Sunpal

500KW-1.2MWh

SUNPAL

STORAGE SYSTEM STANDARD PROPOSAL

DEVELOPMENT HISTORY

Company milestones

2008~2009

Start-up

Driven by the vision of making clean and reliable solar energy accessible world-wide,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 lS0 9001, 1S014001 and OHSAS18001.

2010~2013

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

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

2020~Nowadays

Industrial upgrade

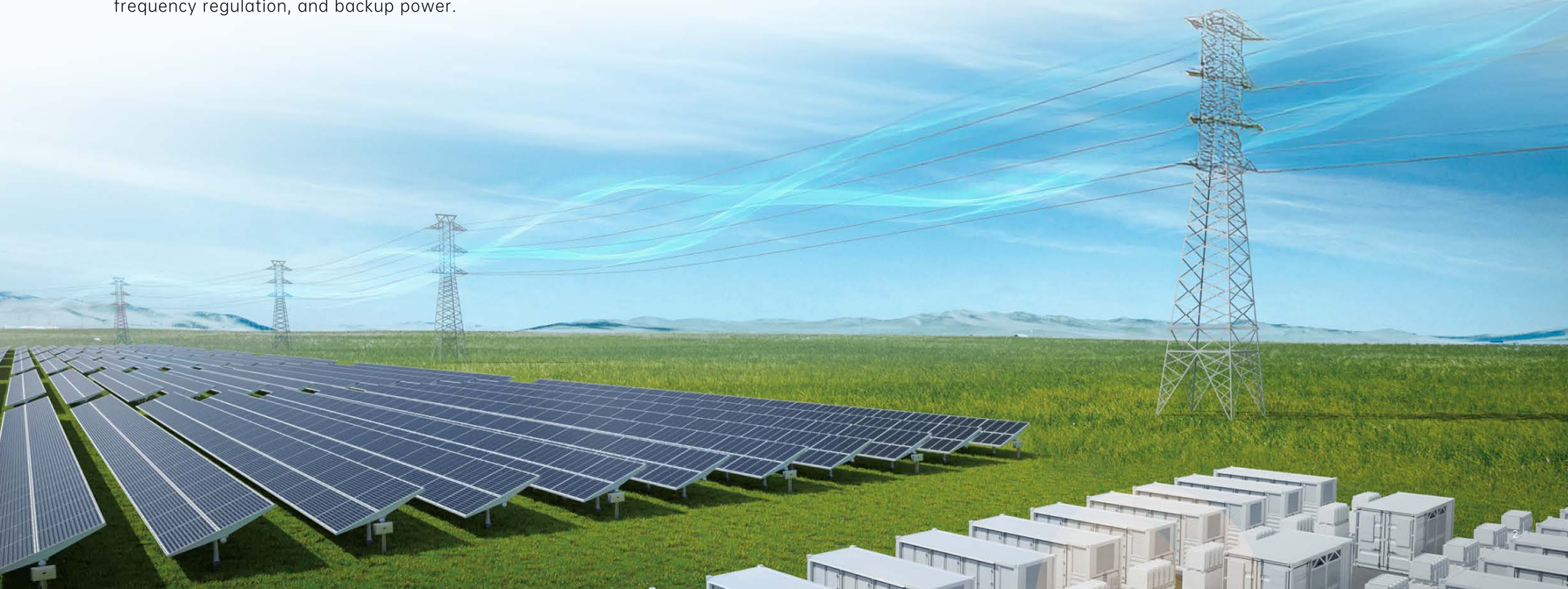
In 2020,Sunpal building a state-of-the-art factory with a production line for high-efficiency 210 mm solar modules (HiMAX6 & BiMAX6). All modules receive TUV/CE/CSA certifications for safety and reliability.

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.

OVERALL SYSTEM DESCRIPTION

The Sunpal containerized energy storage system has a rated output power of 500kW and is equipped with 1.2MWh of battery storage. It utilizes a DC-coupled design for higher conversion efficiency. It can cover a wide range of application scenarios, such as peak shaving, primary frequency regulation, and backup power.

