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Version: **May. 26, 2023, Residential Energy Storage System**

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RoyPow®

Get powered. Get inspired

LI-ION technology

Residential ALL IN ONE Energy Storage System

Intelligent technology coexisting with nature powers your home

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RoyPow
your trusted partner

RoyPow SUN Series

Meet RoyPow SUN Series - Compact, intelligent, and safe.

RoyPow SUN Series combines the most advanced battery management system with super power supply capacity to provide ***sustainable & green energy*** for your working and family usages all day.

RoyPow SUN Series is a fully-integrated $LiFePO_4$ battery system for residential usages. The rechargeable lithium-ion battery with long design life improves solar self-consumption.

Bi-directional energy storage system supports backup mode.

The electrical interface provides a simple connection to any houses or buildings. Simple installation and user-friendly APP monitoring facilitate your usage of clean energy.

RoyPow®
Get powered. Get inspired

Why RoyPow SUN Series?

RoyPow
Get powered. Get inspired

Safety

LiFePO4 batteries ensure premium electrical characteristics without any safety issues.

Enhanced safety with aerosol fire protection.

Integrated Arc Fault Circuit Interrupters (AFCI) & Rapid Shut Down (RSD).

IP65

IP65 Rating, safe and reliable while using.

Core value

Application	Energy transformation	Energy conservation
	Smart home	Capitalization
Platform	Prediction	Scheduling
	AI algorithm	Big data
Communication control	WI-FI power carrier	Cloud communication
Hardware	Power generation / Transformation / Distribution	

Intelligent energy

RoyPow cloud platform

With full-on visual experience, user-friendly data display and all-round monitoring functions, RoyPow makes smart energy management easier for everyone.

- Lifelong free access to monitoring via Web and APP
- New function and latest version upgrades available remotely
- Set parameters control and build VPP
- IoT compatible

Battery management system (BMS)

RoyPow research institute

30+ BMS R&D veteran researchers with **16**+ years ESS BMS experiences

High SOC accuracy

Our SOC algorithm accuracy reaches **5%**

Comprehensive protection

3-level software protection, redundant hardware level protection

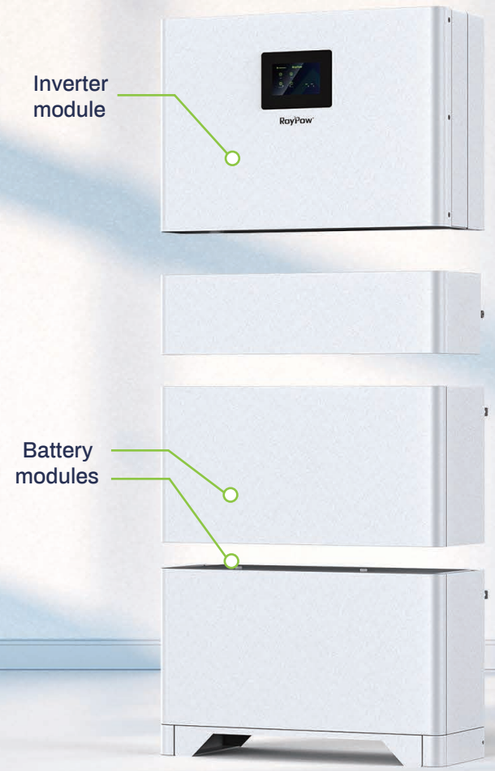
Euro-standard

3 - 5 kW / 5 - 40 kWh

US-standard

10 - 15 kW / 10 - 40 kWh

RoyPow SUN Series 3 - 5 kW / 5 - 40 kWh



Euro-standard

Intelligent residential energy storage system

97.6% Max. efficiency

2 MPPTs

35 dB Max. noise

7 kVA Max. AC input

7 kW Max. PV input

6 Max. systems in parallel

Up to **30 kW** parallel working

5/10 Years optional warranty

IP65
IP65 protection

Natural cooling

- Modular & integrated design for easy installation
- Friendly compatible with new install or existing PV system
- Integrated multiple protections
- Smart management with App & Web, remote off upgrade

