



KH Off-grid 8KW 10KWH RESS Solution

P O W E R I N G G R E E N F U T U R E





01

Overview

02

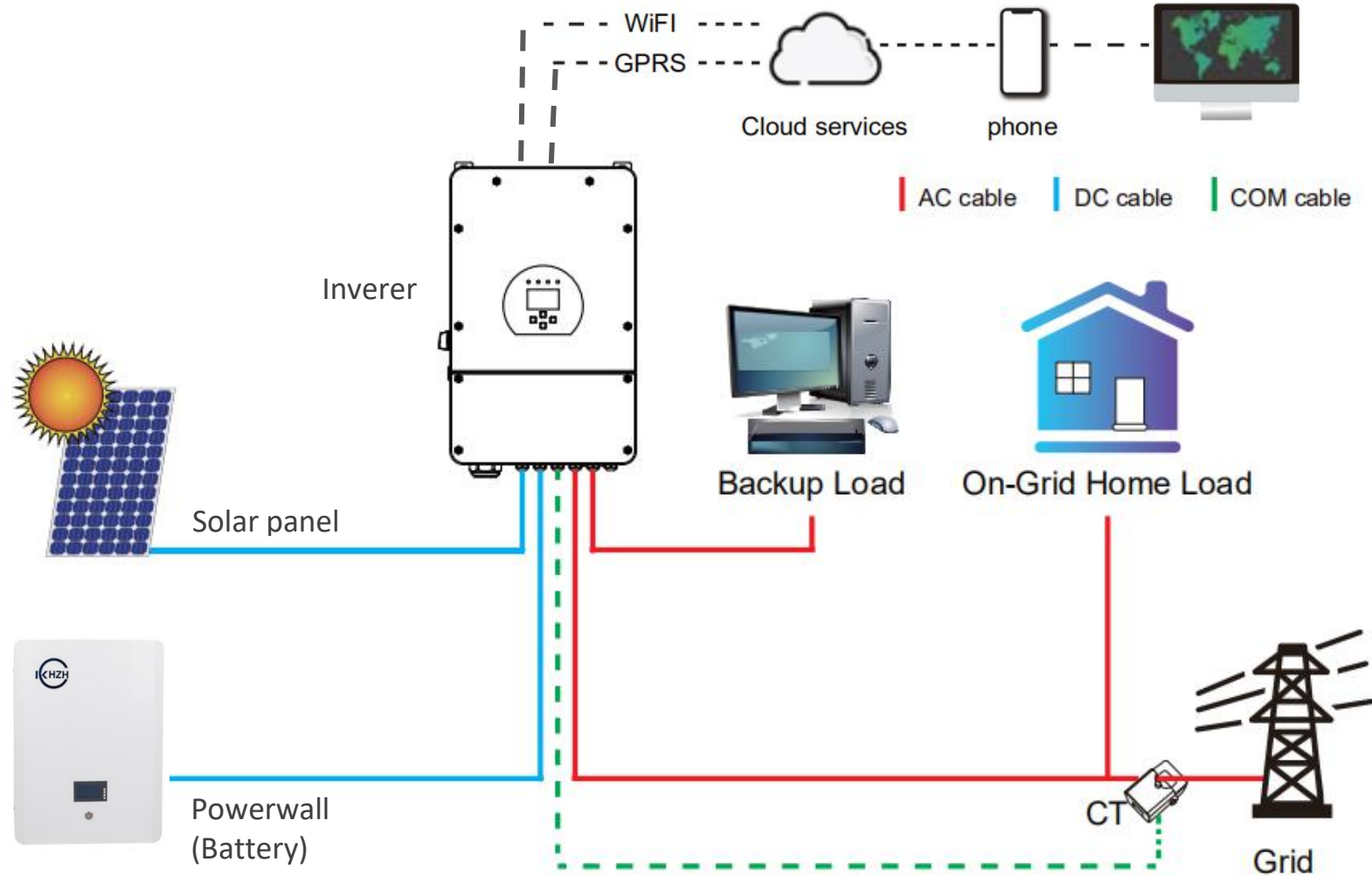
RESS Solution

03

RESS Introduction

Overview

PV+RESS			
Inverter Cap.(kW)	Battery Install Cap.(kWh)	Battery Cap.(kWh)	Solar Panel Cap.(kWp)
8	10	10	3





