



Content



Iris Hellas
Technology Innovations
www.irishellas.com

The features of eArche

Factory and capacity

Certifications and tests

The introduction of eArche Family

Installation method of eArche

Case Studies

eArche in building industry

eArche

Turn all building skin into green electricity generators



eArche products are intended to change the way how solar is easily deployed in the market, thereby making solar energy more accessible and affordable to all.

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eArche

Turn all building skin into green electricity generators

eArche products are developed by the patented technology and have many special features.

Light Weight

Flexible

Thin

Aesthetics

Perforation

Easy Installation

**Convenient
Transportation**

Easy Handling

**High
Performance**

**No Optical
Pollution**

**2400Pa/5400Pa
Static Mechanical
Load**

Tailor-made

Safety

PID-free

Reliability

Durability

This makes eArche products be easily applied to various industries such as buildings, transportation, agriculture, military and remote areas.

eArche

Ultra-light

Conventional Panel



22.0-27.0 kg

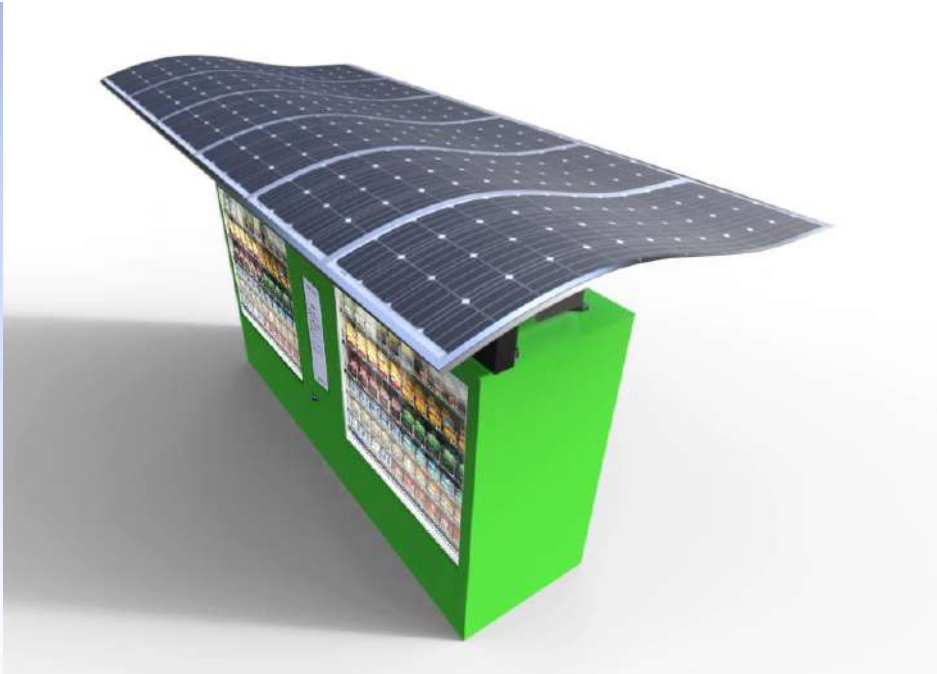


eArche



7.4 kg

eArche Flexible



eArche

Easy Transportation



Handling

Module Type	Handling
Conventional module (72 Cells)	0.5-1 pc
eArche (72 Cells)	1-2 pc

Packaging Configuration

Module Type	20' GP	40' HC
Conventional module (72 Cells)	125 pcs	600 pcs
eArche (72 Cells)	270 pcs	1080 pcs

eArche

Aesthetics



eArche

Easy Installation Pre-assembled



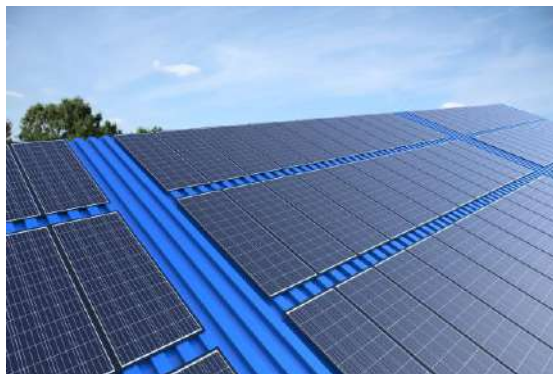
- Great than 1KW system pre-assembled in the workshop
- Saved a lot of hard work on the roof
- Simplified the installation
- Great aesthetics



Bonding



- No add on installation structure
- Strong adhesion compliance with building code
- No roof penetration



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Bolting



- Attachment to the existing surface structure
- Simple installation for rooftop as well as for facade
- Minimal requirement for add on installation structure



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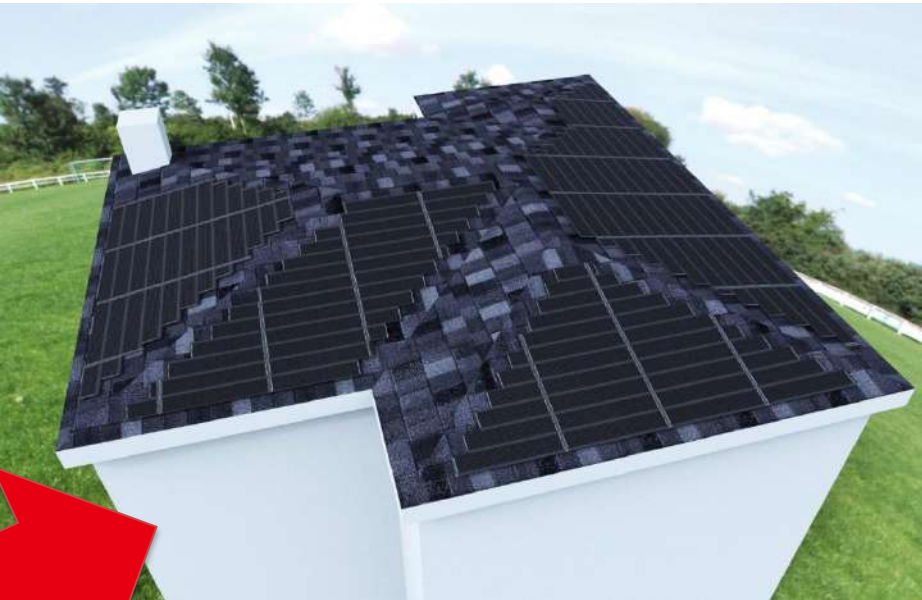
eArche