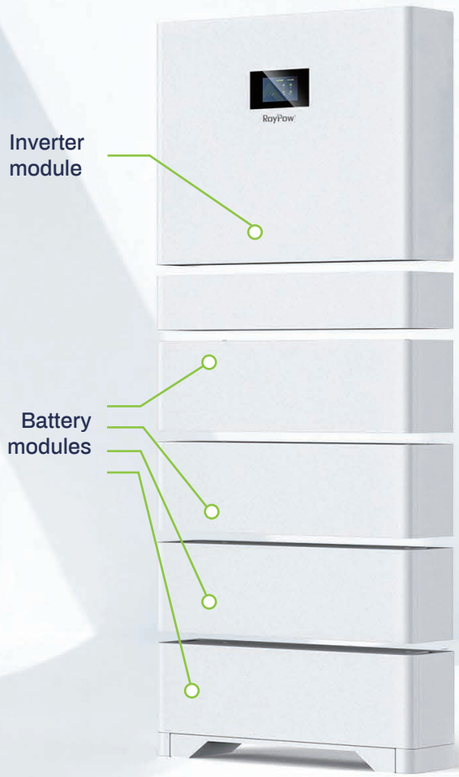
Model	SUN3600S-E/A		SUN5000S-E/A	
System specification				
Nominal output power (W)	3,600		5,000	
Energy capacity (kWh)	5.12 ~ 40.96	Battery type	Lithium iron phosphate (LFP)	
Ingress rating	IP65	Warranty (years)	5 / 10 years (optional)	

Inverter model	SUN3600S-E/I			SUN5000S-E/I		
PV input						
Max. input power (W)	4,600			7,000		
Max. input voltage (V)	580	MPPT Voltage Range (V)	120 ~ 550	Start Operation Voltage (V)	150	
Max. input current（A)	2 x 13.5			2 x 13.5		
Max. short current（A)	2 x 16			2 x 16		
No. of MPPT	2	No. of string per MPPT		1		
Battery input						
Norminal voltage (V)	51.2	Operation voltage range（V)	40 ~ 60	Battery charge method	Self-adaption to BMS	
AC (grid)						
Max. output apparent power (VA)	3600			5,000		
Max. input power (VA)	7,000			7,000		
Grid type	Single phase, L / N / PE	Norminal frequency (Hz)	50 / 60	Grid voltage range (V)	170 ~ 270	
Norminal voltage (V)	230	Frequency range (Hz)	45 ~ 55 / 55 ~ 65	THDI (rated power)	< 3%	
Max.output current (A)	16			22		
Max.input current (A)	32			32		
PF	-0.8 ~ 0.8	Switch time (typical) (ms)		10		
AC (back up)						
Max. active power (W)	3,600			5,000		
Max.output current (A)	15.6			22		
Norminal frequency (Hz)	50 / 60	Norminal voltage (V)		230		
THDV (100% R load)	< 2%	Output parellel(Pcs)		6		
Over load	105% ＜ Load ⩽ 125%, 10 min	125% ＜ Load ⩽ 150%, 1 min		Load ＞150%, 10 S		
Efficiency						
Max. efficiency (BAT to AC)	94%	Max. efficiency (PV to AC)		97.6%		
Euro efficiency	97%	Max. MPPT efficency		99.90%		
General data						
Dimensions (W x D x H)	25.6 x 9.4 x 24.4 inch, 650 x 240 x 620 mm			Net weight	72.8 lbs, 33 kg	
Noise（dB)	< 35			Operating temperature range	-13 ~ 140°F, -25 ~ 60°C (45°C derating)	
Ingress rating	IP65			COM	RS485 / CAN / WiFi / 4G (optional)	
HMI	APP / LCD	Relative humidity	0% ~ 95% (No condensation)	Max. altitude	3000 (>2000 derating)	
Topology type	Transformer (Bat to AC)	Night power consumption（W)	< 10	Cooling	Natural	
Certification						
Safety	EN 62109-1 / 2	EMC	EN61000-6-1 / EN61000-6-3	Grid code	VDE 4105, NRS 097, EN 50549, CEI 0-21	

Battery model	RBmax5.1L		
Electric data			
Nominal energy[1] (kWh)	N [2] x 5.12	Usable energy (kWh)	N x 4.79	Operating voltage range (V)	44.8 ~ 56.8
General data			
Dimensions (W × D × H)	25.6 x 9.4 x (18.1+N x 12.9) inch, 650 x 240 × (460+N x 330) mm		Weight	N x 103.6 lbs, N x 47 kg
Operating temperature	Charge: 32 ~ 131°F (0 ~ 55°C), Discharge: 4 ~ 131°F (-20 ~ 55°C)			
Storage temperature	4 ~ 113°F (-20 ~ 45°C)			
Relative humidity	0% ~ 95% (No condensation)		Max. altitude (m)	4,000 (>2,000 derating)
Ingress rating	IP65		Mounting options	Indoor / Outdoor, Floor or wall mount
Certification				
Safety	IEC62619, UL 1973	EN61000-6-1 / EN61000-6-3	Transportation	UN38.3

[1] Under specific test conditions. [2] N=1~8, depending on the number of batteries configured.