RESS Solution

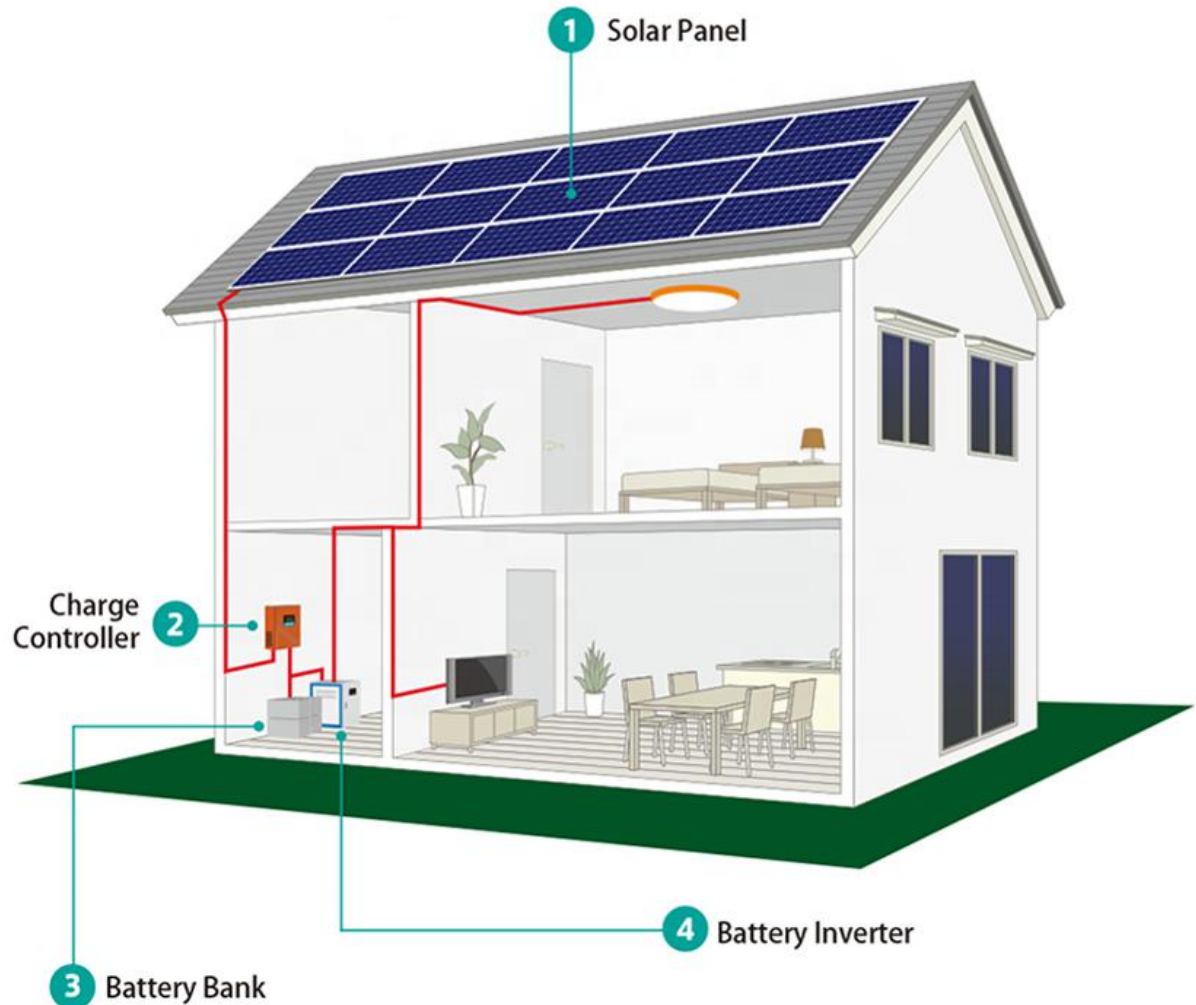
Schematic diagram | Configuration |





RESS Project

KESS Series Storage System Integrated with Solar panel, Inverter, Battery, and solar panel mounting system.