Equipment	Model	Quantity	Unit	Total Power
Solar panels	SP630M-66H	952	PCS	599.76kwh
Inverter	MPS0500	1	PCS	500kwh
Battery	SP-241K314AH	5	PCS	1205.76kwh

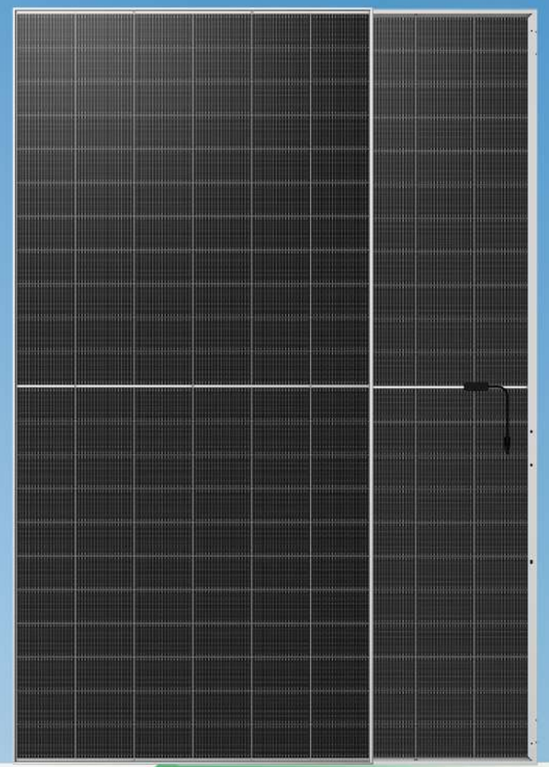


Sunpal

BIMAX 6R

610~630W

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



23.30%
Max. Module Efficiency

- SMBB Technology Half Cut N Type Cell
- High Energy Performance
- 100% Inspection 30years Guarantee
- Fire Class A
- Strengthened Mechanical Load
- Anti PID

BiMAX 6R 610~630W

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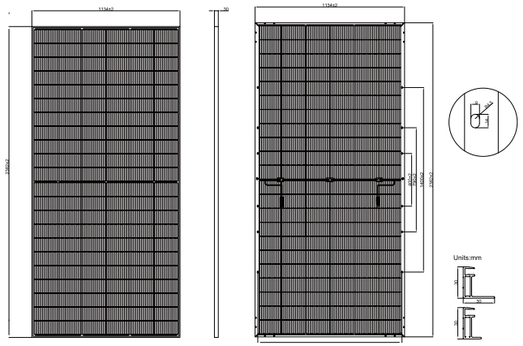
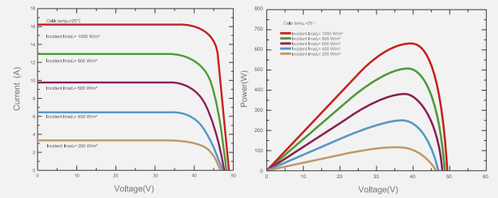


Current- Voltage & Power- Voltage Curves(SP630M-66H)



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	
Test Conditions	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	23.10	23.30	/
Power Tolerance(W)	(0, +5W)									
Maximum System Voltage(V)	1500Vdc (IEC/UL)									
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

Bifacial Output Rear Side Power Gain

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

*Take SP630M-66H as an example.

