

# Sunpal PV Module Brochure 2024

Cutting-Edge Solar Technology for  
Optimal Performance





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# COMPANY PROFILE

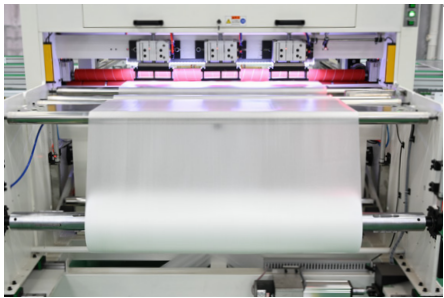
Sunpal is a world-renowned manufacturer of cutting-edge solar products. Since our inception in 2008, Sunpal has been at the forefront of the solar industry, specializing in the research, development, manufacturing, and distribution of high-efficiency solar products.

Our unwavering commitment to innovation has driven us to surpass industry standards and achieve remarkable milestones, including a substantial global installation footprint of 10 GW. With a state-of-the-art manufacturing facility spanning 150,000 square meters and a dedicated workforce of over 1,000 skilled professionals dedicated to crafting exceptional solar products.



## SPEED, EFFICIENCY AND QUALITY THROUGH AUTOMATION

At Sunpal, we're committed to delivering high-quality solar panels quickly and affordably.

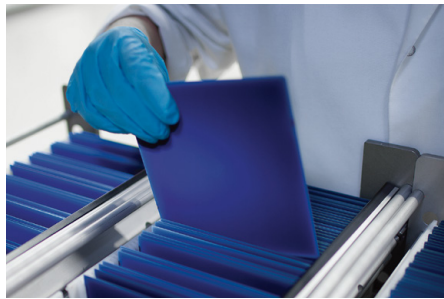


### Modularized Production Lines:

Our production process is divided into self-contained, automated sections that work seamlessly together. This modular approach allows for greater flexibility and faster turnaround times for your orders.

### High Utilization Rates:

By automating various production steps, we ensure our equipment is constantly in use, maximizing efficiency and minimizing wasted time.



### Over 40 Patents for Optimized Processes:

SunPal holds over 40 patents related to production process improvements. These innovations minimize human error and ensure consistent quality throughout all stages, from raw material inspection to final packaging.

### Comprehensive Online Monitoring:

Our entire production chain, from the initial inspection of raw materials to the final packaging, is monitored in real-time. This lets us identify and address potential issues immediately, ensuring consistent quality control.



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 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.

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.

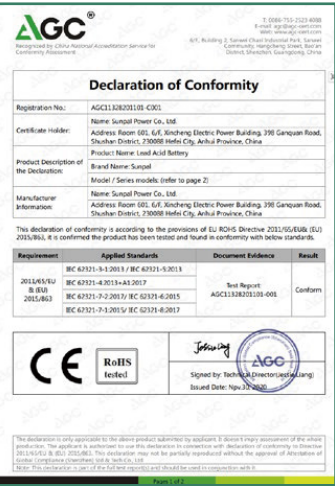
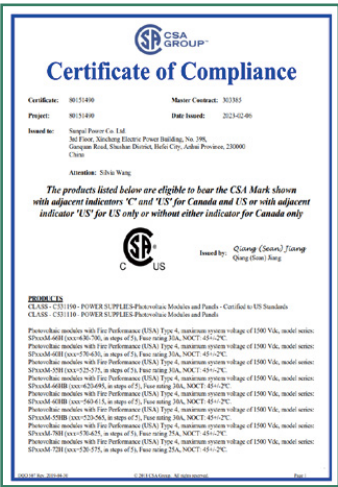
**People-Oriented**  
Cultivate a vibrant and collaborative work environment; empower our employees to take ownership; foster a culture of innovation that fuels our collective growth and shared success with our customers.

