CALACOM
Caribbean & Latin American Trade Company

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Caribbean & Latin American Trade Company

Catálogo General

BIPV GLOBAL

EINNOVA
SOLARLINE

TOPCon N type Mono-crystalline

560-580Watt Full Black

0~+5W POWER TOLERANCE

High efficiency TOPCon N - type solar module

Module characteristics

Strong Mechancial Strength
Pass the wind load test of 2400Mpa and the snow load test of 5400Mpa

Lower attenuation
N-type, good reliability and lower LID/LETID attenuation rate.

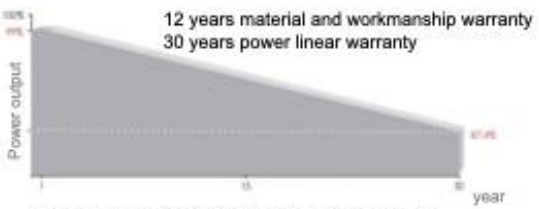
PID resistance
The attenuation probability of PID phenomenon is minimized through solar cell production technology optimization and raw material control

Harsh environmental adaptation
Robust design for demanding climate conditions.

Multiple busbar and Half cell technique
More light utilization and current collection capabilities, effectively improving product power output and reliability

Long and reliable quality assurance

IEC61215(2016), IEC61730(2016)
ISO9001:2015: Quality management system
ISO14001:2015: Environmental management system
ISO45001:2018: Occupational health and safety management system



Linear attenuation of 0.4% per year from the 2nd to 30th year.

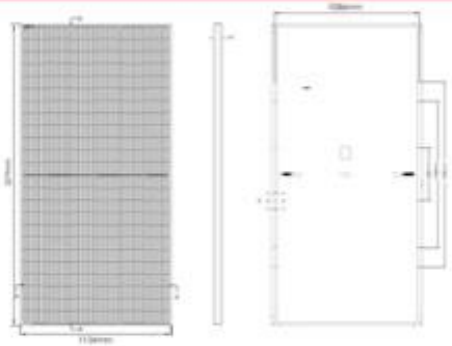
Paneles Fotovoltaicos Monocristalinos BAPV

Electrical Parameters

Model Type	ESM-560T		ESM-565T		ESM-570T		ESM-575T		ESM-580T	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	560	421	565	425	570	429	575	433	580	437
Open Circuit Voltage (Voc)	50.47	47.94	50.60	48.06	50.74	48.20	50.88	48.29	51.00	48.37
Short Circuit Current (Isc)	14.15	11.42	14.23	11.49	14.31	11.57	14.38	11.66	14.39	11.73
MaximumPowerVoltage (Vmp)	41.77	39.25	41.92	39.38	42.01	39.51	42.10	39.64	42.19	39.71
MaximumPowerCurrent (Imp)	13.41	10.73	13.48	10.79	13.55	10.85	13.65	10.92	13.75	11.00
ModuleEfficiency - η_m (%)	21.66		21.86		22.06		21.26		22.46	
Operational Temperature	-40℃~+85℃									
Maximum System Voltage	1500VDC									
Maximum Series Fuse Rating	25A									
Power Tolerance	0~+3%									
Temperature Coefficient of Pmax	-0.310%/℃									
Temperature Coefficient of Voc	-0.260%/℃									
Temperature Coefficient of Isc	+0.046%/℃									
Nominal Operating Cell Temperature	45±2℃									
Safety Class	Class II									
Max Load (Front/back)	5400Mpa/2400Mpa									

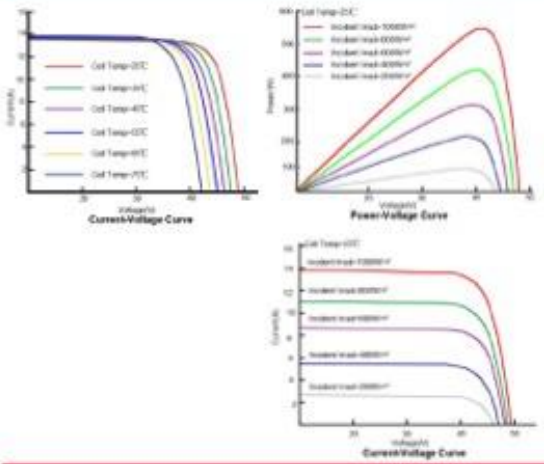
STC: Irradiance 1000W/㎡ Cell temperature 25℃ Atmospheric quality =1.5
NOCT:Irradiance 800W/㎡ Ambient temperature 25℃ Atmospheric quality =1.5 Wind speed 1m/S

Mechanical Diagrams



Length: ± 2mm
Width: ± 2mm
Thickness: ± 1mm
Hole pitch: ± 2mm

Curve



Packing Details:

31pcs/pallet, pallet size: 2314×1130×1245mm

40GP:20 pallets/40HQ, 620pcs/40'HQ

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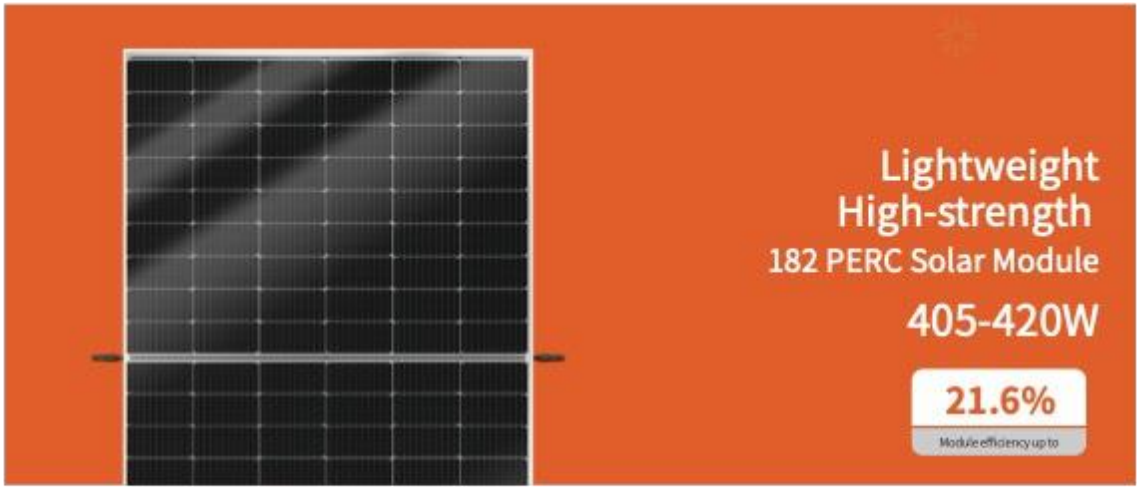
Cell: +86-138-13088384
EMAIL : emma.wu@einnova-solarline.com
Website: www.einnova-solarline.com

Specification

Cell type	N type mono crystalline 182mm
Half-cell quantity	144pcs (6×22)
Dimension	2279×1134×35mm
Weight	28kg±3%
Glass	3.2mm, tempered and AR coated
Frame	Black Anodized Aluminum Alloy
Junction Box	IP68
Cable	1200mm (can be customized)

Paneles Fotovoltaicos Monocristalinos BAPV



Features

Lightweight Design
4.7kg/m² weight, match various requirements for low load roof

High Strength
The surface is made of ultra-thin tempered glass, which has the characteristics of good hail impact resistance and strong load capacity.

High Efficiency
High light transmittance performance with more than 3% higher power than similar products bring more power generation and higher income

Stable and Reliable Characteristics
Meet IEC61215 stringent environment test with low attenuation characteristics.

Convenient Installation
Multiple installation methods, pasted fixed or dismountable lock block fixed.

Safe and Reliable
Prevent dust stratification, lightweight and safe, convenient operation and maintenance.

Reinsurance Coverage for 25 Years

12year Quality Warranty

25year Performance Warranty

Insured by LLOYD'S

LLOYD'S

※Within the first year from the date of installation and normal operation, the output power shall not be less than 98% of the product' s minimum output power as set forth in the specifications. Afterwards, maximum 0.55% output decrease per year. After 25 years, the product' s output power shall not be less than 84.8% of its minimum output power as set forth in the specifications.