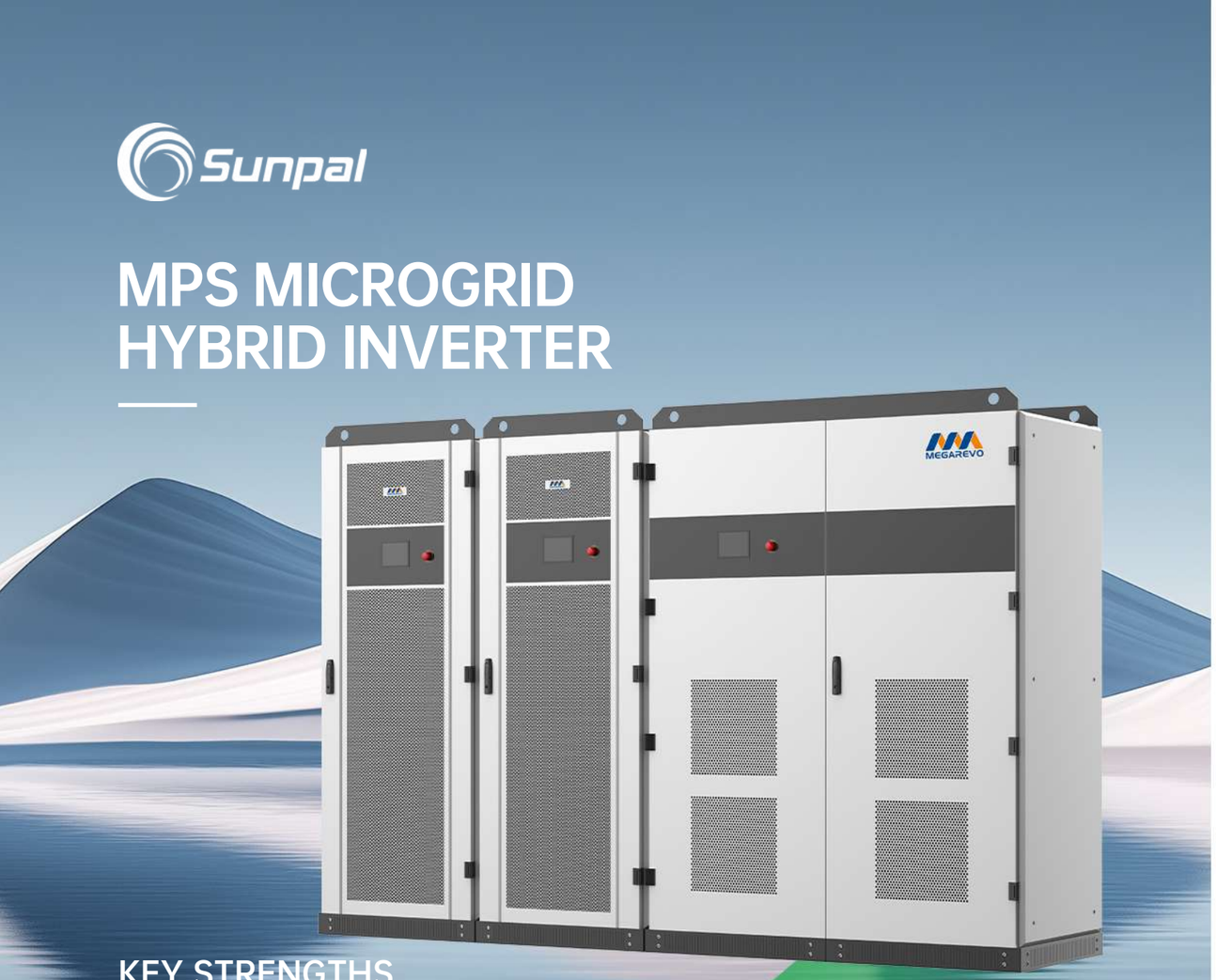
Temperature characteristics

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

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	16 Pallets	25 Pallets
Pieces per Container	740 Pcs	576 Pcs	900 Pcs

MPS MICROGRID HYBRID INVERTER



KEY STRENGTHS

- Integrated MPPT module/transformer/STS/ maintenance bypass.
- Support 100% unbalance.
- Support parallel connection of multiple machines.
- Global launch of MPPT step-up/-down adaptive technology, supporting flexible configuration of PV capacity.
- Support DG load rate control to improve fuel economy.
- Support flexible configuration of control strategies.

