

Photovoltaic Storage

Passion for Excellence

<http://www.nsi-group.co.za>

Discover the Power of Green





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NSI ELECTRICAL PRODUCTS

NSI ELECTRICAL PRODUCTS

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Company Profile

6666666-588N40554
 NSI ELECTRICAL PRODUCTS IS A DIVISION OF NSI GROUP is a professional renewable energy services and solutions provider addressing electricity and energy challenges by improving access to and promoting adoption of clean and energy efficient technologies. Our company is setting the pace to realize the development of a green economy with low emissions, resource efficiency and social inclusivity. This is being achieved through the efforts of our knowledge driven team and network of internationally qualified experts within the fields of renewable energy technologies and sustainable development and engineering. We are dedicated to creating sustainable solutions and enriching lives by reducing energy poverty, providing long lasting and consistent solutions for households, businesses and communities.

As a world-class solar products manufacturer NSI ELECTRICAL PRODUCTS specializes in research, development, production, and sales of solar PV products. Since its foundation in 2010, NSI ELECTRICAL PRODUCTS has accomplished significant achievements which outpaced most of our main competitors in terms of production capacity and in the number of innovative designs. NSI ELECTRICAL PRODUCTS upholds its belief that innovation is the key driver behind advancement by pursuing new technologies and higher efficiencies. We are proud to be a leader in the PV industry in terms of technological innovations.

NSI ELECTRICAL PRODUCTS serves worldwide customers with high-quality products and professional services. So far more than 10GW NSI ELECTRICAL PRODUCTS's products and widely applied in over 50 countries. As a South African-based integrated industrial and trade enterprise, NSI Electrical Products is a world-class manufacturer of solar products, particularly specialize in the research, development, production, and sales of solar PV products, particularly solar panels. Since 2014, NSI Electrical Products has focused on the research and manufacture of various Electrical products and all-black solar panels. We determined and readied to distribute various types of these full-black solar panels to almost everywhere in world earning a good reputation for their quality. After more than 7 years of development, NSI Electrical Products now is partnering with SANPAL a china-based company who has a factory area covering 150,000 square meters, supported by a team of 600 experienced employees with great technical expertise.

MISSION: Our mission is to provide clean energy services and solutions that contribute to the development of a resource efficient, energy rich green economy.

VISION: Our vision is to be recognized as one of the top 5 renewable energy company in Africa and worldwide, distinguished by quality, innovation and professionalism.

VALUES: Our core values are distinguished by quality, integrity, professionalism and environmental Stewardship.

50⁺
 Destination Countries

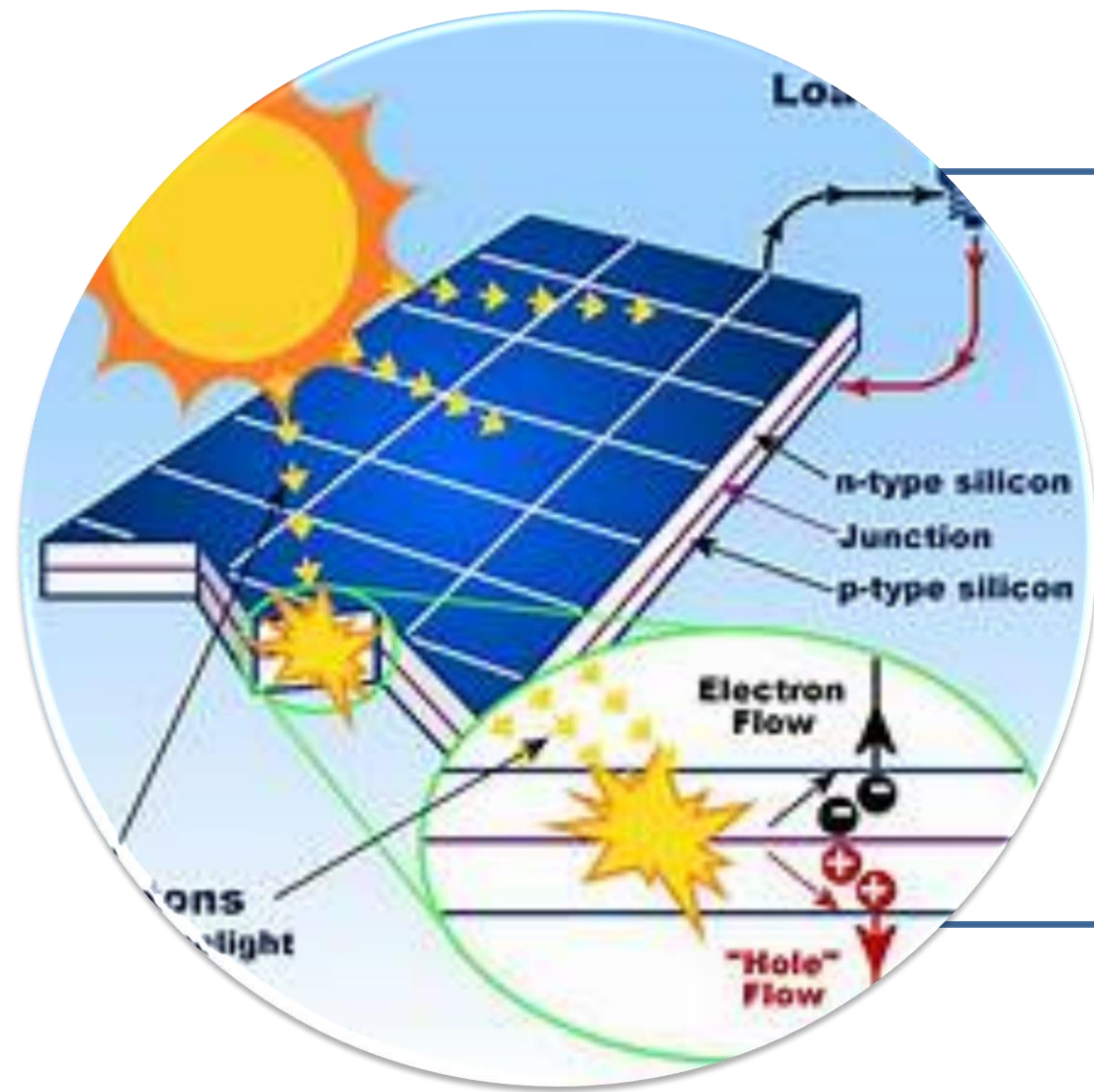
13^{Years}
 Years Experience

50⁺
 Global Partners

10GW⁺
 Modules Installed

1000⁺
 Customer Served

2000m²
 Factory Area



Development Path

NSI ELECTRICAL PRODUCTS

NSI

2010

Solar module factory was
set up, received ISO

2012

Comprehensive solar solution
department was set up.

