



# PV MODULE

PRODUCT BROCHURE

MAKING MORE POWER



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# DEVELOPMENT HISTORY

Company milestones

## Start-up

Driven by the vision of making clean and reliable solar energy accessible worldwide, Sunpal was founded in 2008 by its CEO Juray in Hefei, China.

In the same year, Sunpal established its first solar energy factory and implemented rigorous quality management system that was certified to ISO 9001, ISO14001 and OHSAS18001.



2008~2009

## Solidified the foundation

Initially, Sunpal focused on the research and development of solar modules and solar system solutions.

In 2010, Sunpal established a comprehensive solar solution department that provides customers with access to everything they need for a seamless solar power experience.



2010~2013

2014~2019



## Industrial adjustment

Sunpal's global installation capacity of solar modules reached 5GW for residential, commercial and industrial applications by the end of 2019.

Sunpal's ever-growing distribution network, which now covers more than 80 countries worldwide. We pay more attention to the regions with high solar energy potential and a strong demand for sustainable solutions.

2020~Nowadays



## Industrial upgrade

In 2020, Sunpal building a state-of-the-art factory with a production line for high-efficiency 210 mm solar modules (HiMAX6 & BiMAX6). All modules receive TUV/CE/CSA certifications for safety and reliability.

With an annual production capacity of 12 GW, Sunpal has established itself as a major player in the clean energy sector. And now Sunpal has further cemented its position at the forefront of solar technology by achieving mass production of the new generation of TOPCON and HJT PV modules.

MAKING MORE POWER



## SUNPAL OVERSEAS WAREHOUSE

Our Warehouse

**Topcon 430W/440W  
Bifacial All Black Solar Panel**

Fast Delivery With 20% Deposit Reserve

www.sunpalsolar.com

## OFFICIAL BRAND PV PRODUCTS DISTRIBUTOR

Your Trusted Partner for Renewable Energy Solutions



MAKING MORE POWER

# CORPORATE CULTURE

About Sunpal



## • Our Mission

We are committed to responsible solar system solutions for a better future and adhere to the highest ethical standards in our operations and supply chain. We value responsible sourcing, efficient manufacturing and end-of-life recycling to minimize our environmental footprint.

## • Our Core Values

### Customer-Centric

Respond to our customers beyond expectations and promote customer satisfaction; provide customers with exceptional, efficient and reliable services; build trust and act responsibly towards customers.



## • Our Vision

We support our global customers with highly efficient solar products, individual advice on system design and financing options. By investing in the continuous improvement of our employees, we foster a culture of innovation and excellence to create a sustainable future for all.

### Pragmatism

Encourage our employees to explore new ideas with practical solutions; keep a long-term vision for the decision-making process; be flexible to adjust our course based on the evolving customer needs and data-driven insights.

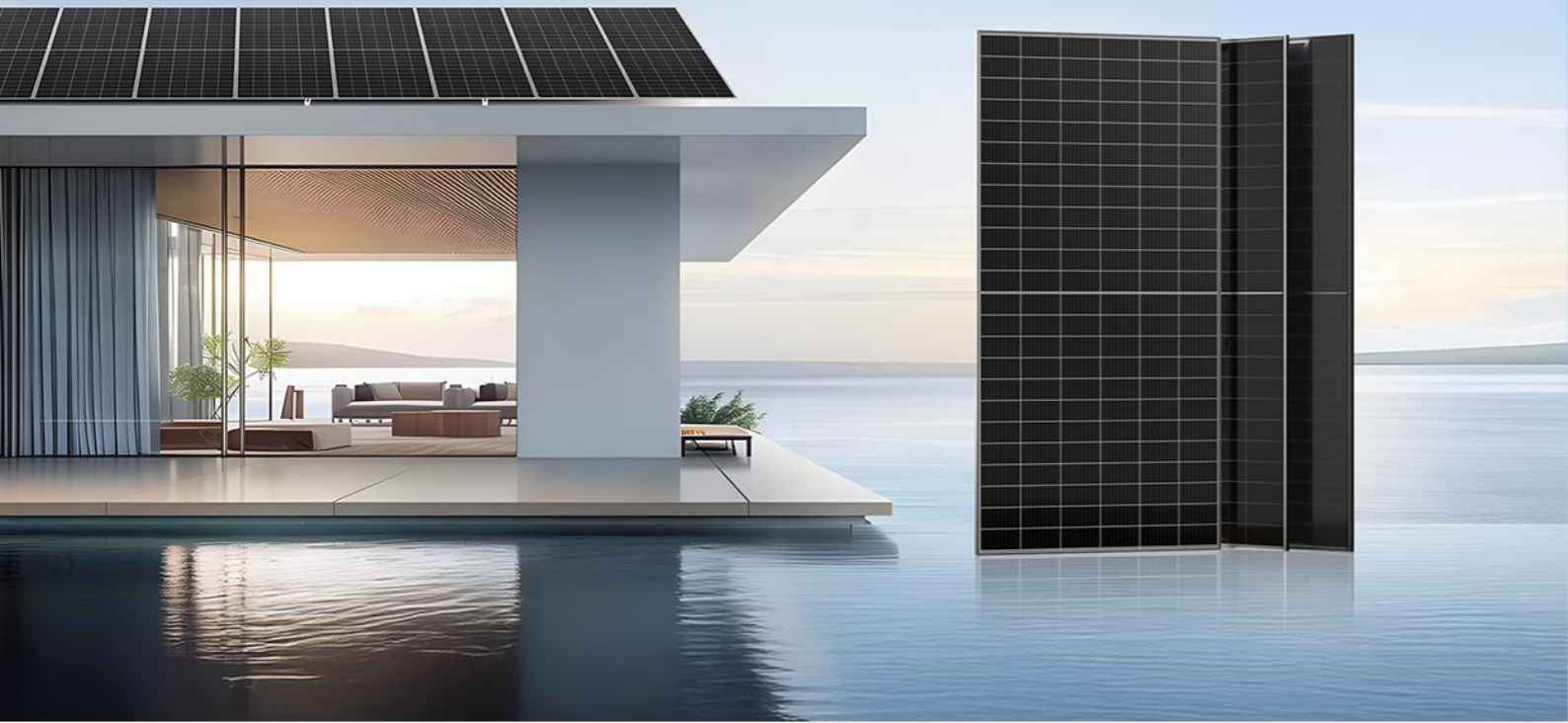
### People-Oriented

Cultivate a vibrant and collaborative work environment; empower our employees to take ownership; foster a culture of innovation that fuels our collective growth and shared success with our customers.

# TECHNICAL CERTIFICATE

Tested and certificated for all major safety approvals



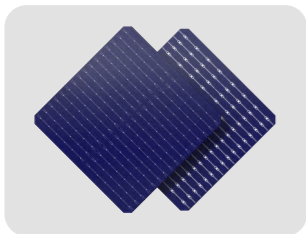


# HIGH EFFICIENCY

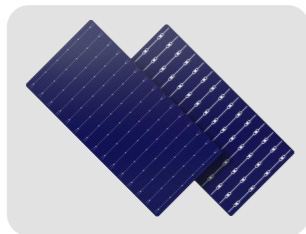
PV Module Series



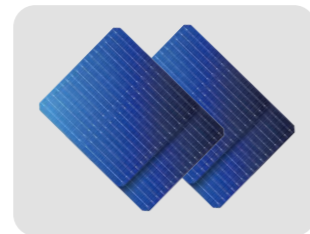
The Future of Solar: N-Type Innovation



Topcon



HJT

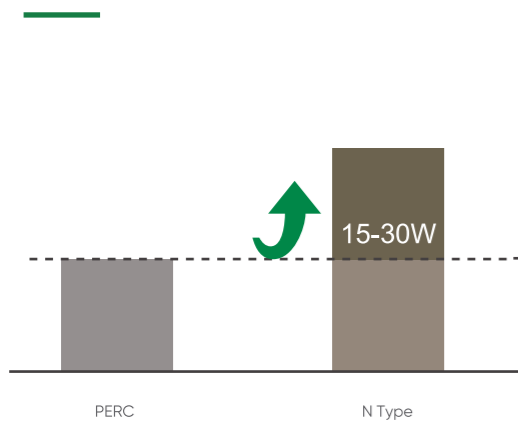


Rectangle



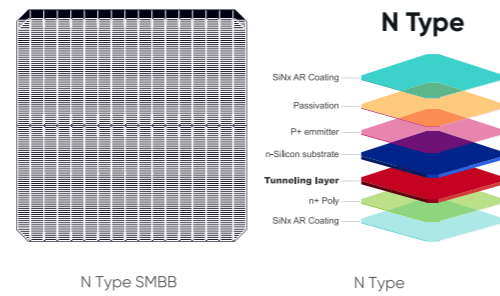
# HALF-CELL N TYPE PV SERIES

Sunpal High Efficiency N-Type PV Module | Advantages



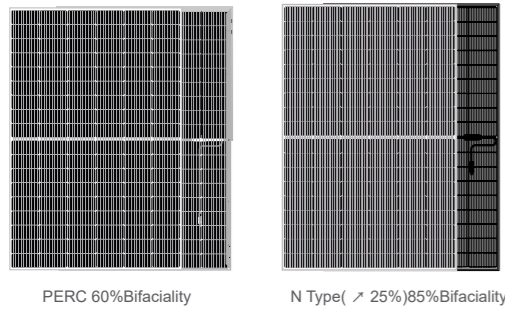
## Higher Power

- For the same module type, the power of N-type modules is 15-30W higher than that of P-type modules



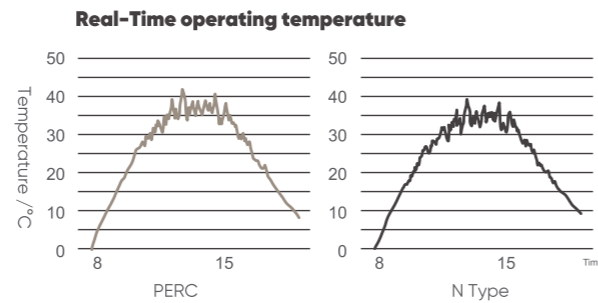
## SMBB Technology

- Reduce the current transmission distance, reduce grid line shielding, and improve optical utilization
- SMBB technology combined with round wire ribbon can increase the utilization rate of incident light by 70%, and increase the power by 1-1.5%



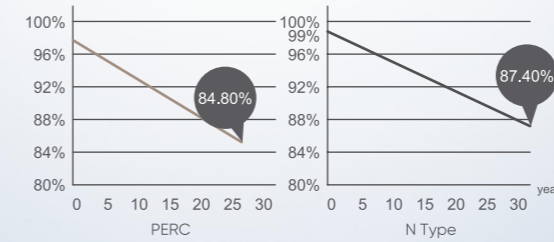
## 85%Bifaciality

- For the same module type, the double-sided rate of N-type modules is 25% higher than that of P-type modules



## Lower Temperature Coefficient

- The temperature coefficient of P-type PV module is  $-0.35\%/^{\circ}\text{C}$
- $^{\circ}\text{C}$  N-type module optimized temperature coefficient to  $-0.29\%/^{\circ}\text{C}$  Power generation is particularly prominent in high temperature environments



## 30 Power Warranty

**≤ 1%**

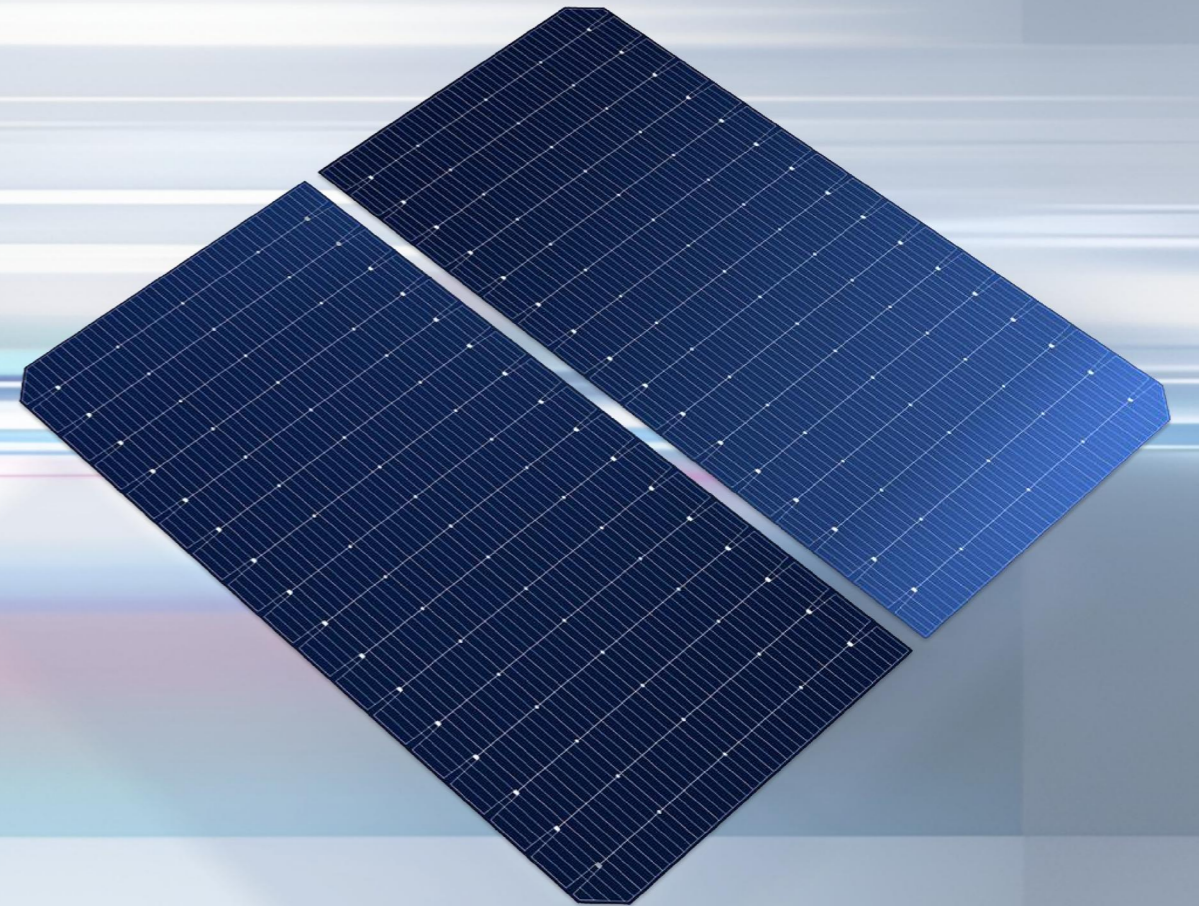
First year degradation

**-0.4%**

Linear degradation

## Better Power Guarantee

- N-type modules decay 1% in the first year (P-type 2%)
- Power warranty for 30 years (Double Glass)
- After 30 years, the output power is not lower than 87.4% of the initial power (Double Glass)




# HiMAX 5N


# 580~590W


 SMBB Technology  
Half Cut N Type Cell

 Fire Class A

 High Energy  
Performance

 5400Pa  
Strengthened  
Mechanical Load

 100% Inspection  
30years Guarantee

 Advanced Bifacial  
Efficiency

**22.84%**

Max. Module Efficiency



Sunpal N Type Linear Warranty

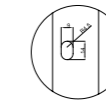
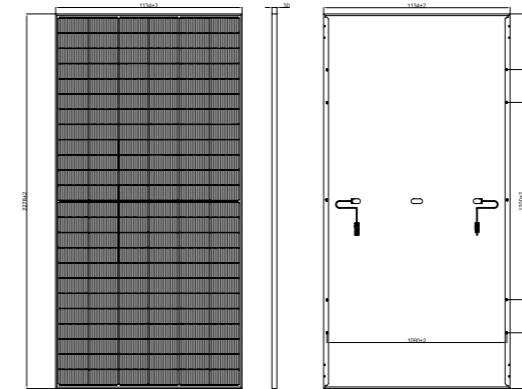
25 Years Materials Warranty

30 Years Power Warranty

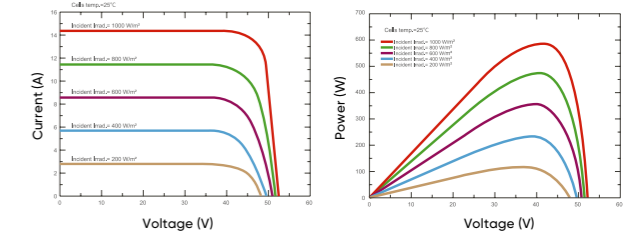


## HiMAX 5N 580~590 Watts

182mm 16BB 144Cells N Type Mono Half Cell PV Module



### Current-Voltage & Power-Voltage Curves(SP590M-72H)



All Dimensions in mm  
The above drawing is a graphical representation of the product.

### Electrical Characteristics(STC/NOCT)

Module Type	SP580M-72H		SP585M-72H		SP590M-72H	
	STC	NOCT	STC	NOCT	STC	NOCT
Test Conditions	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power-Pmax(W)	580	436	585	440	590	444
Open Circuit Voltage - Voc(V)	51.47	48.89	51.67	49.08	51.87	49.27
Short-Circuit Current - Isc(A)	14.37	11.21	14.43	11.26	14.49	11.31
Voltage at Pmax -Vmp(V)	42.60	39.86	42.76	39.97	42.92	40.08
Current at Pmax - Imp(A)	13.62	10.94	13.69	11.01	13.75	11.08
Module Efficiency -nm(%)	22.45	/	22.64	/	22.84	/
Power Tolerance(W)	(0, +4.99W)					
Maximum System Voltage(V)	1500Vdc (IEC/UL61730)					
Maximum Series Fuse Rating(A)	25A					

\*STC :Irradiance 1000W/m²,Cell Temperature25°C, Air Mass 1.5  
\*NOCT : Irradiance 800W/m²,Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s  
\*Measurement tolerance: ±3% \*Power binning up to:±3%

### Mechanical Specifications

External Dimensions	2278x1134x30mm
Weight	27.5kg
Solar Cells	N-Type 16BB 18 mm(2x72pcs)
Front Glass	AR Coated 3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm²,1200mm(+),1200mm(-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max. 5400Pa, Rear Side Max.2400Pa

### Packing configuration

Pallet Dimensions	2320x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	20 Pallets	19 Pallets	28 Pallets
Pieces per Container	740 Pcs	684 Pcs	1008 Pcs

### Temperature characteristics

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

Specifications are subject to change without further notification

 [www.sunpalsolar.com](http://www.sunpalsolar.com)

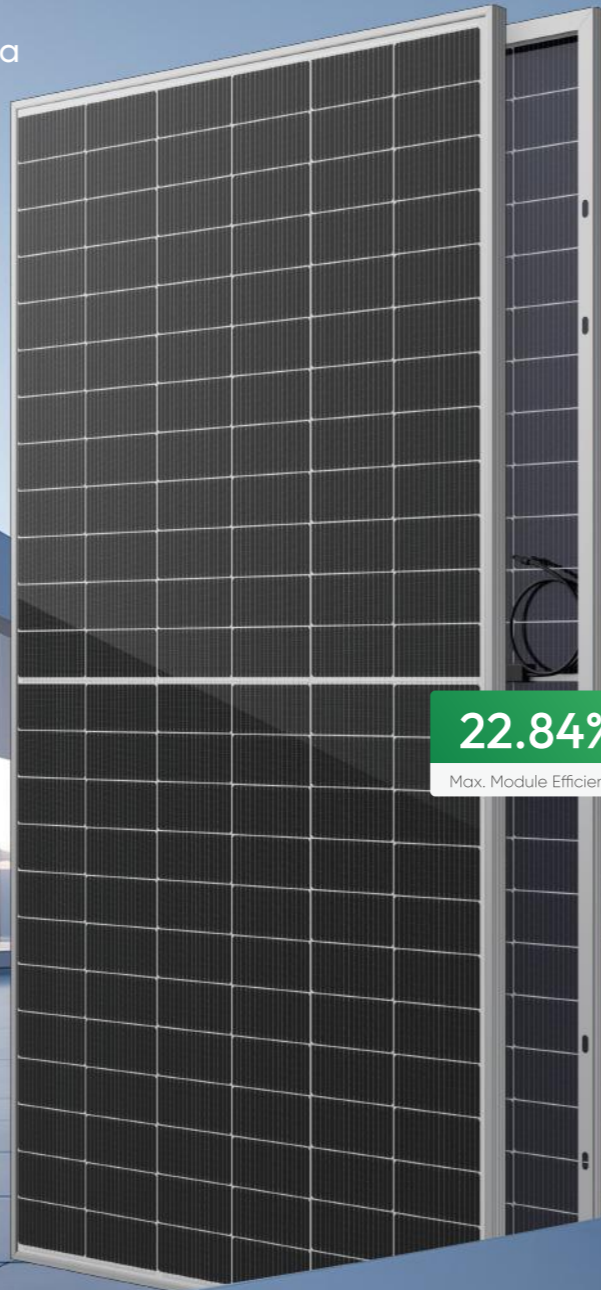
 [info@sunpalsolar.com](mailto:info@sunpalsolar.com)