MPS0030/MPS0050

MPS0100/MPS0150

MPS0250

MPS0500

MPS MICROGRID SERIES

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MODEL	MPS0500
AC(on-grid)	
Max. output power (kW)	550
Rated output power (kW)	500
Rated voltage(V)	400
Voltage range (V)	320~460
Rated current (A)	722
Rated frequency (Hz)	50/60
Frequency range (Hz)	45~55/55~65
THDi	<3%
Power factor	1leading-1lagging(settable)
Grid type	3W+N+PE
AC(off-grid)	
Max. output power (kW)	550
Rated power (kW)	500
Rated voltage (V)	400
Rated current (A)	722
THDu	⩽1% linear; or⩽5% nonlinear
Rated frequency (Hz)	50/60
Overload capacity	110% long-term, 120% 1min
PV input	
Max. PV input voltage (V)	1,000
Max. PV power (kW)	660/742.5/825
MPPT module quantity	8/9/10
MPPT voltage range (V)	250~1000
Battery	
Battery voltage range (V)	500~950
Max. charging power (kW)	550
General data	
Dimension W*D*H (mm)	(600*720*2,050)*2+ 1,600*1,050*2,050
Weight (kg)	3,205/3,235/3,265
Operation temperature (℃)	-30 ~ 55
Relative humidity	0 ~95% non-condensing
Ingress protection	IP20
Noise emission (dB)	<70
Operating altitude (m)	>3,000 Derating
Cooling	Air Cooling
Display and communication	
Display	LCD touch-screen
BMS communication	RS485, CAN
EMS communication	RS485, TCP/IP
Certificates	EN 62109-1/-2, EN 62477-1, EN 61000-6-2/-6-4, NRS 097-2-1:2024, ASGC

SP-241K314AH

ENERGY STORAGE BESS

BESS SP-24IK314AH

www.sunpalsolar.com

MODEL	SP-241K314AH
Product	768V314AH
Nominal Voltage	768V
Nominal Capacity	314
Dimension module(mm)	483*245*792mm*15
Dimension RACK(mm)	1090*780*2190
Weight(kg)	1920

SPECIFICATIONS	PARAMETER
Nominal Capacity (KWH)	241.2
Discharge Cut-Off Voltage (V)	660
Charge Cut-Off Voltage (V)	852
Recommend Charge/Discharge Current (A)	100
Max. Charge/Discharge working Current(A)	160
Communication	RS485/RS232/CAN
Working Temperature	0℃~50℃ Charge -10℃ ~50℃ Discharge
Transport or Storage Temperature Range	-20℃~60℃
Certification	CE/EC/UL/UN38.3/MSDS
Design Life	15years+
Cycle Life	0.5C/0.5C-80% D0D)>6000 times
Series Function	Support 16 units in Series
Certification	UN38.3/MSDS/ROHS