Solar panel



All in one Inverter



Powerwall Battery



MC4 Connector



PV Cable



Solar Panel Mounting System



Scope of Supply

No.	Item	Speciation	Qty	Remark
1	8KW/10KWH RESS SYSTEM	8KW/10KWH RESS SYSTEM		Including 1.1~1.6
1.1	Solar Panel	HCP60X9-300W,Poly, 300Wp,36V	10	
1.2	All-in-one inverter	SUN-8K-SG01LP1-EU,8KW,220/230/240Vac, 48Vdc, Single phase	1	
1.3	Battery system	KH-ES10KPW,51.2Vdc,10KWH,3.2V200AH,LFP, LCD display,powerwall	1	
1.4	PV Cable	PV 4mm2, For system connection	1	200m total
1.5	MC4 Connector	30A,1000Vdc	1	8 units
1.6	Mounting System	Roof(Customized,including all parts)	1	Customized
Total PV Capacity(KW)			3	
Total PCS Capacity(KW)			8	
Total Battery Capacity(KWh)			10	



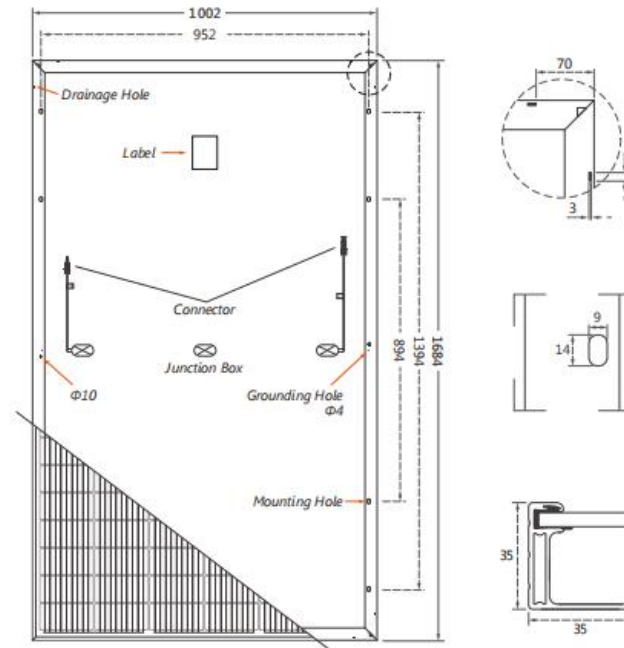
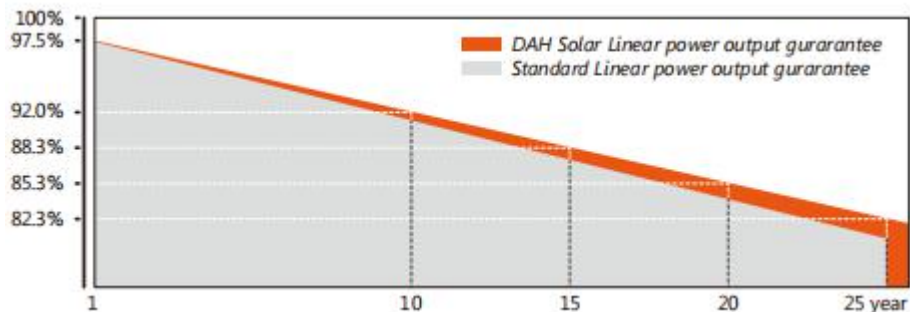
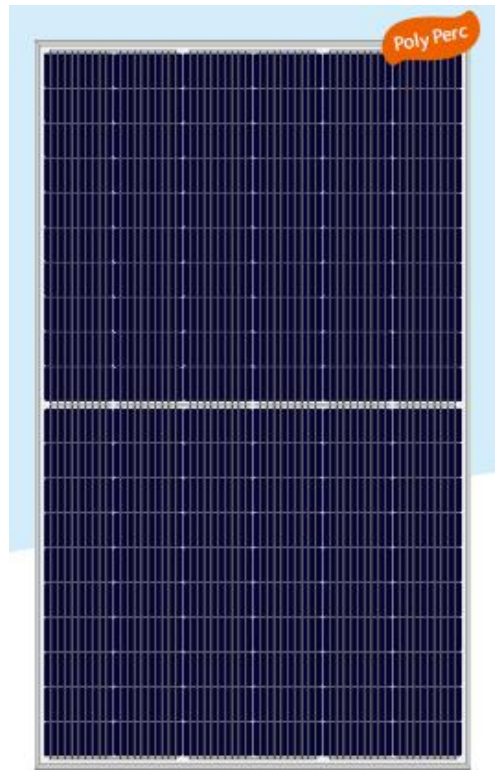
RESS Introduction