**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.



TECHNICAL CERTIFICATE

Tested and certificated for all major safety approvals





# DEVELOPMENT HISTORY

## Company milestones





• Rotterdam Stock      • Schwelm Stock

Schwel Stock  
Rotterdam Stock

OFFICIAL BRAND  
PV PRODUCTS DISTRIBUTOR








Your Trusted Partner for Renewable Energy Solutions

Sunpal Solar

SUNPAL OVERSEAS WAREHOUSE

Our Warehouse

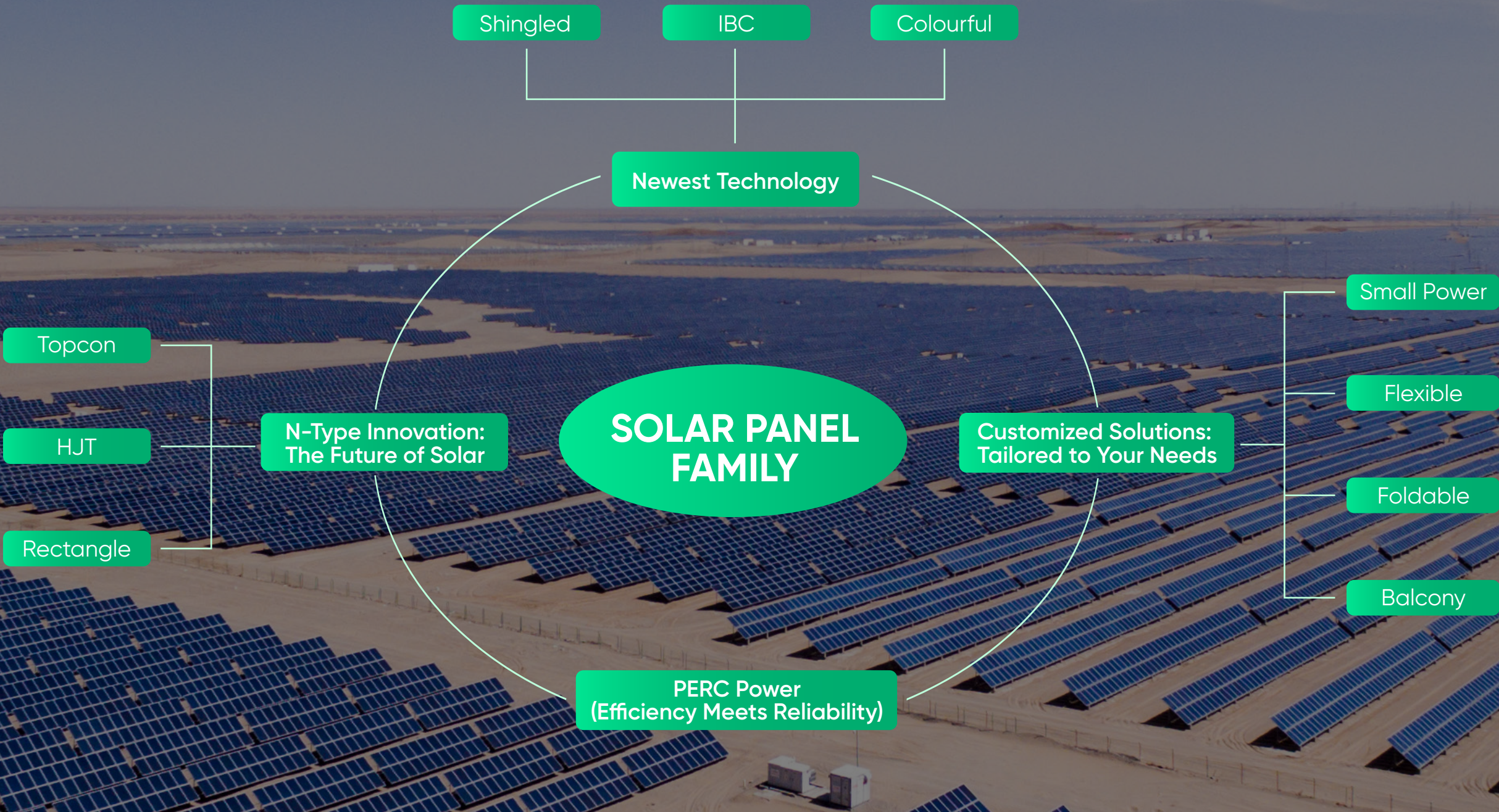
Topcon 430W/440W  
Bifacial All Black Solar Panel  
Fast Delivery With 20% Deposit Reserve



# SOLAR PANEL FAMILY OVERVIEW

Our Solar Panels





# TOPCON

N-type TOPCon Mono-facial Solar Module



## 415~445W

HiMAX 5N

N-type TOPCon Mono-facial Solar Module

1722*1134*30mm	21.0kg	108(6*18)	0~+5W
Dimensions	Weight	Cell Amount	Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	415	420	425	430	435	440	445
Open Circuit Voltage (Voc/V)	38.34	38.57	38.81	39.04	39.27	39.50	39.73
Short Circuit Current (Isc/A)	13.89	13.96	14.03	14.10	14.17	14.24	14.31
Voltage at Maximum Power (Vmp/V)	32.02	32.23	32.44	32.65	32.85	33.06	33.26
Current at Maximum Power (Imp/A)	12.96	13.03	13.10	13.17	13.24	13.31	13.38
Module Efficiency(%)	21.25	21.51	21.76	22.02	22.28	22.54	22.79

## 560~580W

HiMAX 5N

N-type TOPCon Mono-facial Solar Module

2279*1134*30mm	27.5kg	144(6*24)	0~+5W
Dimensions	Weight	Cell Amount	Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	560	565	570	575	580
Open Circuit Voltage (Voc/V)	51.03	51.17	51.30	51.44	51.573
Short Circuit Current (Isc/A)	14.05	14.12	14.19	14.26	14.33
Voltage at Maximum Power (Vmp/V)	42.49	42.64	42.79	42.94	43.09
Current at Maximum Power (Imp/A)	13.18	13.25	13.32	13.39	13.46
Module Efficiency(%)	21.67	21.86	22.06	22.25	22.44

## 610~640W

HiMAX 5N

N-type TOPCon Mono-facial Solar Module

2465*1134*35mm	30.0kg	156(6*26)	0~+5W
Dimensions	Weight	Cell Amount	Power Tolerance