SP-51.2V314AH

SP-48K314AH

SP-64K314AH

SP-80K314AH

SP-96K314AH

SP-160K314AH

SP-225K314AH

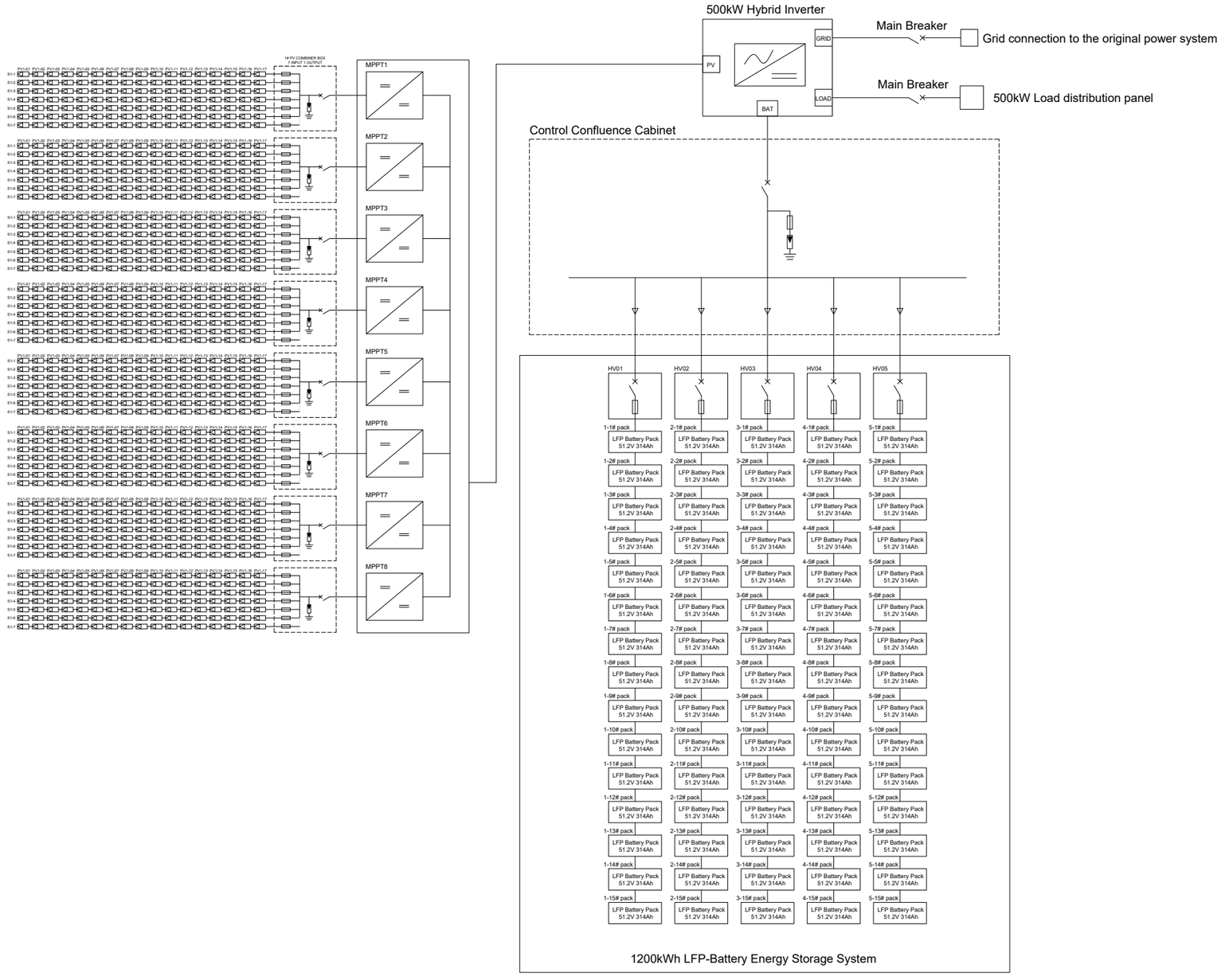
SP-241K314AH

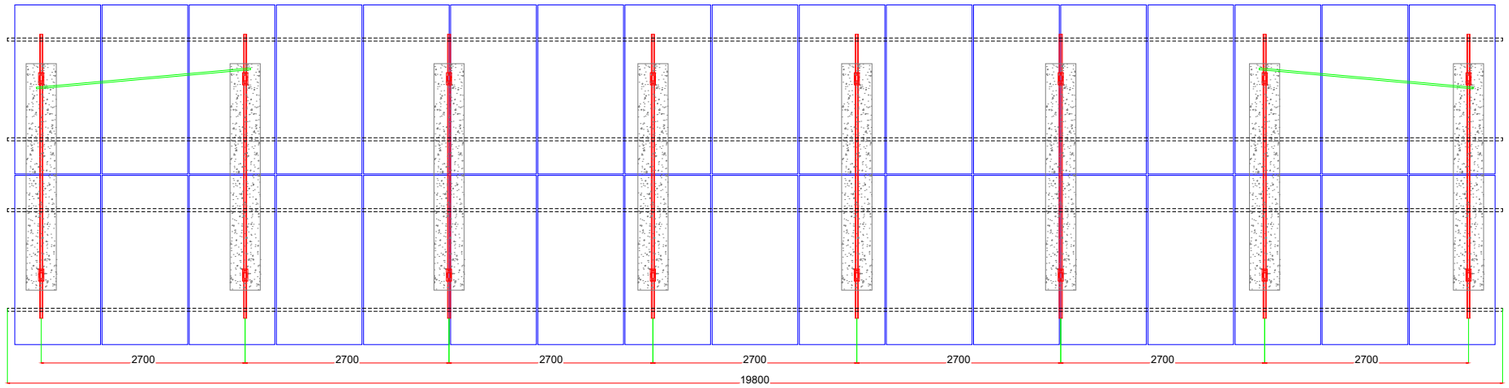
MAIN TECHNICAL PARAMETERS

ATS 500kW

ATS 500kW

GRADE	NUMERICAL
Rated power	500kW
Grid-input	
Input data	380Vac±10%, 50/60Hz±0.5
Input phase	Three phase +N +G
Input breaker	800A/4P
Segmentation capability(Icu)	50kA
Working status indication	Pilot lamp
Work status feedback	Signal contact
Rated insulation voltage Ui(V)	1000Vac
Dynamo-input	
Input data	380Vac+10%, 50/60Hz±0.5
Input phase	Three phase +N+G
Input breaker	800A/4P
Segmentation capability(Icu)	50kA
Working status indication	Pilot lamp
Work status feedback	Signal contact