2019

Global solar module
reached 5GW.

2020

Launched a new factory for HiMAX4
& BiMAX4 solar module.

2023

Launched 210mm production
line, max power 670W+, annual
production capacity up to 5GW.

2024

All solar panels get TUV/CE/CSA
certificate, TOPCON HJT PV module
achieved mass production.

ELECTRICAL PRODUCTS

Market

NSI ELECTRICAL PRODUCTS

LIMPOPO

POLOKWANE,
BURGERSFORT

FREE STATE

BLOEMFONTEIN

MPUMALANGA

NELSPRUIT

WESTERN CAPE

CAPE TOWN



Solar Panel
Manufacturing Center



Lead Acid Battery
Production Center

Wuxi Jiangsu



Lithium Battery
Production Center



Solar Energy Solution
Distribution base

H





Galaxy S22 Ultra

Technical Certificate & Reports

NSI ELECTRICAL PRODUCTS



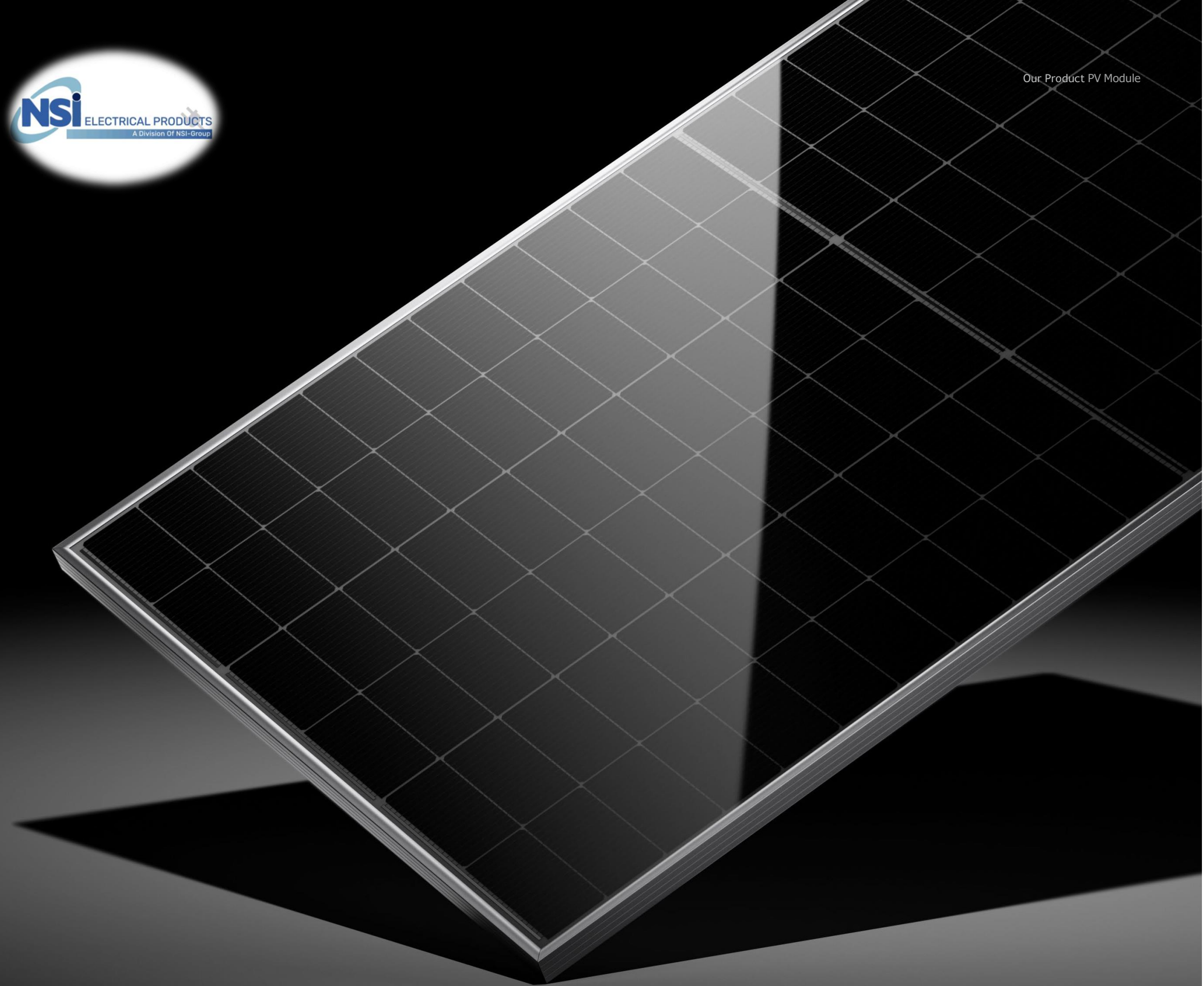
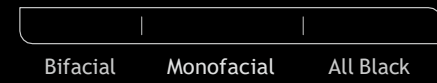
Making More Power