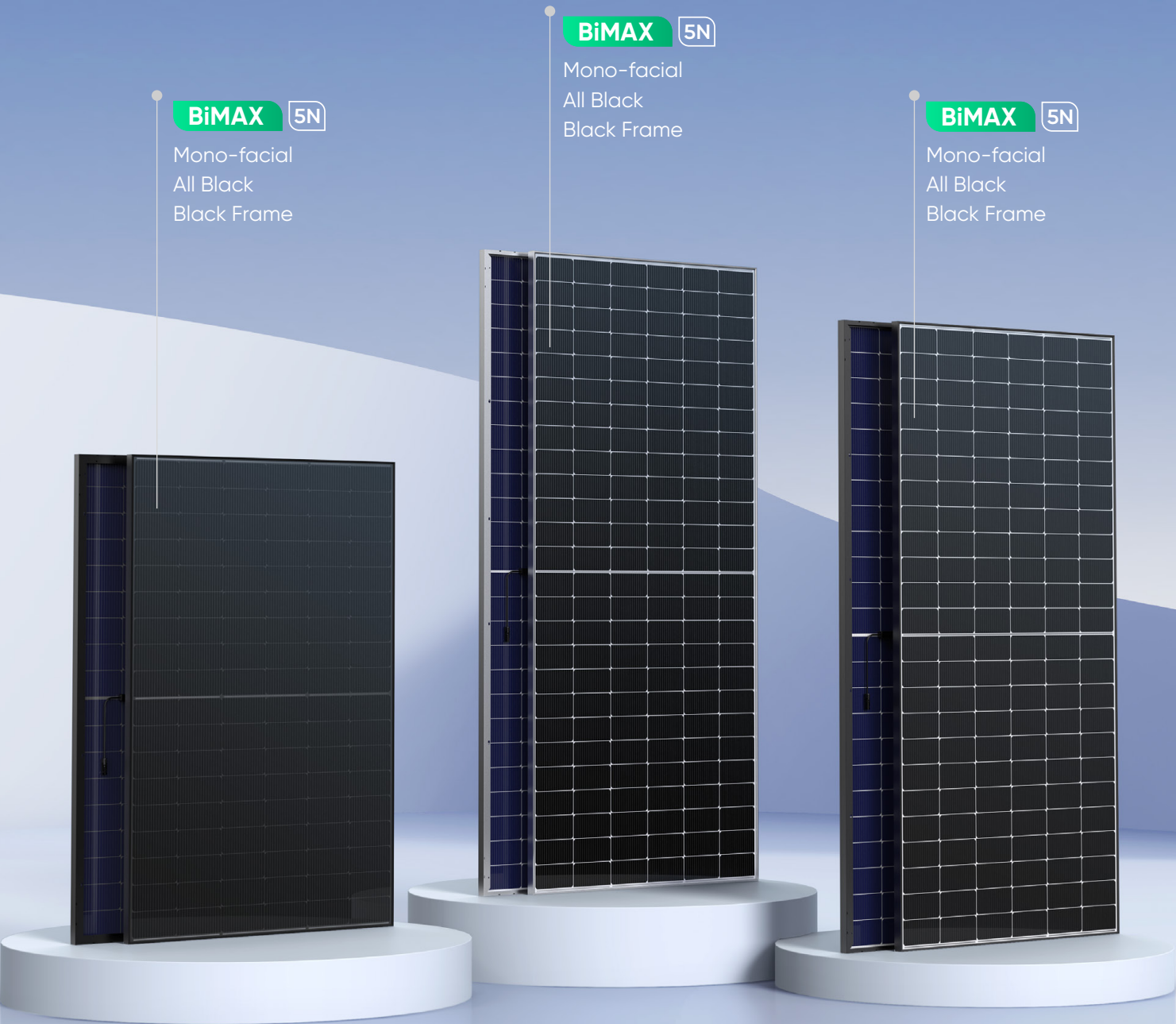
### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	610	615	620	625	630	635	640
Open Circuit Voltage (Voc/V)	55.25	55.40	55.55	55.70	55.84	55.98	56.12
Short Circuit Current (Isc/A)	14.10	14.17	14.24	14.31	14.38	14.45	14.52
Voltage at Maximum Power (Vmp/V)	45.73	45.86	45.99	46.13	46.26	46.39	46.52
Current at Maximum Power (Imp/A)	13.34	13.41	13.48	13.55	13.62	13.69	13.76
Module Efficiency(%)	21.82	22.00	22.18	22.36	22.54	22.72	22.90



# TOPCON

N-type TOPCon Bifacial Solar Module



## 410~440W

BiMAX 5N

N-type TOPCon Bifacial Solar Module

1722*1134*30mm	23.5kg	108(6*18)	0~+5W
Dimensions	Weight	Cell Amount	Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	410	415	420	425	430	435	440
Open Circuit Voltage (Voc/V)	38.10	38.25	38.49	38.73	38.96	39.20	39.44
Short Circuit Current (Isc/A)	13.85	13.92	13.99	14.06	14.13	14.20	14.27
Voltage at Maximum Power (Vmp/V)	31.20	31.42	31.63	31.84	32.04	32.25	32.45
Current at Maximum Power (Imp/A)	13.14	13.21	13.28	13.35	13.42	13.49	13.56
Module Efficiency(%)	21.00	21.25	21.51	21.76	22.02	22.28	22.53

## 555~585W

BiMAX 5N

N-type TOPCon Bifacial Solar Module

2279*1134*30mm	31.5kg	144(6*24)	0~+5W
Dimensions	Weight	Cell Amount	Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	555	560	565	570	575	580	585
Open Circuit Voltage (Voc/V)	51.00	51.14	51.28	51.41	51.55	51.79	52.03
Short Circuit Current (Isc/A)	13.94	14.01	14.08	14.15	14.22	14.29	14.36
Voltage at Maximum Power (Vmp/V)	41.95	42.11	42.26	42.41	42.56	42.71	42.86
Current at Maximum Power (Imp/A)	13.23	13.03	13.37	13.44	13.51	13.58	13.65
Module Efficiency(%)	21.48	21.67	21.86	22.06	22.25	22.44	22.64