RoyPow SUN Series 10 - 15 kW / 10 - 40 kWh



US-standard

Intelligent residential energy storage system

98% Max. efficiency

4 MPPTs

35 dB Max. noise

20 kVA Max. AC input

27 A Max. current (per MPPT)

6 Max. systems in parallel

Up to **90 kW** parallel working

5/10 Years optional warranty

- Split phase output
- Natural cooling
- Type 4X protection
- Smart load function

- Modular & integrated design for easy installation
- Friendly compatible with new install or existing PV system
- Integrated RSD (Rapid Shut Down) & AFCI (Arc Fault Circuit Interrupters)
- Smart management with App & Web, remote off upgrade

Model	SUN10000S-U/A		SUN15000S-U/A	
System specification				
Norminal output power (W)	10,000		15,000	
Battery capacity range (kWh)	10.24 ~ 40.96	Battery type	Lithium iron phosphate (LFP)	
Ingress rating	IP65 / Type 4X	Warranty（years）	5 / 10 (optional)	
Inverter model	**SUN10000S-U/I**		**SUN15000S-U/I**	
PV input				
Max.input power (W)	4 x 3,600		4 x 6,000	
Max.input voltage (V)	600	MPPT voltage range (V)	120 ~ 550	Start operation voltage (V)	150
Max. input current (A)	15.5 + 15.5 + 15.5 + 15.5		27 + 27 + 27 + 27	
Max. short current (A)	20 + 20 + 20 + 20		40 + 40 + 40 + 40	
No. of MPPT	4	No. of string per MPPT	2	
Battery input				
Nominal voltage (V)	153.6		204.8	
Operation voltage range (V)	75 - 480	Battery charge method	Self-adaption to BMS	
AC (grid)				
Max. output apparent power (VA)	10,000		15,000	
Max. input power (VA)	15,000		20,000	
Grid type	Split phase, L1 / L2 / N / PE	Nominal frequence (Hz)	60	Grid voltage range (V)	102 ~ 132 / 204 ~ 264
Nominal voltage (V)	120 / 240	Frequence range (Hz)	55 - 65	THDI (rated power)	< 3%
Max. output current (A)	41.6		62.5	
Max. input Current (A)	62.5		83.3	
PF	-0.8 - 0.8	Switch time (typical) (ms)	10	
AC (back up)				
Max. active power (W)	10,000		15,000	
Max. output current (A)	41.6		62.5	
Nominal frequence (Hz)	60	Nominal voltage (V)	120 / 240	
THDV（100% R load）	< 2%	Output parellel (Pcs)	6	
Over load	105% ＜ Load ⩽ 125%, 10 min	125% ＜ Load ⩽ 150%, 1 min	Load ＞150%, 10 S	
Efficiency				
Max. efficiency（BAT to AC）	96%	Max. efficiency（PV to AC）	98%	
CEC efficiency	97%	DC/AC Suger Protection	Type2 / Type 2	
General data				
Dimensions (W × D × H)	33.3 × 7.9 × 21.7 inch, 845 × 200 × 550 mm		Operating temperature range	-13 ~ 140°F, -25 ~ 60°C (45°C derating)
Ingress rating	IP65 / Type 4X		Noise	< 35 dB
HMI	APP / LCD		COM	RS485 / CAN / WiFi / 4G (Optional)
Net weight	110.2 lbs, 50 kg	Relative humidity	0% ~ 95% (No condensation)	Max. altitude (m)	3,000 (> 2,000 derating)
Topology type	Transformerless	Night self consumption (W)	< 10	Cooling	Natural
Certification				
Safety	UL 1741SA、UL 1699B、CSA 22.2	EMC	FCC Part 15 ClassB	Grid code	IEEE 1547、IEEE 2030.5

Battery model	RBmax5.1H		
Electric data			
Nominal energy [1] (kWh)	N [2] x 5.12	Usable energy (kWh)	N x 4.79	Operating voltage range (V)	102.4 ~ 409.6
General data			
Dimensions (W × D × H)	33.3 x 9.4 x (10.4 + N x 10.6) inch, 845 x 240 x (265 + N x 270) mm (2 Pcs string)		
Weight	N x 105.8 lbs, N x 48 kg	Operating temperature	Charge: 32 ~ 131°F (0 ~ 55°C), Discharge: 4 ~ 131°F (-20 ~ 55°C)	
Relative humidity	0 ~ 95%(No condensation)	Storage temperature	4 ~ 113°F (-20 ~ 45°C)	
Ingress rating	IP65	Max. altitude (m)	4,000 (>2,000 derating)	Mounting options	Indoor / Outdoor, Floor or wall mount
Certification				
Safety	IEC62619、UL 1973、UL9540A、UL9540	EMC	FCC Part 15 ClassB	Transportation	UN38.3

[1] Under specific test conditions.