Solar panel | Inverter | BMS | Battery Cell | Battery Module
Powerwall





Introduction of solar panel



Mechanical Specification

Cells Type	Poly 158.75×79.375mm
Weight	19kg
Dimension (L×W×T)	1684×1002×35mm
Cable	4.0mm ² , Portrait: 300mm(+)/400mm(-)
(Including connector)	Landscape: 1000mm(+)/1000mm(-)
No.of Cells	120 (6×20)
Packing	31pcs/pallet, 372pcs/20GP, 858pcs/40HQ
Glass	3.2 mm High Transmission, Antireflection Coating
Junction box	IP68, 3 Bypass Diodes
Connector	QC4 or MC4 Compatible

Operating Parameters

Maximum system voltage	1000V/1500V DC
Operating Temperature	-40 ~ +85°C
Maximum series fuse rating	20A
Snow load, frontside	5400Pa
Wind load, backside	2400Pa
Nominal operating cell temperature	45°C±2°C
Application level	Class A

Electrical Characteristics(STC)

Module Type	HCP60X9-295W	HCP60X9-300W	HCP60X9-305W	HCP60X9-310W	HCP60X9-315W
Maximum Power (Pmax)	295W	300W	305W	310W	315W
Open-circuit Voltage (Voc)	39.5V	39.8V	40.1V	40.4V	40.7V
Maximum Power Voltage (Vmp)	32.1V	32.3V	32.6V	32.8V	33.1V
Short-circuit Current (Isc)	9.67A	9.77A	9.85A	9.93A	10.02A
Maximum Power Current (Imp)	9.19A	9.29A	9.37A	9.45A	9.53A
Module Efficiency (%)	17.48%	17.78%	18.08%	18.37%	18.67%

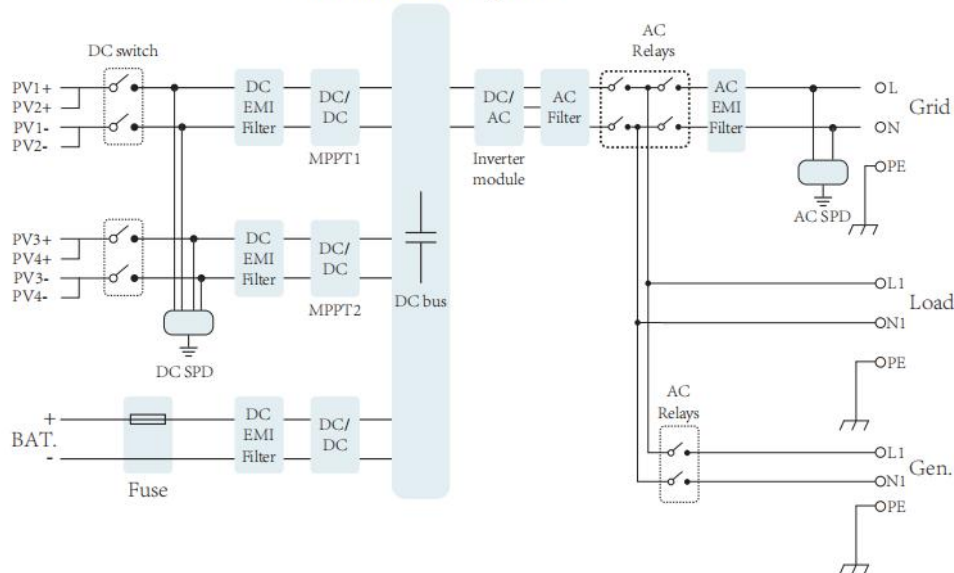
Power Tolerance	0 ~ +5W
Temperature Coefficient of Isc	0.05%/°C
Temperature Coefficient of Voc	-0.31%/°C
Temperature Coefficient of Pmax	-0.38%/°C
Standard Test Environment	Irradiance 1000W/m ² , Cell temperature 25°C, Spectrum AM1.5