## 605~635W

BiMAX 5N

N-type TOPCon Bifacial Solar Module

2465*1134*35mm	34.5kg	156(6*26)	0~+5W
Dimensions	Weight	Cell Amount	Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	605	610	615	620	625	630	635
Open Circuit Voltage (Voc/V)	55.30	55.41	55.53	55.64	55.75	55.86	55.97
Short Circuit Current (Isc/A)	13.97	14.04	14.11	14.18	14.25	14.32	14.39
Voltage at Maximum Power (Vmp/V)	45.63	45.76	45.90	46.03	46.16	46.29	46.42
Current at Maximum Power (Imp/A)	13.26	13.33	13.40	13.47	13.54	13.61	13.68
Module Efficiency(%)	21.64	21.82	22.00	22.18	22.36	22.54	22.72

# TOPCON

N-type TOPCon Mono-facial / Bifacial Solar Module



HiMAX 6N

Mono-facial  
All Black  
Black Frame

BiMAX 6N

Mono-facial  
All Black  
Black Frame

## 675~705W

HiMAX 6N

N-type TOPCon Mono-facial Solar Module

2384\*1303\*35mm 33.6kg 132(6\*22) 0~+5W  
Dimensions Weight Cell Amount Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	675	680	685	690	695	700	705
Open Circuit Voltage (Voc/V)	46.90	47.10	47.30	47.50	47.70	47.90	48.10
Short Circuit Current (Isc/A)	18.24	18.29	18.34	18.39	18.44	18.49	18.54
Voltage at Maximum Power (Vmp/V)	39.00	39.20	39.40	39.60	39.80	40.00	40.20
Current at Maximum Power (Imp/A)	17.31	17.35	17.39	17.43	17.47	17.51	17.55
Module Efficiency(%)	21.70	21.90	22.10	22.30	22.50	22.66	22.82

## 675~705W

BiMAX 6N

N-type TOPCon Bifacial Solar Module

2384\*1303\*35mm 38.7kg 132(6\*22) 0~+5W  
Dimensions Weight Cell Amount Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	675	680	685	690	695	700	705
Open Circuit Voltage (Voc/V)	46.90	47.10	47.30	47.50	47.70	47.90	48.10
Short Circuit Current (Isc/A)	18.24	18.29	18.34	18.39	18.44	18.49	18.54
Voltage at Maximum Power (Vmp/V)	39.00	39.20	39.40	39.60	39.80	40.00	40.20
Current at Maximum Power (Imp/A)	17.31	17.35	17.39	17.43	17.47	17.51	17.55
Module Efficiency(%)	21.70	21.90	22.10	22.30	22.50	22.66	22.82



# TOPCON

182\*210mm Cells N-type TOPCon Rectangle Bifacial Solar Module

BiMAX 6R

Mono-facial  
All Black  
Black Frame

BiMAX 6R

Mono-facial  
All Black  
Black Frame

## 435~455W

BiMAX 6R

182\*210mm Cells N-type TOPCon Rectangle Bifacial Solar Module

1762\*1134\*30mm 25.0kg 96(6\*16) 0~+5W  
Dimensions Weight Cell Amount Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	435	440	445	450	455
Open Circuit Voltage (Voc/V)	35.13	35.38	35.63	35.88	36.13
Short Circuit Current (Isc/A)	15.77	15.84	15.90	15.97	16.02
Voltage at Maximum Power (Vmp/V)	29.18	29.38	29.58	29.78	29.98
Current at Maximum Power (Imp/A)	14.91	14.98	15.04	15.11	15.18
Module Efficiency(%)	21.77	22.02	22.27	22.52	22.77