SUNPAL-EN-2025V3.0

# HiMAX 5N

## 580~590W

182mm16BB 144Cells Double Glass Bifacial  
N Type Mono Half Cell Pv Module



**22.84%**  
Max. Module Efficiency



Sunpal **N Type** Linear Warranty

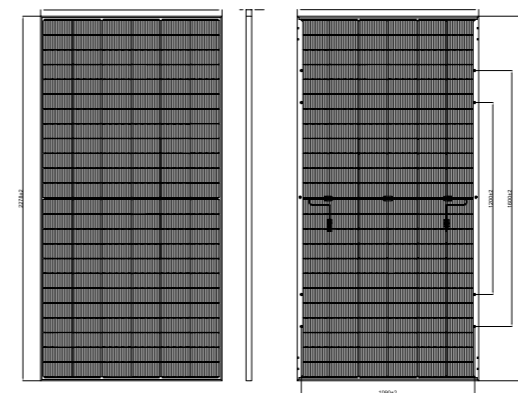
**25 Years** Materials Warranty

**30 Years** Power Warranty

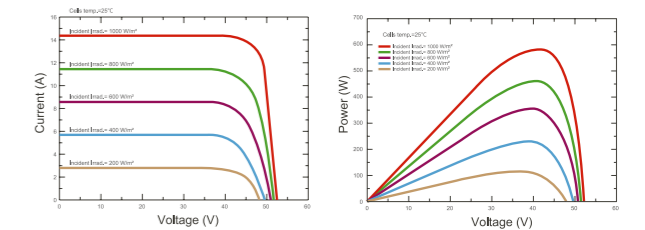


### BiMAX 5N 580~590 Watts

182mm 16BB 144Cells Double Glass Bifacial  
N Type Mono Half Cell Pv Module



Current-Voltage & Power-Voltage Curves(SP590M-72H)



All Dimensions in mm  
The above drawing is a graphical representation of the product,

### Electrical Characteristics(STC/NOCT)

Module Type	SP580M-72H		SP585M-72H		SP590M-72H	
	STC	NOCT	STC	NOCT	STC	NOCT
Test Conditions	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power-Pmax(W)	580	436	585	440	590	444
Open Circuit Voltage - Voc(V)	51.47	48.89	51.67	49.08	51.87	49.27
Short-Circuit Current - Isc(A)	14.37	11.21	14.43	11.26	14.49	11.31
Voltage at Pmax -Vmp(V)	42.60	39.86	42.76	39.97	42.92	40.08
Current at Pmax - Imp(A)	13.62	10.94	13.69	11.01	13.75	11.08
Module Efficiency -nm(%)	22.45	/	22.64	/	22.84	/
Power Tolerance(W)	(0, +4.99W)					
Maximum System Voltage(V)	1500Vdc (IEC/UL61730)					
Maximum Series Fuse Rating(A)	25A					

\*STC :Irradiance 1000W/m<sup>2</sup>,Cell Temperature 25°C, Air Mass 1.5  
\*NOCT : Irradiance 800W/m<sup>2</sup>,Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	2278x1134x30mm
Weight	31kg
Solar Cells	N-Type 16BB 18 mm(2x72pcs)
Front Glass	AR Coated 2+2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm <sup>2</sup> ,1200mm(+),1200mm(-), 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 Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	45±2°C

### Bifacial Output Rear Side Power Gain

\*Take SP585M-72H as an example.

Power Gain	5%	15%	25%
Maximum Power- Pmax(W)	614	673	731
Open Circuit Voltage - Voc(V)	51.67	51.67	51.67
Short-Circuit Current - Isc(A)	14.81	16.23	17.63
Voltage at Pmax -Vmp(V)	42.76	42.76	42.76
Current at Pmax -Imp(A)	14.36	15.74	17.10

### Packing configuration

Pallet Dimensions	2320x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	20 Pallets	17 Pallets	26 Pallets
Pieces per Container	740 Pcs	612 Pcs	936 Pcs

Specifications are subject to change without further notification

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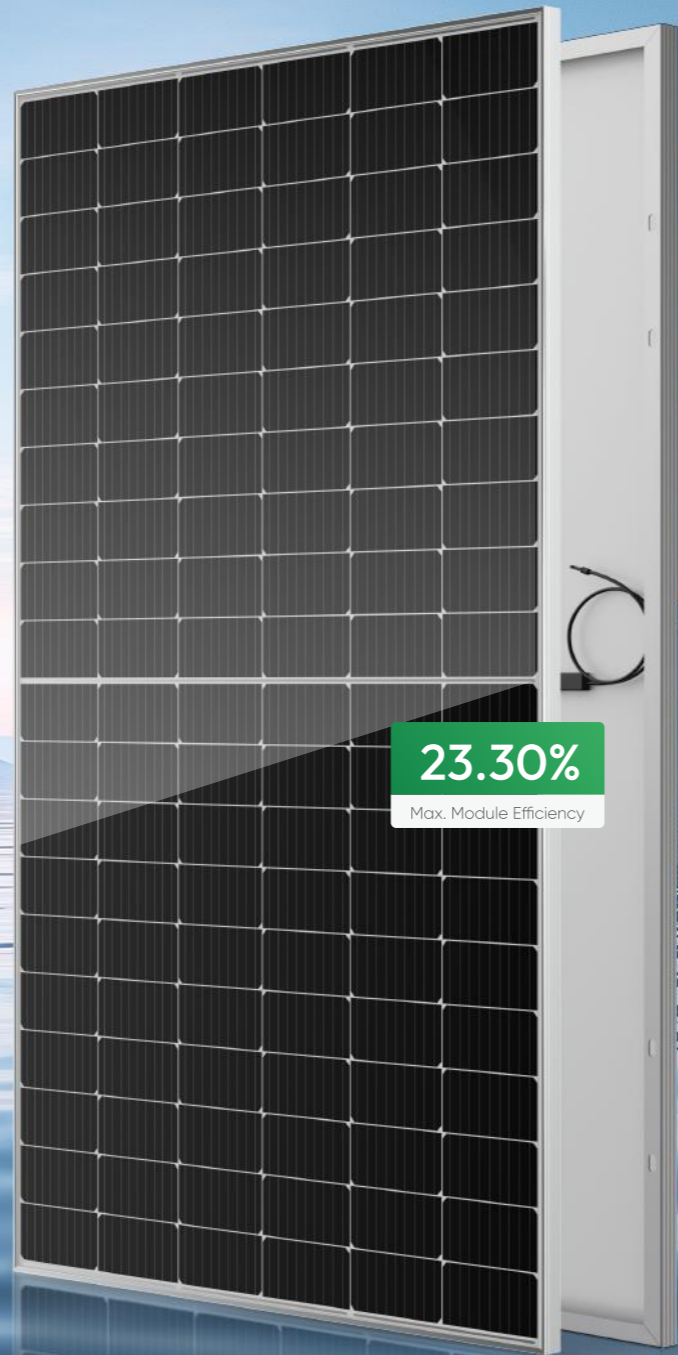
[info@sunpalsolar.com](mailto:info@sunpalsolar.com)

SUNPAL-EN-2025V3.0

# BiMAX 6R

# 610~630W

210x182mm 16BB 132Cells N Type Mono Half Cell PV Module Series



**23.30%**  
Max. Module Efficiency



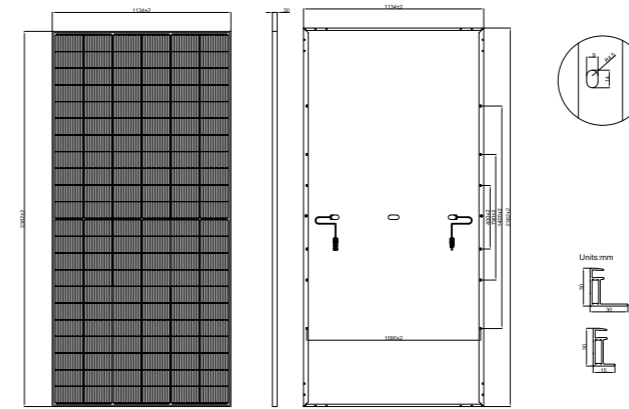
Sunpal **N Type** Linear Warranty

25 Years Materials Warranty

30 Years Power Warranty

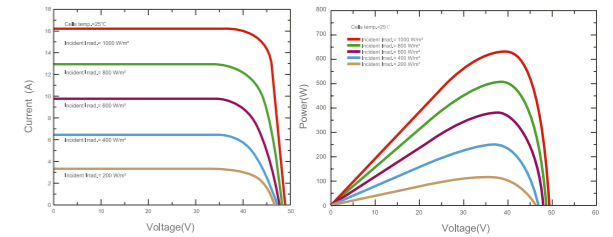


**HiMAX 6R 610 ~630 Watts**  
210x182mm 16BB 132Cells  
N Type Mono Half Cell PV Module Series



All Dimensions in mm  
The above drawing is a graphical representation of the product,

Current-Voltage & Power-Voltage Curves(SP630M-66H)



### Electrical Characteristics(STC / NMOT)

Module Type	SP610M-66H		SP615M-66H		SP620M-66H		SP625M-66H		SP630M-66H	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power- Pmax(W)	610	460.7	615	464.4	620	468.2	625	471.9	630	475.7
Open Circuit Voltage - Voc(V)	48.70	46.24	48.90	46.43	49.10	46.62	49.30	46.81	49.50	47.00
Short- Circuit Current - Isc(A)	15.95	12.88	16.01	12.93	16.07	12.98	16.13	13.03	16.19	13.08
Voltage at Pmax -Vmp(V)	40.48	37.92	40.62	38.10	40.76	38.25	40.91	38.42	41.04	38.59
Current at Pmax -Imp(A)	15.07	12.15	15.14	12.19	15.21	12.24	15.28	12.28	15.35	12.33
Module Efficiency -nm(%)	22.60	/	22.80	/	23.00	/	23.10	/	23.30	/

Power Tolerance(W) (0, +5W)  
Maximum System Voltage(V) 1500Vdc (IEC/UL61730)

Maximum Series Fuse Rating (A) 30A  
\*STC :Irradiance 1000W/m<sup>2</sup>,Cell Temperature 25°C, Air Mass 1.5  
\*NOCT : Irradiance 800W/m<sup>2</sup>,Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	2382x1134x30mm
Weight	28.5kg
Solar Cells	N-Type 16BB 18 mm(2x66pcs)
Front Glass	AR Coated 3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm <sup>2</sup> ,1200mm(+),1200mm(-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max. 5400Pa, Rear Side Max.2400Pa

### Packing configuration

Pallet Dimensions	1164x1140x2495mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	20 Pallets	19 Pallets	28 Pallets
Pieces per Container	740 Pcs	684 Pcs	1008 Pcs

### Temperature characteristics

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

Specifications are subject to change without further notification

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# BiMAX 6R

## 610~630W

210x182mm16BB 132Cells Double Glass Bifacial N Type Mono Half Cell PV Module Series



Sunpal N Type Linear Warranty

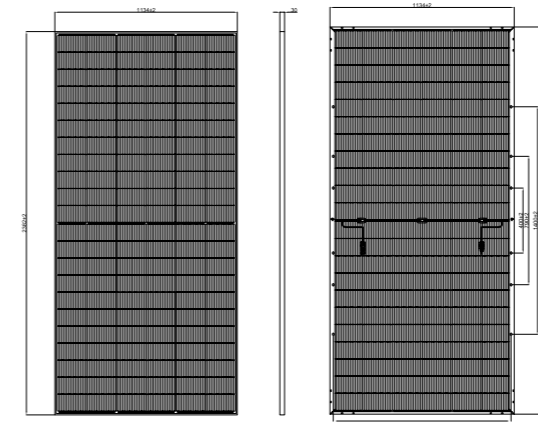
25 Years Materials Warranty

30 Years Power Warranty

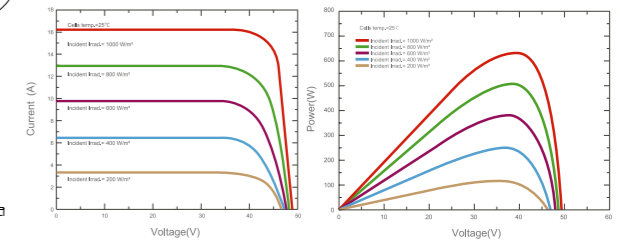


### BiMAX 6R 610 ~630 Watts

210x182mm 16BB 132Cells Double Glass Bifacial N Type Mono Half Cell PV Module Series



Current-Voltage & Power-Voltage Curves(SP630M-66H)



All Dimensions in mm  
The above drawing is a graphical representation of the product,

### Electrical Characteristics(STC /NMOT)

Module Type	SP610M-66H		SP615M-66H		SP620M-66H		SP625M-66H		SP630M-66H	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power- Pmax(W)	610	460.7	615	464.4	620	468.2	625	471.9	630	475.7
Open Circuit Voltage - Voc(V)	48.70	46.24	48.90	46.43	49.10	46.62	49.30	46.81	49.50	47.00
Short- Circuit Current - Isc(A)	15.95	12.88	16.01	12.93	16.07	12.98	16.13	13.03	16.19	13.08
Voltage at Pmax -Vmp(V)	40.48	37.92	40.62	38.10	40.76	38.25	40.91	38.42	41.04	38.59
Current at Pmax -Imp(A)	15.07	12.15	15.14	12.19	15.21	12.24	15.28	12.28	15.35	12.33
Module Efficiency -nm(%)	22.60	/	22.80	/	23.00	/	23.10	/	23.30	/

Power Tolerance(W) (0, +5W)  
Maximum System Voltage(V) 1500Vdc (IEC/UL61730)

Maximum Series Fuse Rating (A) 30A  
\*STC :Irradiance 1000W/m²,Cell Temperature 25°C, Air Mass 1.5  
\*NOCT : Irradiance 800W/m²,Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	2382x1134x30mm
Weight	32.4kg
Solar Cells	N-Type 16BB 182x105mm (2x66pcs)
Front Glass	AR Coated 2+2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm²,1200mm(+),1200mm(-), 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 Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	45±2°C

### Bifacial Output Rear Side Power Gain

\*Take SP630M-66H as an example.

Power Gain	5%	10%	20%
Maximum Power- Pmax(W)	661.5	693.0	756.0
Open Circuit Voltage - Voc(V)	49.50	49.50	49.50
Short- Circuit Current - Isc(A)	16.81	17.60	19.20
Voltage at Pmax -Vmp(V)	41.04	41.04	41.04
Current at Pmax -Imp(A)	16.12	16.89	18.42

### Packing configuration

Pallet Dimensions	2320x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	20 Pallets	17 Pallets	26 Pallets
Pieces per Container	740 Pcs	612 Pcs	936 Pcs

Specifications are subject to change without further notification

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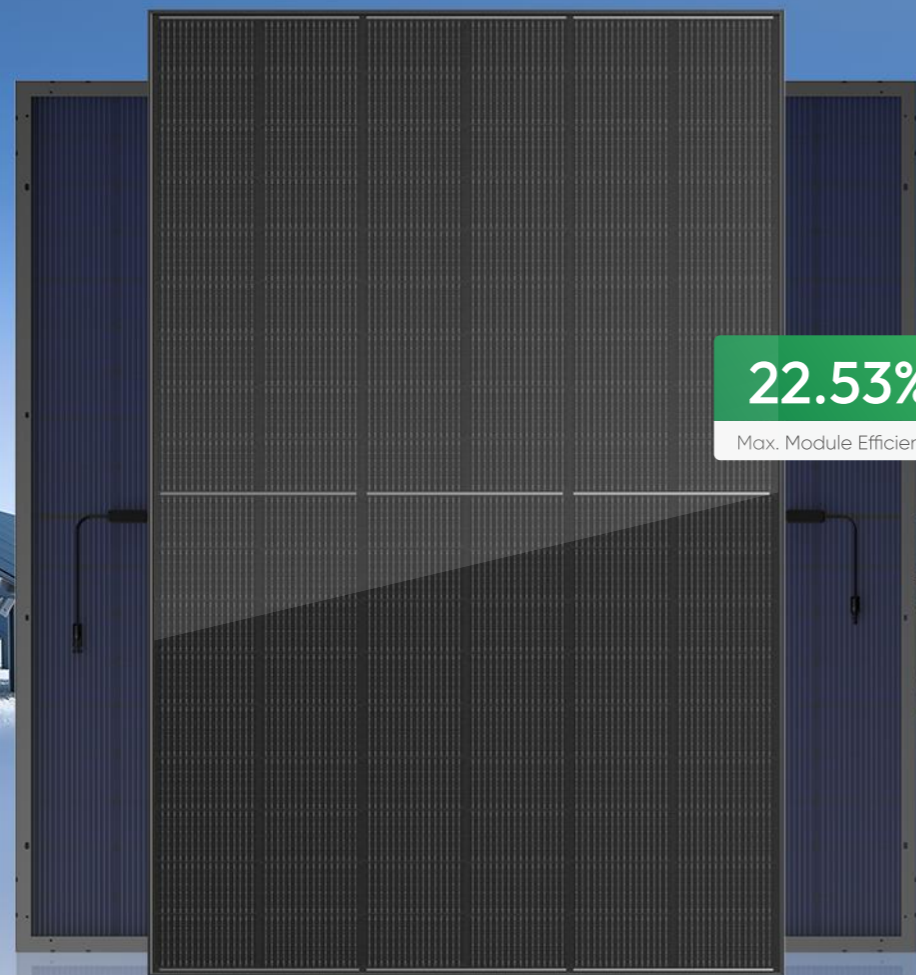
[info@sunpalsolar.com](mailto:info@sunpalsolar.com)

SUNPAL-EN-2025V3.0

# BiMAX 5N

## 410~440W

182mm 16BB 108Cells All Black Double Glass Bifacial N Type Mono Half Cell PV Module Series



**22.53%**

Max. Module Efficiency



Sunpal **N Type** Linear Warranty

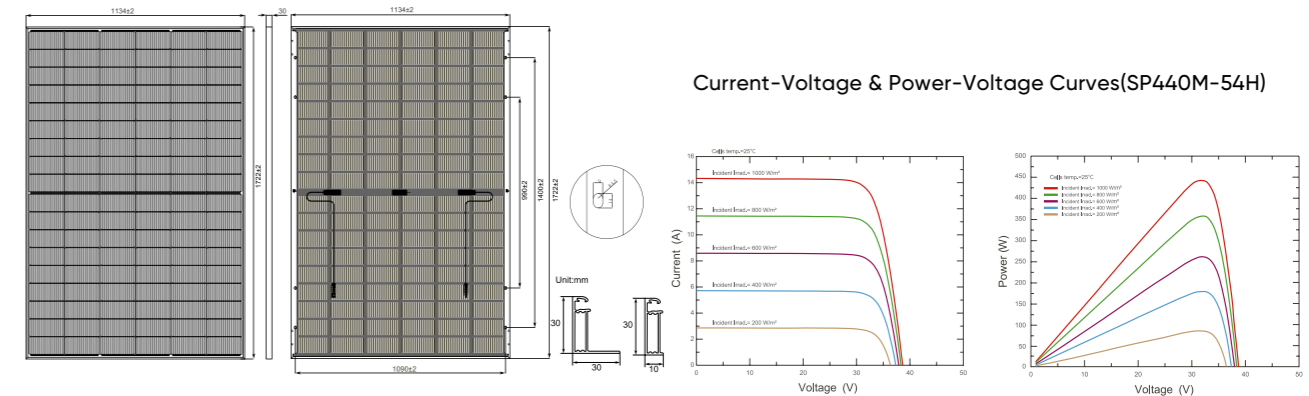
25 Years Materials Warranty

30 Years Power Warranty



### BiMAX 5N 410 ~440 Watts

210x182mm 16BB 132Cells Double Glass Bifacial N Type Mono Half Cell PV Module Series



All Dimensions in mm  
The above drawing is a graphical representation of the product,

### Electrical Characteristics(STC/NMOT)

Module Type	SP410M-54H		SP415M-54H		SP420M-54H		SP425M-54H		SP430M-54H		SP435M-54H		SP440M-54H	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power- Pmax(W)	410	313.7	415	317.3	420	321.1	425	325.0	430	328.7	435	332.4	440	336.3
Open Circuit Voltage - Voc(V)	38.20	36.30	38.33	36.40	38.46	36.50	38.59	36.60	38.72	36.80	38.85	36.90	38.98	37.10
Short- Circuit Current - Isc(A)	13.49	10.97	13.60	11.05	13.71	11.13	13.81	11.22	13.91	11.28	14.33	11.36	14.41	11.44
Voltage at Pmax -Vmp(V)	31.60	29.60	31.79	29.71	31.97	29.90	32.15	30.01	32.34	30.19	32.52	30.30	32.70	30.41
Current at Pmax -Imp(A)	12.98	10.60	13.06	10.68	13.14	10.74	13.22	10.83	13.30	10.89	13.38	10.97	13.46	11.06
Module Efficiency -nm(%)	21.00	/	21.30	/	21.50	/	21.80	/	22.00	/	22.27	/	22.53	/
Power Tolerance(W)	(0, +4.99W)													
Maximum System Voltage(V)	1500Vdc (IEC/UL61730)													
Maximum Series Fuse Rating (A)	30A													

\*STC :Irradiance 1000W/m²,Cell Temperature 25°C, Air Mass 1.5  
\*NOCT : Irradiance 800W/m²,Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	2382x1134x30mm
Weight	21kg
Solar Cells	N-Type 16BB 182mm (2x54pcs)
Front Glass	AR Coated 1.6+1.6mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm² ,1200mm(+),1200mm(-), 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 Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	45±2°C

### Bifacial Output Rear Side Power Gain

\*Take SP420M-54H as an example.