Our Product PV Module

High Efficiency PV Module

PERC TopCon HJT Solar Panel

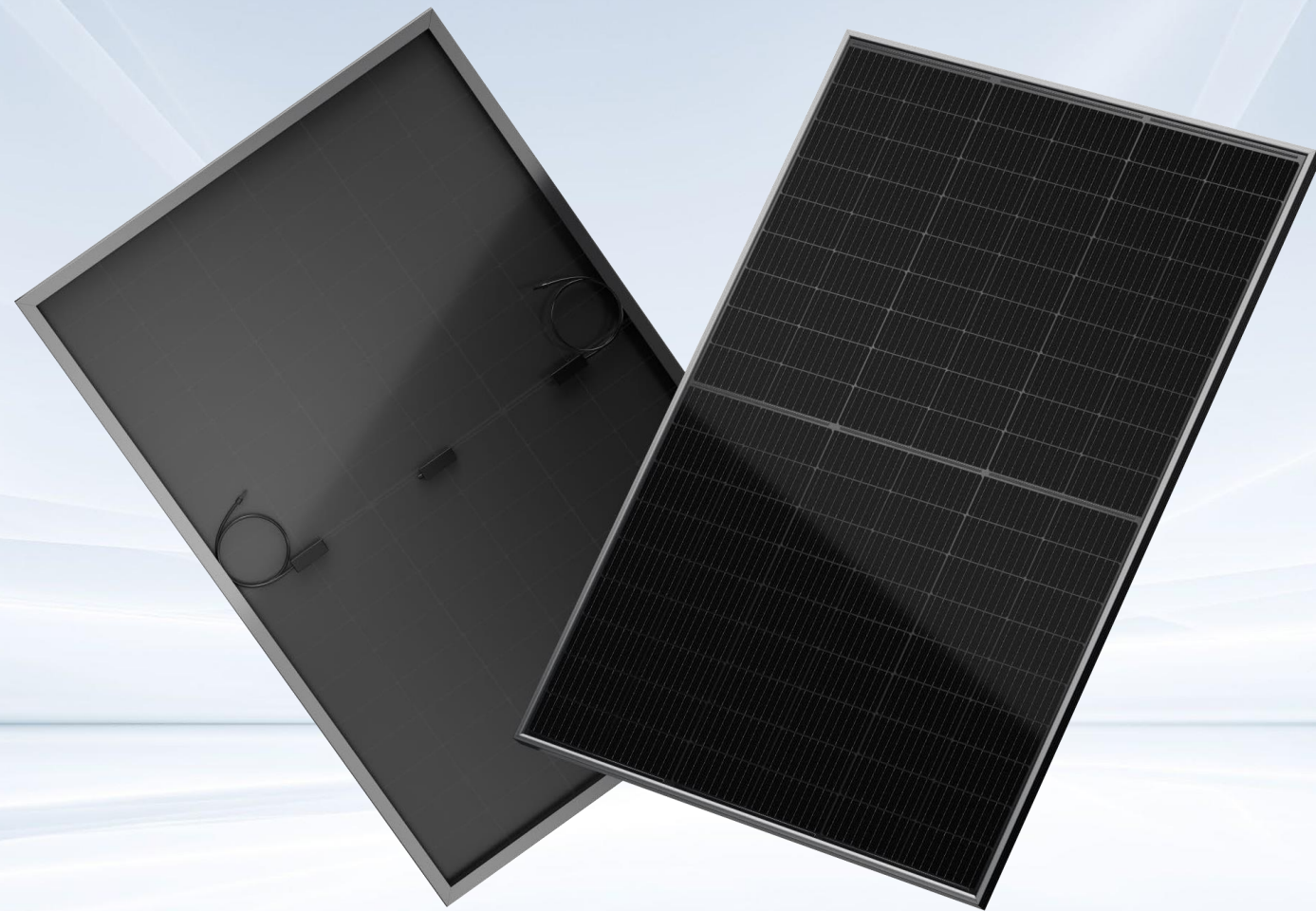


23.02%

Max Module Efficiency

30 *Years*

Linear Power Warranty



PERC Tech

405~425W All Black

HiMAX 5

182mm Cells All Black PERC with MBB & Half-cut Technology

21.76%
Max Module Eff.