Maximizing benefits



Capacity : 10 KW

50%

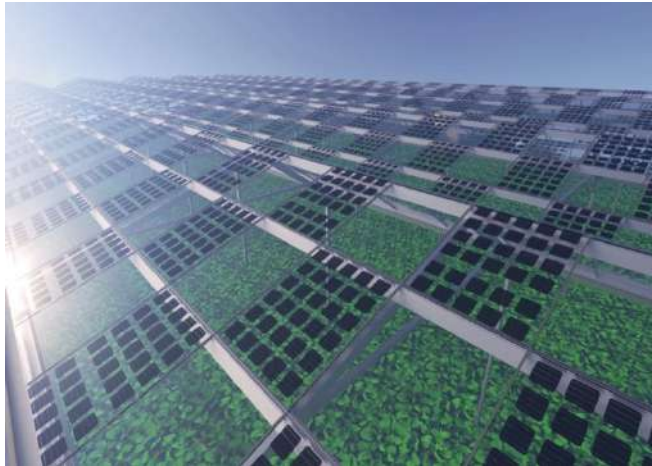


Capacity : 15 KW

Maximizing your benefits at the limited rooftops areas

eArche

Broad Deployment





Content

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Certifications and tests

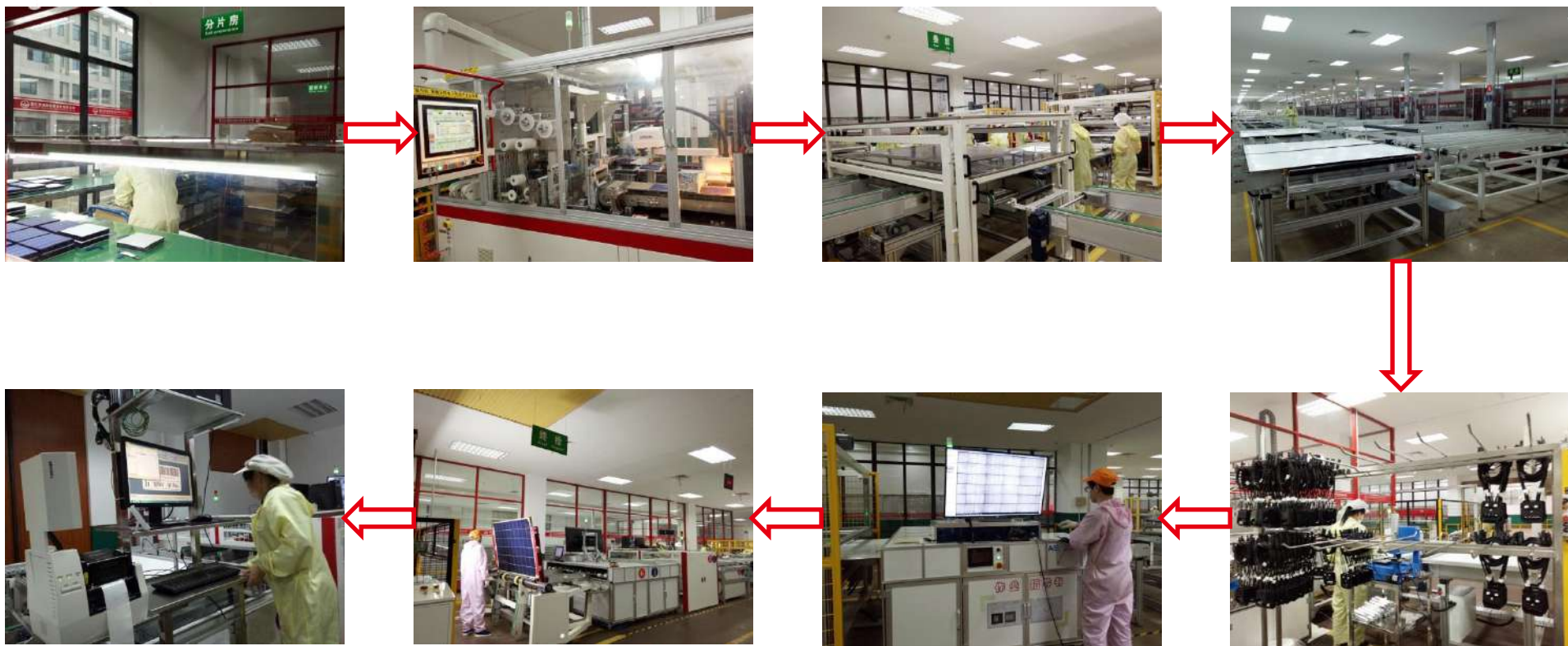
The introduction of eArche Family

Installation method of eArche

Case Studies

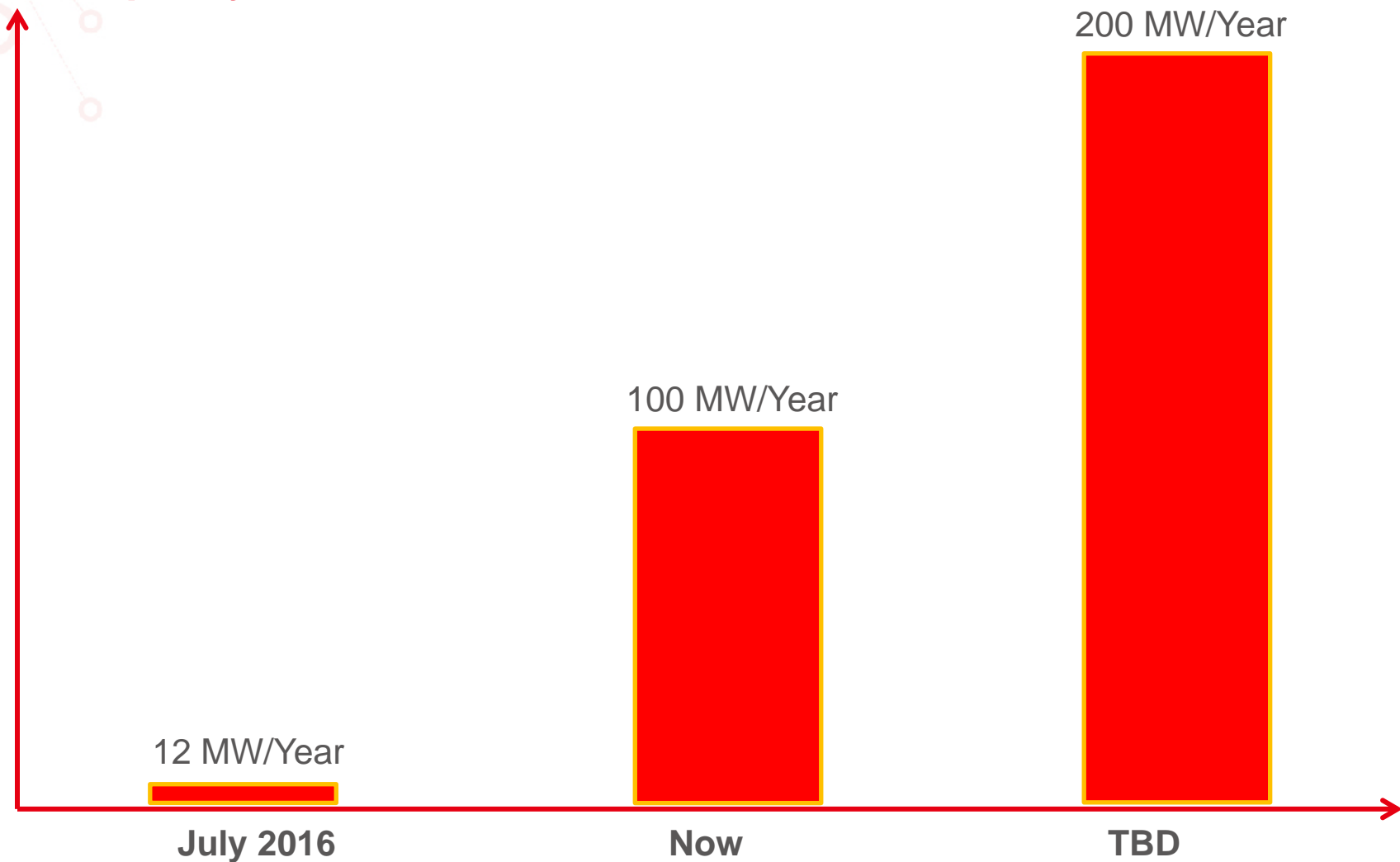
eArche in building industry

eArche Factory



Industry-leading production line

eArche Capacity



The capacity of eArche is 100 MW per year now.



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The features of eArche

Factory and capacity

Certifications and tests

The introduction of eArche Family

Installation method of eArche

Case Studies

eArche in building industry

eArche

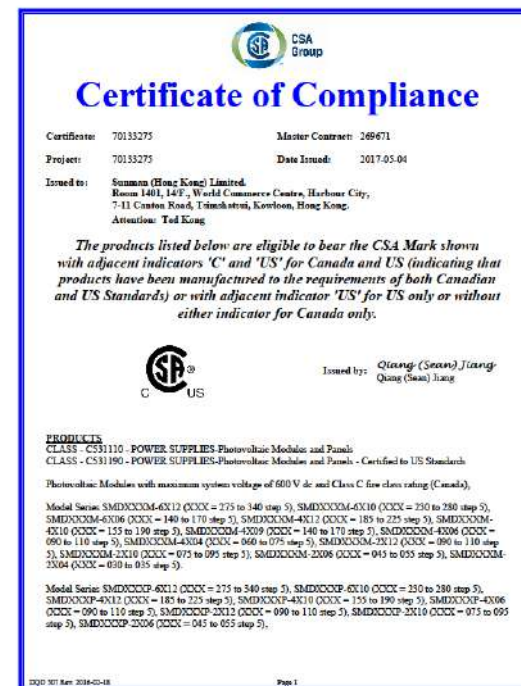
Worldwide Recognitions



Comprehensive Products Certificates:

IEC61215/IEC61730/UL1703/IEC61701/IEC62804-1

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VDE

JET

CSA

Test conditions

- **Module Temperature:** $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$;
- **Chamber relative humidity:** $85\% \pm 3\%$ relative humidity;
- **Dwell:** 192 h at the above stated temperature and relative humidity (not including stabilization);
- **Voltage:** 1000 V and polarities applied for the above given dwell duration and during ramp down of temperature to ambient conditions.



Power degradation = -0.75%

Salt Mist Corrosion Testing

Test conditions

- Severity level: 3
- Testing time: 168 hrs
- Chamber temperature: 40°C
- Relative Humidity: 93 %
- Mist pH level: 7

Power degradation = -0.73%

IEC 61701:2011
Salt mist corrosion testing of photovoltaic (PV) modules
 Confirmation of test results

VDE Renewables File Ref.: 10045/2018-40305

Applicant: Sunman (Hong Kong) Limited
 Room 1401, 14/F., World Commerce Centre, Harbour City, 7-11
 Canton Road, Tsimshatsui, Kowloon, Hong Kong, P.R. China

Product: Crystalline silicon Photovoltaic (PV)-Modules

Type:

A) SMFXXXM-6X12	A) SMFXXXP-6X12
B) SMFXXXM-6X10	B) SMFXXXP-6X10
C) SMFXXXM-6X06	D) SMFXXXM-4X12
D) SMFXXXP-4X12	E) SMFXXXM-4X10
E) SMFXXXP-4X10	F) SMFXXXM-4X06
G) SMFXXXM-4X06	G) SMFXXXP-4X06
H) SMFXXXM-4X04	I) SMFXXXM-2X12
I) SMFXXXP-2X12	J) SMFXXXM-2X10
J) SMFXXXP-2X10	K) SMFXXXM-2X06
K) SMFXXXP-2X06	L) SMFXXXM-2X04

XXX in the type replaces the power in watt and can be any number between:

275 - 340 for A)	230 - 280 for B)	140 - 170 for C)
185 - 225 for D)	155 - 190 for E)	140 - 170 for F)
90 - 110 for G)	60 - 75 for H)	90 - 110 for I)
75 - 95 for J)	45 - 65 for K)	30 - 35 for L)

Manufacturer: Sunman (Hong Kong) Limited

Standard: IEC 61701:2011, Salt mist corrosion test

Test conditions

Severity level:	3
Testing time:	168 hrs
Chamber temperature:	40°C
Relative Humidity:	93 %
Mist pH level:	7

VDE RENEWABLES GMBH
 Siemensstraße 30
 83755 Alzenau, Germany
 Managing Director: Burkhard Hölzer

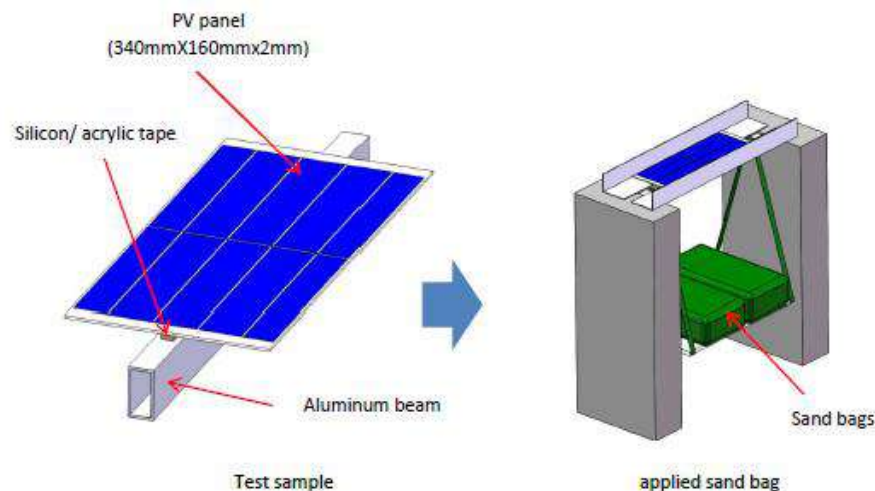
Tel: +49 89 6308 5300
 Fax: +49 89 6308 5320
 Email: renewables@vde.com
www.vde.com/renewables

Location: Alzenau
 District Court: Aschaffenburg
 Registration No: HRB 13620
 Tax Number: 204/14/20763

Bank Information:
 Deutsche Bank AG
 IBAN: DE14 5007 0010 0235 5000 01
 BIC: DEUTDE33XXX

eArche

Pull Test



VDE Global Services Shanghai

6F, Building 3, No.158, Zhucheng Road,
Minhang District, Shanghai, 201199,
P. R. China

Tel: 0086 - 21 - 6390 7080
Fax: 0086 - 21 - 6390 6078
Web: www.vde.com
www.vdeglobalservices.com

VDE
VDE Global Services Shanghai Co., Ltd.