Comprehensive Qualifications & Certifications

★ ISO 9001: 2015 Quality Management System
★ ISO 14001: 2015 Environment Management System
★ ISO 45001: 2018 Occupation Health Safety Management System

Paneles Fotovoltaicos Monocristalinos BAPV

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Electrical Characteristics at Standard Test Conditions(STC)

Spec/Model	Unit	SSD405AH5T	SSD410AH5T	SSD415AH5T	SSD420AH5T
Max-Power(Pm)	W	405	410	415	420
Power Tolerance	W		0~+5		
Max-Power Voltage(Vm)	V	31.12	31.28	31.45	31.66
Max-Power Current(Im)	A	13.04	13.13	13.22	13.29
Open-Circuit Voltage(Voc)	V	37.00	37.20	37.40	37.60
Short-Circuit Current(Isc)	A	14.04	14.10	14.16	14.22
Effective Module Efficiency(ηm)	%	20.9	21.2	21.4	21.6

STC: AM=1.5, Irradiation 1000W/m², Module Temperature 25°C Power Tolerance ±3%

Electrical Characteristics at Nominal Module Operating Temperature (NMOT)

Spec/Model	Unit	SSD405AH5T	SSD410AH5T	SSD415AH5T	SSD420AH5T
Max-Power(Pm)	W	306	310	314	318
Max-Power Voltage(Vm)	V	28.9	29.1	29.3	29.5
Max-Power Current(Im)	A	10.61	10.67	10.73	10.79
Open-Circuit Voltage(Voc)	V	34.8	35.0	35.2	35.4
Short-Circuit Current(Isc)	A	11.22	11.28	11.32	11.36

NMOT: Irradiation 800W/m², Ambient temperature 20°C, Wind Speed 1m/s

Temperature Coefficient

Nominal Module Operating Temperature	43±2°C
Temperature coefficient of Pmax	-0.35%/°C
Temperature coefficient of Voc	-0.26%/°C
Temperature coefficient of Isc	0.048%/°C

Operating Conditions

Max. system voltage	DC1500V(IEC)
Max. series fuse rating	25A
Operating temperature range	-40°C~+85°C

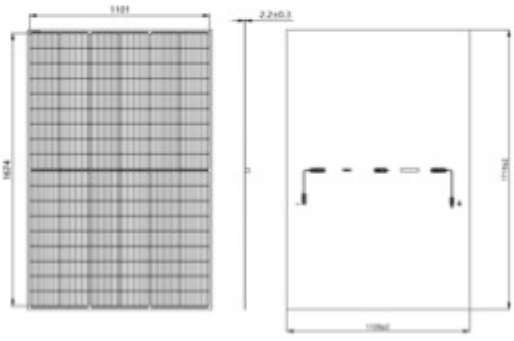
Mechanical Characteristics

Installation Module Dimension (L×W×H)	1716mm×1128mm×2.2mm
Weight	9.1 kg
Glass Type	High Transmittance Tempered Glass
Cell (quantity / material / type / dimensions)	108(6x18) / Mono / 182*91mm
Encapsulant	POE
Junction box(protection degree)	IP68
Cable (length/cross-section area)	Customizable / 4mm²
Connector	MC4 Compatible
Max Load	2400Pa/2400Pa

Package

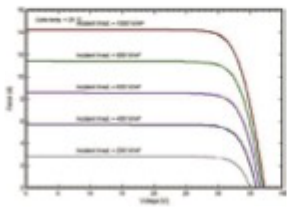
Transportation	Container Size	Quantity(pcs)	Quantity(per pallet)
Container	40'HQ	1104	46
Platform Trailer	13m	1196	46
Platform Trailer	17.5m	2116	46

Module Size

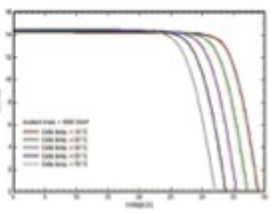


I-V Curve

I-V Curves of SSD410AH5T at different irradiance



I-V Curves of SSD410AH5T at different cell temperature



Version No. EN SPP202301

BIPV GLOBAL

EINNOVA
SOLARLINE

TOPCon N type
Bifacial
Mono-crystalline
560-580Watt

0~+5W POWER TOLERANCE

High efficiency TOPCon N - type solar module

Module characteristics

Strong Mechancial Strength
Pass the wind load test of 2400Mpa and the snow load test of 5400Mpa

Lower attenuation rate
N-type, good reliability and lower LID/LETID attenuation

PID resistance
The attenuation probability of PID phenomenon is minimized through solar cell production technology optimization and raw material control

Harsh environmental adaptation
Robust design for demanding climate conditions.

Multiple busbar and Half cell technique
More light utilization and current collection capabilities, effectively improving product power output and reliability

Long and reliable quality assurance

IEC61215(2016), IEC61730(2016)
ISO9001:2015: Quality management system
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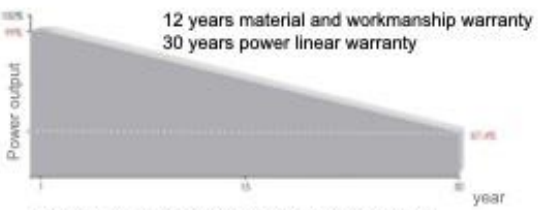


Linear attenuation of 0.4% per year from the 2nd to 30th year.

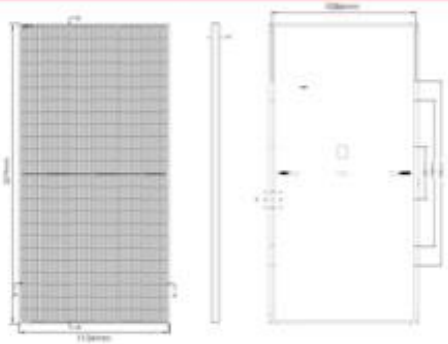
Paneles Fotovoltaicos Bifaciales BAPV

Electrical Parameters

Model Type	ESM-560T		ESM-565T		ESM-570T		ESM-575T		ESM-580T	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	560	421	565	425	570	429	575	433	580	437
Open Circuit Voltage (Voc)	50.47	47.94	50.60	48.06	50.74	48.20	50.88	48.29	51.00	48.37
Short Circuit Current (Isc)	14.15	11.42	14.23	11.49	14.31	11.57	14.38	11.66	14.39	11.73
MaximumPowerVoltage (Vmp)	41.77	39.25	41.92	39.38	42.01	39.51	42.10	39.64	42.19	39.71
MaximumPowerCurrent (Imp)	13.41	10.73	13.48	10.79	13.55	10.85	13.65	10.92	13.75	11.00
ModuleEfficiency - η_m (%)	21.66		21.86		22.06		21.26		22.46	
Operational Temperature	-40℃~+85℃									
Maximum System Voltage	1500VDC									
Maximum Series Fuse Rating	25A									
Power Tolerance	0~+3%									
Temperature Coefficient of Pmax	-0.310%/℃									
Temperature Coefficient of Voc	-0.260%/℃									
Temperature Coefficient of Isc	+0.046%/℃									
Nominal Operating Cell Temperature	45±2℃									
Safety Class	Class II									
Max Load (Front/back)	5400Mpa/2400Mpa									

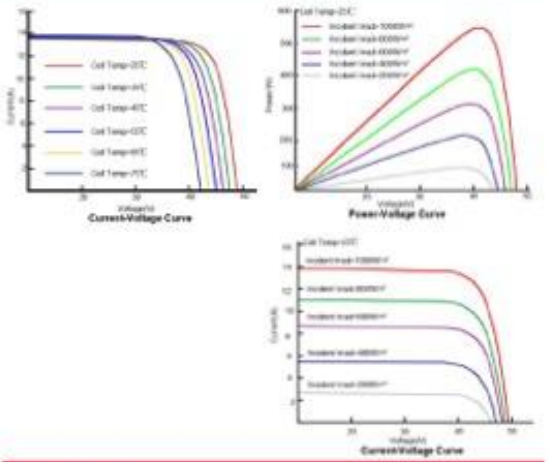
STC: Irradiance 1000W/㎡ Cell temperature 25℃ Atmospheric quality =1.5
NOCT:Irradiance 800W/㎡ Ambient temperature 25℃ Atmospheric quality =1.5 Wind speed 1m/S