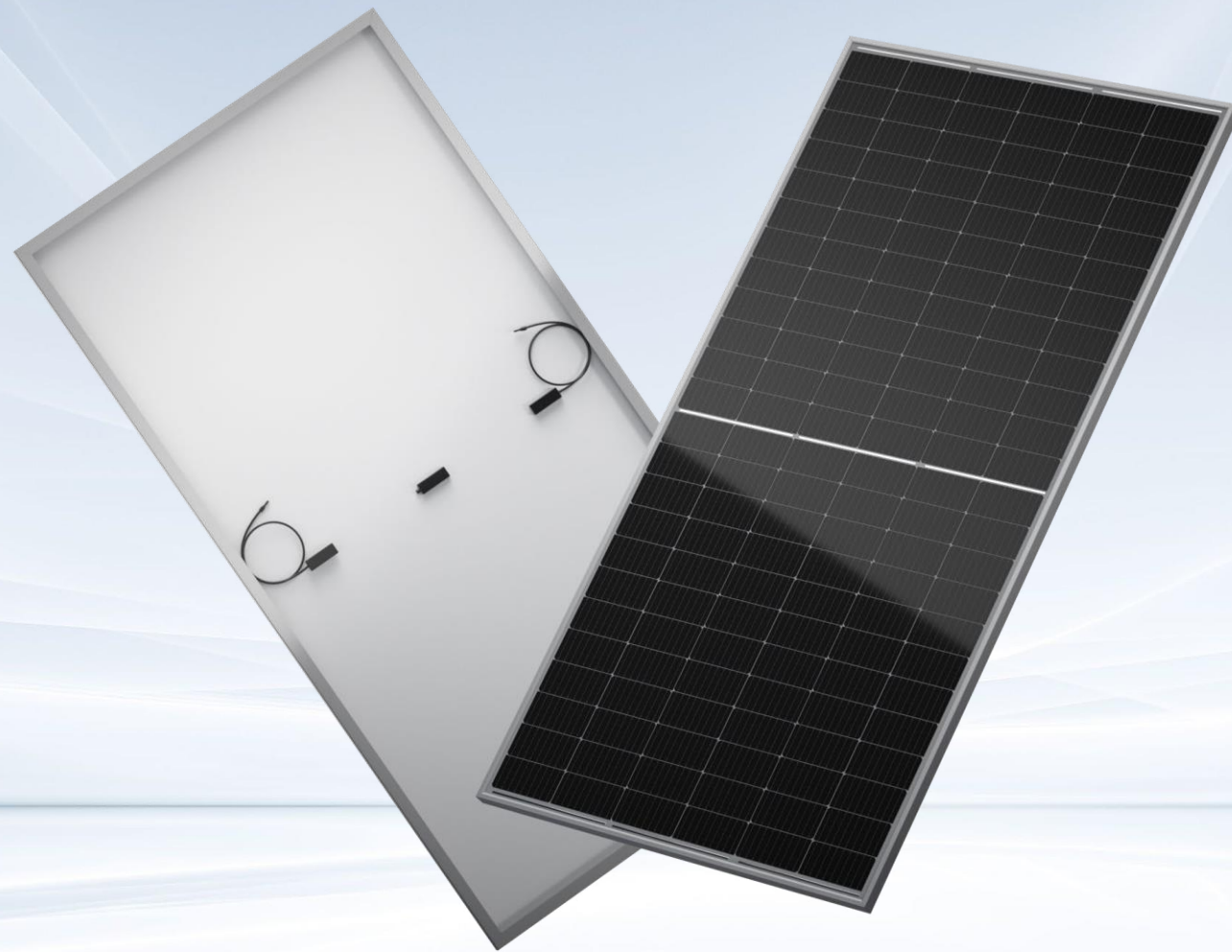
0~+5W
Positive Tolerance

Mechanical Data

Cell Orientation	108(2*54)
Glass	Single Glass 3.2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	20.5kg±3%
Dimension	1722×1134×30mm
Packaging	36pcs per pallet / 936pcs per 40'GP
Power Output Tolerance	0~+5W
Max. System Voltage	DC1500V (IEC/UL)
Max. Series Fuse Rating	25A

Electrical Characteristics (STC)

	405	410	415	420	425
Maximum Power (Pmax/W)	405	410	415	420	425
Open Circuit Voltage (Voc/V)	37.06	37.14	37.22	37.3	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	21.00	21.26	21.51	21.76



PERC Tech

545~565W MONO-FACIAL

HiMAX 5

182mm Cells PERC with MBB & Half-cut Technology

21.87%
Max Module Eff.

0~+5W
Positive Tolerance

Mechanical Data

Cell Orientation	144 (6×24)
Glass	Single Glass 3.2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	28kg±3%
Dimension	2279×1134×35mm
Packaging	31pcs per pallet / 620pcs per 40'GP
Power Output Tolerance	0~+5W
Max. System Voltage	DC1500V (IEC/UL)
Max. Series Fuse Rating	25A

Electrical Characteristics (STC)

	545	550	555	560	565
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	40.9	40.99	41.08	41.17
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



PERC Tech

540~560W Bifacial

BiMAX 5

High Efficiency Low LID Bifacial PERC PV Module

21.67%
Max Module Eff.

0~+5W
Positive Tolerance

Mechanical Data

Cell Orientation	144 (6x24)
Glass	Double Glass 2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	31.6kg±3%
Dimension	2279×1134×35mm
Packaging	31pcs per pallet / 620pcs per 40'GP
Power Output Tolerance	0~+5W
Max. System Voltage	DC1500V (IEC/UL)
Max. Series Fuse Ratin	25A

Electrical Characteristics (STC)

	540	545	550	555	560
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	40.9	40.99	41.08
Current at Maximum Power (Imp/A)	13.27	13.36	13.45	13.54	13.63
Module Efficiency(%)	20.9	21.09	21.29	21.48	21.67



PERC Tech

660~685W MONO-FACIAL

HiMAX 6

210mm Cells PERC with MBB & Half-cut Technology

22.06%
Max Module Eff.