Power Gain	5%	10%	20%
Maximum Power- Pmax(W)	441.0	483.0	525.0
Open Circuit Voltage - Voc(V)	38.46	38.46	38.46
Short- Circuit Current - Isc(A)	14.42	15.79	17.16
Voltage at Pmax -Vmp(V)	31.97	31.97	31.97
Current at Pmax -Imp(A)	13.79	15.11	16.42

### Packing configuration

Pallet Dimensions	2320x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	26 Pallets	24 Pallets	36 Pallets
Pieces per Container	962 Pcs	864Pcs	1296 Pcs

Specifications are subject to change without further notification

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SUNPAL-EN-2025V3.0

# BiMAX 6R


210x182mm 16BB 96Cells All Black Double Glass Bifacial  
N Type Mono Half Cell PV Module Series


## 450~470W


 SMBB Technology  
Half Cut N Type Cell

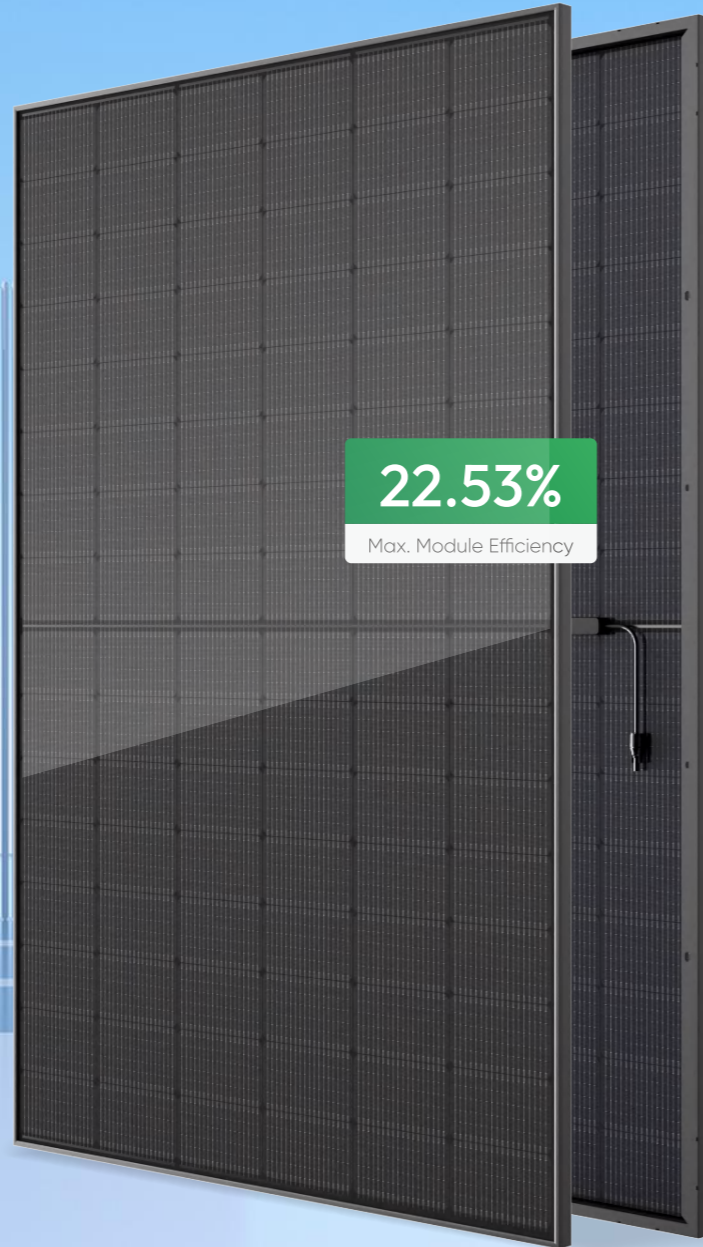
 Fire Class A

 High Energy  
Performance

 5400Pa  
Strengthened  
Mechanical Load

 100% Inspection  
30years Guarantee

 Advanced Bifacial  
Efficiency



Sunpal **N Type** Linear Warranty

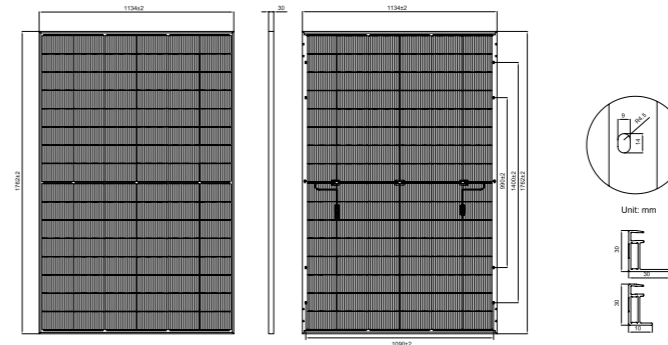
**25 Years** Materials Warranty

**30 Years** Power Warranty

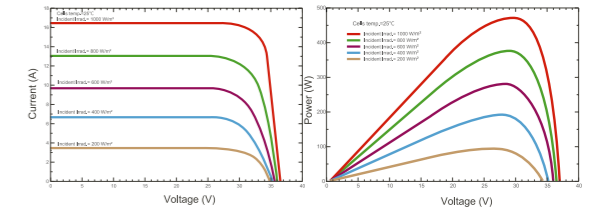


## BiMAX 6R 450 ~470 Watts

210x182mm 16BB 96Cells Double Glass Bifacial  
N Type Mono Half Cell PV Module Series



Current-Voltage & Power-Voltage Curves(SP470M-48H)



All Dimensions in mm  
The above drawing is a graphical representation of the product,

### Electrical Characteristics(STC / NMOT)

Module Type	SP450M-48H		SP455M-48H		SP460M-48H		SP465M-48H		SP470M-48H	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Test Conditions	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power- Pmax(W)	450	339.8	455	343.5	460	347.4	465	351.2	470	355.0
Open Circuit Voltage - Voc(V)	35.64	33.92	35.80	34.11	35.97	34.30	36.14	34.49	36.31	34.68
Short- Circuit Current - Isc(A)	16.06	12.91	16.14	12.96	16.23	13.01	16.32	13.06	16.40	13.11
Voltage at Pmax -Vmp(V)	29.63	27.83	29.76	27.99	29.89	28.15	30.03	28.31	30.16	28.47
Current at Pmax -Imp(A)	15.19	12.21	15.29	12.27	15.39	12.34	15.49	12.40	15.58	12.47
Module Efficiency -nm(%)	22.52	/	22.77	/	23.02	/	23.27	/	23.52	/

Power Tolerance(W) (0, +5W)  
Maximum System Voltage(V) 1500Vdc (IEC/UL61730)  
Maximum Series Fuse Rating (A) 30A

\*STC :Irradiance 1000W/m<sup>2</sup>,Cell Temperature 25°C, Air Mass 1.5  
\*NOCT : Irradiance 800W/m<sup>2</sup>,Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	1762x1134x30mm
Weight	21.5kg
Solar Cells	N-Type 16BB 182x105mm (2x48pcs)
Front Glass	AR Coated 1.6+1.6mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm <sup>2</sup> ,1200mm(+),1200mm(-), 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 Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	45±2°C

### Bifacial Output Rear Side Power Gain

\*Take SP470M-48H as an example.

Power Gain	5%	10%	20%
Maximum Power- Pmax(W)	493.5	517.0	564.0
Open Circuit Voltage - Voc(V)	36.31	36.31	36.31
Short- Circuit Current - Isc(A)	17.22	18.04	19.68
Voltage at Pmax -Vmp(V)	30.16	30.16	30.16
Current at Pmax -Imp(A)	16.36	17.14	18.70

### Packing configuration

Pallet Dimensions	1790x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	26 Pallets	24 Pallets	36 Pallets
Pieces per Container	962 Pcs	864 Pcs	1296 Pcs

Specifications are subject to change without further notification

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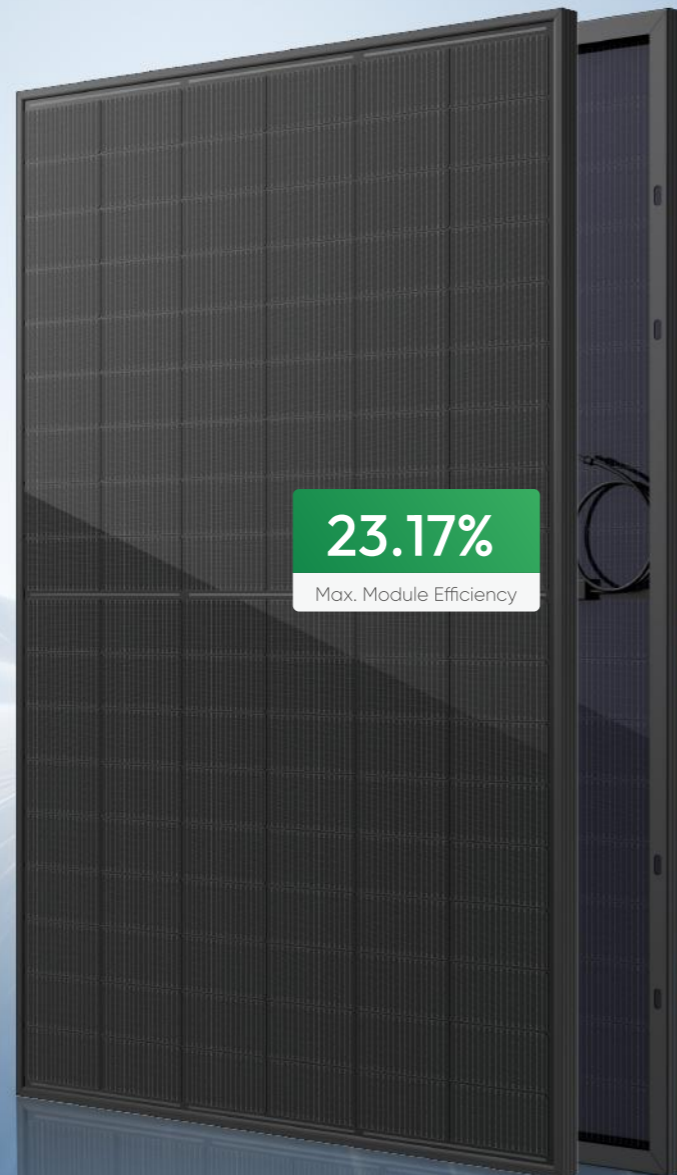
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SUNPAL-EN-2025V3.0

# BiMAX 6R

## 500~525W

210x182mm 16BB 108Cells Double Glass Bifacial  
N Type Mono Half Cell PV Module Series



**23.17%**  
Max. Module Efficiency



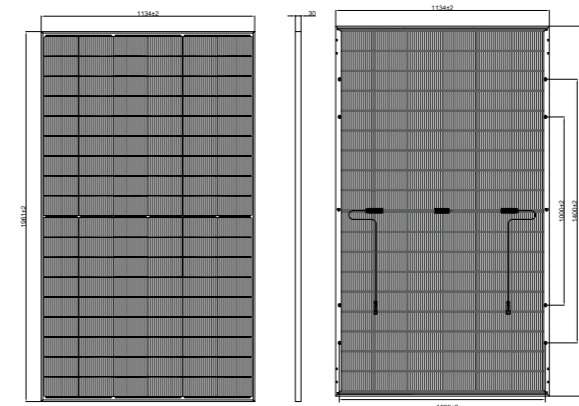
Sunpal **N Type** Linear Warranty

**25 Years** Materials Warranty    **30 Years** Power Warranty



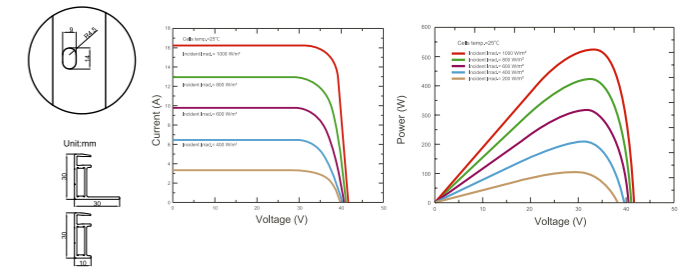
### BiMAX 6R 500 ~525 Watts

210x182mm 16BB 108Cells Double Glass Bifacial  
N Type Mono Half Cell PV Module Series



All Dimensions in mm  
The above drawing is a graphical representation of the product,

#### Current-Voltage & Power-Voltage Curves(SP525M-54H)



#### Electrical Characteristics(STC / NMOT)

Module Type	SP500M-54H		SP505M-54H		SP510M-54H		SP515M-54H		SP520M-54H		SP525M-54H	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power- Pmax(W)	500	377.5	505	381.3	510	385.1	515	388.9	520	392.7	525	396.5
Open Circuit Voltage - Voc(V)	39.90	37.84	40.09	38.00	40.28	38.16	40.47	38.32	40.66	38.48	40.85	38.64
Short- Circuit Current - Isc(A)	15.93	12.89	16.00	12.95	16.05	13.01	16.10	13.07	16.15	13.13	16.20	13.19
Voltage at Pmax -Vmp(V)	33.18	31.02	33.33	31.15	33.48	31.28	33.63	31.41	33.78	31.54	33.93	31.67
Current at Pmax -Imp(A)	15.07	12.17	15.15	12.24	15.23	12.31	15.31	12.38	15.39	12.45	15.47	12.52
Module Efficiency -nm(%)	22.48	/	22.71	/	22.93	/	23.16	/	23.38	/	23.61	/

Power Tolerance(W) (0, +5W)  
Maximum System Voltage(V) 1500Vdc (IEC/UL61730)  
Maximum Series Fuse Rating (A) 30A

\*STC :Irradiance 1000W/m<sup>2</sup>,Cell Temperature 25°C, Air Mass 1.5  
\*NMOT : Irradiance 800W/m<sup>2</sup>,Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

#### Mechanical Specifications

External Dimensions	1961x1134x30mm
Weight	23.9kg
Solar Cells	N-Type 16BB 182x105mm (2x54pcs)
Front Glass	AR Coated 1.6+1.6mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm <sup>2</sup> ,1200mm(+),1200mm(-), 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 Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	45±2°C

#### Bifacial Output Rear Side Power Gain

\*Take SP525M-54H as an example.

Power Gain	5%	10%	20%
Maximum Power- Pmax(W)	551.3	577.5	630.0
Open Circuit Voltage - Voc(V)	40.85	40.85	40.85
Short- Circuit Current - Isc(A)	16.97	17.77	19.38
Voltage at Pmax -Vmp(V)	33.93	33.93	33.93
Current at Pmax -Imp(A)	16.25	17.02	18.57

#### Packing configuration

Pallet Dimensions	1980x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	24 Pallets	22 Pallets	33 Pallets
Pieces per Container	888 Pcs	792 Pcs	1188 Pcs

Specifications are subject to change without further notification

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SUNPAL-EN-2025V3.0

# BiMAX 6N

# 700~730W

210mm 132Cells Double Glass Bifacial Mono PV Module Series

SMBB Technology  
Half Cut N Type Cell

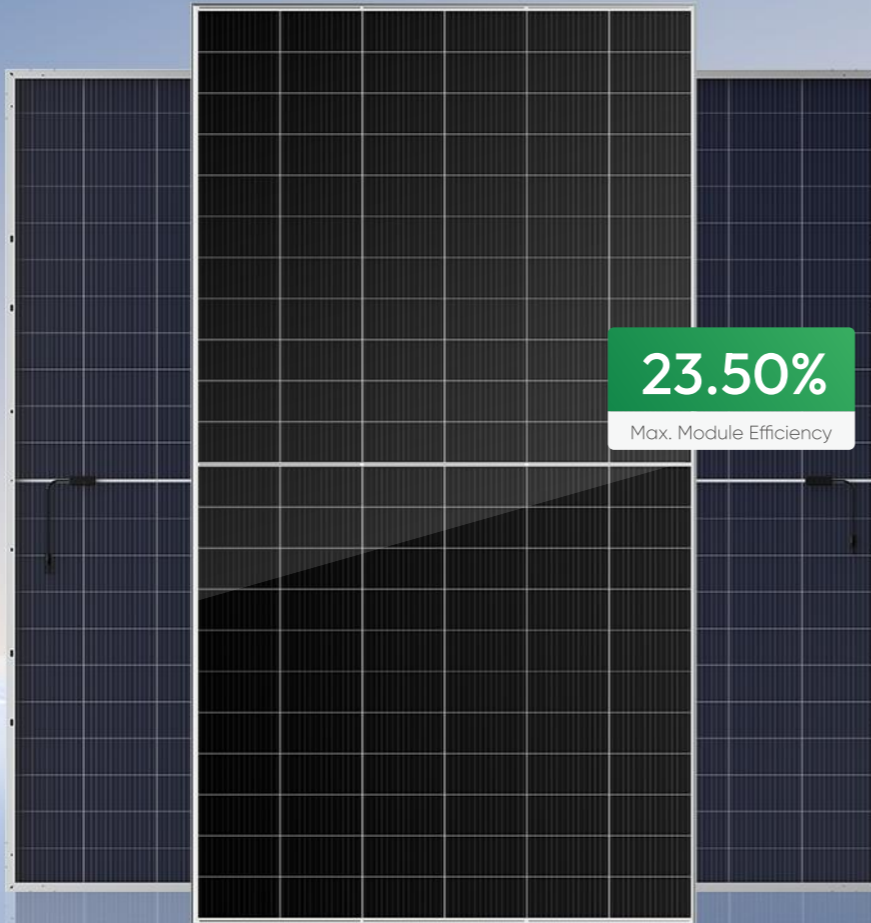
High Energy  
Performance

5400Pa  
Strengthened  
Mechanical Load

100% Inspection  
30years Guarantee

Fire Class A

Anti PID



Sunpal **N Type** Linear Warranty

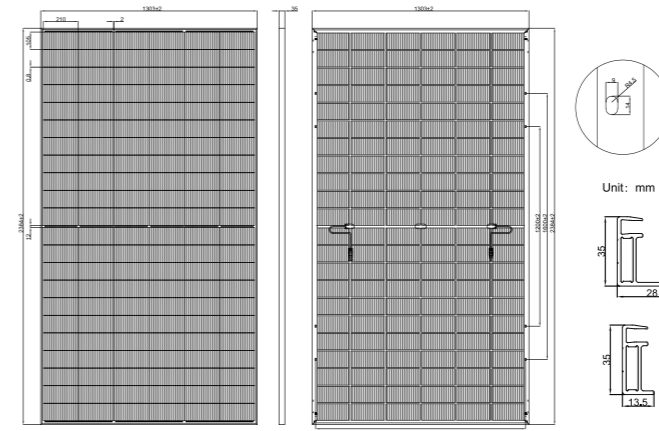
25 Years Materials Warranty

30 Years Power Warranty



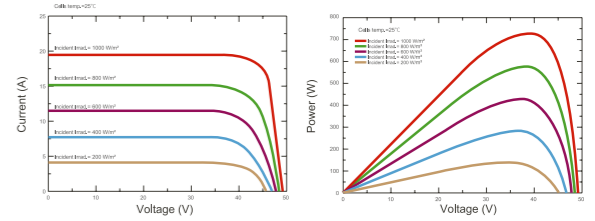
**BiMAX 6N 700 ~730 Watts**

210mm 132Cells Double Glass Bifacial Mono PV Module



All Dimensions in mm  
The above drawing is a graphical representation of the product,

Current-Voltage & Power-Voltage Curves(SP730M-66H)



### Electrical Characteristics(STC / NMOT)

Module Type	SP700M-66H		SP705M-66H		SP710M-66H		SP715M-66H		SP720M-66H		SP725M-66H		SP730M-66H	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power- Pmax(W)	700	529	705	533	710	537	715	541	720	545	725	549	730	553
Open Circuit Voltage - Voc(V)	47.90	45.40	48.10	45.50	48.30	45.70	48.50	45.90	48.70	46.10	48.90	46.30	49.10	46.50
Short- Circuit Current - Isc(A)	18.49	14.91	18.54	14.95	18.59	14.99	18.64	15.03	18.69	15.07	18.74	15.11	18.79	15.15
Voltage at Pmax -Vmp(V)	40.00	37.80	40.20	38.00	40.40	38.20	40.60	38.40	40.80	38.60	41.00	38.80	41.20	39.00
Current at Pmax -Imp(A)	17.51	14.00	17.54	14.03	17.58	14.06	17.62	14.09	17.65	14.12	17.69	14.15	17.72	14.18
Module Efficiency -nm(%)	22.5	/	22.7	/	22.9	/	23.0	/	23.2	/	23.3	/	23.5	/

Power Tolerance(W) (0, +4.99W)  
Maximum System Voltage(V) 1500Vdc (IEC/UL61730)  
Maximum Series Fuse Rating (A) 35A

\*STC :Irradiance 1000W/m<sup>2</sup>,Cell Temperature 25°C, Air Mass 1.5  
\*NOCT : Irradiance 800W/m<sup>2</sup>,Ambient Temperature 20°C, Air Mass1.5, Wind Speed 1m/s  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	2384x1303x35mm
Weight	37.8kg
Solar Cells	Mono crystalline 210mm (2x66pcs)
Front Glass	AR Coated 2+2 mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm <sup>2</sup> ,1200mm(+),1200mm(-), 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 Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	45±2°C

### Bifacial Output Rear Side Power Gain

\*Take SP715M-66H as an example.