Mechanical Diagrams



Length: ± 2mm
Width:± 2mm
Thickness:± 1mm
Hole pitch:± 2mm

Curve



Packing Details:

31pcs/pallet, Pallet size: 2314×1130×1245mm

40GP:20 pallets/40HQ, 620pcs/40'HQ

EINNOVA SOLARLINE ENERGY CORP. LIMITED
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Cell: +86-138-13088384
EMAIL : emma.wu@einnova-solarline.com
Website: www.einnova-solarline.com

Specification

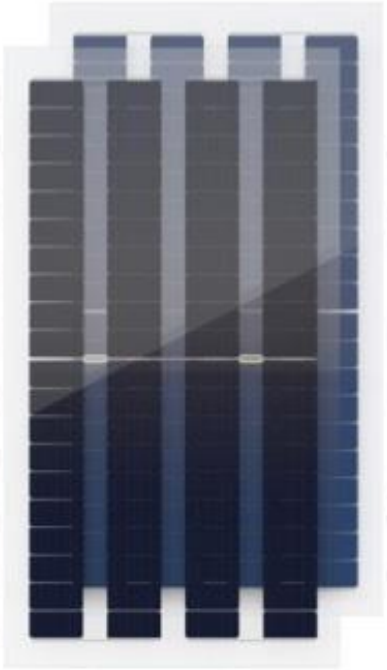
Cell type	N type mono crystalline 182mm
Half-cell quantity	144pcs (6×22)
Dimension	2279×1134×35mm
Weight	28kg±3%
Glass	3.2mm tempered and AR coated
Frame	Silver Anodized Aluminum Alloy
Junction Box	IP68
Cable	1200mm (can be customized)

EINNOVA
SOLARLINE

ESM-320 AGRI PV

182mm 80Cells Double Glass Bifacial Frameless AGRI Mono Half Cell PV Module Series

TRANSMITTANCE 45 (%)

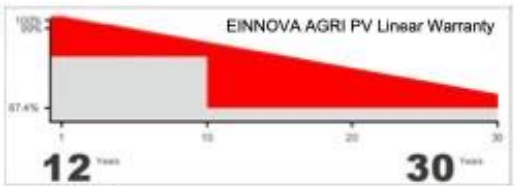


Module characteristics

- SMBB Technology Half Cut Solar Cell
- High Energy Performance
- 100% Inspection 30years Guarantee
- Fire Class A
- 5400Pa — Strengthened Mechanical Load
- Advanced Bifacial Efficiency

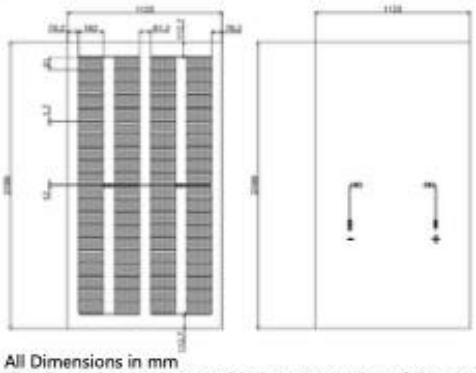
Long and reliable quality assurance

IEC61215(2016), IEC61730(2016)
ISO9001:2015: Quality management system
ISO14001:2015: Environmental management system
ISO45001:2018: Occupational health and safety management system



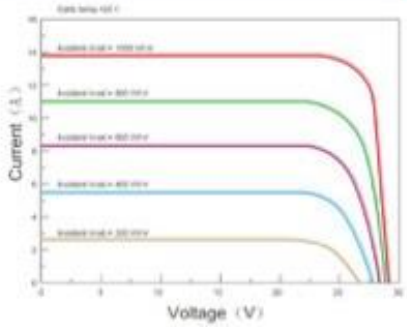
Paneles Fotovoltaicos Bifaciales BAPV

Mechanical Diagrams



All Dimensions in mm
The above drawing is a graphical representation of the product.
For engineering quality drawings please contact EINNOVA.

Curve



Characteritics(STC)

Module Type	ESM 320
	STC
MaximumPower-Pmax(W)	320
Open Circuit Voltage - Voc(V)	28.12
Short- CircuitCurrent -Isc(A)	13.77
Voltage atPmax -Vmp(V)	24.6
Current atPmax -Imp(A)	13.01
ModuleEfficiency -ηm(%)	19.55
Power Tolerance(W)	(0, +4.99W)
Maximum System Voltage(V)	700Vdc (IEC/UL)
Maximum Series Fuse Rating (A)	25A

STC : Irradiance 1000W/m 2 , Cell Temperature 25℃, Air Mass 1.5

Mechanical Specifications

Dimensions	2088*1128*5mm
Weight	27kg
Solar Cells	Mono crystalline 182mm (2x40pcs)
Front Glass	2+2 mm tempered glass
Frame	Aluminum
Junction Box	IP67
Output Cables	4.0mm², 120cm (+), 120cm (-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max. 5400Pa, Rear Side Max. 2400Pa

Temperature Characteristics

Pmax Temperature Coefficient	-0.290%/°C
Voc Temperature Coefficient	-0.250%/°C
Isc Temperature Coefficient	+0.045%/°C
Operating Temperature	-40 ~ +85°C
Nominal Operating Cell Temperature(NOCT)	45±2°C

Packing Configuration

Product size	2088*1128*5mm	
Container	20'GP	40'HQ
Pieces per Pallet	34	34
Pallets per Container	6	26

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Paneles Fotovoltaicos
Semi flexibles y Flexibles BAPV

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Features

Light, Thin design
5.7kg weight, 2.5mm thickness, match various requirements for low-load projects

Customizable
Customized design for different scenarios

Ultra Flexible
Ultra-thin silicon wafers with advanced organic polymer encapsulation materials, minimum bending radius reach 0.30m, fit all kinds of curved surface perfectly

Convenient Installation
Easy installation and convenient transportation with lower cost

High Efficiency And Reliability
Busbar-free design increases cell conversion efficiency, more power output can be achieved at low irradiance conditions

Lead-free
Eco-friendly PV design achieves lead-free MWT module without soldering materials

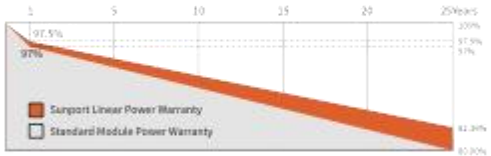
Reinsurance Coverage for 25 Years

12 year Quality Warranty

25 year Performance Warranty

Insured by LLOYD'S

LLOYD'S



※1st year degradation less than 2.5%, 25 years power output 82.36% guaranteed.

Comprehensive Qualifications & Certifications

★ ISO 9001: 2015 Quality Management System
★ ISO 14001: 2015 Environment Management System
★ ISO 45001: 2018 Occupation Health Safety Management System

PV CYCLE

CE

ISO

BIPV GLOBAL

Paneles Fotovoltaicos Semi flexibles y Flexibles BAPV

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Electrical Characteristics at Standard Test Conditions(STC)

Spec/Model	Unit	SPP365QHES	SPP370QHES	SPP375QHES	SPP380QHES	SPP385QHES
Max-Power(Pm)	W	365	370	375	380	385
Power Tolerance	W			0~+5		
Max-Power Voltage(Vm)	V	34.9	35.1	35.3	35.5	35.7
Max-Power Current(Im)	A	10.46	10.54	10.62	10.70	10.78
Open-Circuit Voltage(Voc)	V	42.4	42.6	42.8	43.0	43.2
Short-Circuit Current(Isc)	A	11.09	11.16	11.23	11.30	11.35
Effective Module Efficiency(ηm)	%	20.7	21.0	21.2	21.5	21.8

STC: AM=1.5, Irradiation 1000W/m², Module Temperature 25°C Power Tolerance ±3%

Electrical Characteristics at Nominal Module Operating Temperature (NMOT)

Spec/Model	Unit	SPP365QHES	SPP370QHES	SPP375QHES	SPP380QHES	SPP385QHES
Max-Power(Pm)	W	274	278	282	286	290
Max-Power Voltage(Vm)	V	32.8	33.0	33.2	33.4	33.6
Max-Power Current(Im)	A	8.35	8.42	8.49	8.56	8.64
Open-Circuit Voltage(Voc)	V	39.9	40.1	40.3	40.5	40.7
Short-Circuit Current(Isc)	A	8.91	8.98	9.05	9.12	9.19