[2] N=2~8, depending on the number of batteries configured.

RoyPow SUN Series

Smart energy storage for homeowners,
simple to use & easy to install.

Advanced LiFePO4 battery module

5 kW / module
Max. continuous discharge power

5.12kWh–40.96kWh
Flexible capacity

5/10 Years
optional warranty

- Easy installation with modular and stacked design
- Excellent safety of cobalt free LiFePO4 battery
- Safety standards like CE, UN38.3, EN 62619, UL1973
- Built-in BMS with intelligent monitoring & multiple protections

Model	RBmax5.1L	2*RBmax5.1L	3*RBmax5.1L	4*RBmax5.1L	5*RBmax5.1L	6*RBmax5.1L	7*RBmax5.1L	8*RBmax5.1L
Electric data								
Nominal energy[1] (kWh)	5.12	10.24	15.36	20.48	25.6	30.72	35.84	40.96
Usable energy(kWh)	4.79	9.58	14.37	19.16	23.95	28.74	33.53	38.32
Cell type	Lithium iron phosphate (LFP)							
Nominal voltage (V)	51.2							
Operating voltage range (V)	44.8 ~ 56.8							
Max. continuous charge current (A)	50	100	100	100[2]	100[2]	100[2]	100[2]	100[2]
Max. continuous discharge current (A)	100	100[2]	100[2]	100[2]	100[2]	100[2]	100[2]	100[2]
General data								
Weight (lbs / kg)	99.2 / 45	206.1 / 93.5	306.4 / 139	405.6 / 184	512.6 / 232.5	612.9 / 278	713.2 / 323.5	813.5 / 369
Dimensions (W × D × H) (mm)	650 × 240 × 460	650 × 240 × 790	650 × 240 × 1,120	650 × 240 × 1,450	Double tower: 650 × 240 × 790 + 650 × 240 × 1120	Double tower: 650 × 240 × 1120 + 650 × 240 × 1120	Double tower: 650 × 240 × 1120 + 650 × 240 × 1450	Double tower: 650 × 240 × 1450 + 650 × 240 × 1450
Operating temperature	Charge: 32 ~ 131°F (0 ~ 55°C), Discharge: 4 ~ 131°F (-20 ~ 55°C)							
Storage temperature	4 ~ 113°F (-20 ~ 45°C)							
Relative humidity	0 ~ 95% (No condensation)							
Max. altitude (m)	4,000 (> 2,000 derating)							
Ingress rating	IP65							
Mounting options	Indoor / Outdoor, Floor or wall mount				Communication	CAN, RS485		
Certification								
	IEC 62619 / UL 1973 / EN 61000-6-1 / EN 61000-6-3 / UN38.3							
Warranty	5 / 10 years (optional)							

[1] Under specific test conditions
[2] Optional 200A version RBmax5.1L2
Information may be subject to change without notice during product improving. For the latest product specs, please refer to RoyPow website: www.roypowtech.com.

Powerful monitoring & data platform

APP&WEB MANAGEMENT

Everything at a glance and under control; the intuitive App / Web allows you to have full visibility into your self-powered home while providing real-time information on solar generation, battery power flow, and household consumption.

- Real-time monitoring & comprehensive visualization
- Multi-terminal compatibility & sharing
- Dynamic power flow & generation report
- Backup function & data encryption
- Working mode switch & profit calculation
- Integrated after-sales service