Pull Test Report

Applicant : Sunman (Hong Kong) Ltd.
Date of Issue : 2015/05/11
Witnessed By : Zhang Wang

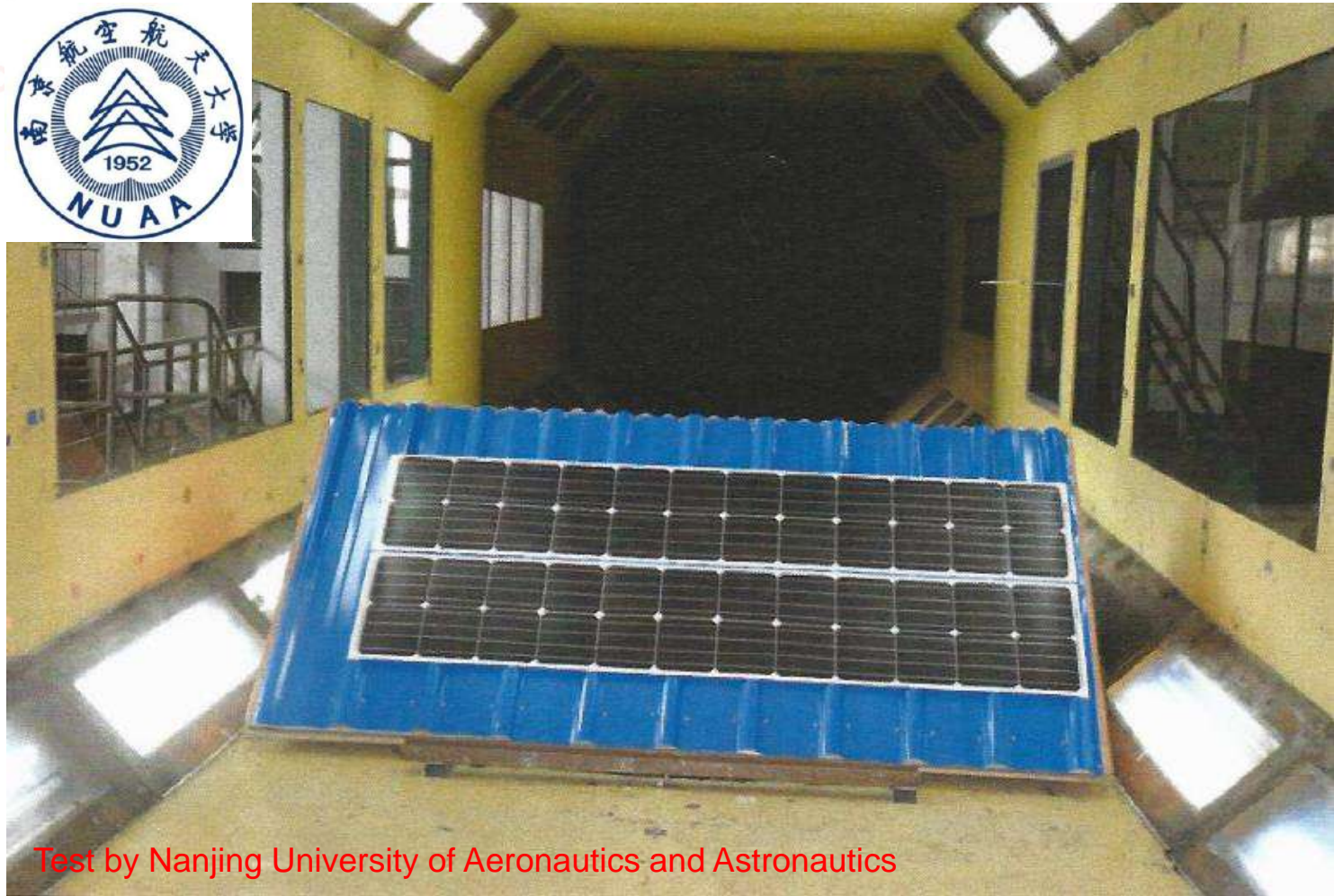
VDE Global Services Shanghai
6F, Building 3, No.158, Zhucheng Road,
Minhang District, Shanghai, 201199,
P. R. China

Tel: 0086 - 21 - 6390 7080
Fax: 0086 - 21 - 6390 6078
Web: www.vde.com
www.vdeglobalservices.com

No	Material	Curing time	Applied weights until the break happens
1	eArche/acrylic tape/aluminum	2 min	60 kg
		10 min	50 kg
		4 hrs	70 kg
		24 hrs	70 kg
2	eArche/silicon tape/aluminum	4 hrs	40 kg
		24 hrs	140 kg
		7 days	> 200 kg

eArche

Wind tunnel test

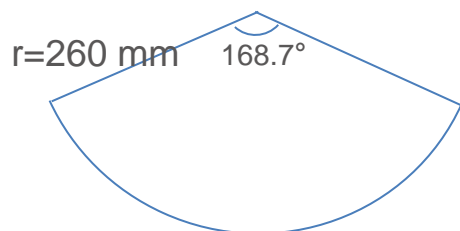


Test by Nanjing University of Aeronautics and Astronautics

Wind Speed: 162 km/h

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Bending Test



Diameter: 900 mm

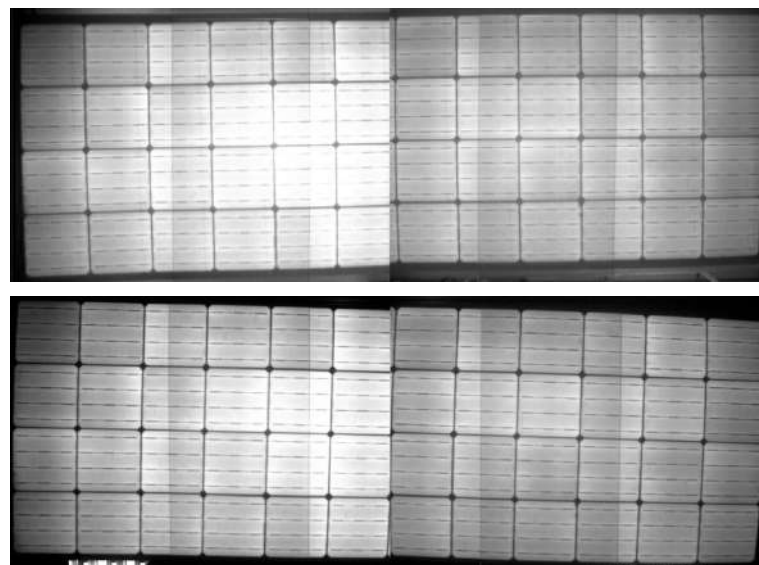
No micro-crack

No power degradation

Before

6 h

After



eArche

Glare Test



Conventional glass module



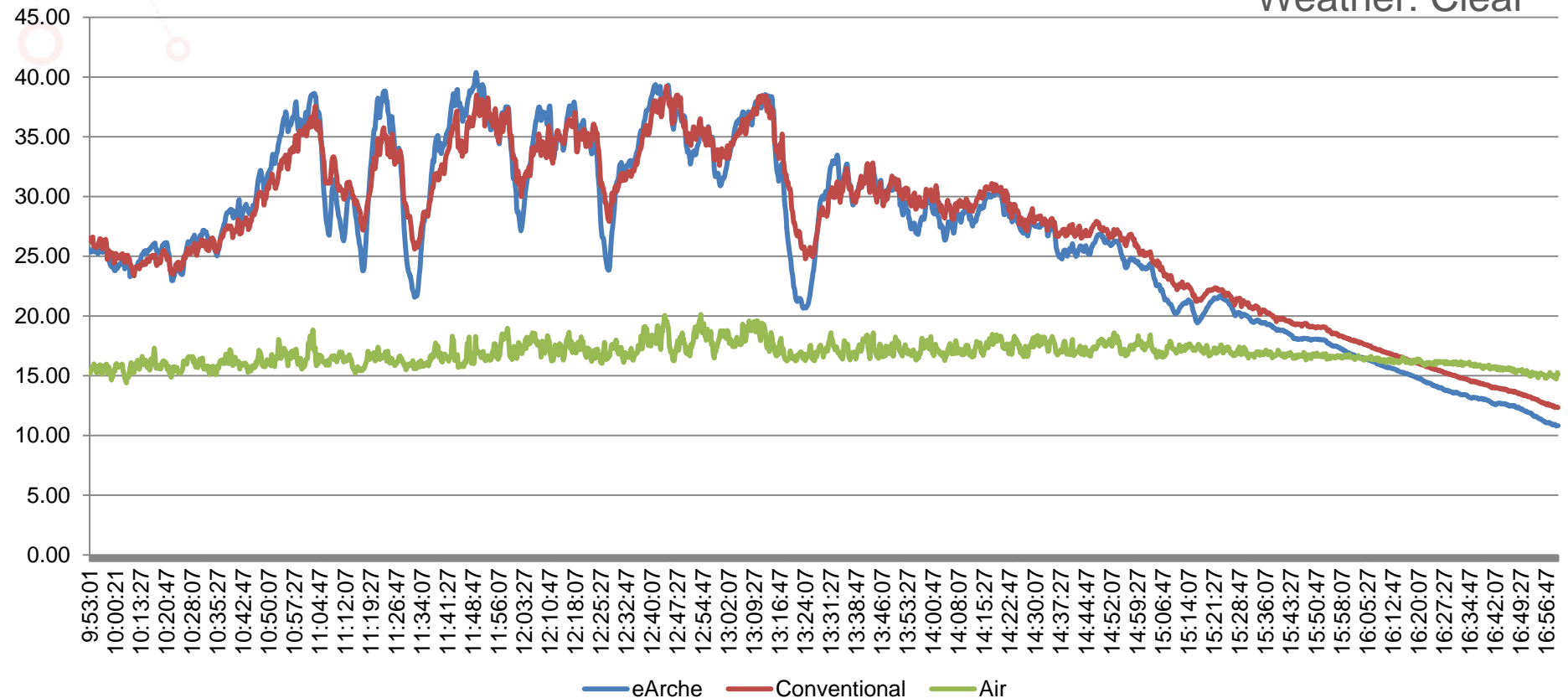
eArche

eArche will reduce the light-pollution significantly.

eArche

Temperature Test

Data: 2016-11-02
Weather: Clear



1. eArche is more sensitive to the change of environment
2. The average temperature of eArche is lower than conventional c-Si module (0.5 °C).