NMOT: Irradiation 800W/m², Ambient temperature 20°C, Wind Speed 1m/s

Temperature Coefficient

Nominal Module Operating Temperature	43±2°C
Temperature coefficient of Pmax	-0.36%/°C
Temperature coefficient of Voc	-0.28%/°C
Temperature coefficient of Isc	0.06%/°C

Operating Conditions

Max. system voltage	DC1500V(IEC)
Max. series fuse rating	18A
Operating temperature range	-40°C~+85°C

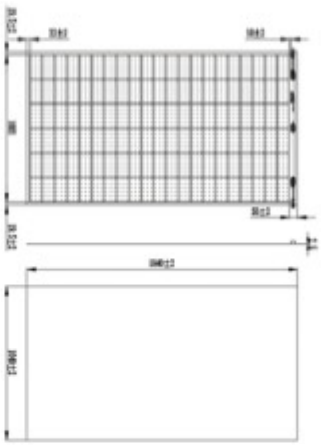
Mechanical Characteristics

Installation Module Dimension (L×W×H)	1840mmx1040mmx2.5mm
Weight	5.7 kg
Back material	Back Sheet(white)
Cell (quantity / material / type / dimensions)	126(21x6) / Mono / Half-cell
Encapsulant	POE
Frame	None
Junction box(protection degree)	IP68
Cable (length/cross-section area)	Customizable / 4mm²
Connector	MC4 Compatible
Bending radius	0.3m

Package

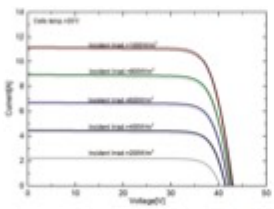
Transportation	Container Size	Quantity(pcs)	Quantity(per pallet)
Container	40' HQ	1104	46

Module Size

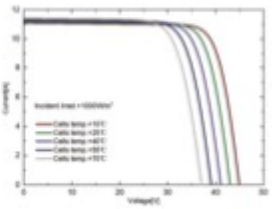


I-V Curve

I-V Curves of SPP375QHES at different irradiance



I-V Curves of SPP375QHES at different cell temperature



Version No. EN SPP202111

BIPV GLOBAL

FLEX SERIES–03N 2.6 METER

.35m x 2.6m
110 –140W

CIGS Flexible Modules:
High Power Density in a Flexible Form Factor

KEY FEATURES

- Record efficiency levels in a CIGS flexible form factor
- Low installed weight at less than 2.3 kg/m² (<0.5 lb/ft²)
- No penetrations, ballast or racking required
- Applicable for high wind load and high seismic hazard areas
- Bypass diodes reduce PV system shading losses
- Directly bonds to many approved surfaces

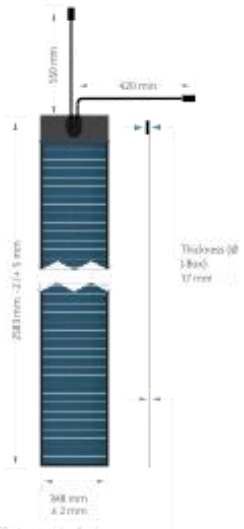
FLEX SERIES

FLEX–03N 2.6 METER SERIES CIGS MODULE

ELECTRICAL PERFORMANCE AT STC[1]

			FLEX–03 110N	FLEX–03 115N	FLEX–03 120N	FLEX–03 125N	FLEX–03 130N	FLEX–03 135N	FLEX–03 140N
Nominal Power	P_{MPP}	[W]	110	115	120	125	130	135	140
Aperture Efficiency	η	[%]	14.4%	15.0%	15.7%	16.4%	17.0%	17.7%	18.3%
Power Output Tolerance		[W]	+5/-0	+5/-0	+5/-0	+5/-0	+5/-0	+5/-0	+5/-0
Maximum Power Voltage	V_{MPP}	[V]	28.4	29.3	30.3	31.2	32.1	33.0	33.9
Maximum Power Current	I_{MPP}	[A]	3.89	3.93	3.97	4.01	4.06	4.10	4.14
Open Circuit Voltage	V_{OC}	[V]	36.3	37.0	37.8	38.6	39.4	40.1	40.9
Short Circuit Current	I_{SC}	[A]	4.66	4.62	4.58	4.53	4.49	4.45	4.41
Maximum Series Fuse Rating		[A]	10						
Maximum System Voltage	(IEC/UL)	[V]	1000/1000						

[1]Standard Test Conditions (STC): 1000 W/m², 25°C cell temperature, AM 1.5 spectrum



Thickness with adhesive: 2.5 mm (0.1 in)

Thickness without adhesive: 1.6 mm (0.06 in)

THERMAL CHARACTERISTICS

NOCT	[°C]	48
Temperature Coefficient of P_{MPP}	[%/°C]	-0.38
Temperature Coefficient of V_{OC}	[%/°C]	-0.28
Temperature Coefficient of I_{SC}	[%/°C]	0.008

PHYSICAL AND MECHANICAL SPECIFICATIONS

Length	2583 mm (101.7 in, 8ft 5.7in)
Width	348 mm (13.7 in, 1ft 1.7in)
Thickness, Maximum at J-Box*, Module	17 mm (0.7 in), 2.5 mm (0.1 in)
Weight (Module without adhesive)	1.7 kg (3.7 lb)
Weight (Module with adhesive)	2.3 kg (5.0 lb)
Weight/Area (Module without adhesive)	1.9 kg/m² (0.4 lb/ft²)
Weight/Area (Module with adhesive)	2.6 kg/m² (0.5 lb/ft²)
Junction Box Type	IP68
Cable Connections	Helios H4 (5&5')
Cell Type	Copper Indium Gallium Diselenide (CIGS)
Warranty**	5 year workmanship; 10/25 year power output
Certifications	UL 1703, IEC 61646, IEC 61730, cUL 1703, IEC 62716, IEC 61701 (Salt Spray)
Packaging Info	10 modules per crate, 80 modules per pallet, 1600 modules per 20' ISO container, 3520 modules per 40' ISO container

*1.5 mm (0.1 in) for the rest of the module with adhesive
*1.6 mm (0.06 in) for the rest of module without adhesive
**Please see full warranty for details

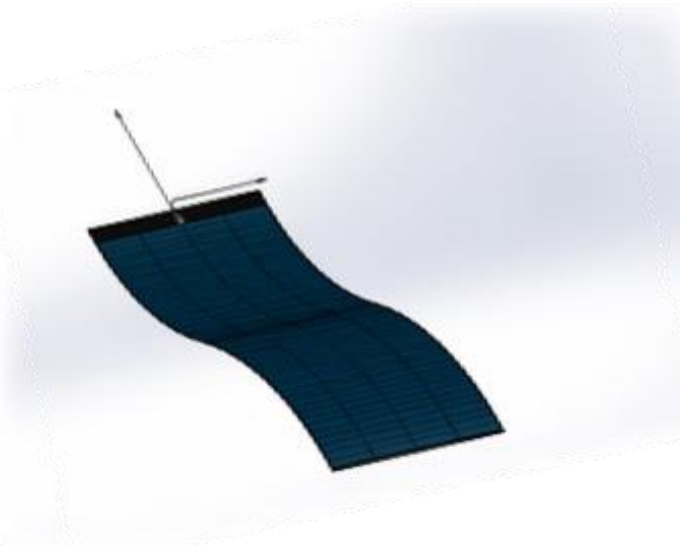
FLEX SERIES–03W 2.6 METER

1.3m x 2.6m
460 – 560W

CIGS Flexible Modules:
High Power Density in a Flexible Form Factor

KEY FEATURES

- Record efficiency levels in a flexible form factor
- Low installed weight at less than 2.0 kg/m² (<0.5 lb/ft²)
- No penetrations, ballast or racking required
- Applicable for high wind load and high seismic hazard areas
- Bypass diodes reduce PV system shading losses
- Directly bonds to many approved surfaces



