	Renovation
	Under Construction	95.04	2026	New Construction

Guizhou

Project Address/Location.	Progress	Scale (kW)	Timeline (Y)	Type
Liupanshui High-tech Zone Low-carbon Bldg.	Under Construction	10050	2023	Sales
Shuicheng ETDZ Energy Efficiency & Carbon Reduction	Under Construction	37987.46	2023	Sales
Liuzhi Mugang Zero-carbon Park (Phase I)	Under Construction	3400	2022	Sales
Zhenfeng County Rooftop PV	Under Construction	3000	2025	New Construction
Ceheng County Rooftop PV Station	Completed	2343.48	2025	New Construction
Ceheng County Rooftop PV Station (Phase II)	Under Construction	4200	2025	New Construction
Danzhai County Distributed PV	Under Construction	10000	2025	New Construction
Guizhou Zhenfeng Sewage Plant BRPV	Under Construction	309.16	2025	Sales
Qiandongnan Huangping PV-Storage Integration	Under Construction	435	2026	Sales

Shanghai

Project Address/Location.	Progress	Scale (kW)	Timeline (Y)	Type
Chongming Smart Island Park	Completed	420	2019	New Construction
Jiangqiao Warehouse BRPV	Completed	100	2019	Renovation
Minhang Huacao Xupu Rooftop PV	Completed	45.6	2023	Renovation
Yangpu Pingliang PV Tiles	Completed	152.6	2023	New Construction
Zhuqiao PV Tiles	Completed	243	2023	Sales
Zhuqiao Service Area BRPV	Completed	243	2024	Renovation

Yunnan

Project Address/Location.	Progress	Scale (kW)	Timeline (Y)	Type
Tgood Kunming 35kV Xiaotuanshan BRPV Project	Completed	35	2023	Sales
Kunming Household Solar PV Project	Completed	18.2	2020	New Construction
Yunnan Soule Company Demo Project	Completed	12.4	2023	New Construction
Yunnan Baoshan Display Project	Completed	0.65	2022	Renovation
Guangnan Guanghe New Energy Nadu Project	Completed	128128	2023	New Construction
Yunnan Power Grid Kunming 35kV Project	Completed	350	2023	New Construction
Helios Zhanyi Production Base Standard Plant	Completed	6600	2023	New Construction
Hongxin Company Rooftop Distributed PV Project	Completed	601.8	2025	New Construction
Zhanyi Production Base Plant Rooftop Distributed PV Project	Completed	6600	2025	New Construction
Yunnan Guangnan County Government BRPV Project	Completed	140	2024	New Construction
Yunnan Qujing Fatou Group Garden Nursery Base BRPV Project	Completed	35.84	2023	New Construction
Kunming Xundian Tangzi Town Distributed PV Project	Completed	41.76	2023	Sales
Yunnan Qujing Commercial Project	Completed	15.08	2024	Sales
Jingneng Fengjie 150MW Power Fence Demo Project	Completed	29.4	2024	Sales
Pingxiang City Youyi Town Songcheng Village Wate Project	Completed	16.5	2024	Sales
Yunnan Kunming Anning Industrial Park BRPV Project	Completed	467.28	2025	Sales
Guangxi Fangcheng Middle School Rooftop BRPV Project	Completed	5.22	2024	Sales
Yunnan Qujing Fangcheng 400MW Agri-PV BRPV Project	Completed	400000	2024	Sales
Guangxi Beiliu Changfa New Energy BIPV BRPV Project	Completed	1970.6	2024	Sales
Hongxin Company Rooftop Distributed PV Project	Completed	601.8	2024	New Construction
Zhanyi Production Base Standard PV Project	Completed	5382.06	2024	New Construction
Yunnan Guangnan Nadu 128MW Agri-PV BRPV Project	Completed	128000	2024	Sales
Yunnan Guangnan Heizhiguo 50MW Agri-PV BRPV Project	Completed	45000	2025	Sales
Yunnan Guangnan Zhulin 34MW Agri-PV BRPV Project	Completed	34000	2023	Sales
Yunnan Qujing Sewage Treatment Plant BRPV Project	Under Construction	309.16	2025	New Construction
Yunnan Kunming Villa PV-Storage Integration Project	Under Construction	15	2026	Sales
Yunnan Yiyuan Food Co., Ltd. BRPV Project	Under Construction	3500	2026	New Construction
Helios Zhanyi Jiantou Self-invested Enterprises BRPV Project	Under Construction	670	2026	New Construction

Anhui

Project Address/Location.	Progress	Scale (kW)	Timeline (Y)	Type
Wuhu Hilton Hotel	Completed	107.9	2021	Renovation
Ma'anshan PV Project	Under Construction	12645.96	2024	Sales
Anhui Wanghao New Energy Distributed PV	Completed	1250	2024	New Construction
Ma'anshan Fumazhisu Tech Park 312.12kW Rooftop PV	Under Construction	312.12	2024	Renovation
Anhui Purde Nonwoven BRPV Rooftop PV	Completed	928	2024	Renovation
Anhui Juhu Doors & Windows BRPV Rooftop PV	Completed	3830	2024	Renovation

Henan

Project Address/Location.	Progress	Scale (kW)	Timeline (Y)	Type
Guangshan 200㎡ Rooftop BRPV	Completed	74	2021	Renovation
Guangzhiyi Kaifeng Villa	Completed	44.2	2021	Renovation
Pingdingshan Dongfang Carbon BRPV O&M	Completed	751.68	2018	Renovation
Zhongmu County 220KW Rooftop BRPV	Completed	220	2022	Renovation
Yuguang Slag Yard	Completed	1500	2022	New Construction
Nanyang Tongcheng School All-Weather Court BRPV	Completed	400.075	2023	New Construction
Yuguang Zinc PV Expansion EPC - Color Steel Roofing	Completed	3700	2024	Renovation

Other Provinces of China.