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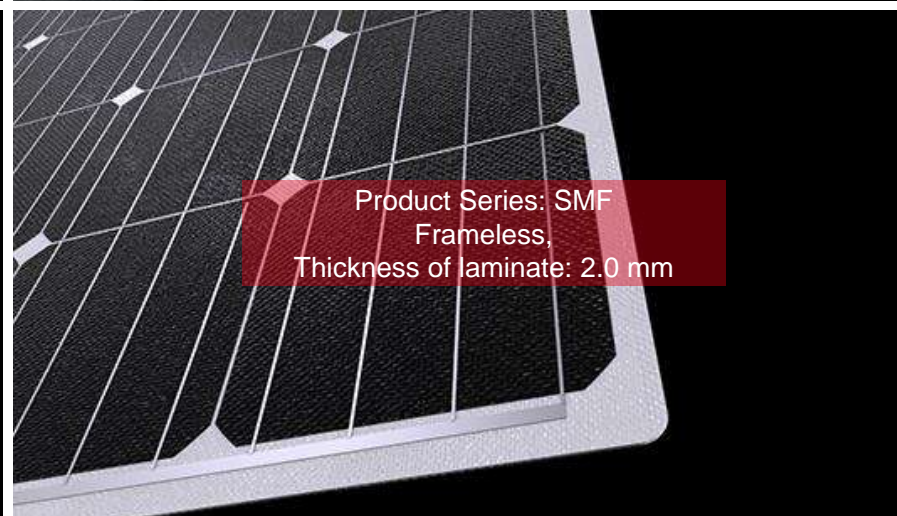
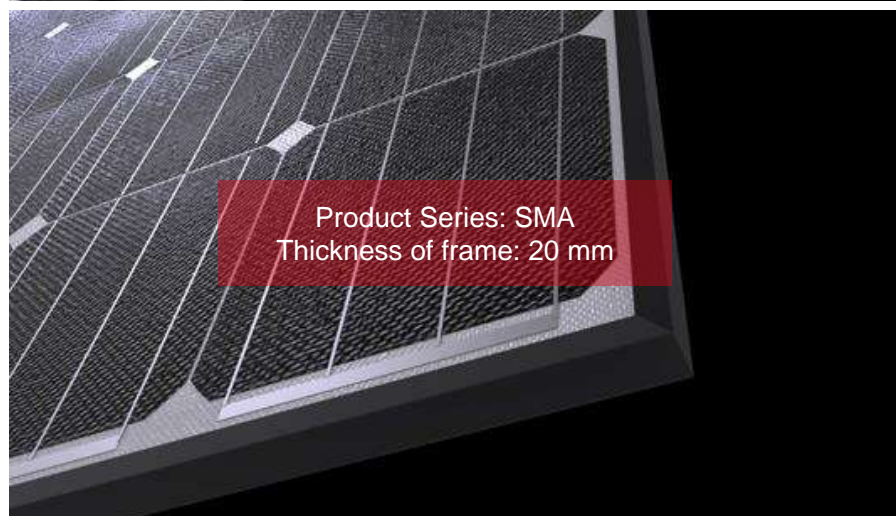
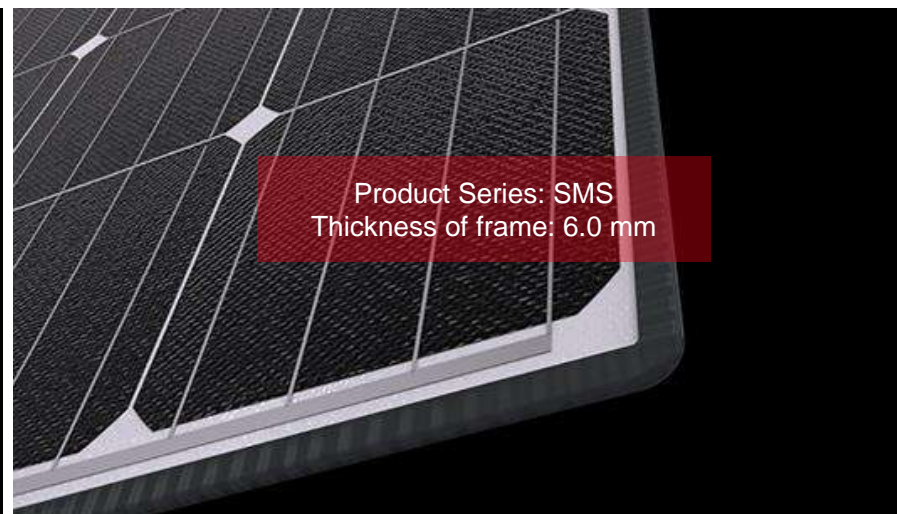
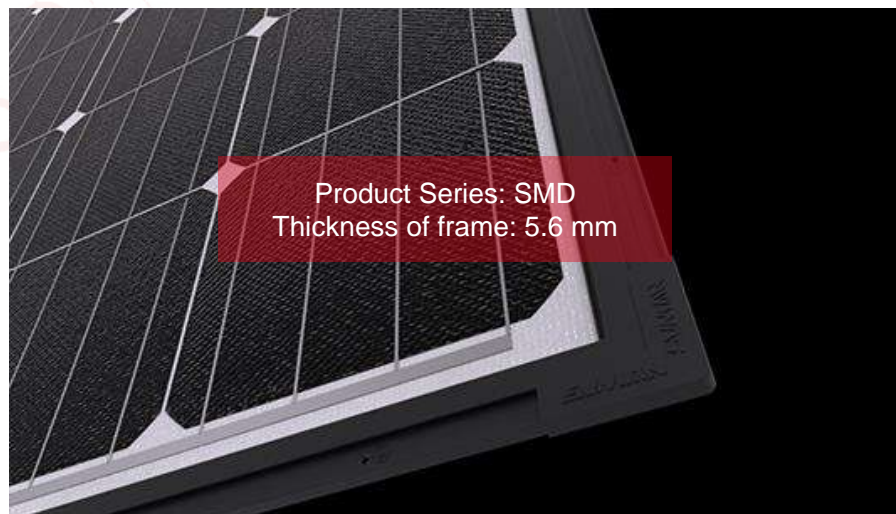
Certifications and tests

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Case Studies

eArche in building industry



Four types of frames prepared for various scenarios

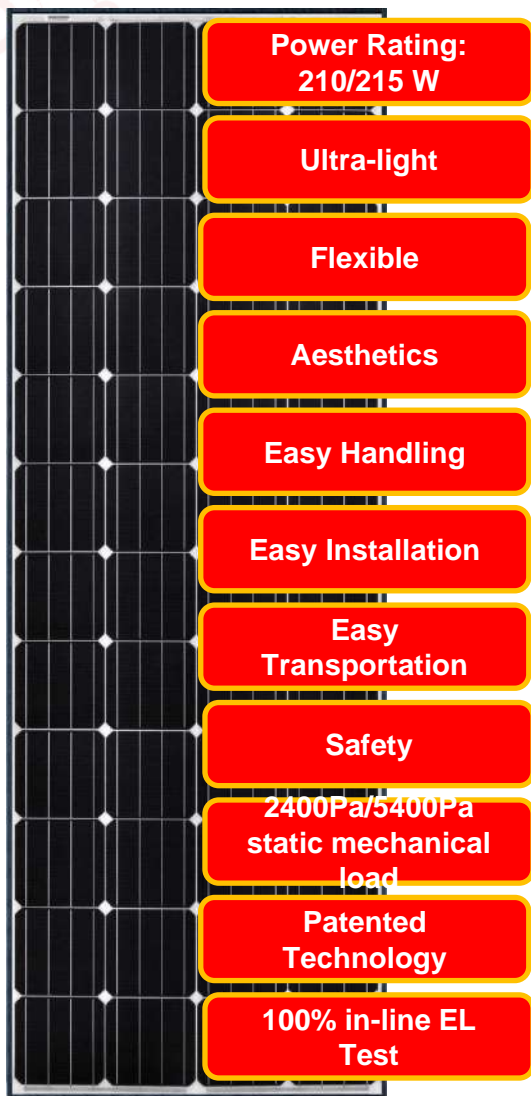
eArche



Each Family have several series which can be customized.

SMS Series

SMS215M-4X12



PSFU-eArche technical information

Specification:

Power rating: 210-215 W

Dimensions: 1950X660X19/6 mm

Benefits:

High efficiency

This 4-busbar mono-crystalline 48-cell product has a high performance efficiency up to 16.7%.

Durability

The qualified materials and stringent quality control ensure a robust durability of the product. The eArche product was certified to IEC61215 standard. It can withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal).

Certification:



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SMS Series

SMS210P-4X12



PSFU-eArche technical information

Specification:

Power rating: 205-210 W

Dimensions: 1950X660X19/6 mm

Benefits:

High efficiency

This 4-busbar mono-crystalline 48-cell product has a high performance efficiency up to 16.3%.

Durability

The qualified materials and stringent quality control ensure a robust durability of the product. The eArche product was certified to IEC61215 standard. It can withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal).

Certification:



SVMAN
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Content

The features of eArche

Factory and capacity

Certifications and tests

The introduction of eArche Family

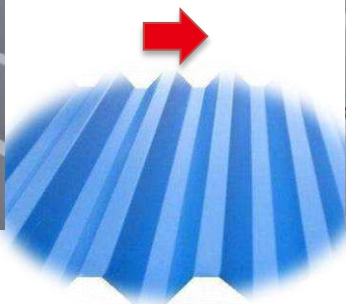
Installation method of eArche

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eArche in building industry



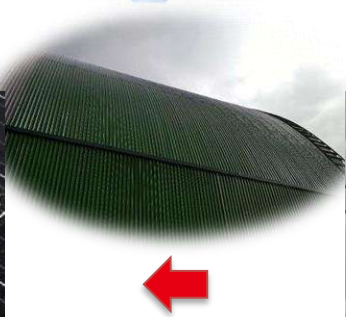
Clean Rooftop



Applying Adhesive



Electrical Connection



eArche Installation

eArche

Installation Method _ Upright lockrand roof



Install roof hook



Install eArche



eArche

Installation Method _ Glass roof or Aluminum composite roof



Stick aluminum strip



Glue



Screw to fix



Install the panels

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Installation Method _ Cement roof