Portable power station

RoyPow
Get powered. Get inspired

R2000PRO 1280 Wh

Lightweight & easy to carry

Maintenance free

Fast charge

Safe & simple to use

Multiple inputs & outputs

Plug and play for multiple devices

Fridge (36W)
R2000PRO 20+ hours
Optional expansion pack 80+ hours

LCD TV (75W)
R2000PRO 10+ hours
Optional expansion pack 35+ hours

Laptop (56W)
R2000PRO 15+ hours
Optional expansion pack 50+hours

CPAP (40W)
R2000PRO 15+ hours
Optional expansion pack 50+hours

Phone (5W)
R2000PRO 90+ hours
Optional expansion pack 280+ hours

LED lamp (4W)
R2000PRO 210+ hours
Optional expansion pack 700+ hours

R2000PRO
Technical Specifications

AC	R2000PRO-U	R2000PRO-E
Nominal power (VA)	2,000	
Input voltage range (Vac)	90 - 145	175 - 265
Input frequency range (Hz)	55 - 65	45 - 65
Inverter voltage (Vac)	110 / 120	230
Impact power (VA)	4,000	
Efficiency	> 88% Max. 90%	
Switch time	10 ms Standard	
Output wave forms	Pure sine wave	
Battery		
Nominal voltage (Vdc)	25.6	
Operating range (Vdc)	23 - 28.8	
Battery type	Lithium Iron Phosphate (LFP)	
Main capacity (Wh)	1,280	
Additional capacity	2,560 Wh (100 Ah)	
PV charge		
Max. charge power (W)	1,000	
PV input range (Vdc)	30 - 60	
Max. charge current (A)	30	
Efficiency	Max. 95%	
AC charge		
Max. charge power (W)	750	
Charge voltage range (Vac)	90 - 264	
Charge frequency range (Hz)	47 - 63	
Charge current (A)	25	
Efficiency	Max. 93%	
DC output		
DC output voltage (Vdc)	13.8	
Rated DC output current (A)	25	
Cigarette lighter	10 A (Normal), 10 A < I < 15 A (1 mins switch off), > 15 A (Immediate switch off)	
USB x 2	5 V x 2.4 A	
PD x 2	5 V / 9 V / 12 V / 15 V / 20 V 3 A	
Dimensions (W * D * H)	14.6 x 17.1 x 12.8 inch (370 x 435 x 326 mm)	
Weight	50.7 lbs / 23 kg (main device) ; 51.8 lbs / 23.5 kg (back-up device)	

All pictures shown are for reference only and data are based on RoyPow standard test procedures. Actual performance may vary according to local conditions.

RoyPow, Your Trusted Partner For One-stop Energy Solutions

RoyPow is a global company dedicated to the research, development and manufacturing of Lithium-ion Battery Systems as one-stop solutions.

With more than 20 years of combined experience manufacturing renewable energy and battery systems, RoyPow provides Lithium-ion Batteries for Low-Speed Vehicles such as golf carts, personnel carriers, industrial batteries for use in Material Handling Equipment such as forklifts, aerial work platforms and floor cleaning machines as well as renewable Energy Storage Systems for residential, commercial, industrial, vehicle-mounted and marine applications.

RoyPow has established a worldwide network to serve customers with a manufacturing center in China and subsidiaries in the USA, Europe, Japan, the UK, Australia, and South Africa to date. RoyPow owns and operates fully automatic production lines, a full range of test equipment and an advanced MES that collectively address all aspects of its manufacturing process, from electronics, software design to module assembly, battery assembly as well as initial and final testing.

As a renewable energy innovator, RoyPow is committed to the mission of achieving energy sustainability while creating a better life for human beings..

R&D and manufacturing highlights

By virtue of all this, RoyPow is capable of “end-to-end” integrated delivery, and makes our products out-performing industry norms.

- Persistent technology innovation.
- Fully automatic production line.
- All-round testing.
- IATF16949 system.

Global sales and service network system

- Timely delivery.
- Hassle-free after-sales service.
- Fast response technical support.

RoyPow has comprehensively unfolded its overseas market layout to realize the localization of R&D, manufacturing, marketing and service, then become your most reliable partner.

Upgrading to new technology, with our turnkey solutions.

Years of dedication on new energy solutions, we are proud to offer customers professional solutions for:

- **Low speed vehicle batteries** including golf carts and sightseeing cars;
- **Industrial batteries** including forklifts, aerial work platforms and floor cleaning machines;
- **Residential energy storage systems & portable power units** including home storage and portable energy storage products, as well as off-grid energy storage (for forest cabin, island villa without electricity, etc.);
- **Vehicle-Mounted Energy Storage Systems** including RV and truck energy storage and air conditioning system, as well as off-grid solar system for RV;
- **Marine Energy Storage Systems & Batteries** including trolling motors, fish finders, other off-grid energy storage systems for marine, and marine power system;
- **Chargers** for forklifts, aerial work platforms, floor cleaning machines, golf carts and various marine batteries.