FLEX SERIES

FLEX–03W 2.6 METER SERIES CIGS MODULE

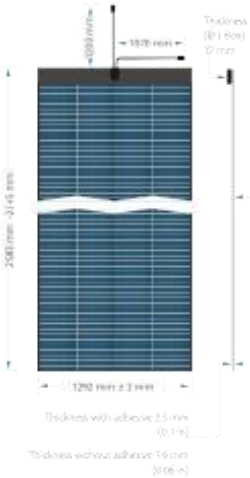
ELECTRICAL PERFORMANCE AT STC[1]

			FLEX–03 460W	FLEX–03 470W	FLEX–03 480W	FLEX–03 490W	FLEX–03 500W	FLEX–03 510W	FLEX–03 520W	FLEX–03 530W	FLEX–03 540W	FLEX–03 550W	FLEX–03 560W
Nominal Power	P_{mpp}	[W]	460	470	480	490	500	510	520	530	540	550	560
Aperature Efficiency	η	[%]	15.0%	15.4%	15.7%	16.0%	16.4%	16.7%	17.0%	17.3%	17.7%	18.0%	18.3%
Power Output Tolerance		[W]	+10/-0	+10/-0	+10/-0	+10/-0	+10/-0	+10/-0	+10/-0	+10/-0	+10/-0	+10/-0	+10/-0
Maximum Power Voltage	V_{mpp}	[V]	58.7	59.6	60.5	61.4	62.4	63.3	64.2	65.1	66.0	66.9	67.9
Maximum Power Current	I_{mpp}	[A]	7.87	7.91	7.95	7.99	8.03	8.07	8.11	8.15	8.19	8.23	8.27
Open Circuit Voltage	V_{OC}	[V]	74.1	74.8	75.6	76.4	77.2	77.9	78.7	79.5	80.3	81.0	81.8
Short Circuit Current	I_{SC}	[A]	9.23	9.19	9.15	9.11	9.07	9.02	8.98	8.94	8.90	8.86	8.82
Maximum Series Fuse Rating		[A]	25										
Maximum System Voltage	(IEC/UL)	[V]	1000/1000										

[1]Standard Test Conditions (STC): 1000 W/m², 25°C cell temperature, AM 1.5 spectrum

THERMAL CHARACTERISTICS

NOCT	[°C]	48
Temperature Coefficient of P_{mpp}	[%/°C]	-0.38
Temperature Coefficient of V_{OC}	[%/°C]	-0.28
Temperature Coefficient of I_{SC}	[%/°C]	0.008



PHYSICAL AND MECHANICAL SPECIFICATIONS

Length	2583 mm (101.8 in, 8ft 5.8in)
Width	1292 mm (50.9 in, 4ft 2.9in)
Thickness, Maximum at J-Box*, Module	17 mm (0.7 in), 2.5 mm (0.1 in)
Weight (Module without adhesive)	5.6 kg (12.3 lb)
Weight (Module with adhesive)	6.6 kg (14.6 lb)
Weight/Area (Module without adhesive)	1.7 kg/m² (0.3 lb/ft²)
Weight/Area (Module with adhesive)	2.0 kg/m² (0.4 lb/ft²)
Junction Box Type	IP68
Cable Connections	Helios H4 (5&F)
Cell Type	Copper Indium Gallium Diselenide (CIGS)
Warranty**	5 year workmanship; 10/25 year power output
Certifications	UL 1703, IEC 61646, IEC 61730, cUL 1703, IEC 62716, IEC 61701 (Salt Spray). For Roofing Systems as the external fire exposure per UL file E483778 for Class A, B or C
Packaging Info	5 modules per crate, 20 modules per pallet, 320 modules per 20' ISO container, 640 modules per 40' ISO container

*2.5 mm (0.1 in) for the rest of the module with adhesive
*1.6 mm (0.06 in) for the rest of module without adhesive
**Please see full warranty for details

Tejas Fotovoltaicas
BIPV

Ultra light | Ultrathin | Super strong

Efficient conversion rate | Thin-film technology subversion and innovation

Cold resistance, tide resistance, wind resistance, impact resistance and other characteristics to adapt to the vast majority of the construction

PHYSICAL PARAMETERS	
Product Model	HW-MQSB-V2
Color	Red
Specification	720(length) *500 (width) *32(arch height) mm
Weight	6.5kg
Connector	MC4
Warranty	25 years
ELECTRICAL PERFORMANCE PARAMETERS	
Chip type	copper, indium, gallium and selenium
Open-circuit voltage	10.5V
Power	28W (Standard Edition)
PMPP Current	3.4A
Short circuit current	3.9A
PMPP time voltage	8.4V
PERFORMANCE LEVEL	
Load rating	5400pa
Waterproof grade	IP67
Fire rating	A
Hail resistance level	Level 4 (ANSI FM 4473)
Working temperature	-40℃~+85℃
Operating humidity	0~80%

The overall product warranty is 10 years, and the power guarantee by the 25th year, the power generation shall not be less than 85% of the nominal power

Beijing Shan Hu International Technology Co., Ltd
Address: Room 130, Apartment 1, 1st floor, Building 31, Nanhai Jiayuan Liuli, Yinghai Town, Daxing District, Beijing
Email: sales.manager@sangsolar.com
https://www.sangsolar.com

Tejas Fotovoltaicas BIPV

PHYSICAL PARAMETERS	
Product Model	HW-MQSB-V2
Color	Black
Specification	720(length) *500 (width) *32 (arch height) mm
Weight	6.5kg
Connector	MC4
Warranty	25 years

ELECTRICAL PERFORMANCE PARAMETERS	
Chip type	copper, indium, gallium and selenium
Open-circuit voltage	10.6V
Power	32W (Standard Edition)
PMPP Current	3.5A
Short circuit current	4.0A
PMPP time voltage	8.6V

PERFORMANCE LEVEL	
Load rating	5400pa
Waterproof grade	IP67
Fire rating	A
Hail resistance level	Level 4 (ANSI FM 4473)
Working temperature	-40℃~+85℃
Operating humidity	0~80%

The overall product warranty is 10 years, and the power guarantee by the 25th year, the power generation shall not be less than 85% of the nominal power

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Email: sales.manager@sangsolar.com
https://www.sangsolar.com

Plane PhotoVoltaic Tile

Modern technology and traditional architecture are perfectly combined, and a variety of colors are available. Can provide integrated solar power roof design, the whole system solution. Can be widely used in high-end villas, club venues, public building roof.

Product Characteristics

- The standard size of the product is 1580×522× 37mm, matching the building module,
- which is more conducive to the early architectural design and later construction;
- Module power up to 140W, module conversion efficiency 18.4%;
- Three side frame design, no ash accumulation problem;
- Weight 10.5kg, can be installed by one person;
- Instead of traditional cement and clay tiles, the weight is half of traditional tiles, and the strength is several times that of ordinary tiles;
  Can achieve a single piece of independent disassembly, convenient for later maintenance.

Standard Color

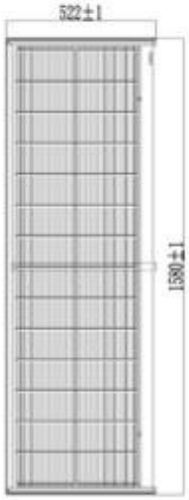
Colors and patterns can be customized

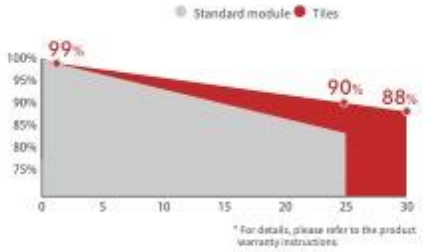
Plane PV Tile (130-140W)

28 Half-plate/double-glass non-transparent heterojunction half-plate assembly

Engineering drawing

unit: mm





* For details, please refer to the product warranty instructions.