Stick root parts



Asphalt protection



Install connect parts



Install eArche



eArche

Installation Method _ Wall



Install rail brackets



Install eArche



Content

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eArche in building industry

eArche

Commercial Market



Capacity: 600 KW

Location: Shanghai, China

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eArche

Commercial Market



Capacity: 522 KW

Location: Jiangsu, China

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eArche

Commercial Market



Capacity: 330 KW

Location: Jiangsu, China

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eArche

Commercial Market



Capacity: 93.4 KW

Location: Jiangsu, China

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eArche

Commercial Market



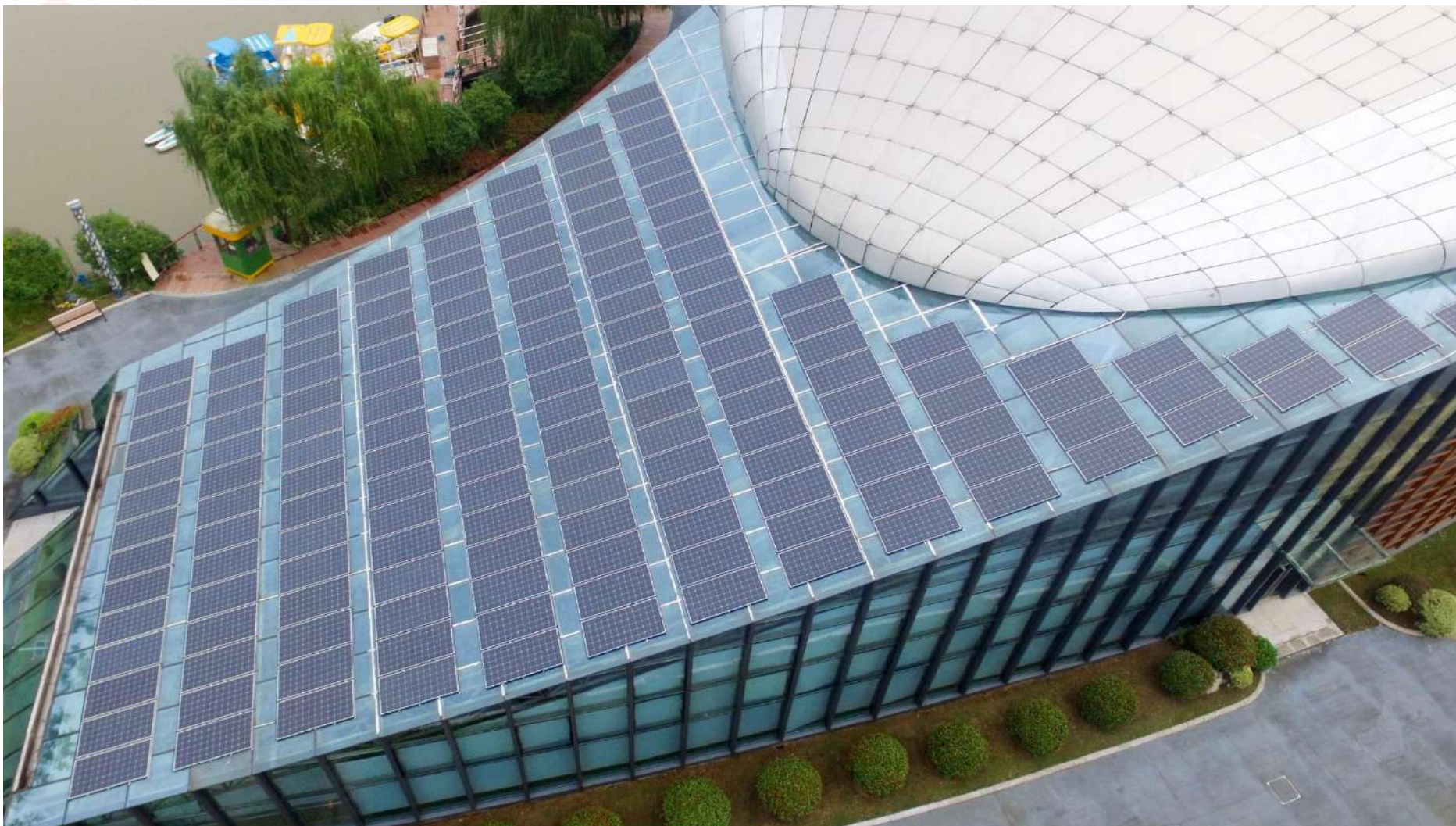
Capacity: 56 KW

Location: Jiangsu, China

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eArche

Commercial Market



Capacity: 51.8 KW

Location: Jiangsu, China

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eArche

Commercial Market



Capacity: 30 KW

Location: Fukuyama, Japan

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Commercial Market



Capacity: 30 KW

Location: Switzerland

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Commercial Market



Capacity: 25.6 KW

Location: Sydney, Australia

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Commercial Market



Capacity: 12.8 KW

Location: Jiangsu, China

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eArche

Commercial Market



Capacity: 10.8 KW

Location: Guangdong, China

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eArche

Commercial Market



Capacity: 5 KW

Location: Manila, The Philippines

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eArche

Commercial Market



Capacity: 5 KW

Location: Osaka, Japan

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eArche

Residential Market



Capacity: 15 KW

Location: Shanghai, China

SUNMAN
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eArche

Residential Market



Capacity: 10 KW

Location: Shanghai, China

SUNMAN
SOLAR SPECIALIST

eArche

Residential Market



Capacity: 10 KW

Location: Shanghai, China

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eArche

Residential Market



Capacity: 5 KW

Location: Shanghai, China

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eArche Wall



Location: Spain

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eArche Wall



Location: Japan

eArche Wall



Location: Jiangsu, China

eArche Wall



Location: Germany

eArche Wall



Location: Germany

eArche Carport



Capacity: 0.9 KW & 3.4 KW

Location: Fukuyama, Japan

eArche Carport



Capacity: 1.7 KW

Location: Osaka, Japan

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eArche Carport



Capacity: 25.7 KW

Location: Jiangsu, China

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eArche

Mobile Power



Capacity: 6.4 KW

Location: Byron Bay, Australia

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eArche

Mobile Power

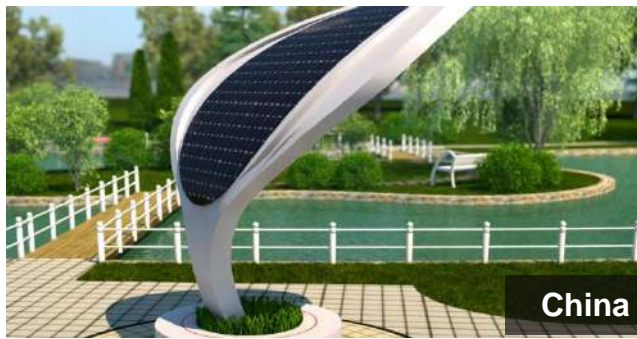


Location: China, New Zealand, America, Australia ect.

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eArche

Others





Content

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Factory and capacity

Certifications and tests

The introduction of eArche Family

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Case Studies

eArche in building industry

Product Positioning of SunMan's Solar Tile



The status of distributed PV

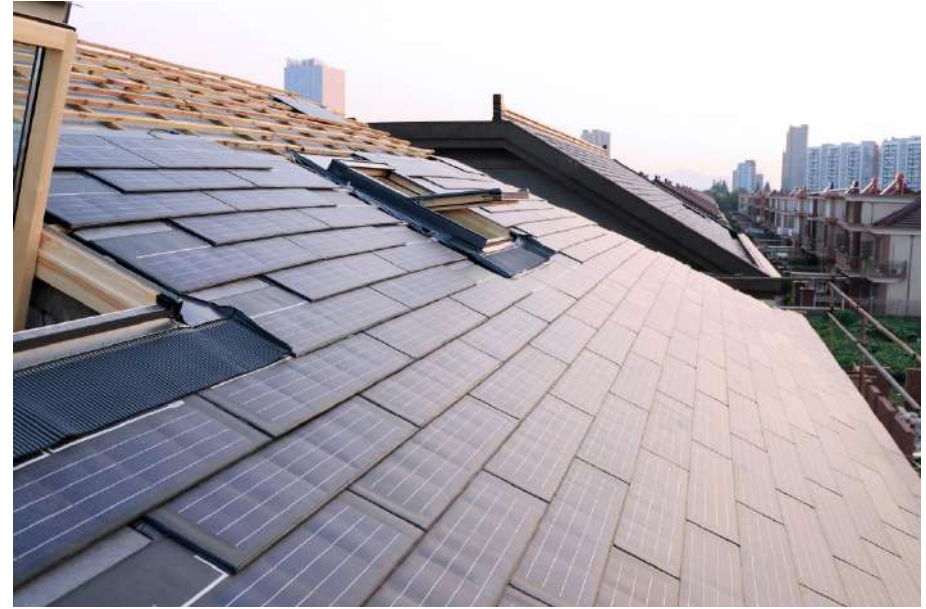
Product: Serious homogenization, single size .

Installation: Solar panels are secured to the building by an added mounting system.

Application: Existing rooftop with a certain carrying capacity.

Advantage: The market and supply chain has much higher maturity

Weakness: Seriously affect the appearance of the building and waste of secondary installation.



Future of solar tile

Products: Diversified product forms, directly replacing traditional building materials, good appearance.

Installation: Similar to the traditional tile installation except the wiring.

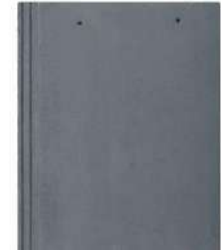
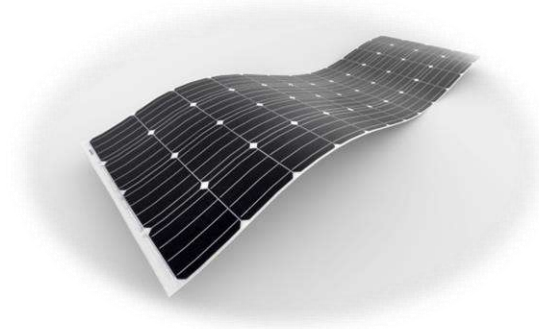
Application: new construction or renew of the roof.

Advantages: Integrating building materials functions and power generation functions.

Disadvantages: Technical barriers are high, the market is in its infancy, and market awareness is low.

Product Positioning of SunMan's Solar Tile

**Most understand the
beauty of architecture**



- Great architectural aesthetics
- Great cost saving as compared to the retrofit installation
- Integration completed in the factory
- Multiple ways of installations as applied to conventional building materials
- No add on installation structures
- Tailor made size and shapes



The Introduction of SunMan's Solar Tile

Type: Tile S

20 W/pc

Structure :

- eArche solar panel
- Tile

Dimension: 910*414*8 mm

Dimension of facing sun:

910*190*8 mm

Weight: 3.8 kg

Pc-to-area ratio: 5.78 pc/m²

Power-to-area ratio: 115 W/m²



The Introduction of SunMan's Solar Tile

Electrical Characteristics

Type	Tile S
Maximum Power (Pmax)	20
Maximum Power Voltage (Vmp)	2.5
Maximum Power Current (Imp)	8.27
Open-circuit Voltage (Voc)	3.1
Short-circuit Current (Isc)	8.73
Power Tolerance	0/+5 W

Mechanical Characteristics

Solar Cell	Polycrystalline silicon (6 inches)
No. of Cells	5 pcs
Module Dimensions	910*414*8 mm
Dimension of facing sun	910*190*8 mm
Weight	3.8 kgs
J-box	IP 68 rated
Output Cables	Photovoltaic technology cable 4.0 mm ² , (+)150 / (-)450 mm
Connector	MC4 compatible

System Characteristics

Operating Temperature (°C)	-40 °C to 85 °C
Maximum System Voltage	600 V DC (IEC)
Maximum Series Fuse Rating	20 A
Application Class	Class A
Fire Resistance	Class C
Mechanical Load (Pa)	2400/5400

The Introduction of SunMan's Solar Tile

Type: Tile M

56 W/pc

Structure :

- eArche solar panel
- Tile

Dimension: 1180*750*8 mm

Dimension of facing sun:

1180*350*8 mm

Weight: 9.5 kg

Pc-to-area ratio: 2.42 pc/m²

Power-to-area ratio: 140 W/m²



The Introduction of SunMan's Solar Tile

Electrical Characteristics

Type	Tile M
Maximum Power (Pmax)	56
Maximum Power Voltage (Vmp)	6.8
Maximum Power Current (Imp)	8.27
Open-circuit Voltage (Voc)	8.4
Short-circuit Current (Isc)	8.73
Power Tolerance	0/+5 W

Mechanical Characteristics

Solar Cell	Polycrystalline silicon (6 inches)
No. of Cells	14 pcs
Module Dimensions	1180*750*8 mm
Dimension of facing sun	1180*350*8 mm
Weight	9.5 kgs
J-box	IP 68 rated
Output Cables	Photovoltaic technology cable 4.0 mm ² , (+)150 / (-)450 mm
Connector	MC4 compatible

System Characteristics

Operating Temperature (°C)	-40 °C to 85 °C
Maximum System Voltage	600 V DC (IEC)
Maximum Series Fuse Rating	20 A
Application Class	Class A
Fire Resistance	Class C
Mechanical Load (Pa)	2400/5400



The Features of SunMan's Solar Tile

- **Unique eArche:** The most competitive and customized solar panel.
- **Independent-integrated design:** eArche + building materials makes us more freedom when we design it.
- **Benefits:** Energy saving, power generation and earning money.
- **High Efficiency:** Up to 115/140 W power output per square meter
- **Aesthetics:** More eArche types are ever-changing, in line with architectural aesthetics
- **Durability:** Shading, insulation, waterproofing, anti-icing and anti-aging functions can resist man-made damage and natural disasters
- **Warranty:** Durable and guaranteed for up 25 years.