Project Address/Location.		Progress	Scale (kW)	Timeline (Y)	Type
Ningxia	Weiqiao Village 2.3MW Smart Energy	Completed	2300	2021	Renovation
Ningxia	Xiangshan Staff Rooftop PV	Completed	123.2	2021	New Construction
Ningxia	Shaogang Shahu Farmer Rooftop PV	Completed	11.7	2021	Renovation
Ningxia	Weiqiao Village PV Poverty Alleviation	Completed	60	2021	Renovation
Ningxia	Hongyazi Cattle Barn	Completed	4000	2021	New Construction
Ningxia	Zhongwei CNG Station	Completed	90	2021	New Construction
Ningxia	Ningxia PetroChina Gucheng Gas Station	Completed	57	2021	Renovation
Inner Mongolia	Inner Mongolia Pude Gong	Completed	17.28	2021	New Construction
Inner Mongolia	Inner Mongolia Tianlita	Completed	69.84	2021	Renovation
Inner Mongolia	PetroChina Wuhai Gas Station	Under Construction	60	2022	Renovation
Inner Mongolia	Mobile Camp BRPV	Completed	47.04	2023	Sales
Inner Mongolia	Sulige Tao 7-9 Gas Station PV	Completed	59.8	2024	New Construction
Inner Mongolia	Inner Mongolia Shuangxin Mining 3MW PV	Under Construction	3000	2024	New Construction
Shanxi	Chuankai Pingyao Coal Chemical	Completed	39.975	2021	New Construction
Shanxi	Fenyang Xing'an Rubber PV	Under Construction	1149.56	2025	New Construction
Sichuan	China Mobile Sichuan Zero-Carbon Base	Completed	756.4	2023	Renovation
Sichuan	Chengdu China Construction Group BRPV	Completed	60	2018	New Construction
Sichuan	Guang'an Minghong 800KWp Rooftop BRPV	Completed	800	2022	New Construction
Sichuan	Mianyang Gas Plant (Tgood)	Completed	200	2024	New Construction
Sichuan	Chengdu Huaxitang BRPV Rooftop	Completed	1200	2024	New Construction
Xinjiang	Shunbei Substation Roof BRPV	Completed	19.5	2021	New Construction
Xinjiang	Sinopec Shunbei Oilfield II	Completed	22.425	2023	Sales
Zhejiang	Zhucuixuan Villa	Completed	10.8	2021	Renovation
Zhejiang	Zhejiang Anchuan BRPV	Completed	624.2	2024	Renovation
Zhejiang	Zhejiang Wansheng BRPV	Completed	252	2024	New Construction
Hunan	Hunan Grid Renovation BRPV	Completed	80.45	2021	Renovation
Beijing	Zhongqingneng Roof Project	Completed	17.74	2021	Renovation
Hebei	Tgood Wind Farm Prefab Cabin BRPV	Completed	47.5	2021	New Construction
Qinghai	Qinghai Qilian Hotel BRPV	Completed	21.6	2020	Renovation
Chengdu	Chengdu Guibao 750KWp Rooftop PV	Completed	750	2022	New Construction
Gansu	Zhuoni Substation	Completed	23.4	2023	Renovation
Tianjin	Tgood Tianjin Binhai Project	Under Construction	37.05	2022	New Construction
Chongqing	Chongqing Guobo Villa Sunroom	Completed	17.92	2023	Sales
Hubei	Hubei Substation BRPV	Completed	110	2023	Sales
Guangdong	Huiyang PV & Curtain Wall	Under Construction	2026.26	2025	New Construction
Xiamen	Xiamen Leizhi Museum BRPV	Under Construction	111.72	2025	New Construction
Taiwan	Taiwan Project	Completed	158.08	2021	Renovation
Taiwan	Taiwan Project	Completed	426.24	2021	Renovation
Hong Kong	Hong Kong Small House PV	Completed	162.3	2021	Renovation

Overseas

Project Address/Location.		Progress	Scale (kW)	Timeline (Y)	Type
Malaysia	Fujiang Manufacturing Malaysia BRPV Project	Completed	36.48	2022	New Construction
Vietnam	Vietnam Weisheng Project	Completed	86.4	2019	Renovation
Singapore	Singapore A02 Project	Completed	172.8	2021	New Construction
Singapore	Singapore A03 Project	Completed	172.8	2021	New Construction
Singapore	Singapore A07 Project	Completed	172.8	2021	New Construction
Singapore	Singapore BRPV Sales Contract	Completed	94.5	2023	New Construction
Australia	Perth PV Carport Project	Completed	153.4	2025	New Construction