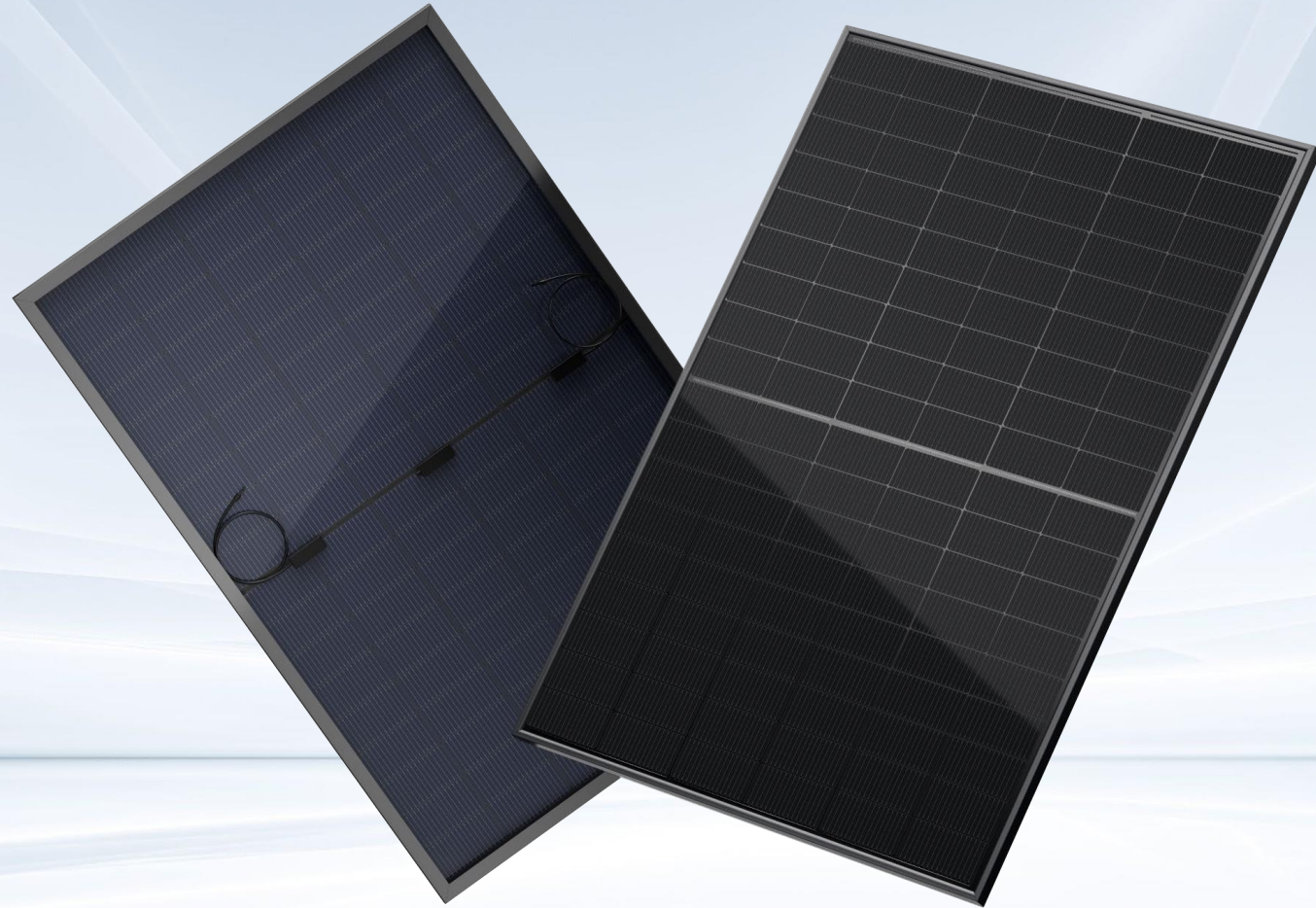
0~+5W
Positive Tolerance

Mechanical Data

Cell Orientation	132 (6×22)
Glass	Single Glass 3.2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	33.6kg±3%
Dimension	2384×1303×35mm
Packaging	31pcs per pallet / 558pcs per 40'GP
Power Output Tolerance	0~+5W
Max. System Voltage	DC1500V (IEC/UL)
Max. Series Fuse Ratin	30A

Electrical Characteristics (STC)

	660	665	670	675	680	685
Maximum Power (Pmax/W)	660	665	670	675	680	685
Open Circuit Voltage (Voc/V)	45.7	45.9	46.1	46.3	46.5	46.7
Short Circuit Current (Isc/A)	18.53	18.58	18.63	18.68	18.73	18.78
Voltage at Maximum Power (Vmp/V)	37.8	38.0	38.2	38.4	38.6	38.8
Current at Maximum Power (Imp/A)	17.47	17.5	17.54	17.58	17.62	17.66
Module Efficiency(%)	21.25	21.41	21.57	21.73	21.90	22.06



TOPCON Tech

420-440W All Black Bifacial

BiMAX 5N

182mm Cells All Black Bifacial TopCon MBB & Half-cut Technology

21.60%
Max Module Eff.

0~+5W
Positive Tolerance

Mechanical Data

Cell Orientation	108 (6×18)
Glass	Double Glass 2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	23.9kg±3%
Dimension	1722×1134×30mm
Packaging	36pcs per pallet / 936pcs per 40'GP
Power Output Tolerance	0~+5W
Max. System Voltage	DC1500V (IEC/UL)
Max. Series Fuse Rating	25A

Electrical Characteristics (STC)

	425	430	435	440
Maximum Power (Pmax/W)	425	430	435	440
Open Circuit Voltage (Voc/V)	38.33	38.56	38.79	39.02
Short Circuit Current (Isc/A)	14.17	14.25	14.33	14.41
Voltage at Maximum Power (Vmp/V)	31.67	31.86	32.05	32.24
Current at Maximum Power (Imp/A)	13.42	13.50	13.58	13.65
Module Efficiency(%)	21.80	22.10	22.30	22.60



HJT Tech

695~715W Bifacial

BiMAX 6N

Bifacial HJT Half Cell Double-glass PV Module

23.02%
Max Module Eff.

0~+5W
Positive Tolerance

Mechanical Data

Cell Orientation	132 (6×22)
Glass	Double Glass 2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	38.7kg±3%
Dimension	2384×1303×35mm
Packaging	31pcs per pallet / 558pcs per 40'GP
Power Output Tolerance	0~+5W
Max. System Voltage	DC1500V (IEC/UL)
Max. Series Fuse Rating	30A

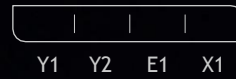
Electrical Characteristics (STC)

	695	700	705	710	715
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



Low Voltage & High Voltage Lithium Battery

High cycle life LiFePO4 Battery Pack



6000 Cycles

> 6000 Cycles, 25°C

15 + Years

15+ Years Design Life



Wall Mount LiFePO4 Battery

PowerPal Y1

Low Voltage LiFePO4 Battery Pack

5kWh / 10kWh 51.2V Optional

Product Specifications

Model	PP-Y1-5kWh	PP-Y1-10kWh
Nominal Voltage	48V	48V
Nominal Capacity	100Ah	200Ah
Battery Cell (Prismatic Battery Cell)	3.2V 100Ah	3.2V 100Ah
Parallel Capacity	15units maximum	15units maximum
Max.Charge Current	100A	100A
Max.Discharge Current	100A	100A
Discharge Voltage Range	41-54.5V	41-54.5V
Charge Voltage Range	53.5-54.5V	53.5-54.5V
Design life	15+ Years (25°C/77°F)	15+ Years (25°C/77°F)
Cycle life	> 6000 Cycles, 25°C	> 6000 Cycles, 25°C
Communication Port	CAN,RS485,RS232	CAN,RS485,RS232
Size (L*W-H)	680×485×220mm	680×485×220mm
Weight	68±1kg	98±1kg
Working Temperature	-10~50°C	-10~50°C
Shelf Temperature	-20~50°C	-20~50°C
Humidity	5%~95%	5%~95%
Lithium Battery Standard	UL1642/IEC62619/UN38.3/ROHS/CE-EMC	