Power Gain	5%	10%	25%
Maximum Power- Pmax(W)	750.8	786.5	893.8
Open Circuit Voltage - Voc(V)	48.50	48.50	48.50
Short- Circuit Current - Isc(A)	19.57	20.50	23.30
Voltage at Pmax -Vmp(V)	40.60	40.60	40.60
Current at Pmax -Imp(A)	18.50	19.38	22.03

### Packing configuration

Pallet Dimensions	1320x1125x2495mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	31 Pcs	31 Pcs	31 Pcs
Pallets per Container	18 Pallets	16 Pallets	24 Pallets
Pieces per Container	558 Pcs	496 Pcs	744 Pcs

Specifications are subject to change without further notification

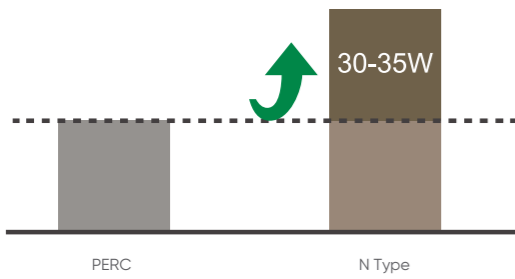
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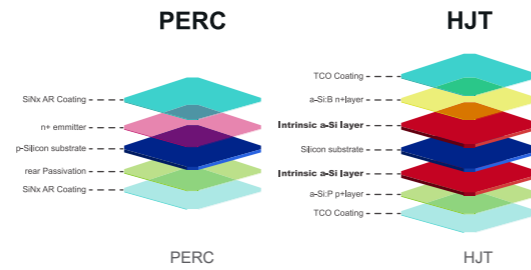
# HALF-CELL HJT PV SERIES

Sunpal High Efficiency N-Type PV Module | Advantages



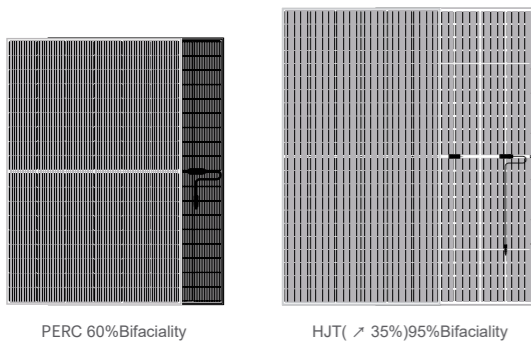
## Higher Power

- For the same module type, the power of HJT modules is 30-35W higher than that of PERC modules



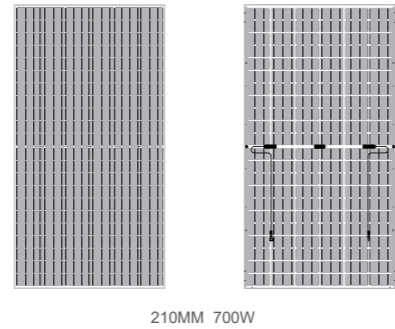
## No PID, LID

- With no B-O bond and TCO film, LID and PID effect can be eliminated, which means less power loss and longer service life



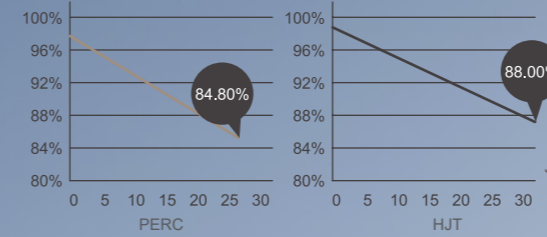
## > 95% Bifaciality

- By virtue of the cell's natural bifacial structure, bifacial solar modules can generate power from both sides, which brings more energy yield



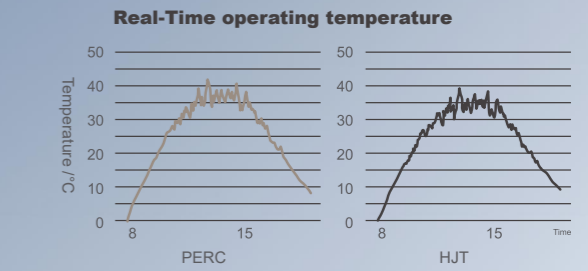
## Superior Power

- The maximum power output of Sunpal HJT solar modules has reached 700W, which can effectively reduce the LCOE and bring more investment returns to customers



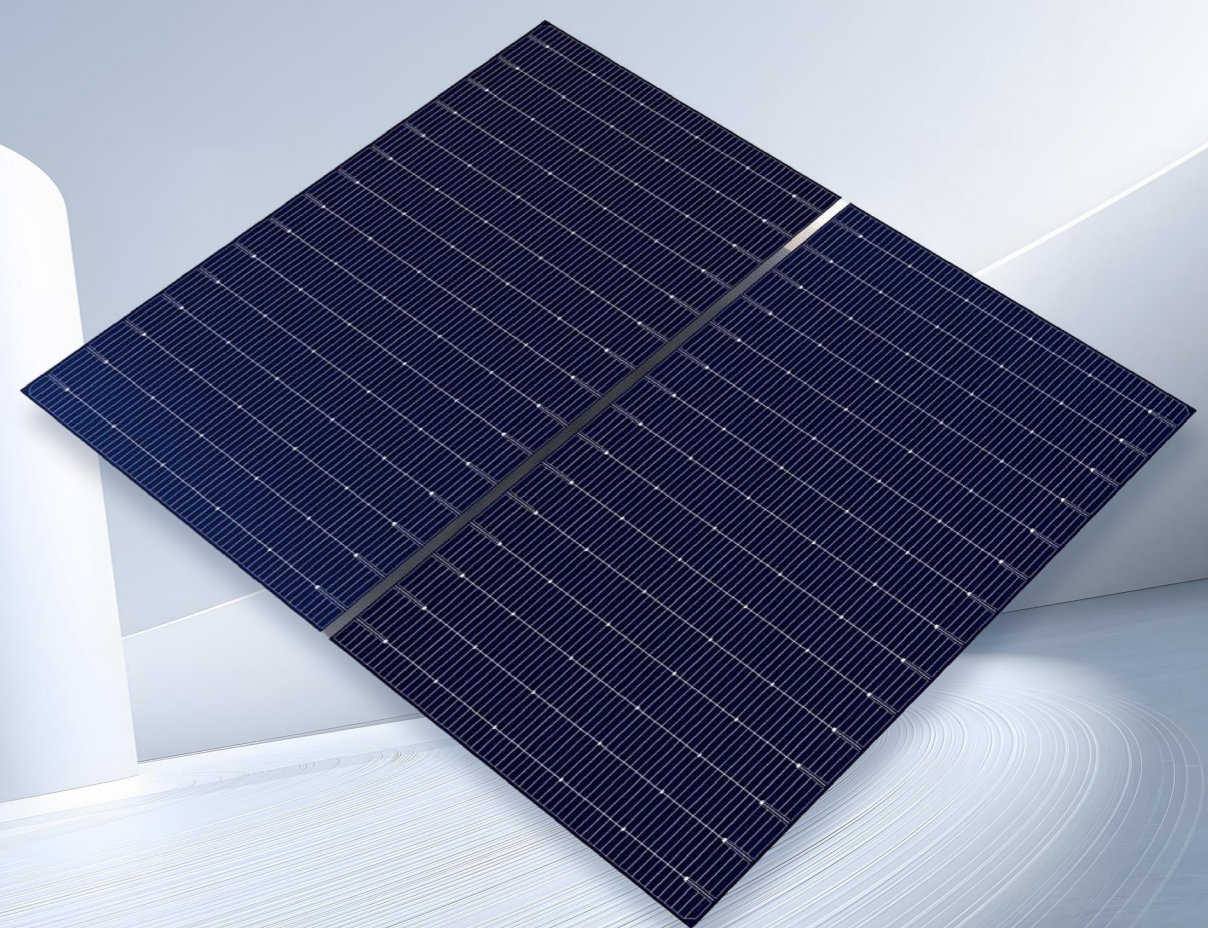
## Leading Warranty

- All Sunpal HJT solar modules have 15-year product warranty and 30-year linear performance warranty, the power will remain above 88% during the service life



## Lower temperature coefficient

- The temperature coefficient of P-type PV module is  $-0.35\%/^{\circ}\text{C}$
- HJT module optimized temperature coefficient to  $-0.26\%/^{\circ}\text{C}$
- Power generation is particularly prominent in high temperature environments



# BiMAX 6N

# 700~730W

210mm 132Cells Double Glass Bifacial HJT Mono Half Cell PV Module Series



**23.50%**  
Max. Module Efficiency



Sunpal **N Type** Linear Warranty

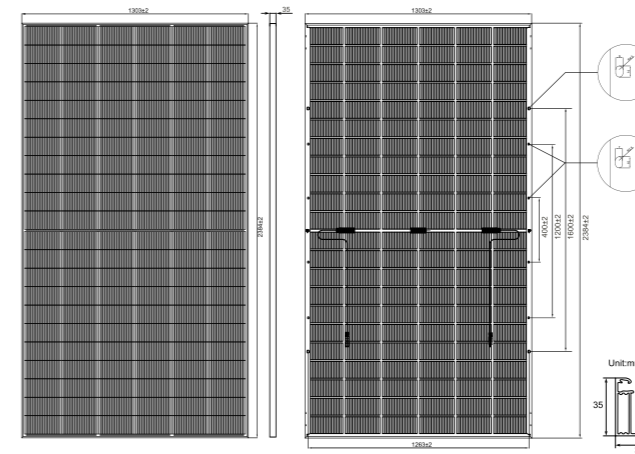
25 Years Materials Warranty

30 Years Power Warranty



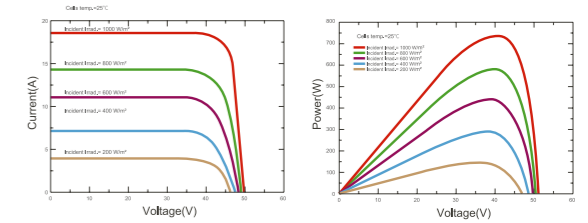
## BiMAX 6N 700~730 Watts

210mm132Cells Double Glass Bifacial HJT Mono Half Cell PV Module



All Dimensions in mm  
The above drawing is a graphical representation of the product,

Current-Voltage & Power-Voltage Curves(SP730M-66H)



### Electrical Characteristics(STC/BSTC)

Module Type	SP700M-66H		SP705M-66H		SP710M-66H		SP715M-66H		SP720M-66H		SP725M-66H		SP730M-66H	
Test Conditions	STC	BSTC	STC	BSTC	STC	BSTC	STC	BSTC	STC	BSTC	STC	BSTC	STC	BSTC
Maximum Power- Pmax(W)	700	770	705	775	710	780	715	785	720	790	725	795	730	800
Open Circuit Voltage - Voc(V)	50.13	50.13	50.29	50.29	50.44	50.44	50.59	50.59	50.74	50.74	50.88	50.88	51.03	51.03
Short- Circuit Current - Isc(A)	17.43	19.17	17.49	19.22	17.55	19.28	17.61	19.33	17.67	19.39	17.73	19.44	17.79	19.50
Voltage at Pmax -Vmp(V)	42.10	42.10	42.25	42.25	42.39	42.39	42.54	42.54	42.68	42.68	42.83	42.83	42.97	42.97
Current at Pmax -Imp(A)	16.63	18.29	16.69	18.35	16.75	18.41	16.81	18.46	16.87	18.51	16.93	18.57	16.99	18.62
Module Efficiency -nm(%)	22.53	/	22.70	/	22.86	/	23.02	/	23.18	/	23.34	/	23.50	/

Power Tolerance(W) (0, +4.99W)  
Maximum System Voltage(V) 1500Vdc (IEC/UL61730)  
Maximum Series Fuse Rating (A) 35A

\*STC :Irradiance 1000W/m<sup>2</sup>,Cell Temperature 25°C, Air Mass 1.5  
\*BSTC : Front side irradiation 1000W/m<sup>2</sup>, back side reflection irradiation 135W/m, AM=1.5, Ambient Temperature 25°C  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	2384x1303x35mm
Weight	38.7kg
Solar Cells	HJT 210mm(2x66pcs)
Front Glass	AR Coated 2+2 mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm <sup>2</sup> ,1200mm(+),1200mm(-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max. 5400Pa, Rear Side Max.2400Pa

### Packing configuration

Pallet Dimensions	1320x1125x2495mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	32 Pcs	32 Pcs	32 Pcs
Pallets per Container	18 Pallets	18 Pallets	24 Pallets
Pieces per Container	576 Pcs	576 Pcs	768 Pcs

### Temperature characteristics

Pmax Temperature Coefficient	-0.260%/°C
Voc Temperature Coefficient	-0.240%/°C
Isc Temperature Coefficient	+0.040%/°C
Operating Temperature Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	44±2°C

Specifications are subject to change without further notification

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SUNPAL-EN-2025V3.0

# BiMAX 6R

## 440~460W

210x182mm 18BB 96Cells All Black Double Glass Bifacial  
HJT Mono Half Cell PV Module Series

SMBB HJT  
Half Cut Cell

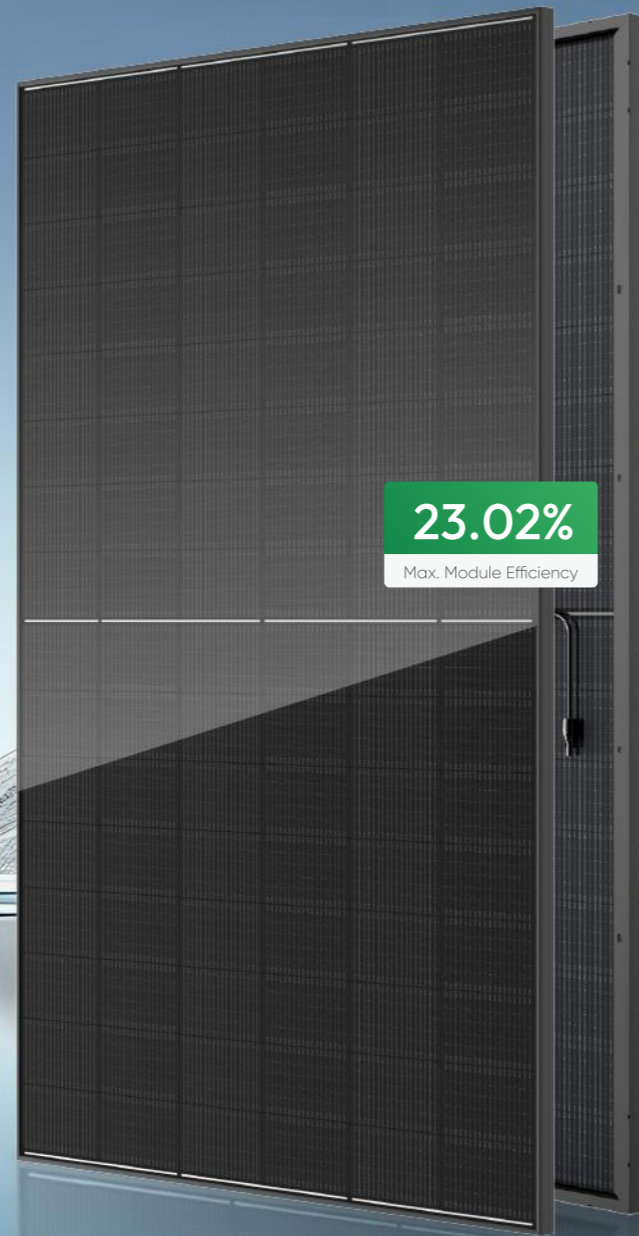
Anti PID

Excellent Low-light  
Performance

Strengthened  
Mechanical Load

100% Inspection  
Guarantee Reliability

Advanced Bifacial  
Efficiency



**23.02%**  
Max. Module Efficiency



Sunpal **N Type** Linear Warranty

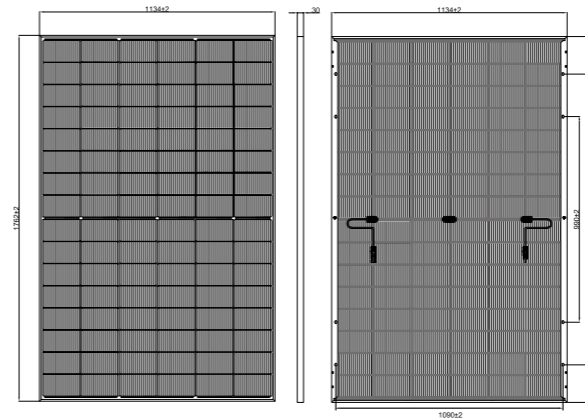
25 Years Materials Warranty

30 Years Power Warranty

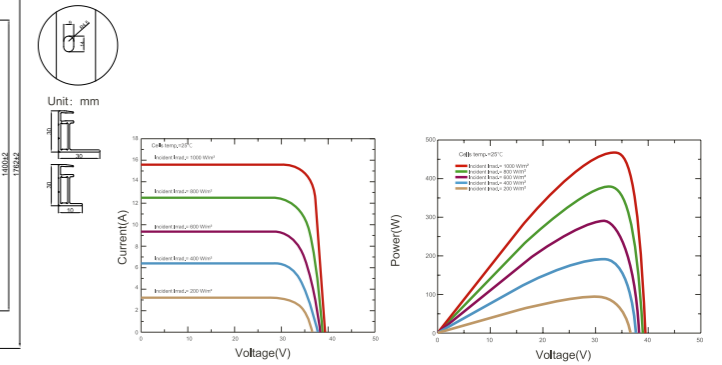


### BiMAX 6R 440~460 Watts

210x182mm 18BB 96Cells All Black Double Glass Bifacial  
HJT Mono Half Cell PV Module Series