Certifications and tests of SunMan's Solar Tile



IEC61215/IEC61730/UL1703/IEC61701/IEC62804-1

1. UV-test (60°C, 15kwh/m²) + Thermal cycling test (-40 °C to 85°C, 50 times, 300h) + Humidity-freeze test (-40 °C to 85°C, 85%RH, 10 times, 240h)

2. Thermal cycling test (-40 °C to 85°C, 200 times, 1000h)

3. Damp heat test (85°C , 85%RH, 1000h) + Mechanical load test (5400Pa)

4. Damp heat test (85°C , 85%RH , 1000h) + Hail test (Ice ball size: 25mm , Ice ball weight: 7.53g, Ice ball velocity: 23m/ s)

5. Spread of Flame Test (Class C : Air Velocity: 5.2-5.3m/s , Flame Temperature: 702.5°C, Time of Spread of Flame Test: 4min)

Installation of SunMan's solar tile



Install water strips and hang tiles



Install solar tile

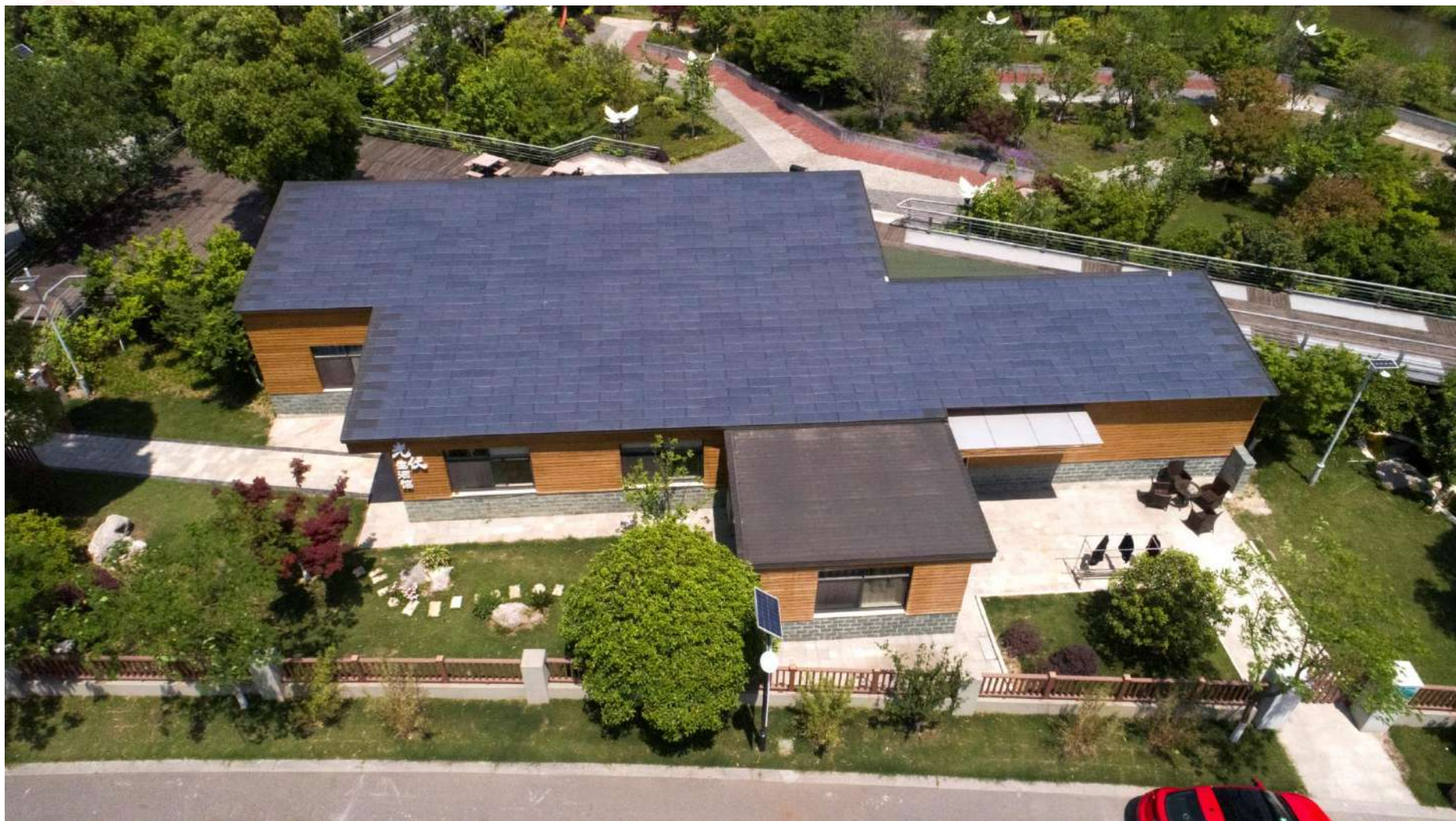


Electrical connection



Install crest tile

Show Case 1



Location: Jiangsu, China

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Show Case 2



Location: Jiangsu, China

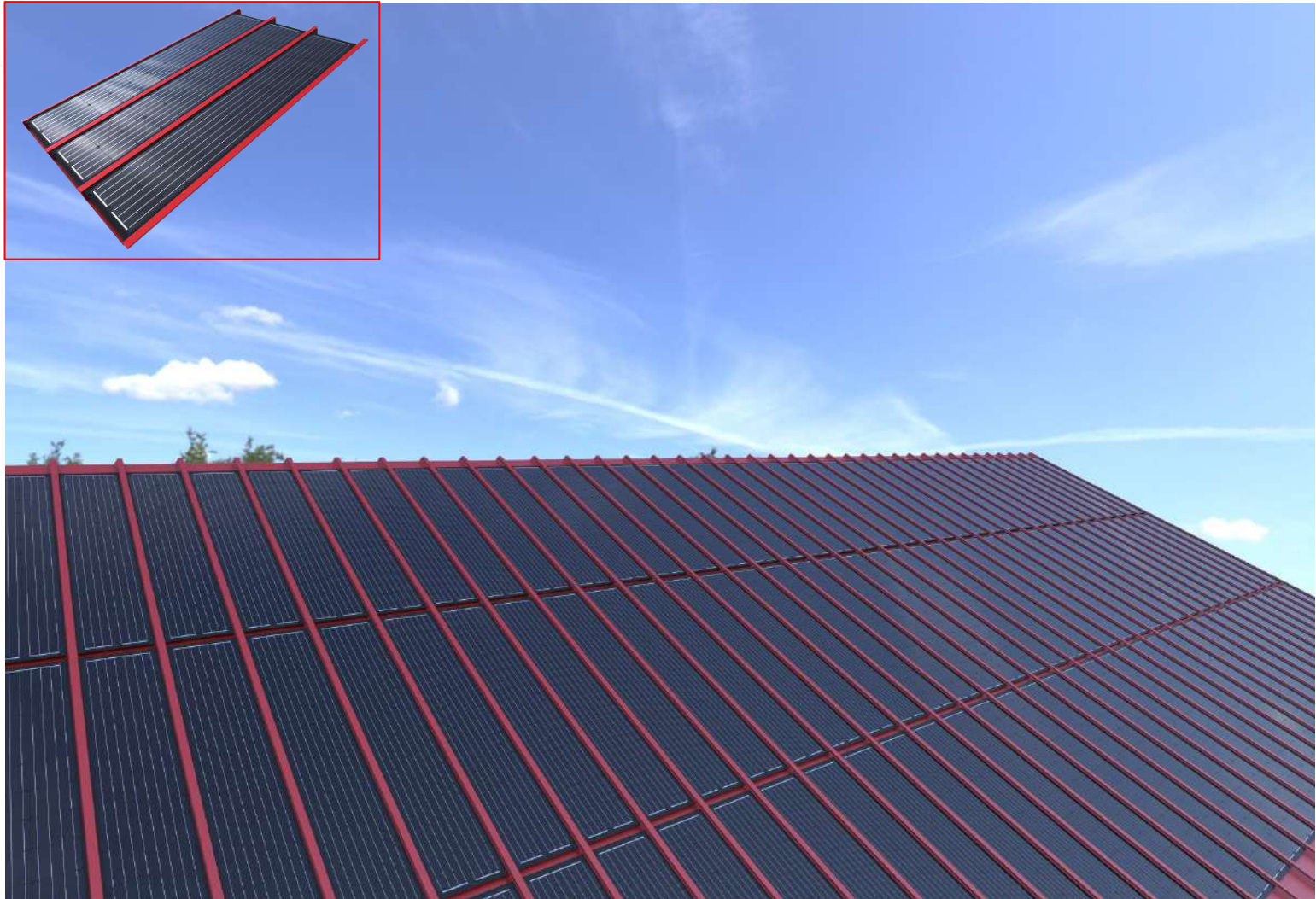
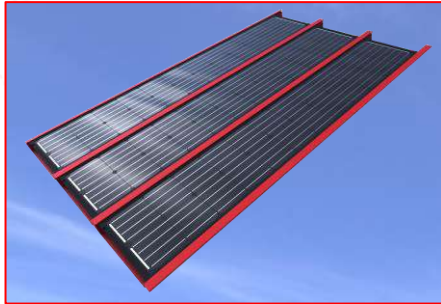
SUMAN
SOLAR SPECIALIST



Something will happen soon

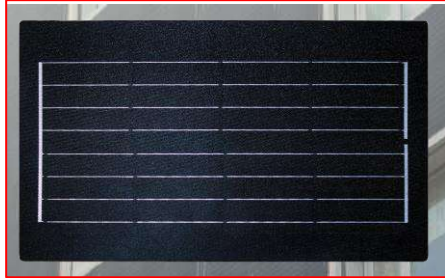
Something will happen soon

Metal Roof



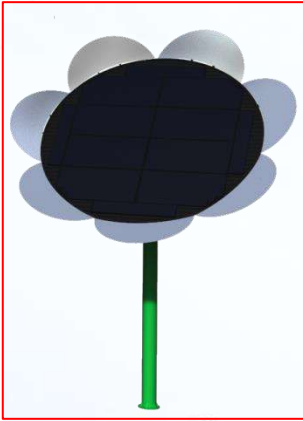
Something will happen soon

Facade



Something will happen soon

Sunflowers



Something will happen soon

Folding carport



eArche

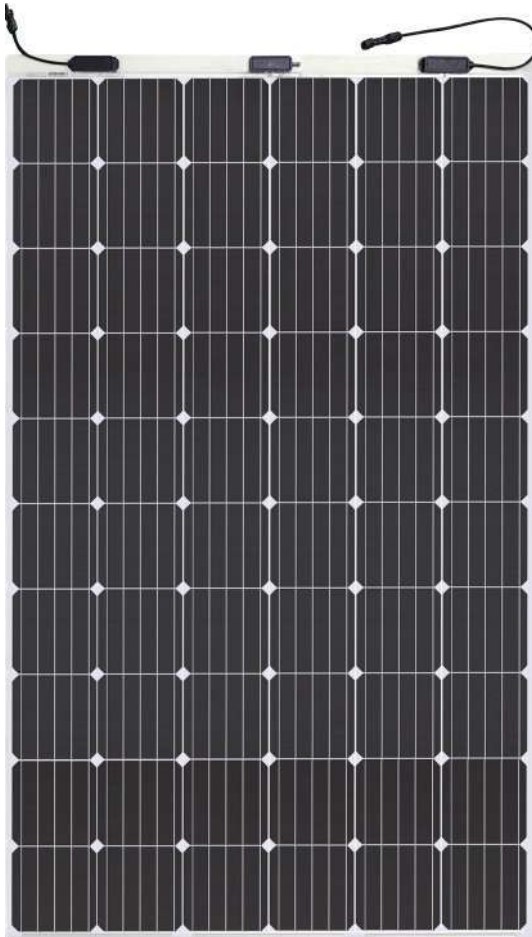
SUNMAN



290 Watt

60 Cell Monocrystalline Module

Features



Ultra-light: Through replacement of the glass and optimization of the frame eArche weighs as 70% less than conventional PV panels.