Mechanical parameters

Cell type	Single-crystal heterojunction 210×105mm
Cell arrangement	28 (14×2)
Module size	1580×522×37 mm
Module weight	10.5 kg
Junction box	Protection grade IP67/IP68
Output cable	4mm², 1000mm cable length, cable length can be customized/ UV protection
Connector class	MC4 compatible
Frame	6005-T5 aluminum alloy
Sealant	PVB
Front static load (snow pressure)	5400 Pa
Back static load (wind pressure)	2400 Pa
Glass	(F) 2.0mm ultra-white heat-strengthened glass (B) 2.0mm heat-strengthened glass

Electrical parameter (STC*)

Module type		HL-XWB13 T01130	HL-XWB13 T01135	HL-XWB13 T01140
Maximum power	(Pmax)	130W	135W	140W
Module efficiency	(%)	17.1%	17.7%	18.4%
Optimum operating voltage	(Vmp)	8.60V	8.80V	8.98V
Optimum operating current	(Imp)	15.12A	15.35A	15.59A
Open-circuit voltage	(Voc)	10.42V	10.44V	10.46V
Short-circuit current	(Isc)	15.95A	16.19A	16.45A
Operating temperature range of modules		-40 ~ +85℃		
Maximum system voltage		DC1000V (IEC)		
Maximum rated fuse current		20A		
Power tolerance range		0~+5W		

*STC (standard test condition): irradiance 1000W/m², battery temperature 25 °C, spectrum AM1.5.

Temperature coefficient

Rated operating temperature of battery (NOCT)	44℃±2℃
Maximum power temperature coefficient (Pmax)	-0.26%/℃
Temperature coefficient of open circuit voltage (Voc)	-0.24%/℃
Temperature coefficient of short-circuit current (Isc)	0.04%/℃

Safety level & warranty

Safety level	Class II
Product warranty	10-year product materials and processes
Power warranty	30-year linear power output*

* The attenuation is 1% in the first year, not more than 0.375% annually from the next year, and not less than 88% in the 30th year.

Packaging information

Tablet/plate	24pieces
Weight/pallet	330Kg

The specifications and key features described in this data sheet may deviate slightly. Please access the latest version of the specification at any time. The specification shall be formally incorporated into the binding contract signed by both parties and shall apply to all transactions relating to the sale and purchase of the products described herein.

Beijing Shan Hu International Technology Co., Ltd.

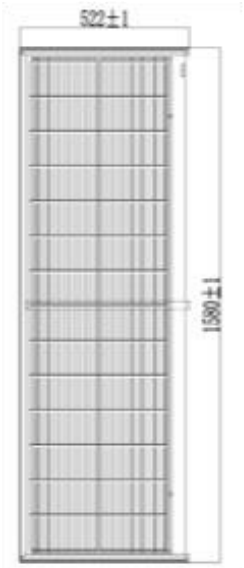
No. 1, Xingguang Street 4, Economic and Technological Development Zone, Beijing, China

Plane PV Tile 80-90W

28 half-cell/d ouble-glass cr imson heter ojunction half-cell module

Engineering Drawing

Unit: mm



Elextrical Parameters(STC)

Spec/Model		HL-28B13 C28080	HL-28B13 C28085	HL-28B13 C28090
Rated Maximum Power	(Pmax)	80W	85W	90W
Effective Module Efficiency	(%)	10.5%	11.2%	11.8%
Voltage at Pmax	(Vmp)	8.75V	8.98V	9.16V
Current at Pmax	(Imp)	9.14A	9.46A	9.83A
Open-Circuit Voltage	(Voc)	10.40V	10.49V	10.61V
Short-Circuit Curren	(Isc)	9.78A	10.05A	10.45A
Nominal Cell Operating Temperature Range		-40 to +85 ° C		
Maximum Sysrem Voltage		DC1000V (IEC)		
Maximum Rated Fuse Current		30A		
Power Tolerance Range		0~+5W		

STC: Irradiation 1000W/㎡ Module Temperature=25° C AM=1.5

Temprature Coefficient

Nominal Module Operating Temprature	44° C±2° C
Temprature Coefficient of Pmax	-0.38%/° C
Temperature Coefficient of Voc	-0.28%/° C
Temprature Coefficient of Isc	0.04 %/° C

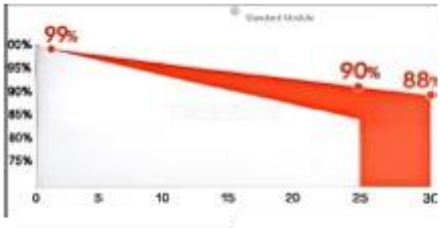
Mechanical Parameters

Cell (quantity/material/type/dimentions)	Single Crystals Heterojunction Components 210× 105mm
Cell Arrangement	28(14×2)
Installation Module Dimension (L×W×H)	1580×522×17 mm
Weight	10.5 kg
Junction Box(Protction Degree)	Protection Level IP67 / IP68
Cable(Length/Cross-section area	4mm², 1000mm cable length, cable length canbe customized UV protection
Connector	MC4 Compat
Frame	6005-T5 Alluminum Alloy
Sbsulatin	PVB
Stotic load on Front(snow, wind	5400 Pa
Stotic load on back(wind pressu	2400 Pa
Glass	(F) 2.0mm Ultra-Incond escent Heat Enhanced Crimson Glass (B) 2.0mm Enhanced Heat Glass

Safety Level&Warranty

Safety Level	Class II
Warranty	10-year product materials and workmanship guarantee 30-year linear power output guarantee*
Power Warranty	

The attenuation is 1% in the fir st year , the annual attenuation fr om the next year shall not be higher than 0.375%, and the attenuation shall not be lower than 88% in the 30th year .



Package

Pieces/Pallet	24 Pieces
Weight/Pallet	330Kg

Beijing Shan Hu International Technology Co.,Ltd

VIDRIO SOLAR BIPV OPACO

El Vidrio BIPV (Building-integrated photovoltaic) es un nuevo elemento fotovoltaico que une el mundo de las energías renovables con la construcción (Arquitectura Fotovoltaica). Los vidrios fotovoltaicos no solo recogen energía para el uso en el edificio, sino que forman parte del edificio en sí.

PRINCIPALES BENEFICIOS VIDRIO FOTOVOLTAICO

Beneficio mecánico: Es un material de construcción que forma parte del propio edificio

Beneficio económico: Grandes ahorros por generación de energía

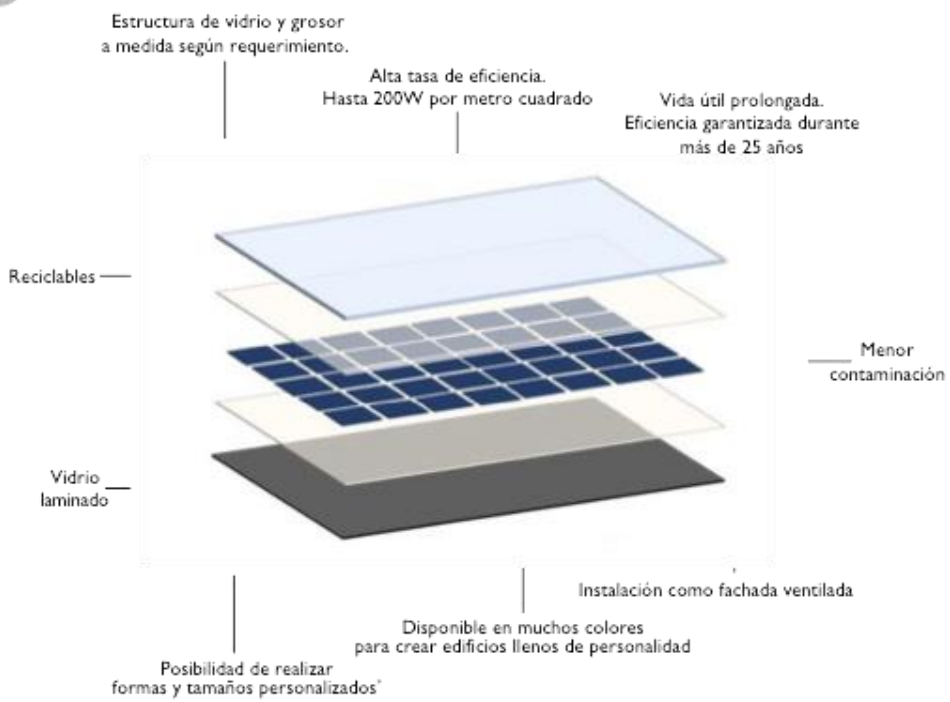
Beneficio social: Al generar energía y demandar menos a la red, el precio de la luz es más barata para todos