## 600~625W

BiMAX 6R

182\*210mm Cells N-type TOPCon Rectangle Bifacial Solar Module

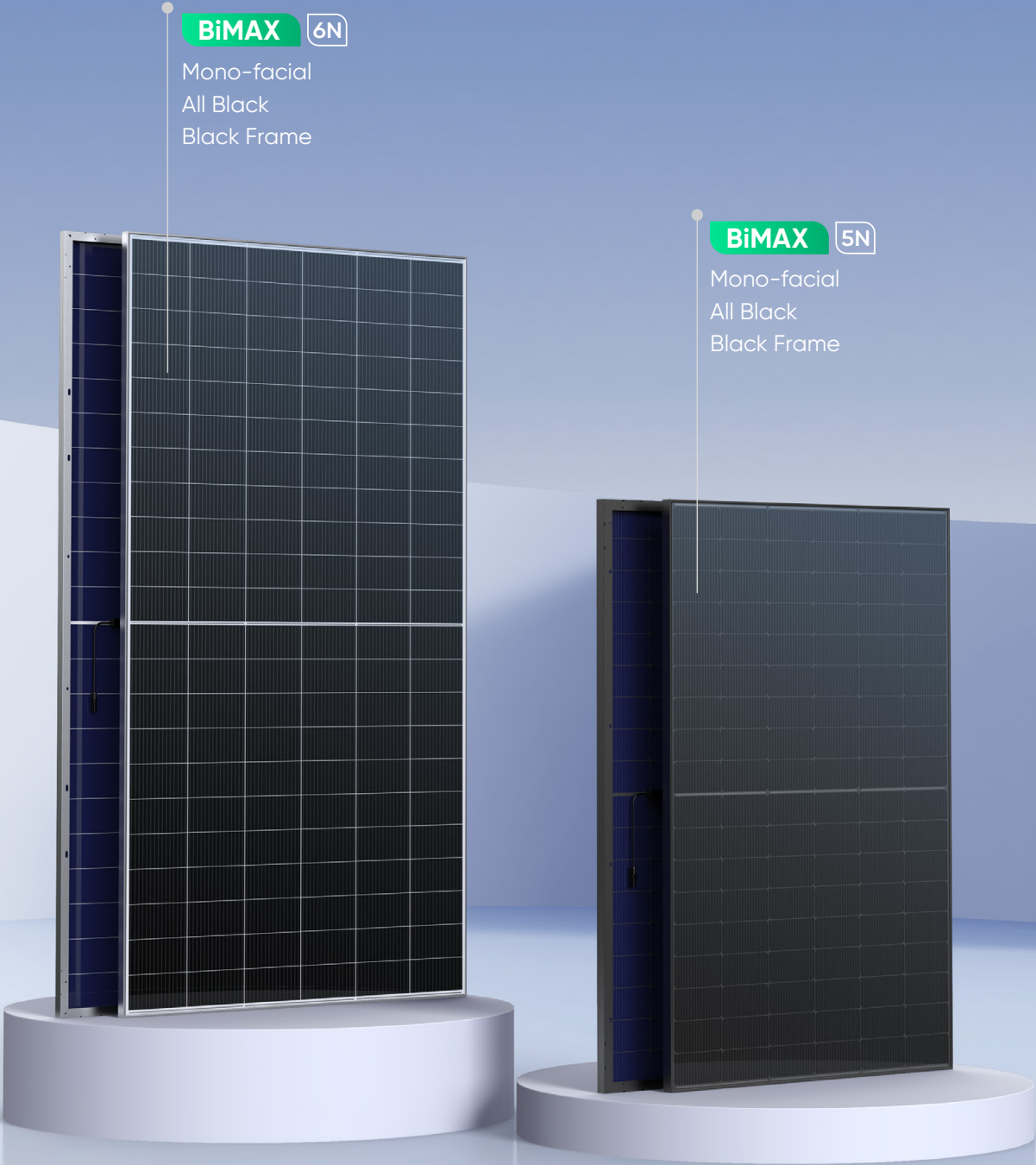
2382\*1134\*30mm 33.5kg 132(6\*22) 0~+5W  
Dimensions Weight Cell Amount Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	600	605	610	615	620	625
Open Circuit Voltage (Voc/V)	48.45	48.75	49.05	49.35	49.55	49.75
Short Circuit Current (Isc/A)	15.78.	15.81	15.84	15.88	15.93	16.00
Voltage at Maximum Power (Vmp/V)	40.269	40.46	40.66	40.86	41.06	41.26
Current at Maximum Power (Imp/A)	14.90	14.95	15.00	15.05	15.10	15.15
Module Efficiency(%)	22.21	22.40	22.58	22.77	22.95	23.14

# HJT

N-type HJT Bifacial Solar Module



## 430~450W

BiMAX 5N

N-type HJT Bifacial Solar Module

1722\*1134\*30mm      21.0kg      108(6\*18)      0~+5W  
Dimensions      Weight      Cell Amount      Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	430	435	440	445	450
Open Circuit Voltage (Voc/V)	40.30	40.56	40.83	41.09	41.34
Short Circuit Current (Isc/A)	13.30	13.35	13.40	13.45	13.50
Voltage at Maximum Power (Vmp/V)	33.49	33.75	34.01	34.26	34.51
Current at Maximum Power (Imp/A)	12.84	12.89	12.94	12.99	13.04
Module Efficiency(%)	22.02	22.28	22.53	22.79	23.04

## 695~715W

BiMAX 6N

N-type HJT Bifacial Solar Module

2384\*1303\*35mm      38.7kg      132(6\*22)      0~+5W  
Dimensions      Weight      Cell Amount      Power Tolerance