Rated insulation voltage Ui(V)	1000Vac
General data	
Dimension (mm) (WxDxH)	1020*850*2050
Installation mode	Vertical cabinet
Noise dB	⩽60
Display mode	LCD
|<->|| Switching time	Can set
Class of protection	IP20
Working temperature	-20℃~ +65℃
Lightning protection class	||
Routing mode	Up and down
Reference weight (Kg)	210
Altitude (m)	⩽3000

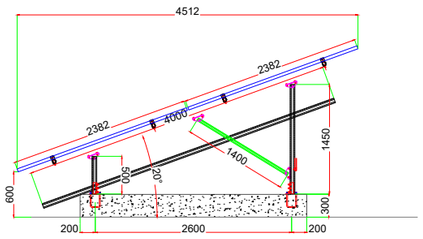

500kW Hybrid Inverter
Main Breaker
Grid connection to the original power system
Main Breaker
500kW Load distribution panel
GRID
PV
LOAD
BAT
Control Confluence Cabinet
14 PV COMBINER BOX
7 INPUT 1 OUTPUT
MPPT1
MPPT2
MPPT3
MPPT4
MPPT5
MPPT6
MPPT7
MPPT8
HV01
HV02
HV03
HV04
HV05
LFP Battery Pack
51.2V 314Ah
1200kWh LFP-Battery Energy Storage System