Introduction of All in one inverter



Circuit block diagram



Model	SUN-5K-SG01LP1 -US	SUN-6K-SG01LP1 -US	SUN-7.6K-SG01LP1 -US/EU	SUN-8K-SG01LP1 -US/EU
Battery Input Data				
Battery Type	Lead-acid or Lithium-ion			
Battery Voltage Range (V)	40~60V			
Max.Charging Current (A)	120A	135A	190A	190A
Max.Discharging Current (A)	120A	135A	190A	190A
Charging Curve	3 Stages/Equalization			
External Temperature Sensor	Optional			
Charging Strategy for Li-Ion Battery	Self-adaption to BMS			
PV String Input Data				
Max.DC Input Power (W)	6500W	7800W	9880W	10400W
PV Input Voltage (V)	370V(100V~500V)			
MPPT Range (V)	125V~425V			
Start-up Voltage (V)	150V			
PV Input Current (A)	11A+11A	18A+9A	18A+18A	18A+18A
No.of MPPT Trackers	2			
No.of Strings Per MPPT Tracker	1+1	2+1	2+2	2+2
AC Output Data				
Rated AC Output and UPS Power (W)	5000W	6000W	7600W	8000W
Max AC Output Power (W)	5500W	6600W	8360W	8800W
Peak Power(off grid)	2 times of rated power, 10 S			
AC Output Rated Current(A)	20.8A	25A	31.7A/33A	33.4A/35A
Max.AC Current(A)	24A	28.8A	36.4A/38A	38.3A/40A
Max Continuous AC Passthrough(A)	48A	80A	90A	90A
Output Frequency and Voltage	50/60Hz; 120/240Vac(split phase), 208Vac(2/3 phase),230Vac(single phase)			
Grid Type	Split phase 、 2/3 phase 、 Single Phase			
Current Harmonic Distortion	THD<3%(Linear load<1.5%)			
Efficiency				
Max. Efficiency	97.60%			
Euro Efficiency	97.00%			
MPPT Efficiency	99.90%			
Certifications and Standards				
Grid Regulation	UL1741,IEEE1547,RULE21,VDE 0126,AS4777,NRS2017,G98,G99,IEC61683,IEC62116,IEC61727			
Safety Regulation	IEC62109-1, IEC62109-2			
EMC	EN61000-6-1, EN61000-6-3, FCC 15 class B			
General Data				
Operating Temperature Range (C)	-25~60 C , >45 C Derating			
Cooling	Fan			
Noise (dB)	<30			
Communication with BMS	RS485; CAN			
Weight (kg)	32			
Size (Length*Width*Height mm)	670×420×233mm			
Protection Degree	IP65			
Installation Style	Wall-mounted			
Warranty	5 years			

Specification of Power wall

The rack BMS has the ability to measure the full voltage and current of all units in the rack. It can protect the battery according to its own algorithm. Rack SOC and SOH are also calculated automatically and updated very precisely by the rack BMS.



ITEM	POWERWALL SPECIFICATION
Configuration	16S1P
Rated Energy@25°C, BOL, LFP-100Ah cell	10240Wh
Rated Voltage	51.2V
Voltage Range	42.4V ~ 58.4V
Weight	~83kg
Dimension	650mm(H)*485mm(W)*220mm(D)
Cycle life	>4000 times@ 25 °C , 0.5C
Operation Range of Temperature	Min:0 °C Max:40 °C
Cooling Method	Air Cooling
Humidity	0%~95%, No condensing
Power Consumption	210W
Communication Protocol	RS485/RS232/CAN
Certification	IEC62133, CE, UL1973, UN38.3