PowerPal Y2

Wall Mount LiFePO4 Battery

Low Voltage LiFePO4 Battery Pack

5kWh / 10kWh 51.2V Optional



Product Specifications

Model	PP-Y2-5kWh	PP-Y2-10kWh
Nominal Voltage	48V	48V
Nominal Capacity	100Ah	200Ah
Battery Cell (Prismatic Battery Cell)	3.2V 100Ah	3.2V 100Ah
Parallel Capacity	8 units maximum	15 units maximum
Max.Charge Current	100A	100A
Max.Discharge Current	100A	100A
Discharge Voltage Range	41-54.5V	41-54.5V
Charge Voltage Range	53.5-54.5V	53.5-54.5V
Design life	15+ Years (25°C/77°F)	15+ Years (25°C/77°F)
Cycle life	> 6000 Cycles, 25°C	> 6000 Cycles, 25°C
Communication Port	CAN,RS485,RS232	CAN,RS485,RS232
Size (L*W-H)	600×510×173mm	673×618×193mm
Weight	51±0.5kg	89±0.5kg
Working Temperature	-10~50°C	-10~50°C
Shelf Temperature	10~50°C	10~50°C
Humidity	15%~75%	15%~75%
Lithium Battery Standard	UL1642/IEC62619/UN38.3/ROHS/CE-EMC	



Rack Mount LiFePO4 Battery

PowerPal **E1**

Low Voltage LiFePO4 Battery Pack

5kWh / 10kWh 51.2V Optional

Product Specifications

Model	PP-E1-5kWh	PP-E1-10kWh
Nominal Voltage	48V	48V
Nominal Capacity	100Ah	200Ah
Battery Cell (Prismatic Battery Cell)	3.2V 100Ah	3.2V 100Ah
Parallel Capacity	15 units maximum	15 units maximum
Max.Charge Current	100A	100A
Max.Discharge Current	100A	100A
Charge Voltage Range	53.5-54.5V	53.5-54.5V
Discharge Cut-off Voltage	41V	41V
Design life	15+ Years (25°C/77°F)	15+ Years (25°C/77°F)
Cycle life	> 6000 Cycles, 25°C	> 6000 Cycles, 25°C
Communication Port	CAN,RS485,RS232	CAN,RS485,RS232
Size (L*W-H)	460×442×180mm	680×485×220mm
Weight	46±1kg	85±1kg
Operation Temperature Range	Charge:0~55°C / Discharge:-20~55°C	
Shelf Temperature	10~50°C	