Beneficio medioambiental: Mucha menor huella carbono/ Fácil Reciclaje

Beneficio estético: Multitud de colores y texturas para crear edificios bellos y con personalidad

Beneficios fiscales: Certificaciones Leed y de eficiencia energética

Beneficios intangibles: Proyectos reconocidos a nivel nacional e internacional. Gran posicionamiento de marca con las últimas tecnologías y amigable con el medio ambiente para cliente final y empresas desarrolladoras del proyecto



PRINCIPALES APLICACIONES Y TIPOS DE INSTALACIÓN

Fachadas

Colores disponibles

Vidrios Fotovoltaicos Opacos BIPV

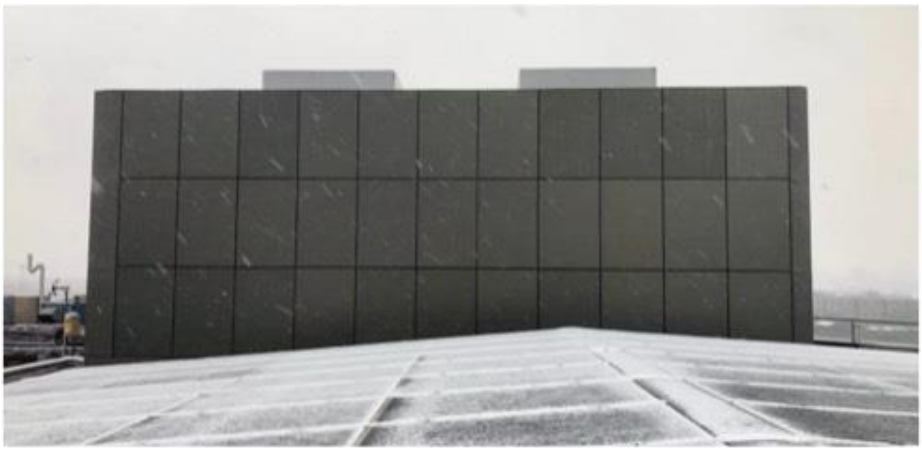
VIDRIO SOLAR

ESPECIFICACIONES TÉCNICAS

	Vidrio Solar 1200x600mm					Vidrio Solar 1000x1000mm				
	NCL-BP.P-C02-140	NCL-BP.P-C08-118	NCL-BP.P-C10-132	NCL-BP.P-C15-111	NCL-BP.P-C15-105	NCL-BP.P-C02-195	NCL-BP.P-C05-152	NCL-BP.P-C11-184	NCL-BP.P-C15-155	NCL-BP.P-C15-145
Potencia nominal (Pn)	140W	110W	132W	111W	105W	195W	152W	184W	155W	145W
Voltaje en circuito abierto (Voc)	12.92V	12.92V	12.92V	12.92V	12.92V	17.95V	17.95V	17.95V	17.95V	17.95V
Corriente de corto-circuito (Isc)	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A
Voltaje en máxima potencia (Vmp)	10.26V	8.06V	9.67V	8.13V	7.69V	14.21V	11.14V	13.48V	11.28V	10.62V
Corriente máxima potencia (Imp)	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A
Color	Negro	Gris	Azul	Plata	Arena	Negro	Gris	Azul	Plata	Arena
Estructura vidrio	Doble lámina temperada 3.2mm+PVB									
Voltaje máximo sistema (Vsys)	1500V									
Ratio máximo fusible (Icf)	2.0									
Coeficiente de temperatura para potencia	-0.25%°C									
Coeficiente de temperatura para voltaje	-0.28%°C									
Coeficiente de temperatura para corriente	0.04%°C									
Rango temperatura	-40°C a +85°C									
Diodo Bypass	6A									
Conector	MC4									
Cable (Grosor / Longitud)	11mm / Cable(+) 650mm ; Cable(-) 650mm									
Encapsulación	PVB									
Nivel protección	IP68									
Material	Vidrio y celdas SI									
Peso	12.5Kg					17.5Kg				
Colores disponibles	Estándar: Negro, rojo, verde, amarillo, naranja, morado, azul. Otros bajo demanda.									
Dimensiones	1200x600x7mm					1000x1000x8mm				
Área panel	0.72m2					1m2				
Tipo embalaje	Caja madera apta exportación									
Unidades por caja	54 unidades					54 unidades				
Embalaje	1340x980x830mm / 698Kg por caja					1150x980x1150mm / 972Kg por caja				
Carga 20ft	8 cajas / 432 uds					6 cajas / 324 uds				
Carga 40ft	16 cajas / 868 uds					12 cajas / 648 uds				

ESPECIFICACIONES TÉCNICAS

	Vidrio Solar 1800x1200mm					Vidrio Solar 2400x1200mm				
	NCL-BP.P-C01-418	NCL-BP.P-C05-327	NCL-BP.P-C11-396	NCL-BP.P-C15-332	NCL-BP.P-C15-314	NCL-BP.P-C18-558	NCL-BP.P-C16-438	NCL-BP.P-C14-528	NCL-BP.P-C09-443	NCL-BP.P-C09-418
Potencia nominal (Pm)	418W	327W	396W	332W	314W	558W	438W	528W	443W	418W
Voltaje en circuito abierto (Voc)	38.76V	38.76V	38.76V	38.76V	38.76V	51.68V	51.68V	51.68V	51.68V	51.68V
Corriente de corto-circuito (Isc)	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A	14.22A
Voltaje en máxima potencia (Vmp)	30.62V	23.96V	29V	24.32V	23V	40.88V	32V	38.6V	32.45V	30.62V
Corriente máxima potencia (Imp)	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A	13.65A
Color	Negro	Gris	Azul	Plata	Arena	Negro	Gris	Azul	Plata	Arena
Estructura vidrio	Doble lámina templada 5mm+PVB					Doble lámina templada 6mm+PVB				
Voltaje máximo sistema (Vsys)	1500V									
Ratio máximo fusible (Icf)	2.0									
Coeficiente de temperatura para potencia	-0.25%/°C									
Coeficiente de temperatura para voltaje	-0.28%/°C									
Coeficiente de temperatura para corriente	0.04%/°C									
Rango temperatura	-40°C a +85°C									
Diodo Bypass	6A									
Conector	MC4									
Cable (Grosor / Longitud)	11mm / Cable(+) 1500mm ; Cable(-) 1500mm									
Encapsulación	PVB									
Nivel protección	IP68									
Material										
Peso	59.5Kg					79Kg				
Colores disponibles	Estándar: Negro, rojo, verde, amarillo, naranja, morado, azul. Otros bajo demanda.									
Dimensiones	1800x1200x11.5mm					2400x1200x13.5mm				
Área panel	2.16m2					2.88m2				
Tipo embalaje	Caja madera apta exportación									
Unidades por caja	16 unidades					10 unidades				
Embalaje	1900x300x1400mm / 992Kg por caja					2500x250x1400mm / 852Kg por caja				
Carga 20ft	21 cajas / 336 uds					16 cajas / 160 uds				
Carga 40ft	42 cajas / 672 uds					32 cajas / 320 uds				



NEXT CITY LABS

VIDRIO SOLAR

VIDRIO SOLAR BIPV TRANSPARENTE

CARACTERÍSTICAS PRINCIPALES

Hasta 160W por metro cuadrado de potencia máxima.

Uso estructural dentro del propio edificio como ventana que genera energía, sustituyendo a las ventanas tradicionales.