Battery Management System

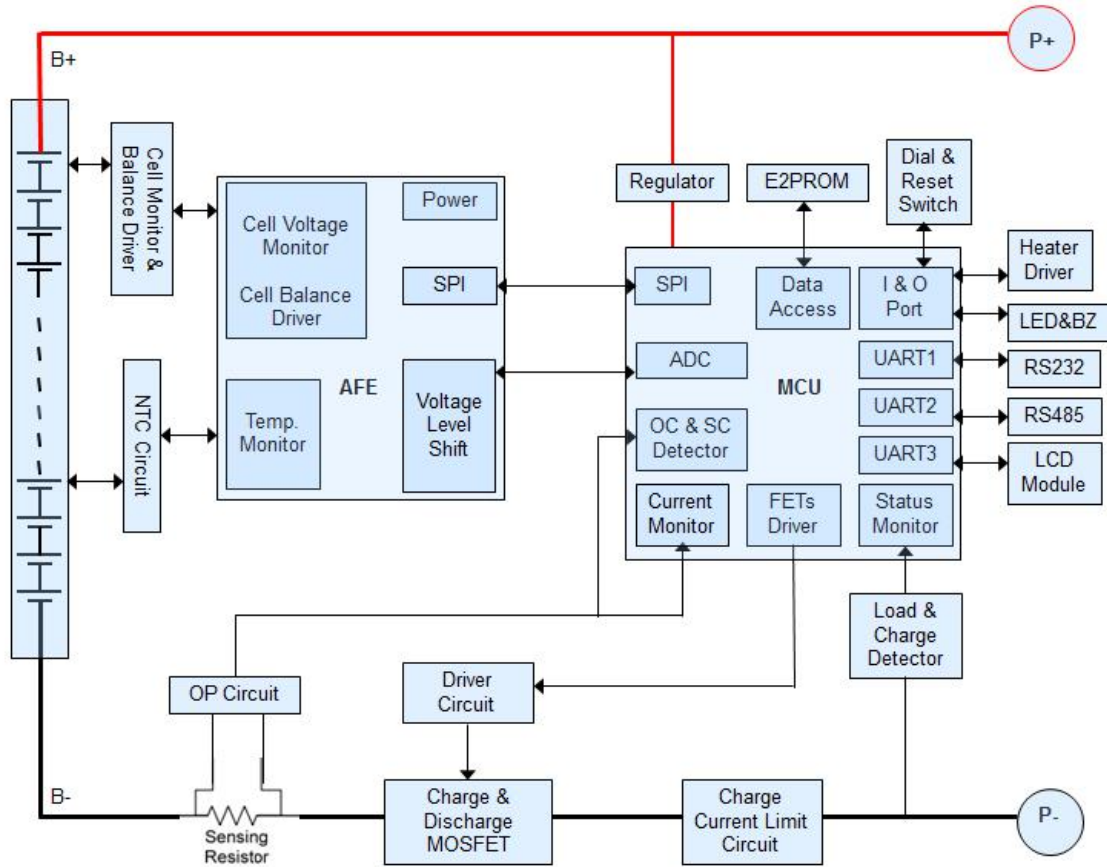


Fig.4 Communication layout of system BMS

Table 5:BMS function lists

No.	Item	Description
1	Communication	RS485/232
2	Ambient temperature	Temperature detection function
3	Analog signal input	UPS and fire safety dry contact
4	LCD instruction	Display
5	High voltage	Over charge detection
6	Low voltage	Over discharge detection
7	Cell voltage	Cell voltage measurement
8	Cell temperature	Cell temperature measurement
9	Current Sensor	Over current detection
10	Protection function	short detection
11	Protection function	Alarm function



Battery Cell



No.	ITEM	SPECIFICATION
1	capacity	≥ 200Ah @ 25℃, 0.5C
2	Nominal voltage	3.2V
3	Dimension(W×H×D)	173*200*54mm
4	Weight	≤4.01kg
5	Material	LiFePO4
6	Cycle life	>6000 cycle@ 25℃, 0.5C
7	Impedance(1kHz,BOL,40%SOC)	≤0.3mΩ
8	Reversible capacity loss (25℃,100%SOC/month)	≤ 3.5%
9	Operation temperature	-20℃ ~ 55℃
10	Storage temperature	-30℃ ~ 60℃
11	Certification	IEC 62619,UL1973,UN38.3

A two-story house with a grey roof and white siding. The roof is covered with several large, dark solar panels. The house has a chimney and a large glass-enclosed porch on the ground floor. The house is surrounded by lush green trees and foliage. The text "THANK YOU" is overlaid in large, bold, blue letters across the center of the image.

THANK YOU

P O W E R I N G G R E E N F U T U R E