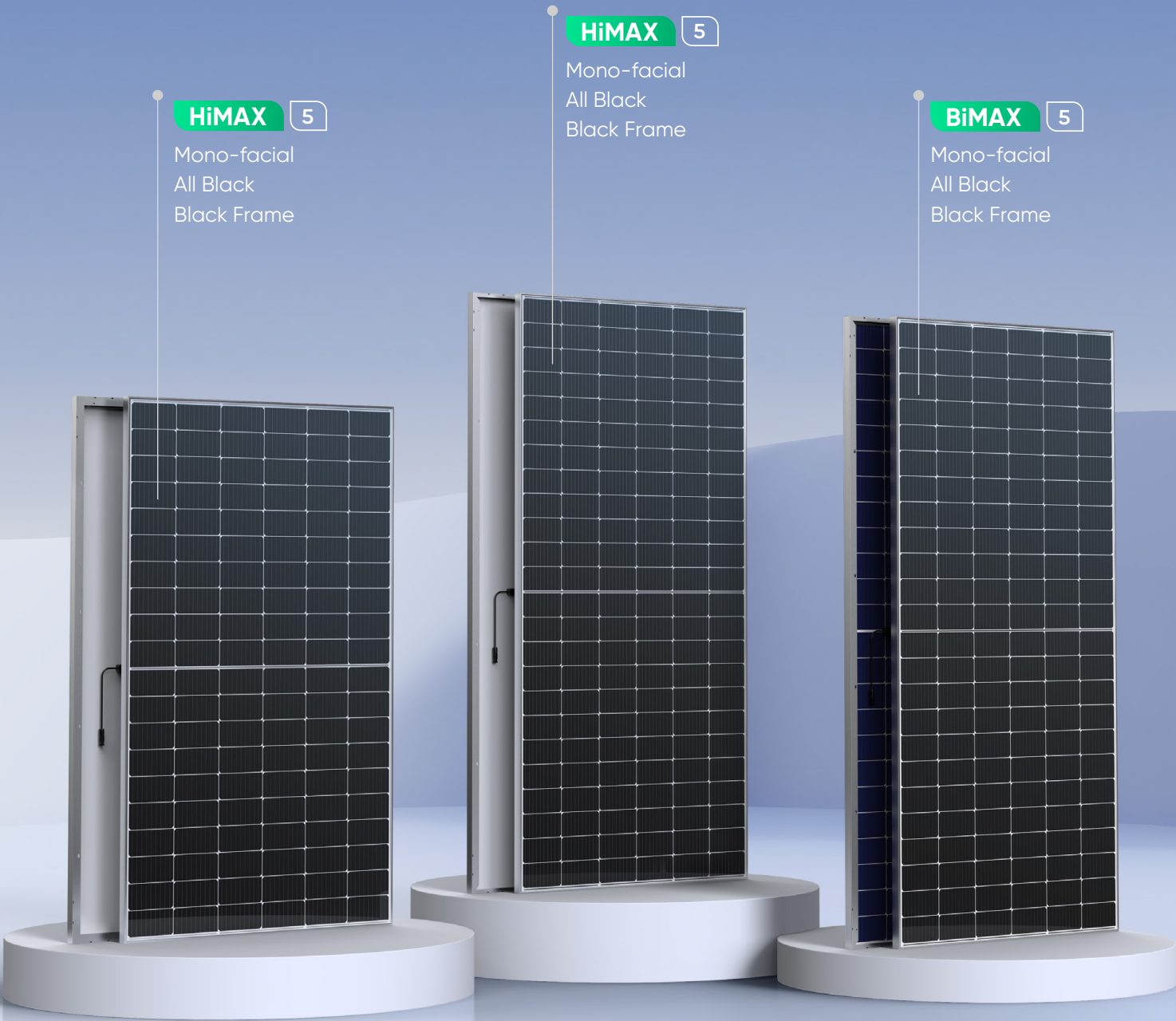
### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	695	700	705	710	715
Open Circuit Voltage (Voc/V)	49.98	50.13	50.29	50.44	50.59
Short Circuit Current (Isc/A)	17.37	17.43	17.49	17.55	17.61
Voltage at Maximum Power (Vmp/V)	41.95	42.10	42.25	42.39	42.54
Current at Maximum Power (Imp/A)	16.57	16.63	16.69	16.75	16.81
Module Efficiency(%)	22.37	22.53	22.70	22.86	23.02



# PERC

182mm Cells PERC Mono-facial / Bifacial Solar Module



## 405~425W

HiMAX 5

182mm Cells PERC Mono-facial Solar Module

1722\*1134\*30mm 21.0kg 108(6\*18) 0~+5W  
Dimensions Weight Cell Amount Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	405	410	415	420	425
Open Circuit Voltage (Voc/V)	37.06	37.14	37.22	37.30	37.38
Short Circuit Current (Isc/A)	13.85	13.92	13.99	14.06	14.13
Voltage at Maximum Power (Vmp/V)	30.52	30.62	30.72	30.82	30.92
Current at Maximum Power (Imp/A)	13.27	13.39	13.51	13.63	13.75
Module Efficiency(%)	20.75	21.01	21.26	21.51	21.76

## 545~565W

HiMAX 5

182mm Cells PERC Mono-facial Solar Module

2279\*1134\*35mm 28.0kg 144(6\*24) 0~+5W  
Dimensions Weight Cell Amount Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	545	550	555	560	565
Open Circuit Voltage (Voc/V)	49.54	49.64	49.74	49.84	49.94
Short Circuit Current (Isc/A)	13.93	14.00	14.07	14.14	14.21
Voltage at Maximum Power (Vmp/V)	40.81	40.90	40.99	41.08	41.017
Current at Maximum Power (Imp/A)	13.36	13.45	13.54	13.64	13.74
Module Efficiency(%)	21.09	21.29	21.48	21.67	21.87

## 540~560W

BiMAX 5

182mm Cells PERC Bifacial Solar Module

2279\*1134\*35mm 31.6kg 144(6\*24) 0~+5W  
Dimensions Weight Cell Amount Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	540	545	550	555	560
Open Circuit Voltage (Voc/V)	49.44	49.54	49.60	49.74	49.88
Short Circuit Current (Isc/A)	13.86	13.93	14.00	14.07	14.14
Voltage at Maximum Power (Vmp/V)	40.72	40.81	40.90	40.99	41.08
Current at Maximum Power (Imp/A)	13.27	13.36	13.45	13.54	13.63
Module Efficiency(%)	20.90	21.09	21.29	21.48	21.67

# PERC

210mm Cells PERC Mono-facial / Bifacial Solar Module

HiMAX 6

Mono-facial  
All Black  
Black Frame

BiMAX 6

Mono-facial  
All Black  
Black Frame

## 675~700W

HiMAX 6

210mm Cells PERC Mono-facial Solar Module

2384\*1303\*35mm 33.6kg 132(6\*2<sup>TM</sup>) 0~+5W  
Dimensions Weight Cell Amount Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	675	680	685	690	695	700
Open Circuit Voltage (Voc/V)	46.30	46.50	46.70	46.90	47.10	47.30
Short Circuit Current (Isc/A)	18.68	18.73	18.78	18.83	18.88	18.93
Voltage at Maximum Power (Vmp/V)	38.40	38.60	38.80	39.00	39.20	39.40
Current at Maximum Power (Imp/A)	17.58	17.62	17.66	17.70	17.73	17.77
Module Efficiency(%)	21.73	21.90	22.06	22.22	22.38	22.54