Flexible: eArche combines a unique, patented material with other industry-leading technologies to produce superior flexible crystalline-silicon panel which can be installed on curved surface.

Aesthetics: Aesthetically pleasing design with patented materials and sophisticated manufacturing process results in a high-efficiency, attractive panel, with no light pollution, PID-free operation and high levels of safety.

Easy Installation: eArche can reduce installation cost by up to 50% through the use of re-engineered components, ease of handling and faster installation.

Transportation: eArche's innovative frame and low weight will very significantly reduce the cost of transportation.

Deployment: Ultra-light weight, flexibility and customizable size make eArche the best choice to change the way how solar is deployed in the market and bring added value to special applications.

Durability: eArche panels are certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal), while special materials and stringent quality control ensure panel longevity.

285-290 W

POWER OUTPUT RANGE

0-5 W

POWER TOLERANCE

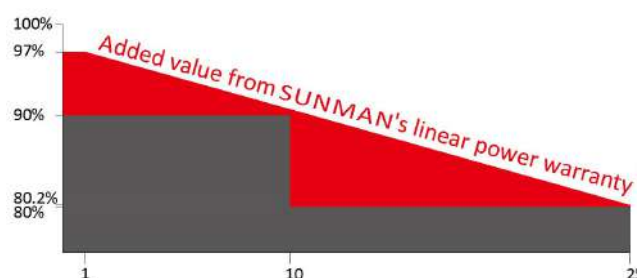
LINEAR

PERFORMANCE

WARRANTY

10 Year Product Warranty

25 Year Linear Power Warranty



www.sunman-energy.com

SMF290M-6X10UW

SMF285M-6X10UW



Electrical Characteristics

STC	SMF290M-6X10UW	SMF285M-6X10UW
Maximum Power (P_{max})	290	285
Maximum Power Voltage (V_{mp})	32.6	32.4
Maximum Power Current (I_{mp})	8.90	8.80
Open-circuit Voltage (V_{oc})	39.9	39.8
Short-circuit Current (I_{sc})	9.43	9.34
Module Efficiency (%)	17.6	17.3
Operating Temperature ($^{\circ}C$)	-40 $^{\circ}C$ to 85 $^{\circ}C$	
Maximum System Voltage	1000 V DC (IEC)	
Maximum Series Fuse Rating	20 A	
Application Class	Class A	
Power Tolerance	0/+5 W	

STC: Irradiance 1000W/m², Cell temperature 25 $^{\circ}C$, AM=1.5.

NOCT	SMF290M-6X10UW	SMF285M-6X10UW
Maximum Power (P_{max})	214	210
Maximum Power Voltage (V_{mp})	29.9	29.7
Maximum Power Current (I_{mp})	7.16	7.08
Open-circuit Voltage (V_{oc})	36.9	36.7
Short-circuit Current (I_{sc})	7.61	7.53

NOCT: Irradiance 800W/m², Ambient temperature 20 $^{\circ}C$, Wind speed 1 m/s.

Mechanical Characteristics

Solar Cell	Monocrystalline silicon (6 inches)
No. of Cells	60 (6 \times 10)
Module Dimensions	1661 \times 990 \times 2 mm (65.4 \times 39.0 \times 0.1 inch)
Weight	4.6 kgs (10.1 lbs)
Backsheet	White
Frame	Black Anodized Aluminium Alloy
J-box	IP 68 rated
Output Cables	Photovoltaic technology cable 4.0 mm ² , (+)150 / (-)450 mm
Connector	MC4 compatible

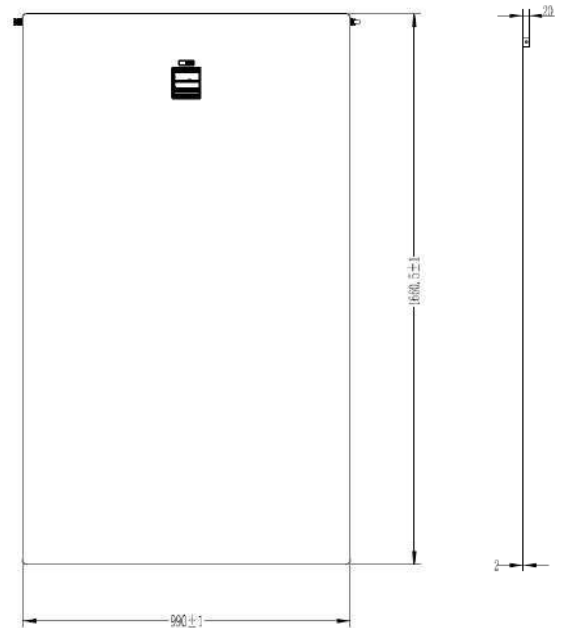
Packaging Configuration

	20' GP	40' HC
Module per pallet	66	66
Pieces per container	396	1848

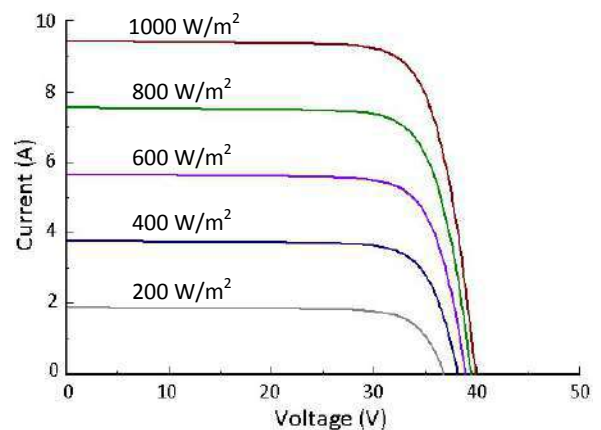
CAUTION: Read installation manual before using the product.

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Dimensions



I-V Curve (290)



Temperature Characteristics

Nominal Operating Cell Temperature (NOCT)	45 \pm 2 $^{\circ}C$
Temperature Coefficient of P_{max}	-0.39 %/ $^{\circ}C$
Temperature Coefficient of V_{oc}	-0.30 %/ $^{\circ}C$
Temperature Coefficient of I_{sc}	0.059 %/ $^{\circ}C$

Dealer Information



Iris Hellas
Technology Innovations
www.irishellas.com

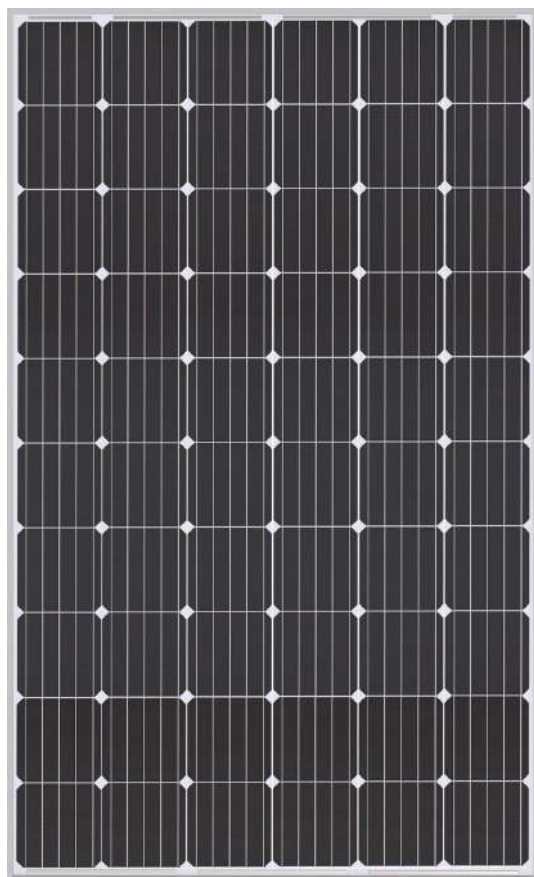
SMFUW_IEC_EN_2019A



290 Watt

60 Cell Monocrystalline Module

Features



Ultra-light: Through replacement of the glass and optimization of the frame eArche weighs as 60% less than conventional PV panels.

Aesthetics: Aesthetically pleasing design with patented materials and sophisticated manufacturing process results in a high-efficiency, attractive panel, with no light pollution and high levels of safety.

Easy Installation: eArche can reduce installation cost significantly through the use of re-engineered components, ease of handling and faster installation.

No-glass: No fragile glass design lead to PID-free and more safety in handling, transportation, installation and operation.

Transportation: eArche's innovative frame and low weight will very significantly reduce the cost of transportation.

Deployment: Ultra-light weight and customizable size make eArche the best choice to change the way how solar is deployed in the market and bring added value to special applications.

Durability: eArche panels are certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal), while special materials and stringent quality control ensure panel longevity.

285-290 W

POWER OUTPUT RANGE

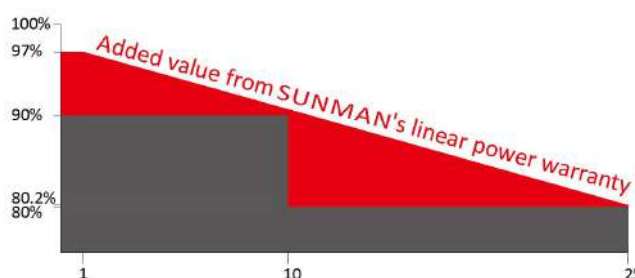
0-5 W

POWER TOLERANCE

LINEAR**PERFORMANCE****WARRANTY**

10 Year Product Warranty

25 Year Linear Power Warranty



SMA290M-6X10DW

SMA285M-6X10DW



Electrical Characteristics

STC	SMA290M-6X10DW	SMA285M-6X10DW
Maximum Power (P_{max})	290	285
Maximum Power Voltage (V_{mp})	32.6	32.4
Maximum Power Current (I_{mp})	8.90	8.80
Open-circuit Voltage (V_{oc})	39.9	39.8
Short-circuit Current (I_{sc})	9.43	9.34
Module Efficiency (%)	17.8	17.5
Operating Temperature ($^{\circ}C$)	-40 $^{\circ}C$ to 85 $^{\circ}C$	
Maximum System Voltage	1000 V DC (IEC)	
Maximum Series Fuse Rating	20 A	
Application Class	Class A	
Power Tolerance	0/+5 W	

STC: Irradiance 1000W/m², Cell temperature 25 $^{\circ}C$, AM=1.5.