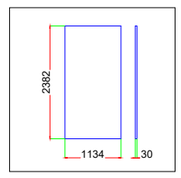


*28 Kits

Top View

PV Plan: 2 *17 pcs /Kit



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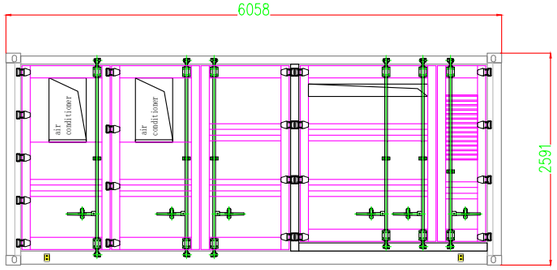
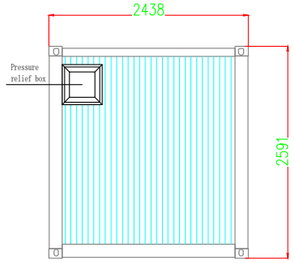
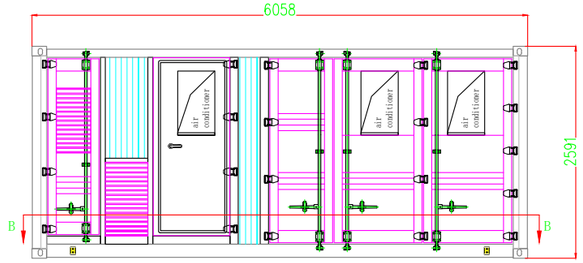
Rear view



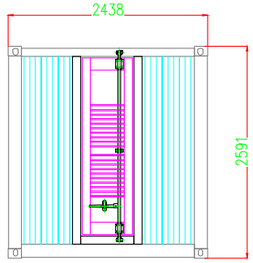
Right view



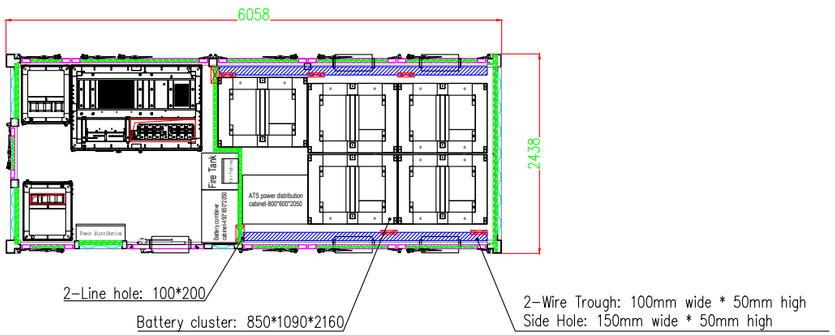
Front view



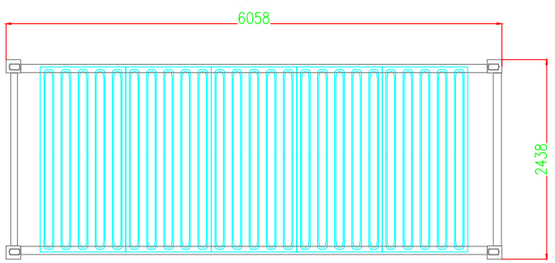
Left view



Cross-section



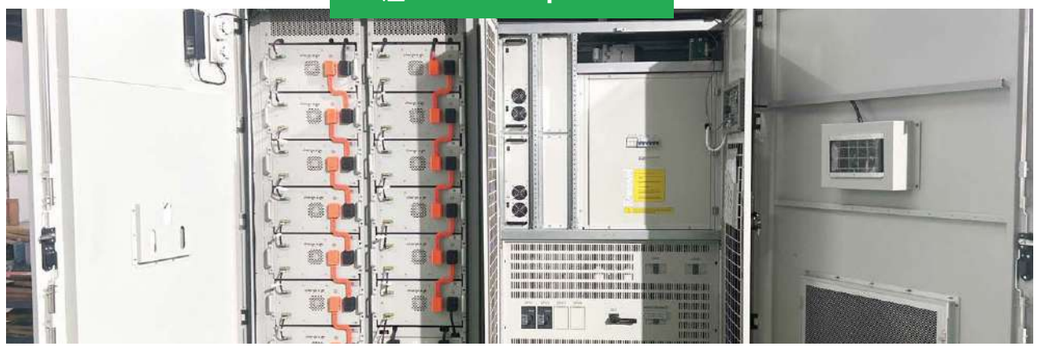
Top view



SUNPAL

GLOBAL PROJECT


Czech Republic




South Africa


Chad


Afghanistan

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