Current-Voltage & Power-Voltage Curves(SP460M-48H)



All Dimensions in mm  
The above drawing is a graphical representation of the product,

### Electrical Characteristics(STC/BSTC)

Module Type	SP440M-48H		SP445M-48H		SP450M-48H		SP455M-48H		SP460M-48H	
	STC	BSTC	STC	BSTC	STC	BSTC	STC	BSTC	STC	BSTC
Test Conditions										
Maximum Power- Pmax(W)	440	490	445	495	450	500	455	505	460	510
Open Circuit Voltage - Voc(V)	36.68	36.68	36.95	36.95	37.22	37.22	37.47	37.47	37.72	37.72
Short- Circuit Current - Isc(A)	15.26	17.01	15.30	17.05	15.36	17.12	15.41	17.17	15.45	17.22
Voltage at Pmax -Vmp(V)	30.43	30.43	30.66	30.66	30.88	30.88	31.10	31.10	31.30	31.30
Current at Pmax -Imp(A)	14.47	16.11	14.53	16.15	14.60	16.19	14.66	16.24	14.72	16.30
Module Efficiency -nm(%)	22.02	/	22.27	/	22.52	/	22.77	/	23.02	/

Power Tolerance(W) (0,+4.99W)  
Maximum System Voltage(V) 1500Vdc (IEC/UL61730)  
Maximum Series Fuse Rating (A) 30A

\*STC :Irradiance 1000W/m<sup>2</sup>,Cell Temperature 25°C, Air Mass 1.5  
\*BSTC : Front side irradiation 1000W/m<sup>2</sup>, back side reflection irradiation 135W/m<sup>2</sup>, AM=1.5, Ambient Temperature 25°C.  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	1762x1134x30mm
Weight	21.5kg
Solar Cells	HJT 182x105mm(2x48pcs)
Front Glass	AR Coated 1.6+1.6mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm <sup>2</sup> ,1200mm(+),1200mm(-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max. 5400Pa, Rear Side Max.2400Pa

### Packing configuration

Pallet Dimensions	1790x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	26 Pallets	24 Pallets	36 Pallets
Pieces per Container	962 Pcs	864 Pcs	1296 Pcs

### Temperature characteristics

Pmax Temperature Coefficient	-0.260%/°C
Voc Temperature Coefficient	-0.240%/°C
Isc Temperature Coefficient	+0.040%/°C
Operating Temperature Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	44±2°C

Specifications are subject to change without further notification

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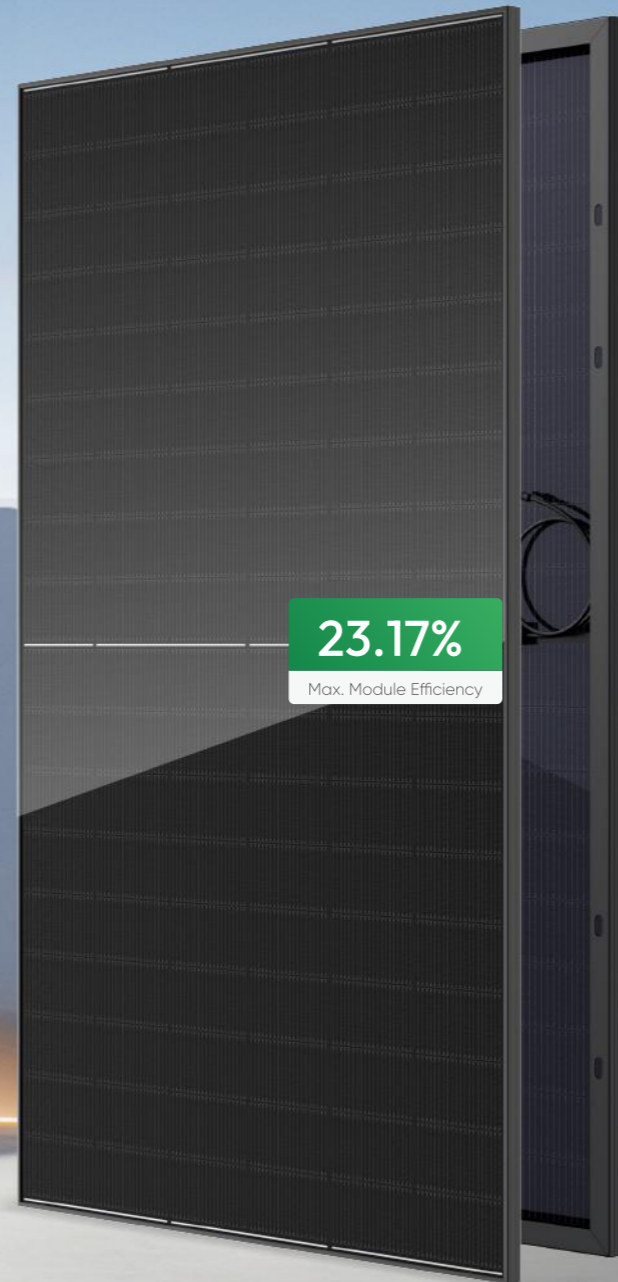
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# BiMAX 6R

## 500~515W

210x182mm 18BB 108Cells All Black Double Glass Bifacial  
HJT Mono Half Cell PV Module Series

-  SMBB HJT Half Cut Cell
-  Anti PID
-  Excellent Low-light Performance
-  Strengthened Mechanical Load
-  100% Inspection Guarantee Reliability
-  Advanced Bifacial Efficiency



Sunpal **N Type** Linear Warranty

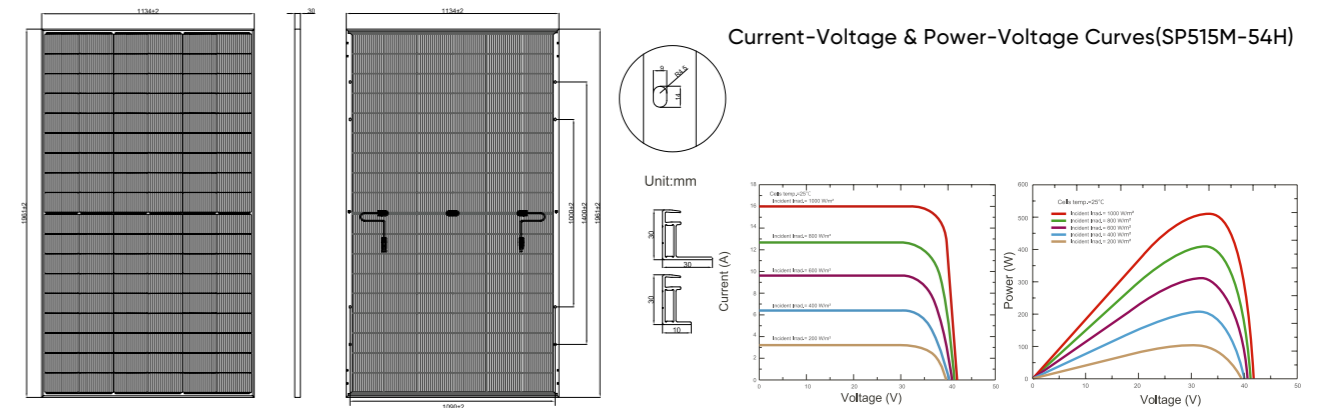
**25 Years** Materials Warranty

**30 Years** Power Warranty



### BiMAX 6R 500~515 Watts

210x182mm 18BB 108Cells All Black Double Glass Bifacial  
HJT Mono Half Cell PV Module Series



All Dimensions in mm  
The above drawing is a graphical representation of the product,

### Electrical Characteristics(STC/BSTC)

Module Type	SP500M-54H		SP505M-54H		SP510M-54H		SP515M-54H	
	STC	BSTC	STC	BSTC	STC	BSTC	STC	BSTC
Test Conditions								
Maximum Power- Pmax(W)	500	560	505	565	510	570	515	575
Open Circuit Voltage - Voc(V)	41.67	41.67	41.82	41.82	41.97	41.97	42.12	42.12
Short- Circuit Current - Isc(A)	15.42	17.19	15.47	17.25	15.52	17.30	15.57	17.36
Voltage at Pmax -Vmp(V)	34.36	34.36	34.49	34.49	34.61	34.61	34.74	34.74
Current at Pmax -Imp(A)	14.56	16.30	14.65	16.39	14.74	16.47	14.83	16.56
Module Efficiency -nm(%)	22.50	/	22.72	/	22.95	/	23.17	/

Power Tolerance(W) (0,+4.99W)  
Maximum System Voltage(V) 1500Vdc (IEC/UL61730)  
Maximum Series Fuse Rating (A) 30A

\*STC :Irradiance 1000W/m<sup>2</sup>,Cell Temperature 25°C, Air Mass 1.5  
\*BSTC : Front side irradiation 1000W/m<sup>2</sup>, back side reflection irradiation 135W/m<sup>2</sup>, AM=1.5, Ambient Temperature 25°C.  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	1961x1134x30mm
Weight	23.9kg
Solar Cells	HJT 182x105mm(2x54pcs)
Front Glass	AR Coated 1.6+1.6mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm <sup>2</sup> ,1200mm(+),1200mm(-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max. 5400Pa, Rear Side Max.2400Pa

### Packing configuration

Pallet Dimensions	1790x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	24 Pallets	22 Pallets	33 Pallets
Pieces per Container	888 Pcs	792 Pcs	1188 Pcs

### Temperature characteristics

Pmax Temperature Coefficient	-0.260%/°C
Voc Temperature Coefficient	-0.240%/°C
Isc Temperature Coefficient	+0.040%/°C
Operating Temperature Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	44±2°C

Specifications are subject to change without further notification

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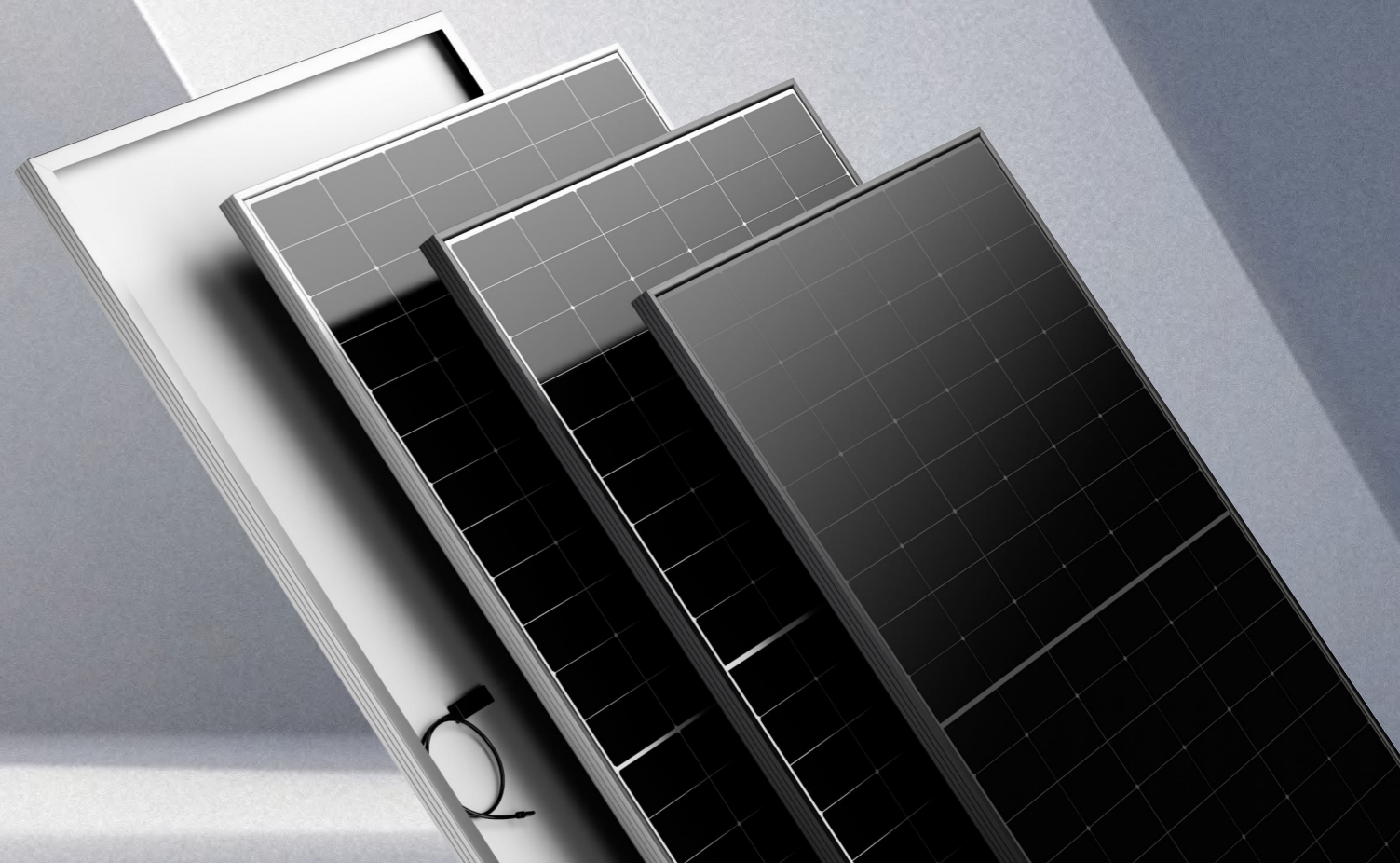
HIGH EFFICIENCY  
**BC PV MODULE**

BC PV Modules create a Full black aesthetic

[www.sunpalsolar.com](http://www.sunpalsolar.com)

## BC PV MODULE

HIGH EFFICIENCY

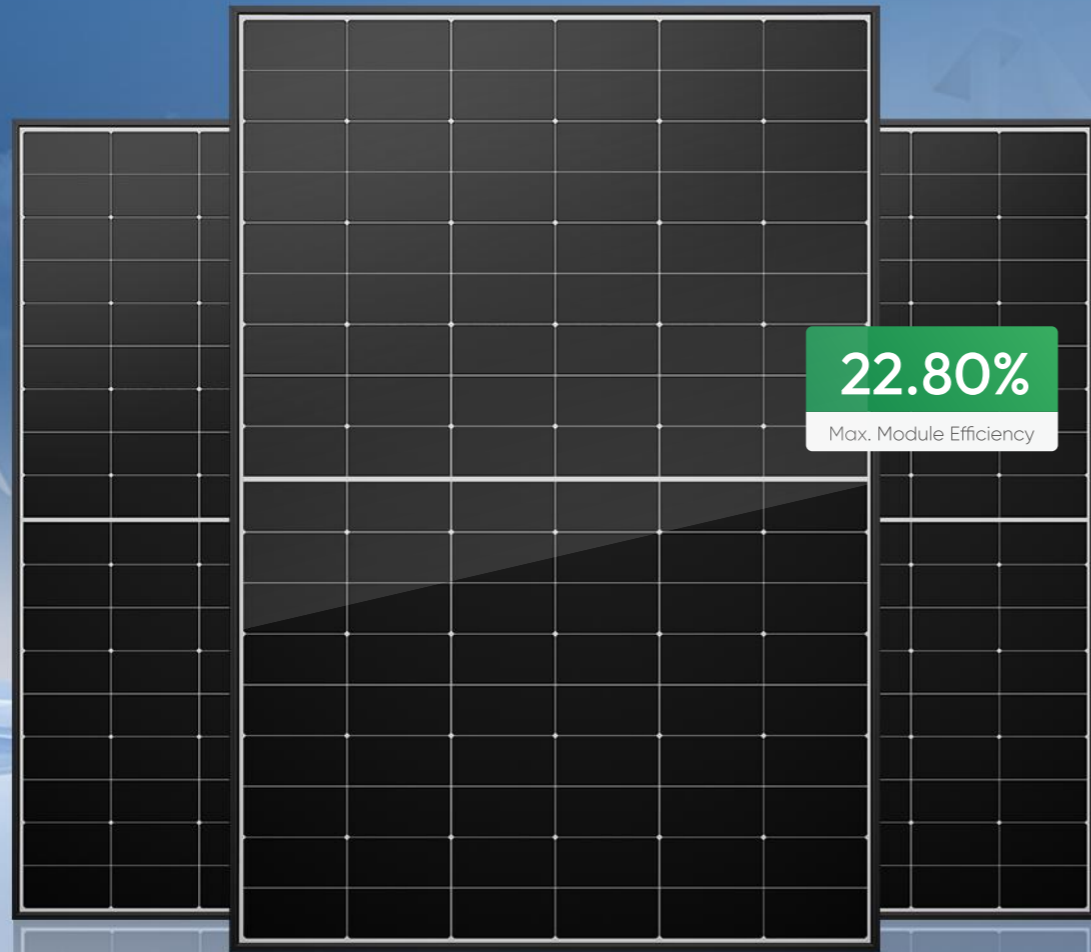


- No Busbar on the front to block light, capturing light with maximum efficiency
- Higher power, higher efficiency

# BiMAX 5N

# 440-445W

182mm 54Cells Black Frame PV Module



Sunpal **N Type** Linear Warranty

25 Years Materials Warranty

30 Years Power Warranty

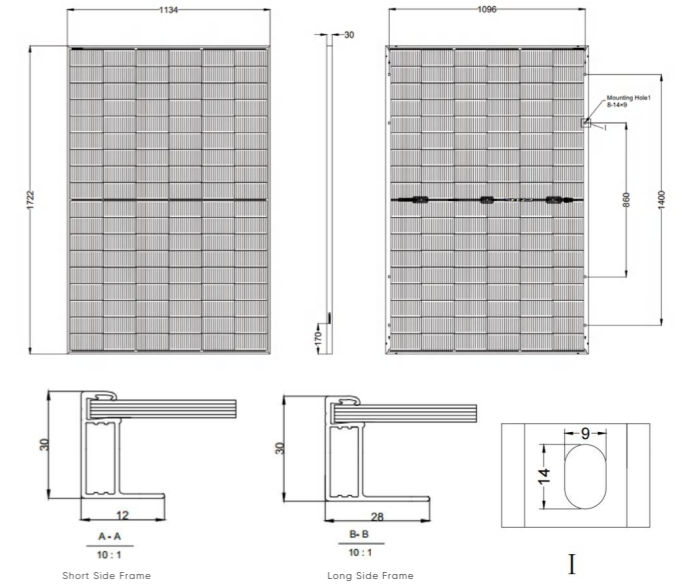


**BiMAX 5N 440-445 Watts**  
182mm 54Cells Black Frame PV Module

### Mechanical Parameters

Cell Type	N-Type TOPCon
No. of cells	108 (2x54)
Output Cables	TüV 1x4mm <sup>2</sup>
	(+)300mm,(-)200mm in length or customized length
Glass	Front: 1.6mm, AR-coating, semi-tempered
	Rear: 1.6mm, semi-tempered
Frame	Anodized aluminum alloy frame
Weight	19.7 kg (43.43 lbs)
Dimension	1722x1134x30mm
Packaging	36 pcs per pallet
	216 pcs per 20' HC, 936 pcs per 40' HC
Protection Class	Class II
Fire Rating	IEC Class C

### Engineering Drawings



\* Length:±2mm Width:±2mm Height:±1mm Row Pitch:±2mm

### Electrical Characteristics (STC & NOCT & BNPI)

Module Type	SP440M-54HBC			SP445M-54HBC		
	STC	NOCT	BNPI	STC	NOCT	BNPI
Testing Condition						
Maximum Power (Pmax/W)	440	332	485	445	336	490
Open-circuit Voltage (Voc/V)	38.87	36.81	38.90	39.06	36.98	39.09
Short-circuit Current (Isc/A)	14.37	11.59	15.82	14.44	11.65	15.88
Maximum Power Voltage (Vmp/V)	32.26	30.52	32.30	32.45	30.69	32.48
Maximum Power Current (Imp/A)	13.65	10.88	15.02	13.73	10.95	15.10
Module Efficiency (%)	<b>22.5</b>			<b>22.8</b>		

Note: 1. STC: Irradiance 1000W/M<sup>2</sup>, Cell Temperature 25°C, AM=1.5 2. NOCT: Irradiance 800W/M<sup>2</sup>, Ambient Temperature 20°C, AM=1.5, Wind Speed 1M/S 3. BNPI: Irradiance of front 1000W/M<sup>2</sup>, rear 135W/M<sup>2</sup>