NOCT	SMA290M-6X10DW	SMA285M-6X10DW
Maximum Power (P_{max})	214	210
Maximum Power Voltage (V_{mp})	29.9	29.7
Maximum Power Current (I_{mp})	7.16	7.08
Open-circuit Voltage (V_{oc})	36.9	36.7
Short-circuit Current (I_{sc})	7.61	7.53

NOCT: Irradiance 800W/m², Ambient temperature 20 $^{\circ}C$, Wind speed 1 m/s.

Mechanical Characteristics

Solar Cell	Monocrystalline silicon (6 inches)
No. of Cells	60 (6 \times 10)
Module Dimensions	1638 \times 995 \times 35 mm (64.5 \times 39.2 \times 1.4 inch)
Weight	7.6 kgs (16.8 lbs)
Backsheet	White
Frame	Anodized Aluminium Alloy
J-box	IP 68 rated
Output Cables	Photovoltaic technology cable 4.0 mm ² , (+)150 / (-)450 mm
Connector	MC4 compatible

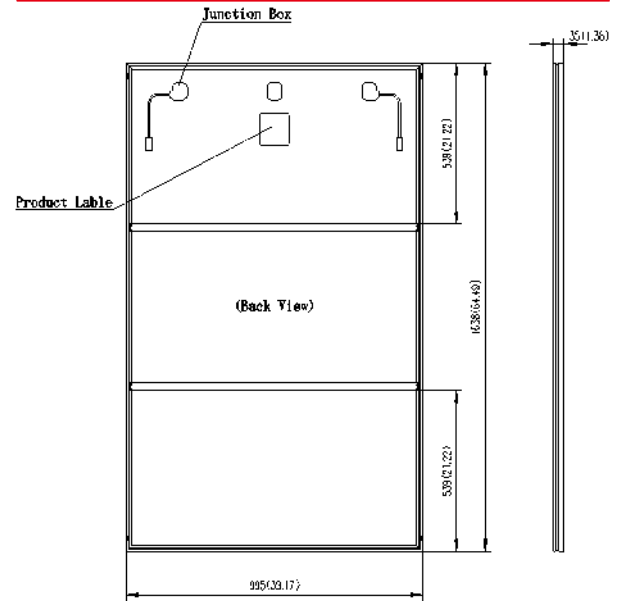
Packaging Configuration

	20' GP	40' HC
Module per pallet	28	28
Pieces per container	168	784

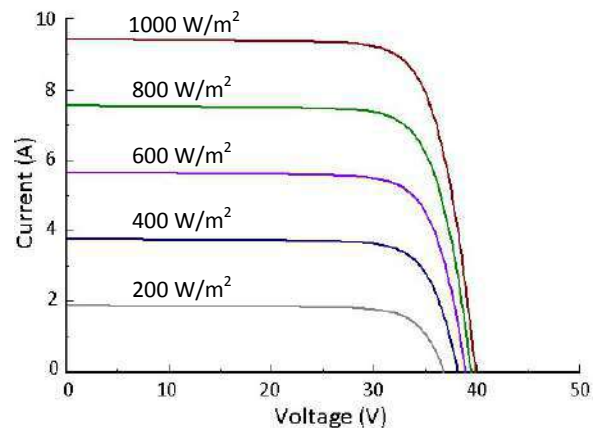
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Dimensions



I-V Curve (290)



Temperature Characteristics

Nominal Operating Cell Temperature (NOCT)	45 \pm 2 $^{\circ}C$
Temperature Coefficient of P_{max}	-0.39 %/ $^{\circ}C$
Temperature Coefficient of V_{oc}	-0.30 %/ $^{\circ}C$
Temperature Coefficient of I_{sc}	0.059 %/ $^{\circ}C$

Dealer Information



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290 Watt

60 Cell Monocrystalline Module

Features

Ultra-light: Through replacement of the glass and optimization of the frame eArche weighs as 70% less than conventional PV panels.

Flexible: eArche combines a unique, patented material with other industry-leading technologies to produce superior flexible crystalline-silicon panel which can be installed on curved surface.

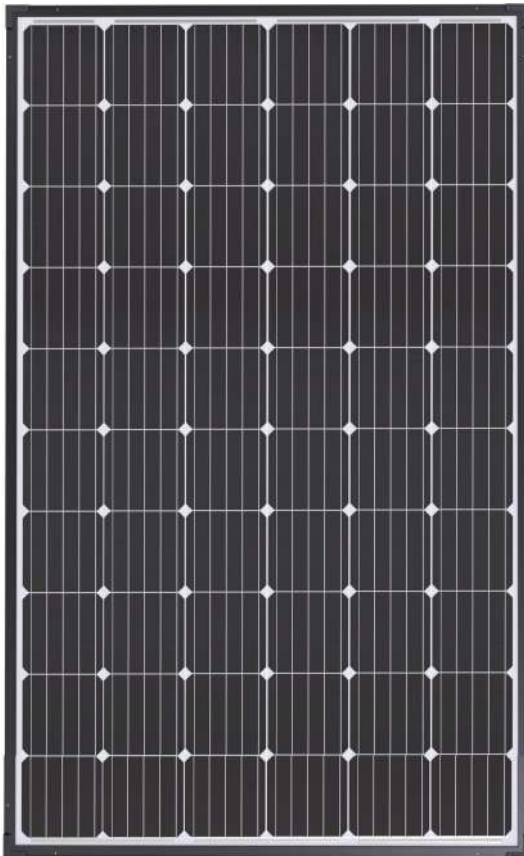
Aesthetics: Aesthetically pleasing design with patented materials and sophisticated manufacturing process results in a high-efficiency, attractive panel, with no light pollution, PID-free operation and high levels of safety.

Easy Installation: eArche can reduce installation cost by up to 50% through the use of re-engineered components, ease of handling and faster installation.

Transportation: eArche's innovative frame and low weight will very significantly reduce the cost of transportation.

Deployment: Ultra-light weight, flexibility and customizable size make eArche the best choice to change the way how solar is deployed in the market and bring added value to special applications.

Durability: eArche panels are certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal), while special materials and stringent quality control ensure panel longevity.



285-290 W

POWER OUTPUT RANGE

0-5 W

POWER TOLERANCE

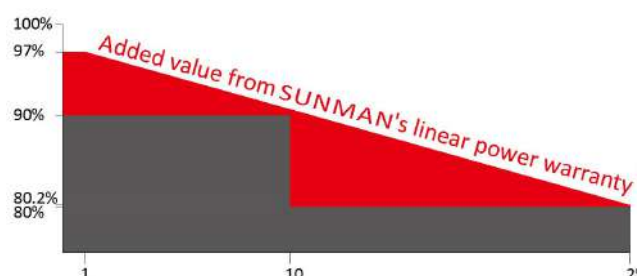
LINEAR

PERFORMANCE

WARRANTY

10 Year Product Warranty

25 Year Linear Power Warranty



SMD290M-6X10DW

SMD285M-6X10DW



Electrical Characteristics

STC	SMD290M-6X10DW	SMD285M-6X10DW
Maximum Power (P_{max})	290	285
Maximum Power Voltage (V_{mp})	32.6	32.4
Maximum Power Current (I_{mp})	8.90	8.80
Open-circuit Voltage (V_{oc})	39.9	39.8
Short-circuit Current (I_{sc})	9.43	9.34
Module Efficiency (%)	17.1	16.8
Operating Temperature ($^{\circ}C$)	-40 $^{\circ}C$ to 85 $^{\circ}C$	
Maximum System Voltage	1000 V DC (IEC)	
Maximum Series Fuse Rating	20 A	
Application Class	Class A	
Power Tolerance	0/+5 W	

STC: Irradiance 1000W/m², Cell temperature 25 $^{\circ}C$, AM=1.5.

NOCT	SMD290M-6X10DW	SMD285M-6X10DW
Maximum Power (P_{max})	214	210
Maximum Power Voltage (V_{mp})	29.9	29.7
Maximum Power Current (I_{mp})	7.16	7.08
Open-circuit Voltage (V_{oc})	36.9	36.7
Short-circuit Current (I_{sc})	7.61	7.53

NOCT: Irradiance 800W/m², Ambient temperature 20 $^{\circ}C$, Wind speed 1 m/s.

Mechanical Characteristics

Solar Cell	Monocrystalline silicon (6 inches)
No. of Cells	60 (6 \times 10)
Module Dimensions	1662 \times 1019 \times 5.6 mm (65.4 \times 40.1 \times 0.2 inch)
Weight	5.5 kgs (12.1 lbs)
Backsheet	White
Frame	Black Anodized Aluminium Alloy
J-box	IP 68 rated
Output Cables	Photovoltaic technology cable 4.0 mm ² , (+)150 / (-)450 mm
Connector	MC4 compatible

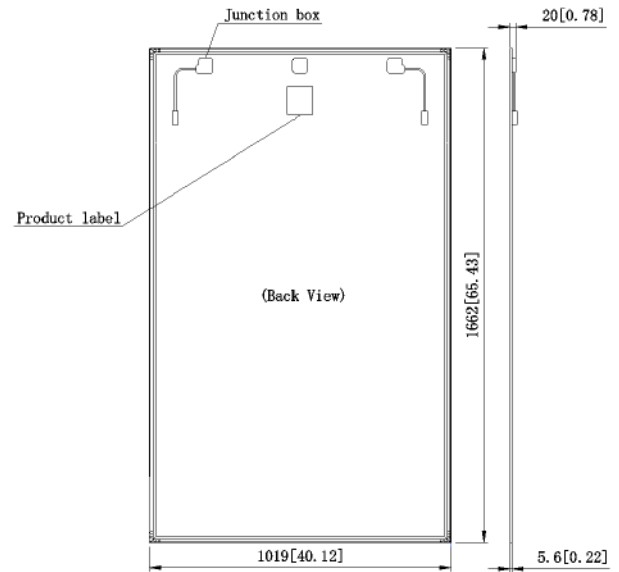
Packaging Configuration

	20' GP	40' HC
Module per pallet	66	66
Pieces per container	396	1848

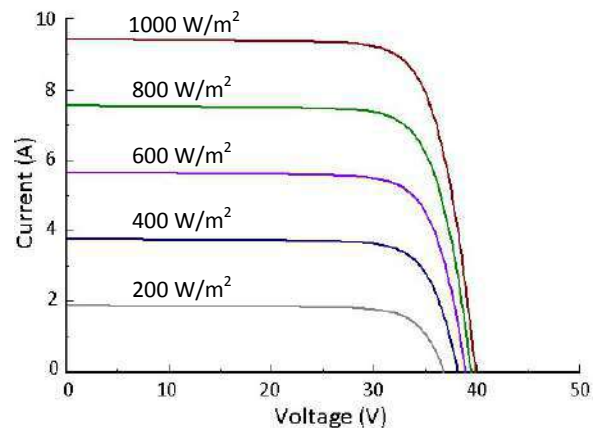
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Dimensions



I-V Curve (290)



Temperature Characteristics

Nominal Operating Cell Temperature (NOCT)	45 \pm 2 $^{\circ}C$
Temperature Coefficient of P_{max}	-0.39 %/ $^{\circ}C$
Temperature Coefficient of V_{oc}	-0.30 %/ $^{\circ}C$
Temperature Coefficient of I_{sc}	0.059 %/ $^{\circ}C$

Dealer Information



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