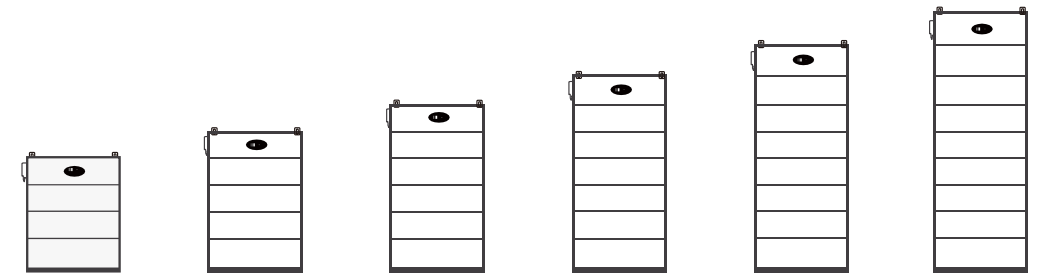
PowerPal X1

Stackable Mount LiFePO4 Battery

High Voltage Stackable Energy Storage Battery

7.5-20kWh

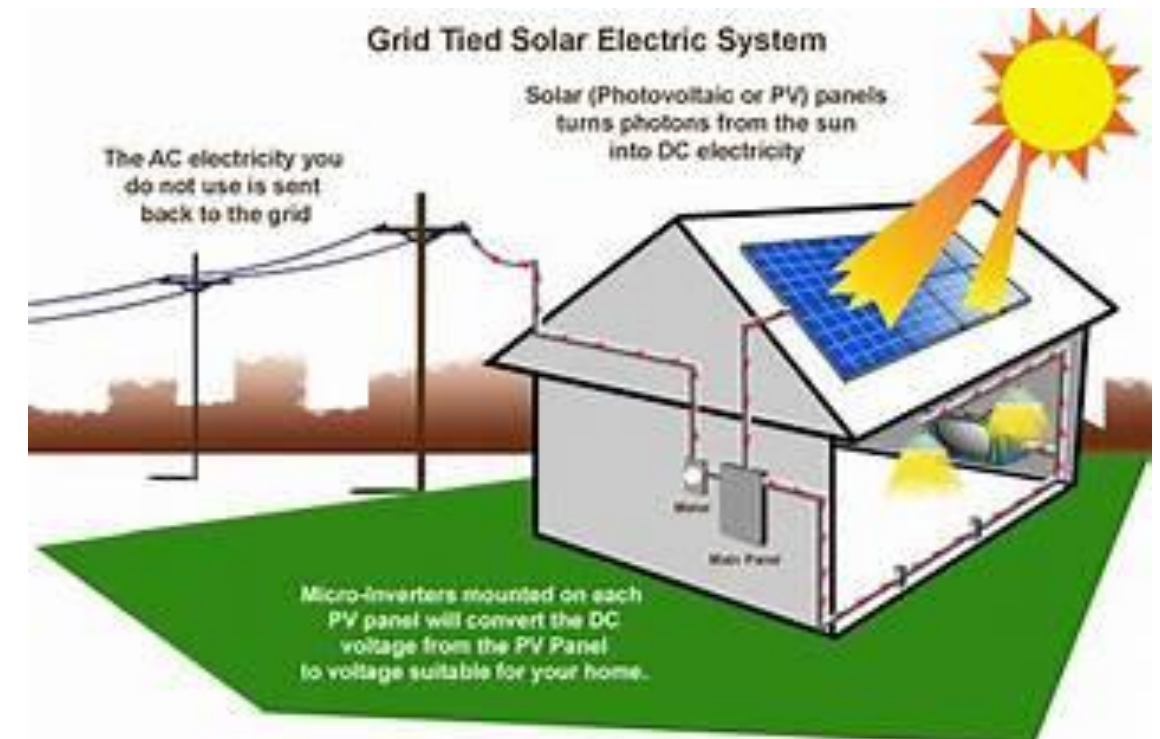
Product Specifications





Model	PP-X1-HV-7.5K	PP-X1-HV-10K	PP-X1-HV-12.5K	PP-X1-HV-15K	PP-X1-HV-17.5K	PP-X1-HV-20K
Nominal Voltage	144V	192V	240V	288V	336V	384V
Connection	1P45S	1P60S	1P75S	1P105S	1P45S	1P90S
Voltage Working Range(V)	114.7-159.7V	153-213V	191.2-266.2V	267.7-372.7V	114.7-159.7V	306-426V
Nominal Capacity(kWh)	7.488kWh	9.984kWh	12.48kWh	14.976kWh	7.488kWh	19.968kWh
Weight	~80kg	~105kg	~129kg	~152.3kg	~176.2kg	~199.5kg
Dimension(L*W*H)	606 x220x730mm	606 x220x730mm	606 x220x730mm	606 x220x730mm	606 x220x730mm	606 x220x730mm
Capacity	52Ah					
Battery Type	LiFePO4					
Max. Charge Current(A)	35A					
Installation	Floor Installation					
Max. Discharge Current(A)	Fully recyclable at the end of life					
Recyclable	IP65					
Cycle Life	> 6000 Cycles, 25°C, 90%DOD					
Temperature(°C)	-20°C~+35°C					
Working Temperature(°C)	Charge: 0°C~+55°C / Discharge:-20°C~+55°C					
Transportation SOC	30%					