### Different Rearside Power Gain (Reference to 440W)

Rearside Power Gain	5%	10%	20%
Maximum Power at STC (Pmax)	462.0	484.0	528.0
Open-circuit Voltage (Voc/V)	38.9	38.9	38.9
Short-circuit Current (Isc/A)	15.1	15.8	17.2
Maximum Power Voltage (Vmp/V)	32.3	32.3	32.3
Maximum Power Current (Imp/A)	14.3	15.0	16.4
Module Efficiency (%)	23.7	24.8	27.0

### Temperature Ratings (STC)

Temperature coefficient of Isc	+ 0.045%/°C
Temperature coefficient of Voc	- 0.25%/°C
Temperature coefficient of Pmax	- 0.29%/°C

### Working Parameters

Operating Temperature	-40°C~ +85°C
Power Tolerance	0~ +5W
Maximum System Voltage	1500V(IEC)
NOCT	45±2°C
Maximum Series Fuse Rating	30A
Pmax and Voc and Isc Tolerance	±3%
Junction Box	IP68

### Mechanical Loading

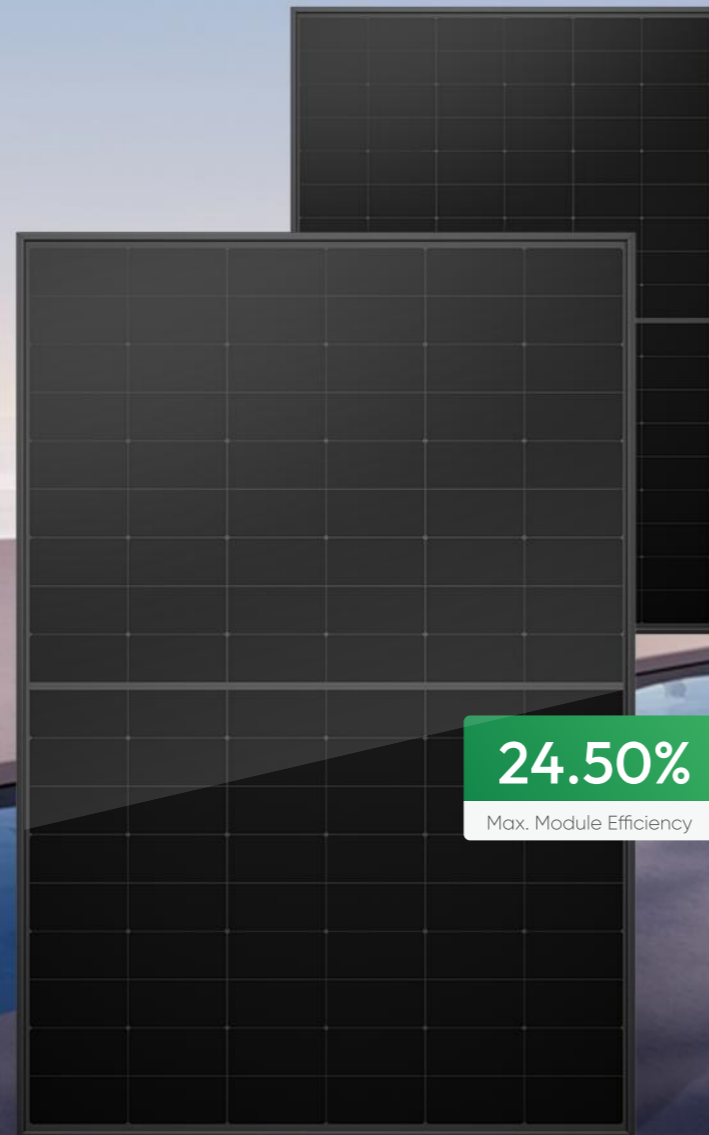
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm hailstone at 23m/s

# BiMAX 5N

# 470-500W

GBC Module with Dual Glass All Black

- Superior Temperature coefficient
- Excellent Micro-crack Resistance
- Higher Generated Energy
- High Temperature Restriction
- Higher Reliability
- Partial Shading Optimisation
- Lower BOS
- Extraordinary Aesthetic Design



Sunpal N Type Linear Warranty

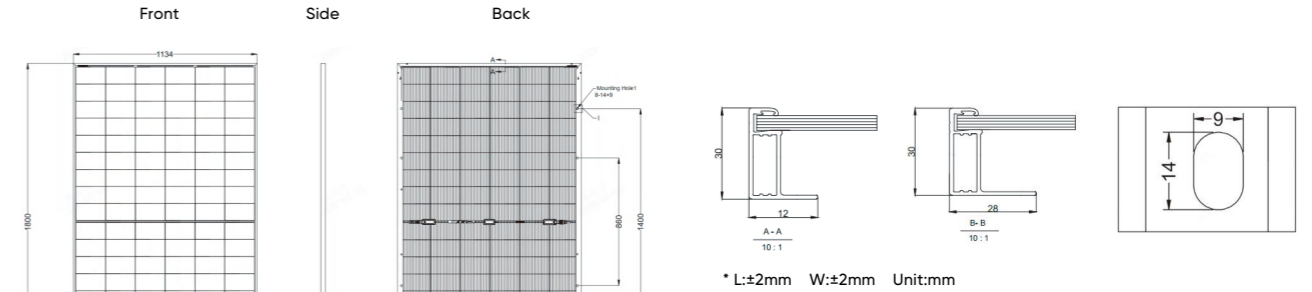
25 Years Materials Warranty

30 Years Power Warranty



**BiMAX 5N 470-500 Watts**  
GBC Module with Dual Glass All Black

## Engineering Drawings



## Electrical Characteristics (STC Test)

Module Type	SP470M-54HBC		SP475M-54HBC		SP480M-54HBC		SP485M-54HBC		SP490M-54HBC		SP495M-54HBC		SP500M-54HBC	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	470	357	475	361	480	364	485	368	490	372	495	375	500	379
Open-circuit Voltage (Voc/V)	40.50	38.42	40.63	38.55	40.76	38.67	40.89	38.80	41.02	38.92	41.15	39.04	41.28	39.16
Maximum Power Voltage (Vmp/V)	33.64	31.92	33.74	32.01	33.84	31.11	33.94	32.20	34.04	32.30	34.14	32.40	34.24	32.49
Short-circuit Current (Isc/A)	14.82	11.97	14.89	12.03	14.96	12.09	15.03	12.15	15.10	12.21	15.17	12.26	15.24	12.32
Maximum Power Current (Imp/A)	13.98	11.17	14.09	11.27	14.19	11.35	14.30	11.44	14.40	11.51	14.50	11.59	14.60	11.67
Module Efficiency (%)	23.0		23.3		23.5		23.8		24.0		24.3		24.5	

1- STC: Irradiance 1000W/M<sup>2</sup>, Cell Temperature 25°C, AM=1.5

2- NOCT: Irradiance 800W/M<sup>2</sup>, Ambient Temperature 20°C, AM=1.5, Wind Speed 1M/S

## Mechanical Parameters

Cell Type	GBC
No. of cells	108(6×18)
Glass	Dual glass, 1.6+1.6mm coated semi tempered glass
Frame	Black anodized aluminum
Output Cables	TüV 1x4mm, (+)300mm, (-)200mm or Customized Length
Weight	20.8kg (45.86lbs)
Dimension	1800×1134×30mm
Connector	MC4 Compatible/MC4-Evo2
Packaging	37 pcs per pallet 222 pcs per 20'GP 888 pcs per 40'HC
Protection Class	Class II
Protection Class	IEC Class A

## Temperature Ratings (STC)

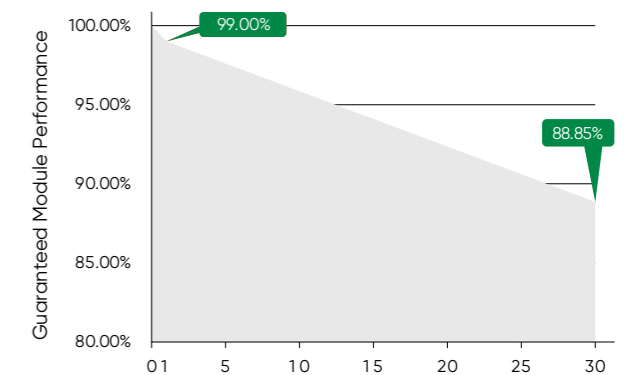
Temperature Coefficient of Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.22%/°C
Temperature Coefficient of Pmax	-0.26%/°C

## Mechanical Loading

Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm diameter hail at 23m/s

## Mechanical Specifications

Operating Temperature	-40°C~+85°C
Power Tolerance	0~+3%
Junction Box	IP68
NOCT	45±2°C
Maximum Series Fuse Rating	25A
Bifacial Factor	70±5%
Maximum System Voltage	1500V(IEC)



**BiMAX 5N**

**635-665W**

GBC Module with Dual Glass



**24.60%**

Max. Module Efficiency



Sunpal N Type Linear Warranty

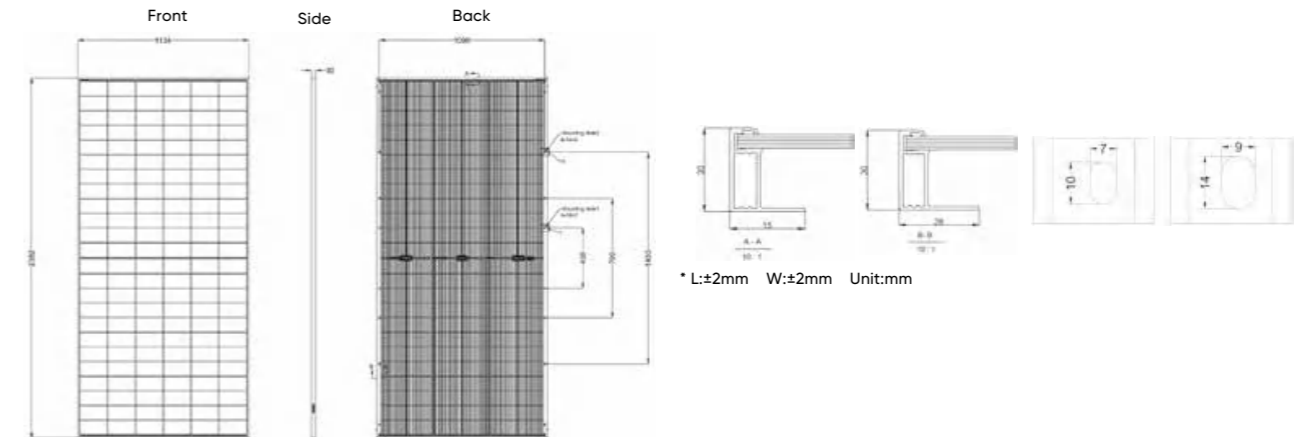
25 Years Materials Warranty

30 Years Power Warranty



**BiMAX 5N 635-665 Watts**  
GBC Module with Dual Glass

**Engineering Drawings**



**Electrical Characteristics (STC Test)**

Module Type	SP635M-72HBC		SP640M-72HBC		SP645M-72HBC		SP650M-72HBC		SP655M-72HBC		SP660M-72HBC		SP665M-72HBC	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	635	481	640	485	645	489	650	493	655	496	660	500	665	504
Open-circuit Voltage (Voc/V)	53.70	50.95	53.80	51.04	53.90	51.14	54.00	51.23	54.10	51.33	54.20	51.42	54.30	51.51
Maximum Power Voltage (Vmp/V)	45.00	42.69	45.10	42.79	45.20	42.88	45.30	42.98	45.40	43.07	45.50	43.17	45.60	43.27
Short-circuit Current (Isc/A)	14.88	12.02	14.94	12.07	15.00	12.12	15.06	12.17	15.12	12.22	15.18	12.27	15.24	12.32
Maximum Power Current (Imp/A)	14.12	11.29	14.20	11.35	14.27	11.41	14.35	11.48	14.43	11.54	14.51	11.60	14.59	11.66
Module Efficiency (%)	23.5		23.7		23.9		24.1		24.2		24.4		24.6	

1. STC: Irradiance 1000W/M<sup>2</sup>, Cell Temperature 25°C, AM=1.5    2. NOCT: Irradiance 800W/M<sup>2</sup>, Ambient Temperature 20°C, AM=1.5, Wind Speed 1M/S

**Mechanical Parameters**

Cell Type	GBC
No. of cells	144(6×24)
Glass	Dual glass, 2.0+2.0mm Heat Strengthened Glass
Frame	Anodized aluminum
Output Cables	TüV 1x4mm,(+)300mm,(-)200mm or Customized Length
Weight	33.5kg (73.85lbs)
Dimension	2382×1134×30mm
Connector	MC4 Compatible/MC4-Evo2
Packaging	37 pcs per pallet 148 pcs per 20'GP 740 pcs per 40'HC
Protection Class	Class II
Protection Class	IEC Class C

**Temperature Ratings (STC)**

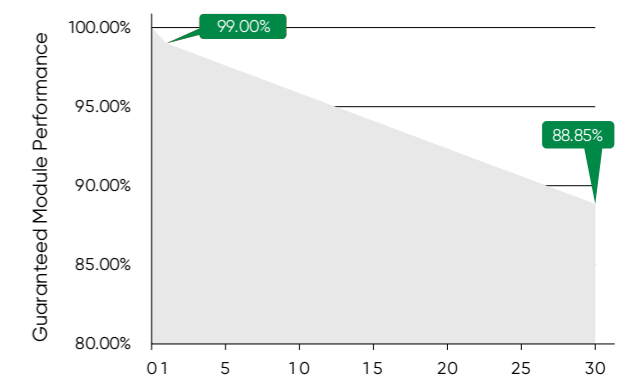
Temperature Coefficient of Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.22%/°C
Temperature Coefficient of Pmax	-0.26%/°C

**Mechanical Loading**

Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm diameter hail at 23m/s

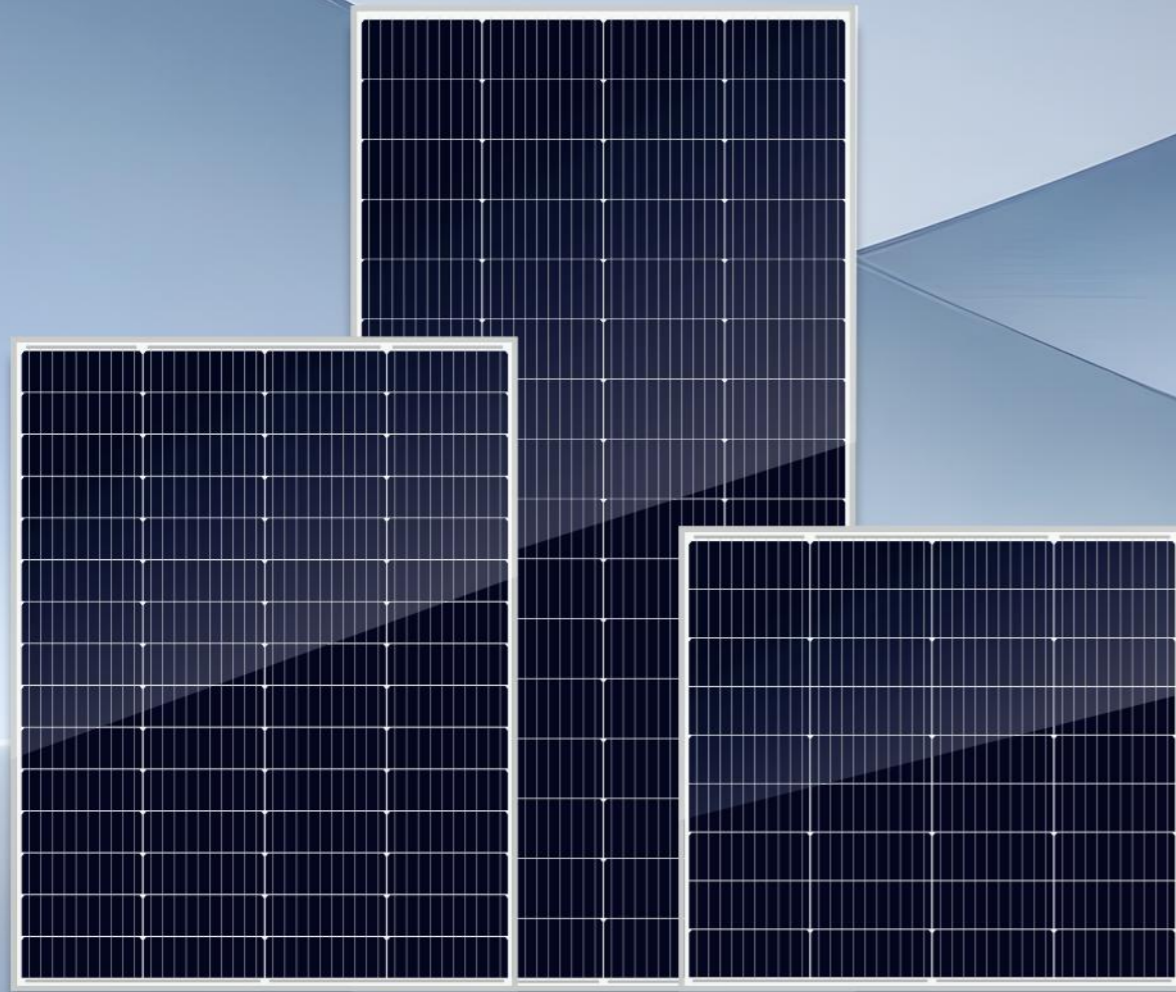
**Mechanical Specifications**

Operating Temperature	-40°C~+85°C
Power Tolerance	0~+3%
Junction Box	IP68
NOCT	45±2°C
Maximum Series Fuse Rating	30A
Bifacial Factor	70±5%
Maximum System Voltage	1500V(IEC)