## 675~700W

BiMAX 6

210mm Cells PERC Bifaciall Solar Module

2384\*1303\*35mm 38.7kg 132(6\*22) 0~+5W  
Dimensions Weight Cell Amount Power Tolerance

### Electrical Characteristics (STC)

Maximum Power (Pmax/W)	675	680	685	690	695	700
Open Circuit Voltage (Voc/V)	46.30	46.50	46.70	46.90	47.10	47.30
Short Circuit Current (Isc/A)	18.68	18.73	18.78	18.83	18.88	18.93
Voltage at Maximum Power (Vmp/V)	38.40	38.60	38.80	39.00	39.20	39.40
Current at Maximum Power (Imp/A)	17.58	17.62	17.66	17.70	17.73	17.77
Module Efficiency(%)	21.73	21.90	22.06	22.22	22.38	22.54



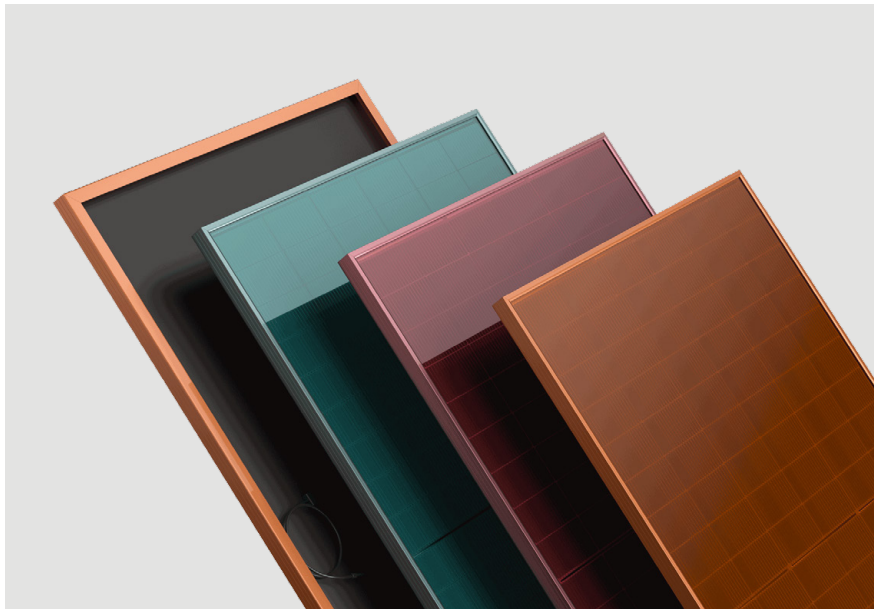
# NEWEST TECHNOLOGY

Colourful / Shingled / IBC Solar Panel

## 370~390W

HiMAX 5U

N-type TOPCon Red/Green/Orange Mono-facial Solar Module



1500V DC(IEC)	30 Years	19.97%	0~+5W
Max. System Voltage	Power Warranty	Max. Efficiency	Power Tolerance

### Roofing Aesthetics with multiple colours

Multiple colourful glasses & frames looks well integrated to roof tiles or modern building.

### Better Weak Illumination Response

Higher power output even under low-light environments like on cloudy or foggy days.

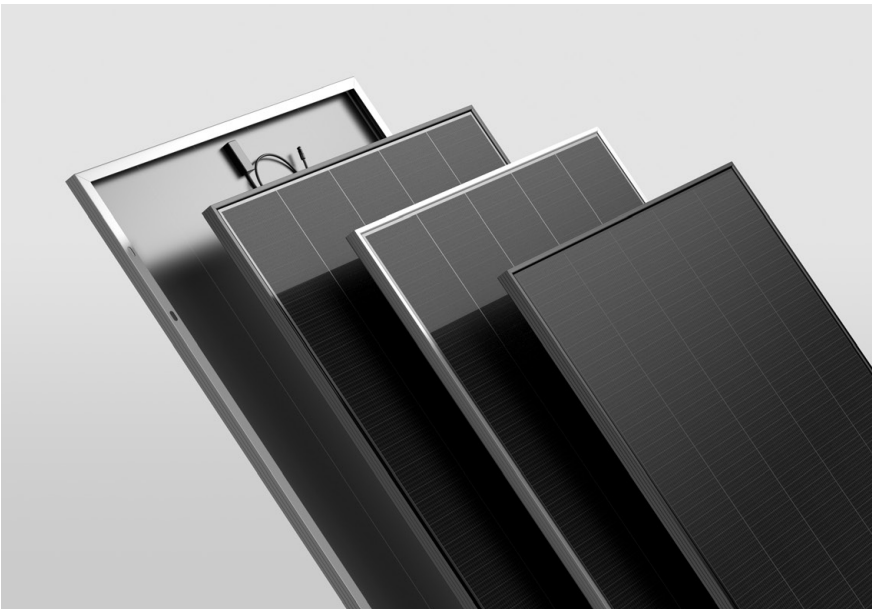
### 10~30% Additional Power Generation

30 years lifespan brings 10~30% additional power generation comparing with conventional P-type module.