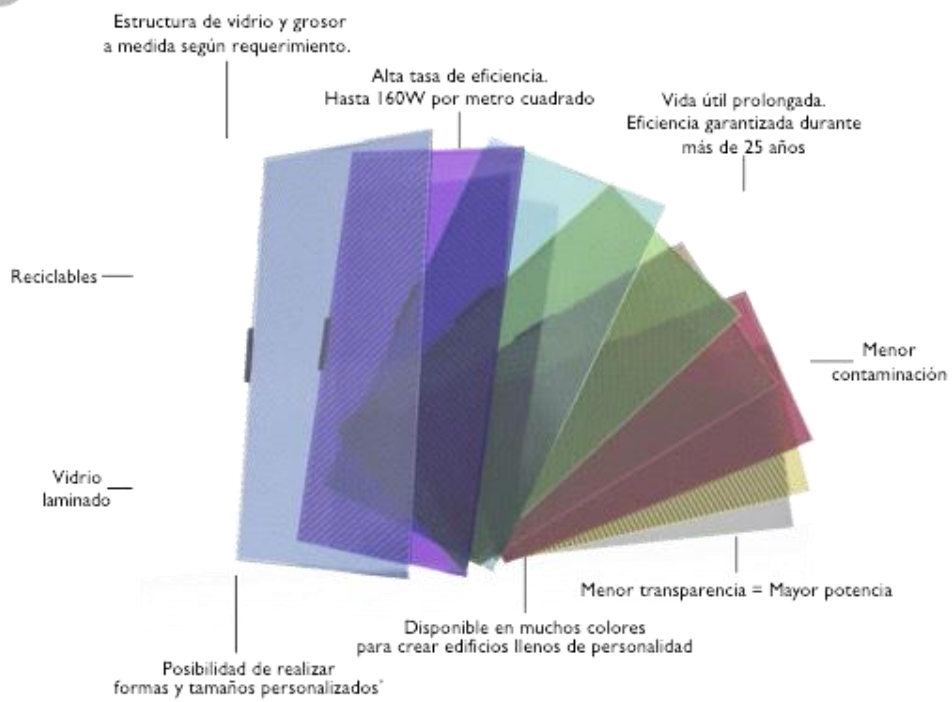
Fabricación en vidrio: Posibilidad de tener cualquier tipo de estructura como el vidrio tradicional. Incluyendo vidrio con capas de aislamiento térmico.

Con las celdas ultrafinas encapsuladas protege el interior del edificio frente a la radiación y el calor del sol, haciendo más cómoda la estancia y sin necesidad de realizar otro tipo de instalaciones para evitar el brillo directo del sol.

Vidrio laminado templado: Máxima seguridad frente a impactos, sin desmembramientos de partes y alta resistencia al calor.

Niveles transparencia según requerimiento del cliente: Desde 0% hasta 60% de transparencia. A mayor nivel de transparencia más luz entra al interior.

Completamente a medida: Estructura del vidrio, grosor, tamaño, transparencia y color según requerimiento del proyecto.



NEXT CITY LABS

BIPV GLOBAL

PRINCIPALES APLICACIONES Y TIPOS DE INSTALACIÓN

Fachadas

Muro cortina

Perfil ventana

Perfil muro cortina

Tipo araña

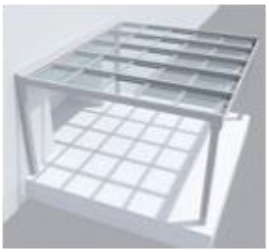
Barandillas

Perfil barandilla

Barandilla

Skylight/Claraboya

Pérgola



NEXT CITY LABS

VIDRIO SOLAR

VIDRIO SOLAR BIPV TRANSPARENTE

ESPECIFICACIONES TÉCNICAS

	Vidrio Solar 1200x600mm				Vidrio Solar 1200x1200mm			
	NCL-BP-P-C02-108	NCL-BP-P-C08-95	NCL-BP-P-C10-83	NCL-BP-P-C15-60	NCL-BP-P-C02-217	NCL-BP-P-C05-193	NCL-BP-P-C11-169	NCL-BP-P-C15-121
Potencia nominal (Pm)	108W	95W	83W	60W	217W	193W	169.2W	121.5W
Voltaje en circuito abierto (Voc)	124.2V	124.2V	124.2V	124.2V	124.2V	124.2V	124.2V	124.2V
Corriente de corto-circuito (Isc)	1.21A	1.09A	0.97A	0.72A	2.48A	2.23A	1.98A	1.48A
Voltaje en máxima potencia (Vmp)	96V	94.9V	93.6V	89.6V	96V	94.9V	93.6V	89.6V
Corriente máxima potencia (Imp)	1.11A	1A	0.89A	0.66A	2.26A	2.03A	1.81A	1.36A
Transparencia	0%	10%	20%	40%	0%	10%	20%	40%
Estructura vidrio	Doble lámina templada 3.2mm+PVB+CdTe				Vidrio templado 5mm+1.52mm PVB+3.2mm CdTe+1.52mm PVB+ Vidrio templado 5mm			
Voltaje máximo sistema (Vsys)	1000V							
Ratio máximo fusible (Icf)	2.0							
Coeficiente de temperatura para potencia	-0.25%/°C							
Coeficiente de temperatura para voltaje	-0.28%/°C							
Coeficiente de temperatura para corriente	0.04%/°C							
Rango temperatura	-40°C a +85°C							
Diodo Bypass	6A							
Conector	MC4							
Cable (Grosor / Longitud)	11mm / Cable(+) 650mm ; Cable(-) 650mm							
Encapsulación	PVB							
Nivel protección	IP67							
Material	Vidrio y celdas CdTe							
Peso	11.8Kg				58.46Kg			
Color	Estándar: Negro, rojo, verde, amarillo, naranja, morado, azul. Otros bajo demanda.							
Dimensiones	1200x600x7mm				1200x1200x16.2mm			
Área panel	0.72m2				1.44m2			
Tipo embalaje	Caja madera apta exportacion							
Unidades por caja	54 unidades				16 unidades			
Embalaje	1340x980x830mm / 698Kg por caja				1300x385x1400mm / 986Kg por caja			
Carga 20ft	8 cajas / 432 uds				20 cajas / 320 uds			
Carga 40ft	16 cajas / 868 uds				40 cajas / 640 uds			

NEXT CITY LABS

BIPV GLOBAL

Vidrios Fotovoltaicos Semitransparentes BIPV

ESPECIFICACIONES TÉCNICAS

	Vidrio Solar 1800x1200mm				Vidrio Solar 2400x1200mm			
	NCL-BP-P-C03-327	NCL-BP-P-C05-291	NCL-BP-P-C11-255	NCL-BP-P-C15-183	NCL-BP-P-C18-438	NCL-BP-P-C16-390	NCL-BP-P-C14-342	NCL-BP-P-C09-245
Potencia nominal (Pm)	327.8W	291.8W	255.6W	183.5W	438.5W	390.2W	342W	245.5W
Voltaje en circuito abierto (Voc)	124.2V	124.2V	124.2V	124.2V	124.2V	124.2V	124.2V	124.2V
Corriente de corto-circuito (Isc)	3.74A	3.37A	2.99A	2.24A	5A	4.5A	4A	3A
Voltaje en máxima potencia (Vmp)	96V	94.9V	93.6V	89.6V	96V	94.9V	93.6V	89.6V
Corriente máxima potencia (Imp)	3.41A	3.07A	2.73A	2.05A	4.57A	4.11A	3.65A	2.74A
Transparencia	0%	10%	20%	40%	0%	10%	20%	40%
Estructura vidrio	Vidrio templado 5mm+1.52mm PVB+3.2mm CdTe+1.52mm PVB+ Vidrio templado 5mm							
Voltaje máximo sistema (Vsys)	1000V							
Ratio máximo fusible (Icf)	2.0							
Coeficiente de temperatura para potencia	-0.25%/°C							
Coeficiente de temperatura para voltaje	-0.28%/°C							
Coeficiente de temperatura para corriente	0.04%/°C							
Rango temperatura	-40°C a +85°C							
Diodo Bypass	6A							
Conector	MC4							
Cable (Grosor / Longitud)	11mm / Cable(+) 1500mm . Cable(-) 1500mm							
Encapsulación	PVB							
Nivel protección	IP67							
Material	Vidrio y celdas CdTe							
Peso	88Kg				117Kg			
Color	Estándar: Negro, rojo, verde, amarillo, naranja, morado, azul. Otros bajo demanda.							
Dimensiones	1800x1200x16.2mm				2400x1200x16.2mm			
Área panel	2.16m2				2.88m2			
Tipo embalaje	Caja madera apta exportación							
Unidades por caja	11 unidades				8 unidades			
Embalaje	1900x283x1400mm / 982Kg por caja				2500x233x1400mm / 986Kg por caja			
Carga 20ft	21 cajas / 231 uds				16 cajas / 128 uds			
Carga 40ft	42 cajas / 462 uds				32 cajas / 248 uds			


CALACOM
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