# CUSTOMIZED SERIES

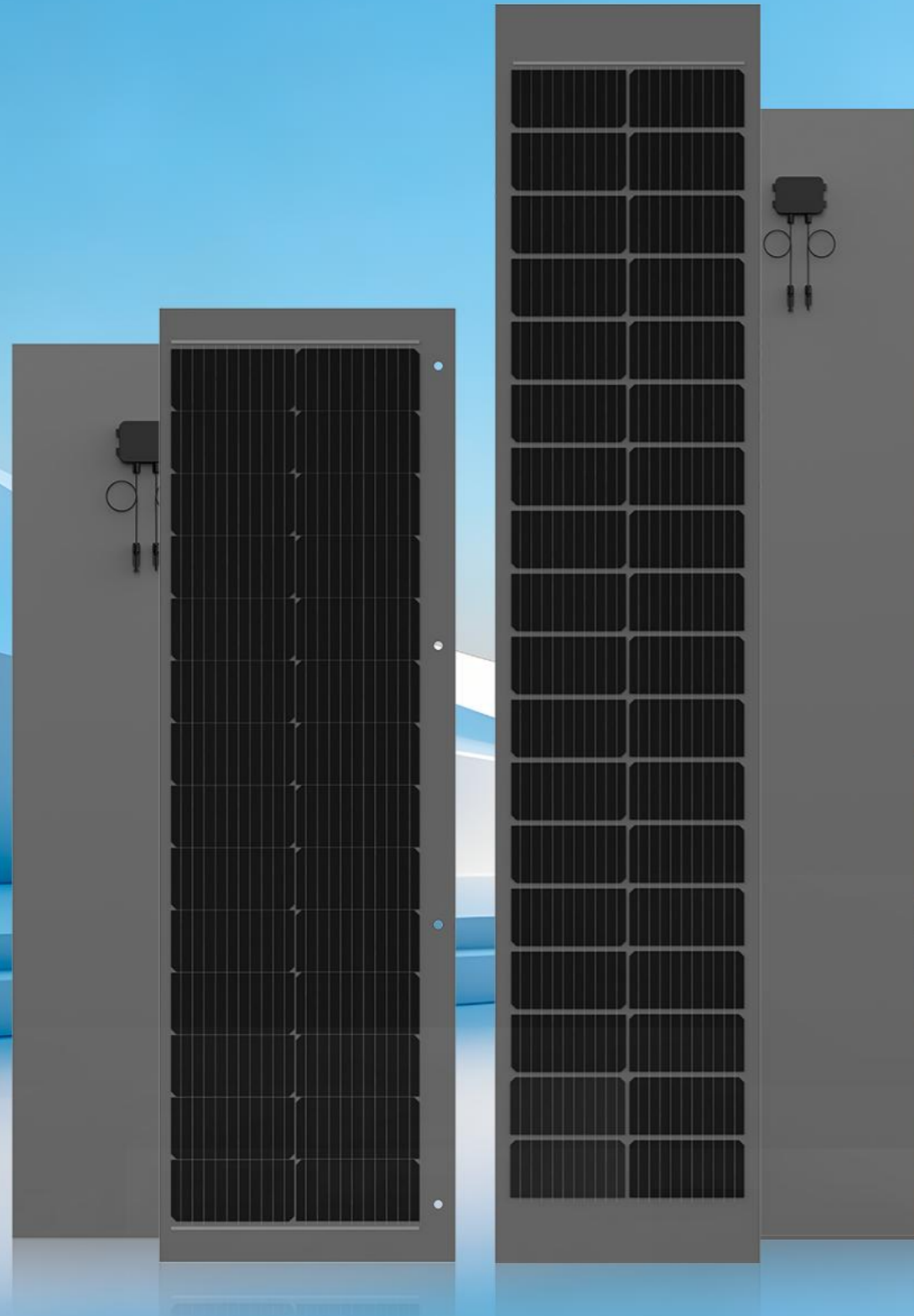
N-Type Customized



N Type	Pmax	Voc	Isc	Vmp	Imp	Eff	Dimension	Weight
SP50M-36	50	21.24	2.85	18.48	2.71	20.10	650*395*25mm	2.70kg
SP60M-36	60	20.88	3.53	18.15	3.31	19.86	765*395*25mm	3.28kg
SP70M-36	70	20.91	4.08	17.94	3.90	20.50	865*395*25mm	3.71kg
SP80M-33	80	19.15	5.21	16.1	4.97	19.01	550*765*25mm	4.57kg
SP90M-36	90	21.89	5.13	19.04	4.73	18.98	620*765*25mm	5.15kg
SP100M-30	100	22.30	5.44	19.2	5.21	21.08	620*765*25mm	5.15kg
SP110M-33	110	19.35	6.81	16.5	6.67	20.40	705*765*25mm	5.86kg
SP120M-36	120	21.96	6.62	19.07	6.29	19.61	800*765*25mm	6.65kg
SP130M-36	130	22.37	7.12	19.42	6.69	21.24	800*765*25mm	6.65kg
SP140M-33	140	21.89	7.85	18.4	7.61	20.22	905*765*25mm	7.52kg
SP150M-36	150	22.30	8.16	19.2	7.81	21.67	905*765*25mm	7.52kg
SP160M-72	160	38.86	5.2	32.76	4.88	19.83	1055*765*30mm	8.27kg
SP170M-72	170	39.20	5.4	33.43	5.09	21.06	1055*765*30mm	8.27kg
SP180M-39	180	41.82	5.47	35.46	5.08	20.92	1125*765*30mm	8.85kg
SP190M-39	190	42.12	5.63	36.6	5.19	22.08	1125*765*30mm	8.85kg
SP200M-39	200	44.61	5.57	38.4	5.21	21.79	1200*765*30mm	9.4kg
SP210M-42	210	45.12	5.71	39.45	5.32	22.88	1200*765*30mm	9.4kg
SP220M-68	220	39.14	6.97	34.1	6.45	21.07	1365*765*30mm	10.76kg
SP230M-72	230	39.48	7.22	34.44	6.68	22.03	1365*765*30mm	10.76kg
SP240M-72	240	41.76	7.06	36.3	6.61	21.56	1455*765*30mm	11.5kg
SP250M-72	250	42.24	7.31	36.66	6.82	22.46	1455*765*30mm	11.5kg
SP260M-72	260	38.86	8.35	33.38	7.79	21.93	1550*765*30mm	12.28kg
SP270M-72	270	39.76	8.47	34.14	7.91	22.77	1550*765*30mm	12.28kg
SP280M-72	280	41.88	8.1	36.21	7.73	22.12	1655*765*30mm	13.15kg
SP290M-60	290	42.18	8.33	36.52	7.94	22.91	1655*765*30mm	13.15kg
SP300M-60	300	45.47	8.14	38.92	7.71	21.6	1230*1134*30mm	14.54kg
SP310M-60	310	46.01	8.31	39.47	7.85	22.32	1230*1134*30mm	14.54kg
SP320M-68	320	49.32	8.18	41.54	7.70	21.22	1340*1134*30mm	15.88kg
SP330M-68	330	49.75	8.35	41.9	7.88	21.88	1340*1134*30mm	15.88kg
SP340M-68	340	50.15	8.52	42.26	8.05	22.54	1340*1134*30mm	15.88kg
SP350M-72	350	50.65	8.69	42.62	8.21	23.21	1340*1134*30mm	15.88kg

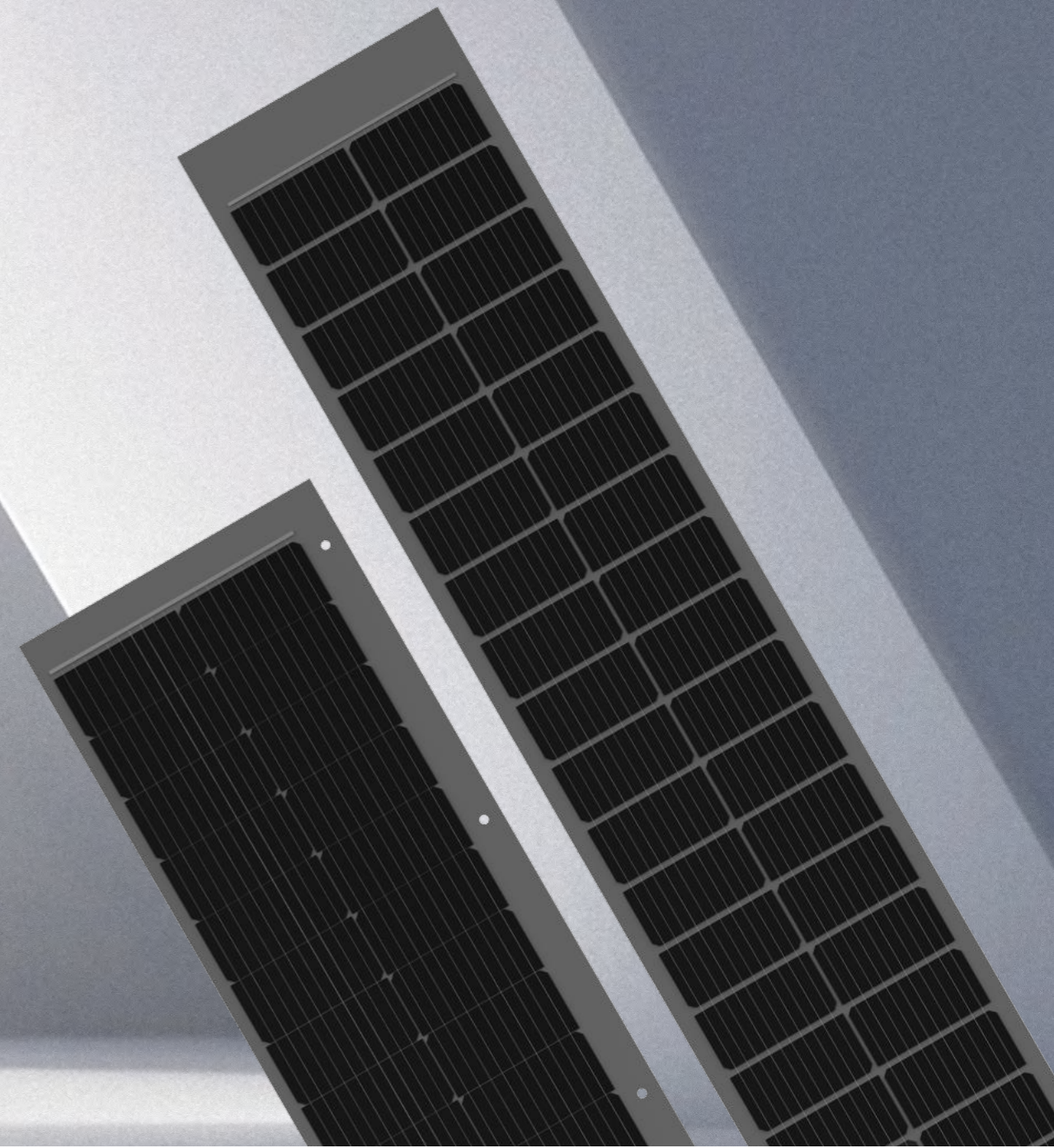
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## Solar Tile Series



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## BIPV Series




**BIPV BAPV**

# BiMAX 5N


# 110W


182mm 28 Cells All Black 110W  
N Type Solar Tile Series

 Half Cut  
N Type Solar Cells

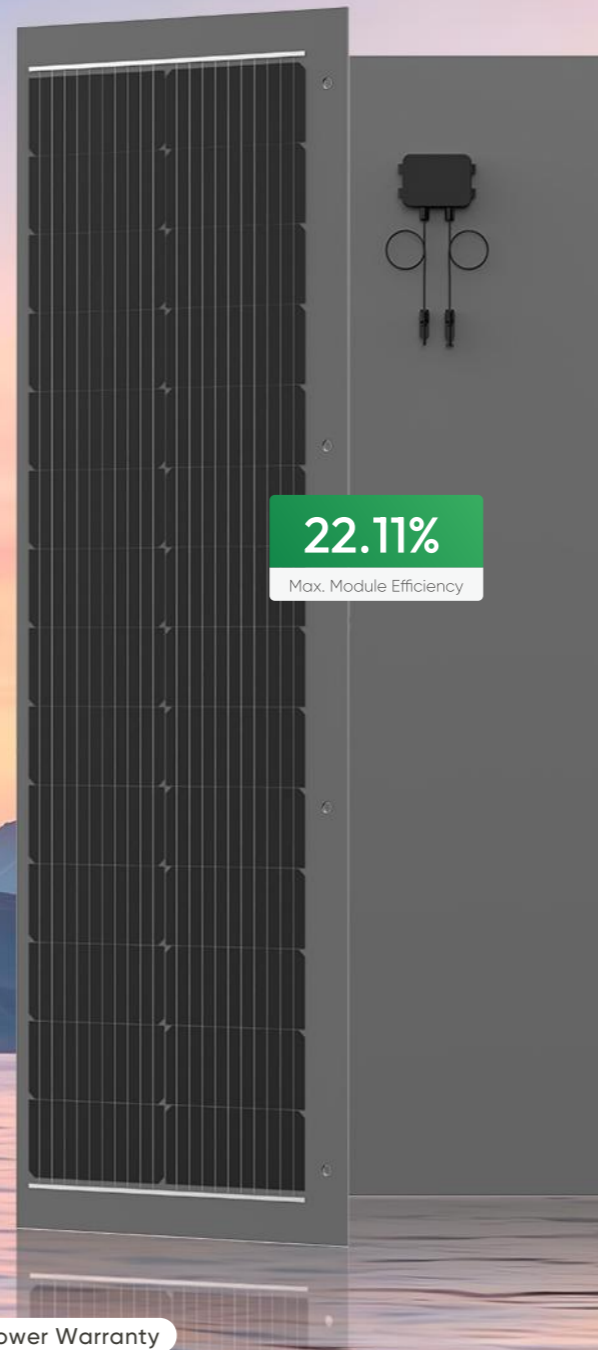
 Lower summer indoor  
Temperatures by 5-8°C

 Resists 35mm hail  
Withstands 12-grade winds

 Reduce energy consumption  
By 10%

 25-year waterproof and  
Rooftop safety guarantee

 Modular design with standardized  
prefabricated construction



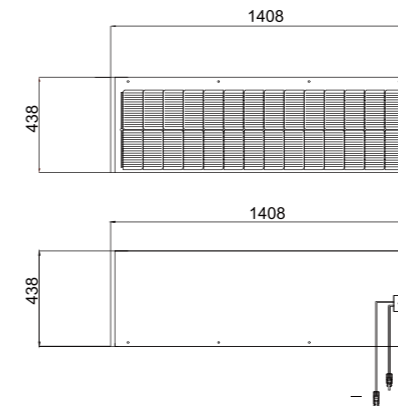
Sunpal N Type Linear Warranty

25 Years Materials Warranty

30 Years Power Warranty

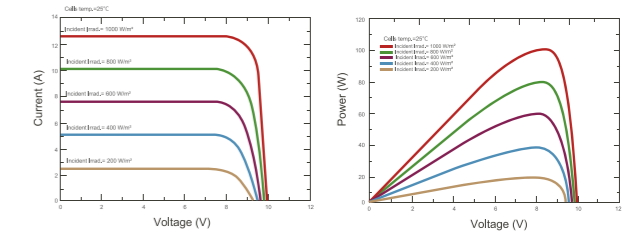


**BiMAX 5N 110 Watts**  
182mm 28 Cells All Black 110W  
N Type Solar Tile Series



All Dimensions in mm  
The above drawing is a graphical representation of the product,

Current-Voltage & Power-Voltage Curves(SP110M-28)



## Electrical Characteristics(STC)

Module Type	SP110M-28
Test Conditions	STC
Maximum Power- Pmax(W)	110
Open Circuit Voltage - Voc(V)	20.02
Short- Circuit Current - Isc(A)	6.58
Voltage at Pmax -Vmp(V)	17.30
Current at Pmax -Imp(A)	6.36
Module Efficiency - $\eta$ (%)	15.40
Power Tolerance(W)	(0, +4.99W)
Maximum System Voltage(V)	1500Vdc (IEC/UL61730)
Maximum Series Fuse Rating (A)	10A

\*STC :Irradiance 1000W/m<sup>2</sup>,Cell Temperature 25°C, Air Mass 1.5  
\*Measurement tolerance:  $\pm 3\%$  \*Power binning up to: +3%

## Mechanical Specifications

External Dimensions	1408x438x6.2mm
Weight	8.5kg
Solar Cells	Mono crystalline 16BB 182mm
Glass	AR Coated 3.2+2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm', 900mm(+),900mm(-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max.5400Pa, Rear Side Max. 2400Pa
Fire Protection Grade	A
Windproof Grade	15
Anti Hail Level	35mm

## Packing configuration

Wooden box	1520x1130x1120mm
Container	40'HQ
Pieces per Wooden box	56
Box per Container	30
Pieces per Container	1680

## Temperature characteristics

Pmax Temperature Coefficient	-0.3904%/C
Voc Temperature Coefficient	-0.286%/C
Isc Temperature Coefficient	+0.0268%/C
Operating Temperature Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	45+2°C

Specifications are subject to change without further notification

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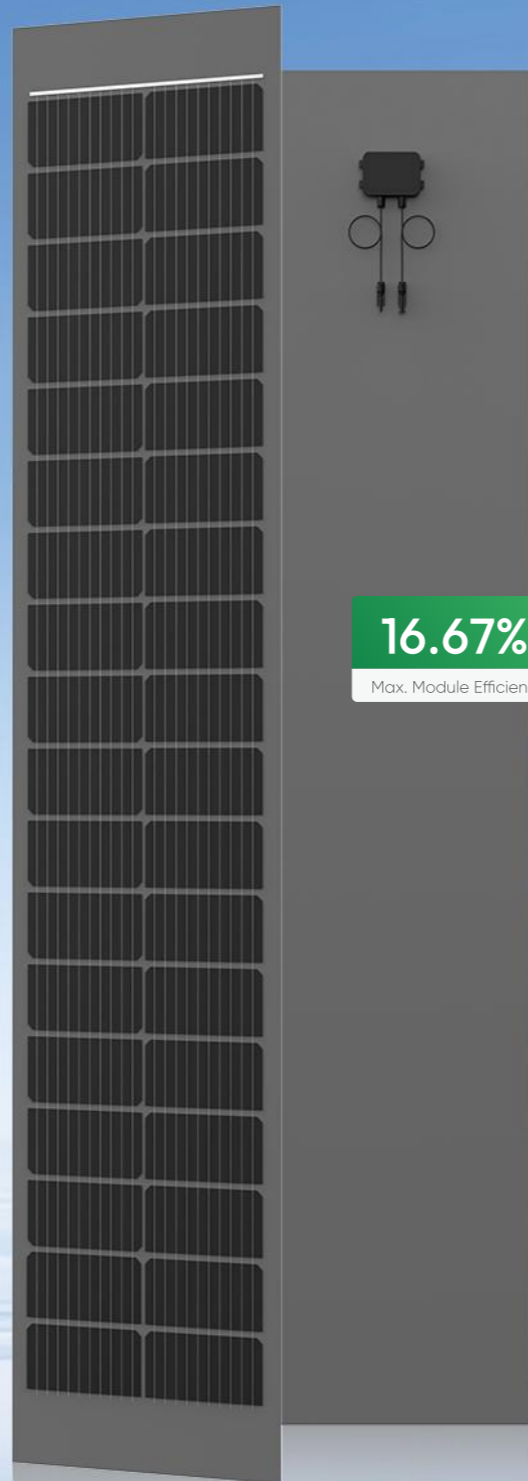
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# BiMAX 5N

# 135W

182mm 36 Cells All Black 135W  
N Type Solar Tile Series



**16.67%**

Max. Module Efficiency



Sunpal **N Type** Linear Warranty

**25 Years** Materials Warranty

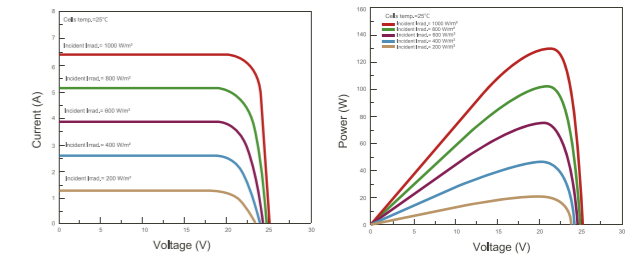
**30 Years** Power Warranty



## HiMAX 5N 135 Watts

182mm 36 Cells All Black 135W  
N Type Solar Tile Series

Current-Voltage & Power-Voltage Curves (SP135M-36)



All Dimensions in mm  
The above drawing is a graphical representation of the product,

### Electrical Characteristics(STC)

Module Type	SP135M-36
Test Conditions	STC
Maximum Power- Pmax(W)	135
Open Circuit Voltage - Voc(V)	25.31
Short- Circuit Current - Isc(A)	6.45
Voltage at Pmax -Vmp(V)	22.03
Current at Pmax -Imp(A)	6.13
Module Efficiency - $\eta$ (%)	16.67
Power Tolerance(W)	(0, +4.99W)
Maximum System Voltage(V)	1500Vdc(IEC/UL61730)
Maximum Series Fuse Rating (A)	10A
*STC :Irradiance 1000W/m <sup>2</sup> , Cell Temperature 25°C, Air Mass 1.5	
*Measurement tolerance: $\pm 3\%$ *Power binning up to: +3%	

### Mechanical Specifications

External Dimensions	Product dimensions:2000x422x25mm Effective dimensions:1875x422x25mm
Weight	9.3±0.2kg
Solar Cells	Mono crystalline 182mm
Glass	AR Coated 3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm,900mm(+),900mm (-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max.5400Pa, Rear Side Max.2400Pa
Fire Protection Grade	15
Windproof Grade	35mm
Anti Hail Level	

### Packing configuration

Wooden box	2010x940x1020mm
Container	40'GP
Pieces per Wooden box	66
Box per Container	24
Pieces per Container	1584

### Temperature characteristics

Pmax Temperature Coefficient	-0.3904%/°C
Voc Temperature Coefficient	-0.286%/C
Isc Temperature Coefficient	+0.0268%/°C
Operating Temperature Range	-40~+85°C
Nominal Operating Cell Temperature(NOCT)	45±2°C