## 420~445W

HiMAX 6S

Shingled Mono-facial/Black Frame/All Black Solar Module



1500V DC(IEC)	25 Years	20.2%	0~+5W
Max. System Voltage	Power Warranty	Max. Efficiency	Power Tolerance

### Shingling Technology

Innovative structure, low-temperature adhesive bonding, high-density layout.

### Low Shading Loss

Full parallel arrangement brings high effective power generation hours.

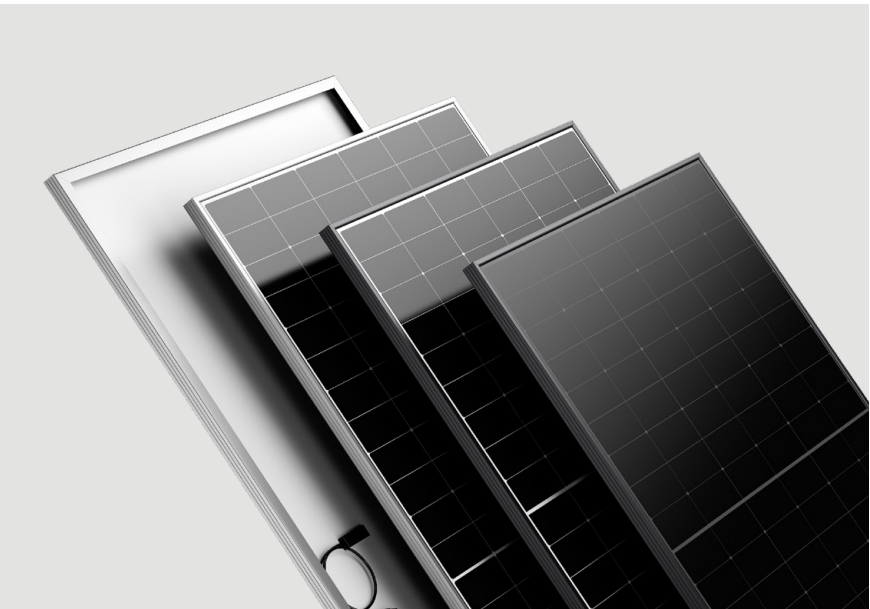
### Superior Safety and Reliability

No hidden welding crack, low operating temperature, high pressure resistance.

## 415~450W/565~600W

HiMAX 5C

IBC Mono-facial/All Black/Black Frame Solar Module



1500V DC(IEC)	25 Years	23.2%	0~+5W
Max. System Voltage	Power Warranty	Max. Efficiency	Power Tolerance

### Outstanding Performance

HiMAX 5C improves power generation capacity greatly with comprehensive upgrade of Back Contact cells and modules.

### Aesthetic Appearance

HiMAX 5C simplifies the complexity and redefines the aesthetic concept of photovoltaic modules.

### Market-leading Reliability

HiMAX 5C pioneers the adoption of full back welding technology to efficiency improve the resistance to micro cracking of moudles.



# CUSTOMIZED SOLUTIONS

Small / Flexible / Balcony / Foldable Solar Panel

■ Small Power Solar Panel



■ Balcony Solar Panel



■ Flexible Solar Panel



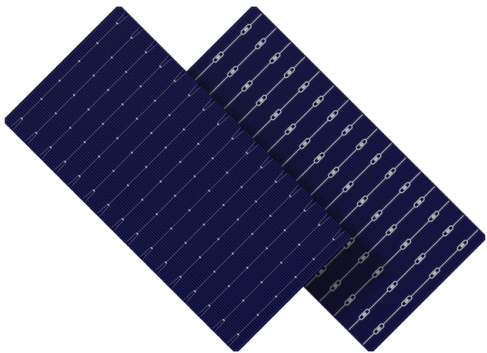
■ Foldable Solar Panel





# COMPREHENSIVE SOLAR PV VALUE CHAIN SOLUTIONS

Sunpal has evolved into an integrated PV company that manufactures high-efficiency solar cells and PV modules and has expertise in one-stop solar system solutions, creating a vertically integrated layout of the entire PV industry chain.



## Solar Cells

A full range of solar cells such as 166mm, 182mm, and 210mm caters to diverse solar module technologies. These high-quality cells offer superior performance, which translates into benefits such as higher efficiency and lower electricity costs for your solar project.

## PV Modules

Sunpal offers a comprehensive range of solar modules, including PERC, Topcon and HJT technology, with an output of 10w to 715w. We offer various options from the monofacial, bifacial, black frame and ultra black series to find the perfect solar module for your project.



## PV Solutions

Sunpal is more than a product supplier and offers project consulting, design, procurement, operation and maintenance as well as financing expertise. Whether you're considering a residential or commercial solar project, Sunpal can help you every step of the way.



# RESIDENTIAL SOLUTIONS

## Our projects case

Sunpal's residential is a revolutionary solar solution that enables homeowners to generate clean, renewable electricity for their homes.

With this system, the energy generated by the solar panels is used to power household loads via the inverter and monitored by a meter box. Or it is sold to the national grid at the local electricity tariff, generating additional income. Take control of your energy bills with Sunpal's state of the art solar system.





# COMMERCIAL SOLUTIONS

## Our projects case

Sunpal Solar specializes in photovoltaic (PV) power plants in various forms, including conventional centralized PV power plants, agri-voltaics, floating PV power plants and other forms.

In addition, we offer integrated solar energy storage solutions to ensure reliable power supply. Sunpal Solar is committed to helping businesses and communities transition to clean energy, reduce their carbon footprint and achieve energy independence.