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Making More Power

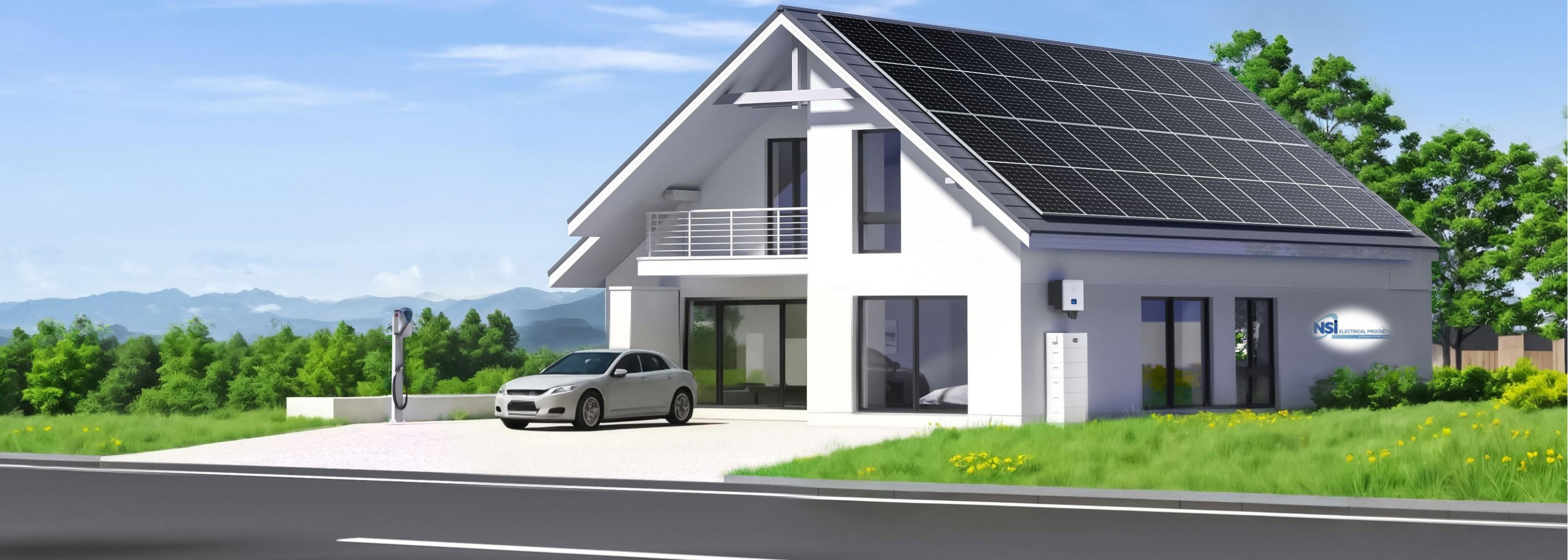
Our Product All in One Solar Solution

All in One Solar System

One-Stop Solar Solution



Residential Commercial



NSI
ELECTRICAL PRODUCTS





Residential Energy Storage System

Residential

5KW / 8KW / 10KW / 12KW

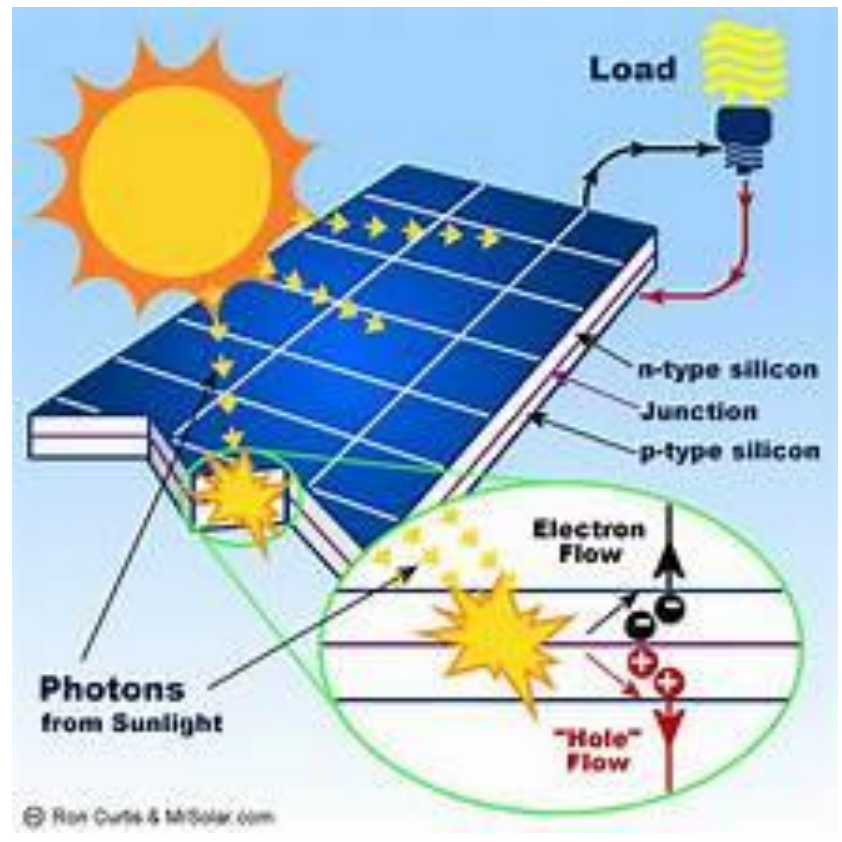


PV Kits Include

Solar module & Solar Mounting

System MODEL	SP5KW-HY	SP8KW-HY	SP10KW3-HY	SP12KW3-HY
PV System Size Nominal (kWp)	5.5	8.8	11	13.2
PV MODULE SPECIFICATIONS				
Power (W)				550
Vmp (V)				41.96
Voc (V)				49.90
Isc (A)				14.00
Imp (A)				13.11
Dimensions (L x W x H) (mm)				2279x1134x35
PV Module weight (kg)				28.6
Certifications	CE / TUV (IEC 61215 & IEC 61730) / UL (UL1703)			
INVERTER SPECIFICATIONS				
Inverter Size (kW)	5	8	10	12
Max DC Power (W)	6500	10400	13000	15600
Max DC Voltage (V)	500	5400	1000	1000
Start-up Voltage(V)	150	150	160	160
MPPT Voltage Range(V)	150-425	125-425	200-650	200-655
Number of MPPTS	2	2	2	2
Strings per MPPT	1+1	2+2	2+1	1+1
Max. AC Current(A)	20.8	33	23	27
Output Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Output Voltage	220,230Vac	220,230Vac	220/380,230/400Vac	220/380,230/400Vac
Grid Type	Single Phase	Single Phase	Three Phase	Three Phase
Pack Dimensions(WxHxD)(mm)	789*490*357	880*600*360	890*610*460	890*610*460
Inverter Weight GW(kg)	25	37.5	46	46
Grid Requalification.	CEI 0-21, VDE-AR-N 4105, NRS 097, IEC 62116, IEC 61727,G99, G98, VDE 0126-1-1, RD 1699, C10-11			
Safety EMC/Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2			
BATTERY BANK SPECIFICATIONS				
Battery Type	Li-Ion(LifePO4)			
Total Batteries	1	2	3	4
Battery Bank Power(kWh)	4.8	9.6	14.4	19.2
Battery Voltage (V)				48
Battery Current(Ah)				100
Battery Bank Voltage(V)				48
Battery Bank Current(Ah)	100	200	300	400
Full Cycles(80% DoD)				6000
Hybrid inverter Connection	Battery bank	Main disconnect	Parallel	box

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PV Kits Include

Solar module & Solar Mounting

Commercial Energy Storage System

Commercial

50kW / 100kW / 250kW / 500kW

PRODUCT MODEL	SP50KW3-HY	SP100KW3-HY	SP250KW3-HY	SP500KW3-HY
Max Pv System Size Nominal(kwp)	60	120	300	400
Battery System Size Nomina(kwh)	64/128/192/256/320/384	128/192/256/320/384	276/552/1104/1656	552/1104/1656
PV MODULE SPECIFICATIONS				
Power (W)				550
Vmp (V)				41.96
Voc (V)				49.90
Isc (A)				14.00
Imp (A)				13.11
Dimensions (L x W x H) (mm)				2279x1134x35
PV Module weight (kg)				28.6
Certifications	CE / TUV (IEC 61215 & IEC 61730) / UL (UL1703)			
BESS SPECIFICATIONS				
Battery chemistry	Lithium Iron Phosphate(LFP)			
Cell life cycle	80%Retention with 5000 Cycles@1c 25 °C			
Cell spec	3.2V 90Ah			
String configuration	2P112S	2P112S	2P240S	2P240S
Rated voltage	358.4V	358.4V	768V	768V
Voltage range	313.6-397.6V	313.6-397.6V	672-852V	672-852V
Single rack rated energy capacity	64kWh	64kWh	64kWh	138kWh
OPT rack number	2-6	2-6	22.7	27.3
Rated AC Power	50kW	100kW	250kW	500kW
MAX AC Power	55kW	110kW	275kW	550kW
Rated grid voltage	3phase,400V,50/60Hz			
Grid voltage range	340-460V			
Grid frequency range	49.5-50.5/59.5-60.5Hz			
Isolation method	3 phase 4 lion transformer			
Degree of protection	IP54			
Operating temperature range	-20-40 °C			
Relative humidity	0-95%(non-condensing)			
Max working altitude	3000m			
Cooling concept of DC hatch	HVAC			
Communication interfaces	RS485,Ethernet,GPRS			
Certifications	UL1973,UL9540A,IEC62619,CE,UN38.3			

Battery bank

Main disconnect

b
o
x



Solar Panel Projects

Our Projects



Energy Storage Projects

Our Projects