Specifications are subject to change without further notification

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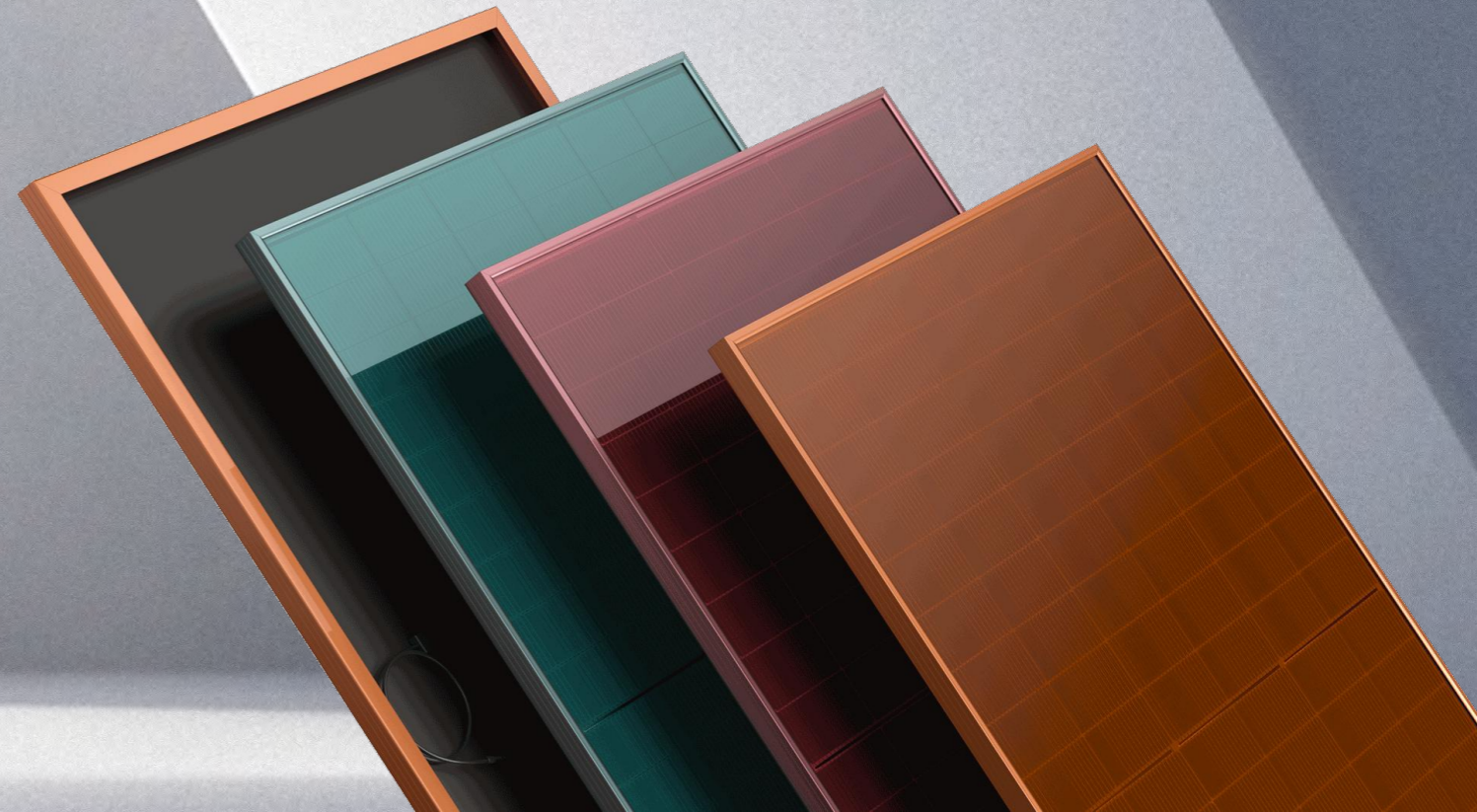
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## Colored N Type Series

## Colored N Type Series

A variety of colors can be selected



RAL 8001



RAL 5009



RAL 6033



RAL 7047



RAL 1020



RAL 1014



RAL 4004



RAL 4008

# HiMAX 6R

# 390~400W

210x182mm 96Cells Terracotta  
N Type Mono Half Cell PV Module Series

-  Terracotta glass and frame
-  Suitable for red / orange / terracotta roof buildings
-  PV facade with innovative compositions
-  SMBB Technology Half Cut N Type Cell
-  Anti PID
-  Excellent Low-light Performance
-  Strengthened Mechanical Load
-  100% Inspection Guarantee Reliability



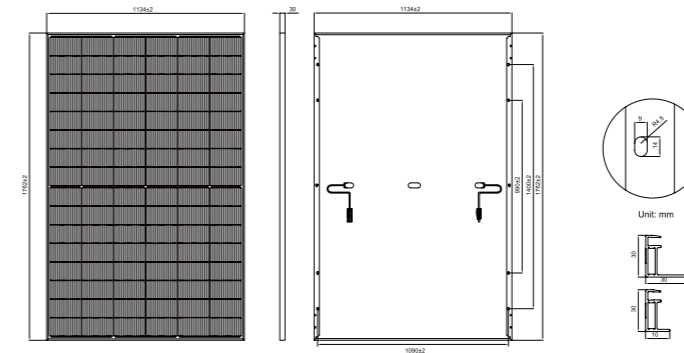
Sunpal N Type Linear Warranty

25 Years Materials Warranty

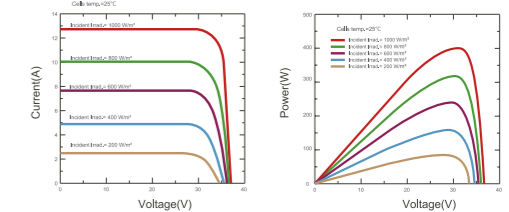
30 Years Power Warranty



**HiMAX 6R 390~400 Watts**  
210x182mm 96Cells Terracotta  
N Type Mono Half Cell PV Module Series



Current-Voltage & Power-Voltage Curves(SP400M-48H)



All Dimensions in mm  
The above drawing is a graphical representation of the product,

### Electrical Characteristics(STC)

Module Type	SP390M-48H	SP395M-48H	SP400M-48H
Test Conditions	STC	STC	STC
Maximum Power- Pmax(W)	390	395	400
Open Circuit Voltage - Voc(V)	35.86	36.07	36.28
Short- Circuit Current - Isc(A)	13.65	13.76	13.87
Voltage at Pmax -Vmp(V)	30.86	31.03	31.20
Current at Pmax -Imp(A)	12.64	12.73	12.82
Module Efficiency -nm(%)	19.50	19.80	20.00
Power Tolerance(W)		(0, +4.99W)	
Maximum System Voltage(V)		1500Vdc (IEC/UL61730)	
Maximum Series Fuse Rating (A)		25A	

\*STC :Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass 1.5  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	1762x1134x30mm
Weight	21.5kg
Solar Cells	N-Type 16BB 182x105mm(2x48pcs)
Front Glass	AR Coated 3.2 mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm <sup>2</sup> ,1200mm(+),1200mm (-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max.5400Pa, Rear Side Max.2400Pa

### Packing configuration

Pallet Dimensions	1790x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	26 Pallets	24 Pallets	36 Pallets
Pieces per Container	962 Pcs	864 Pcs	1296 Pcs

### Temperature characteristics

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

Specifications are subject to change without further notification

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# HiMAX 5N

# 350W

182mm 108Cells Anthracite Grey-colored  
N Type Solar PV Module



**17.92%**

Max. Module Efficiency

**RAL7016**



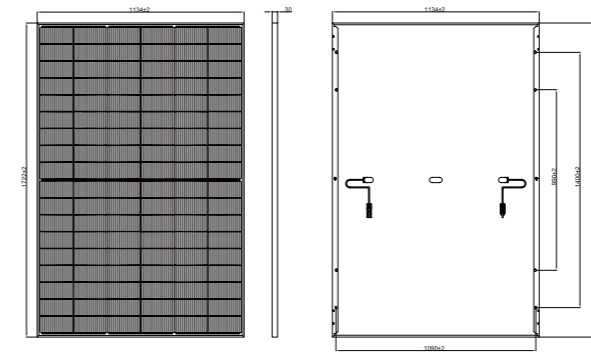
Sunpal **N Type** Linear Warranty

25 Years Materials Warranty

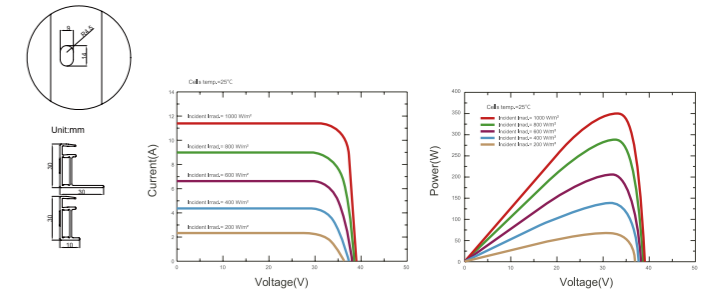
30 Years Power Warranty



**HiMAX 5N 350 Watts**  
182mm 108Cells Anthracite Grey-colored  
N Type Solar PV Module



Current-Voltage & Power-Voltage Curves(SP350M-54H)



All Dimensions in mm  
The above drawing is a graphical representation of the product,

### Electrical Characteristics(STC)

Module Type	SP350M-54H
Test Conditions	STC
Maximum Power- Pmax(W)	350
Open Circuit Voltage - Voc(V)	38.70
Short- Circuit Current - Isc(A)	11.32
Voltage at Pmax -Vmp(V)	32.10
Current at Pmax -Imp(A)	10.90
Module Efficiency -nm(%)	17.92
Power Tolerance(W)	(0,+4.99)
Maximum System Voltage(V)	1500Vde (IEC/UL61730)
Maximum Series Fuse Rating (A)	25A

\*STC :Irradiance 1000W/m²,Cell Temperature 25°C, Air Mass 1.5  
\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	1722x1134x30mm
Weight	20.5kg
Solar Cells	Mono crystalline 182mm(2x54pcs)
Front Glass	AR Coated 3.2 mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm, 1200mm (+),1200mm (-), length can be customized
Connector	MC4 Compatible
Mechanical Load	Front Side Max.5400Pa, Rear Side Max.2400Pa

### Packing configuration

Pallet Dimensions	1750x1140x1254mm		
Ways of Transport	40'HQ	13.5m Flatbed Truck	17.5m Flatbed Truck
Pieces per Pallet	37 Pcs	36 Pcs	36 Pcs
Pallets per Container	26 Pallets	24 Pallets	36 Pallets
Pieces per Container	962 Pcs	864 Pcs	1296 Pcs


### Temperature characteristics


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


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# AGRI-PV


160W/320V


 Higher power generation in high temperature

 45%-70% transmittance

 More than 30-year life span

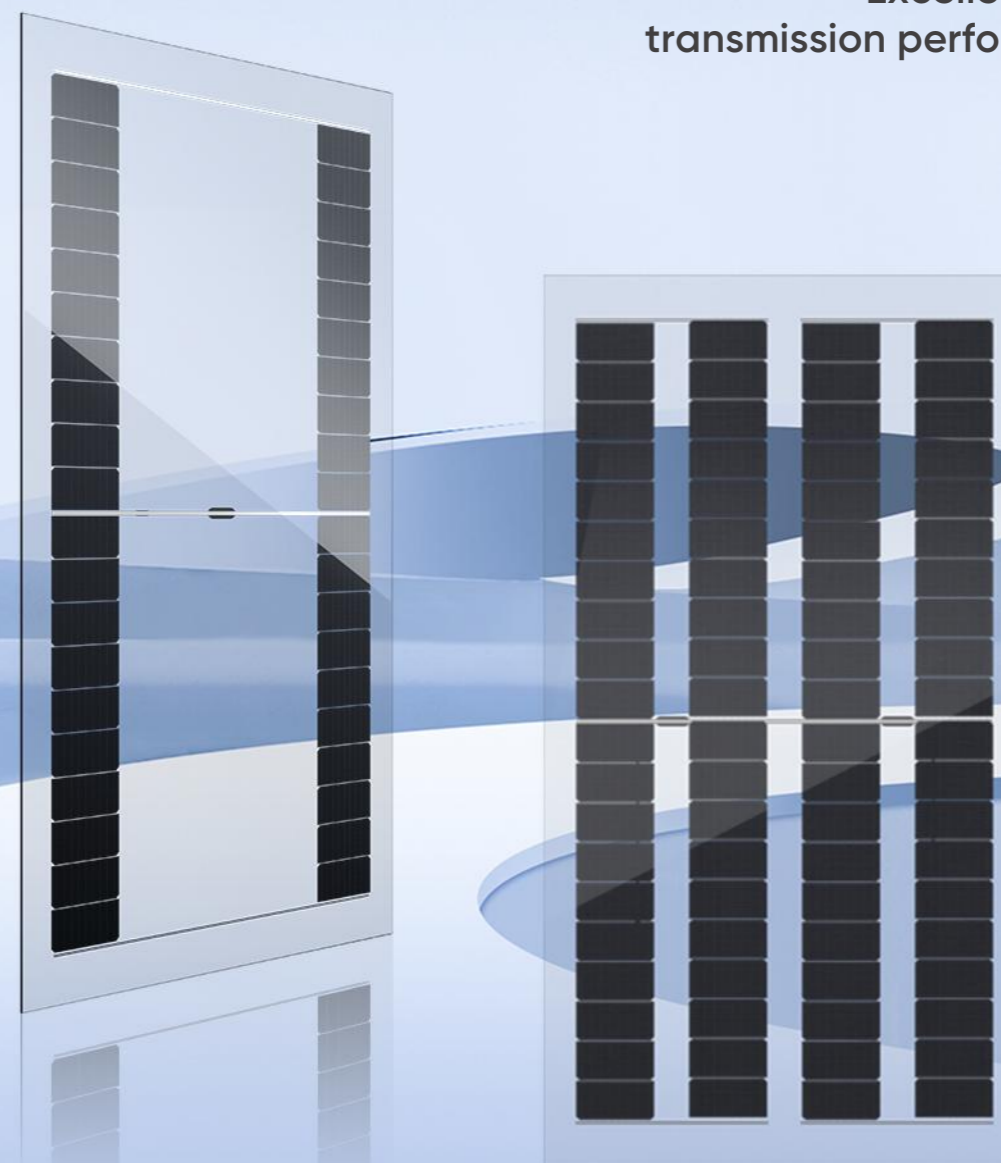
 Eco-pest control

 Durable and watertight

 Double financial gain

# AGRI-PV

Excellent light transmission performance




# BiMAX 5N


# 160W


182mm 40Cells Double Glass Bifacial Frameless  
AGRI Mono Half Cell PV Module Series


 **SMBB Technology**  
Half Cut N Type Cell

 **Fire Class A**

 **High Energy**  
Performance

 **Strengthened**  
Mechanical Load

 **100% Inspection**  
30years Guarantee

 **Advanced Bifacial**  
Efficiency



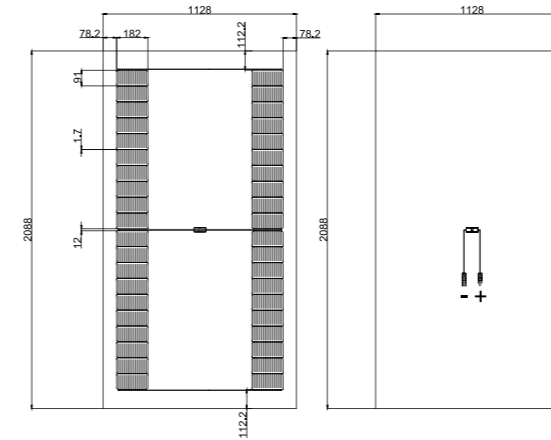
Sunpal **N Type** Linear Warranty

**25 Years** Materials Warranty

**30 Years** Power Warranty

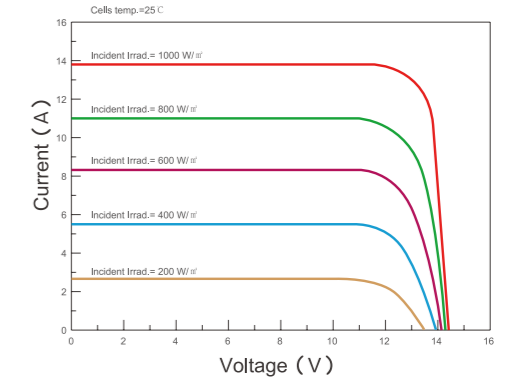


**BiMAX 5N 160 Watts**  
182mm 40Cells Double Glass Bifacial Frameless  
AGRI Mono Half Cell PV Module



All Dimensions in mm  
The above drawing is a graphical representation of the product.

Current-Voltage & Power-Voltage Curves(SP160M-40)



### Electrical Characteristics (STC)

Module Type	SP160M-40
Test Conditions	STC
Maximum Power- Pmax(W)	160
Open Circuit Voltage - Voc(V)	14.06
Short- Circuit Current - Isc(A)	13.77
Voltage at Pmax -Vmp(V)	12.3
Current at Pmax - Imp(A)	13.01
Module Efficiency -ηm(%)	6.7
Power Tolerance(W)	(0,+4.99W)
Maximum System Voltage(V)	1000Vde (IEC/UL61730)
Maximum Series Fuse Rating (A)	25A

\*STC : Irradiance 1000W/m², Cell Temperature 25 °C, Air Mass 1.5

\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	2088*1128*5mm
Weight	27kg
Solar Cells	N-Type 16BB 182mm (2x20pcs)
Glass	2+2 mm tempered glass
Frame	Can be Framed
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

### Packing Configuration

Wooden box Dimensions	2210*1130*1270mm
Container	40'HQ
Pieces per Pallet	32
Pallets per Container	20
Pieces per Container	640

### Temperature Characteristics

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

Specifications are subject to change without further notification

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# BiMAX 5N


# 320W


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


 **SMBB Technology**  
Half Cut N Type Cell

 **Fire Class A**

 **High Energy**  
Performance

 **Strengthened**  
Mechanical Load

 **100% Inspection**  
30years Guarantee

 **Advanced Bifacial**  
Efficiency



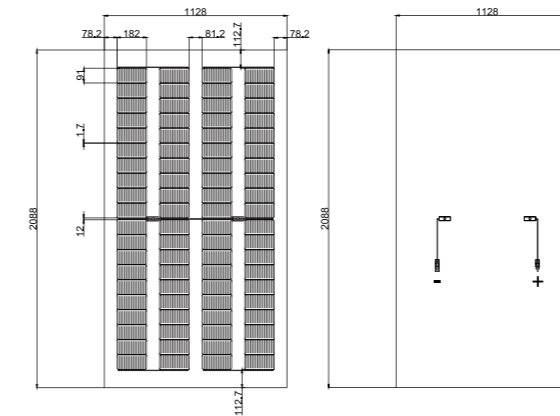
Sunpal **N Type** Linear Warranty

**25 Years** Materials Warranty

**30 Years** Power Warranty

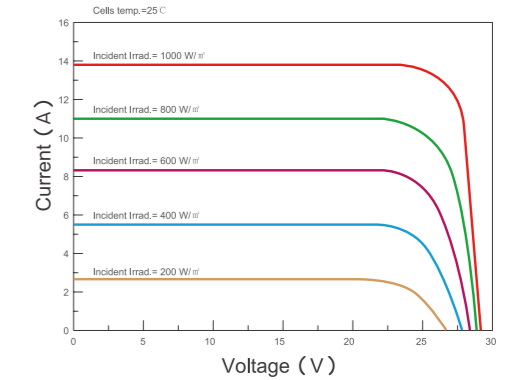


**BiMAX 5N 320 Watts**  
182mm 80Cells Double Glass Bifacial Frameless  
AGRI Mono Half Cell PV Module



All Dimensions in mm  
The above drawing is a graphical representation of the product.

Current-Voltage & Power-Voltage Curves(SP320M-80)



### Electrical Characteristics (STC)

Module Type	SP320M-80
Test Conditions	STC
Maximum Power- Pmax(W)	320
Open Circuit Voltage - Voc(V)	28.12
Short- Circuit Current - Isc(A)	13.77
Voltage at Pmax -Vmp(V)	24.6
Current at Pmax - Imp(A)	13.01
Module Efficiency -ηm(%)	13.58
Power Tolerance(W)	(0,+4.99W)
Maximum System Voltage(V)	1000Vde (IEC/UL61730)
Maximum Series Fuse Rating (A)	25A

\*STC : Irradiance 1000W/m², Cell Temperature 25 °C, Air Mass 1.5

\*Measurement tolerance: ±3% \*Power binning up to: +3%

### Mechanical Specifications

External Dimensions	2088*1128*5mm
Weight	27kg
Solar Cells	N-Type 16BB 182mm (2x40pcs)
Glass	2+2 mm tempered glass
Frame	Can be Framed
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

### Packing Configuration

Wooden box Dimensions	2210*1130*1270mm
Container	40'HQ
Pieces per Pallet	32
Pallets per Container	20
Pieces per Container	640

### Temperature Characteristics

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

Specifications are subject to change without further notification

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# SUNPAL GLOBAL PROJECTS



MAKING MORE POWER

## COOPERATIVE PARTNER
