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# SG-BX Portable Storage Power Supply

## User Manual



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Dear customer, thank you for choosing to use our products, as the specifications, please refer to the actual product. Please read the manual carefully before using this product if necessary you can keep it for future review.

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# Catalogue

One: Product Characteristics .....	- 2 -
1.1 Product Overview .....	- 2 -
1.2 Product Characteristics.....	- 2 -
Two: Product Introduction .....	- 3 -
2.1 Dimension Drawing of the Product .....	- 3 -
2.2 Panel Introduction .....	- 4 -
2.3 Display Screen Introduction .....	- 5 -
Three: Operation Instructions .....	- 6 -
3.1 Introduction of Product Charging Port.....	- 6 -
3.2 Introduction of the Product Output Port.....	- 7 -
Four: Attention.....	- 8 -
4.1 Use Skills.....	- 8 -
4.2 Safety and Maintenance.....	- 9 -
4.3 Troubleshooting .....	- 10 -
4.4 System Maintenance.....	- 11 -
Five: Warranty Commitment .....	- 11 -
Six: Equipment Parameters.....	- 12 -
Seven: Packing List and Communication Module Accessories Selection.....	- 13 -
8 Installation Size.....	- 14 -

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## **1. Product Characteristics**

### **1.1 Product Overview**

Thank you very much for using the multi-functional and portable power supply products produced by our company. This product has a lot of features, when you need the power outage or when you go travelling, you can use it to power your appliances or digital products. This power supply is built-in high quality lithium ion battery which support DC, USB DC output, AC output. Before using this product, please read this user manual carefully and keep it for reference properly.

This manual is used to help you use the product correctly. The pictures in this manual are for reference only.

### **1.2 Product characteristics**

1. Support AC, DC, USB multiple output mode;
2. Built-in LED lighting, emergency high brightness at night;
3. With municipal electric, vehicle, solar energy three charging methods;
4. This product is small in volume, light in weight, high in efficiency, and stable in performance;
5. This power supply is built-in high-quality lithium iron phosphate battery, lasting endurance;
6. This power supply is built-in pure sine wave inverter, stable AC output;
7. Intelligent color screen display, can accurately display the working state of the system;
8. With overvoltage, undervoltage, short circuit, over temperature, backconnection and other multiple protection;

## 2. Product Introduction

### 2.1 Dimension of the Product



Parameter Name	Dimension			
	Model	SG-BX500/55-12	SG-BX1000/100-12	SG-BX1500/150-12
Weight (kg)				
Product Size L * D * H (mm)	225*175*205mm	280*228*233mm	340*245*326mm	340*245*326mm

## 2.2 Control Board Introduction

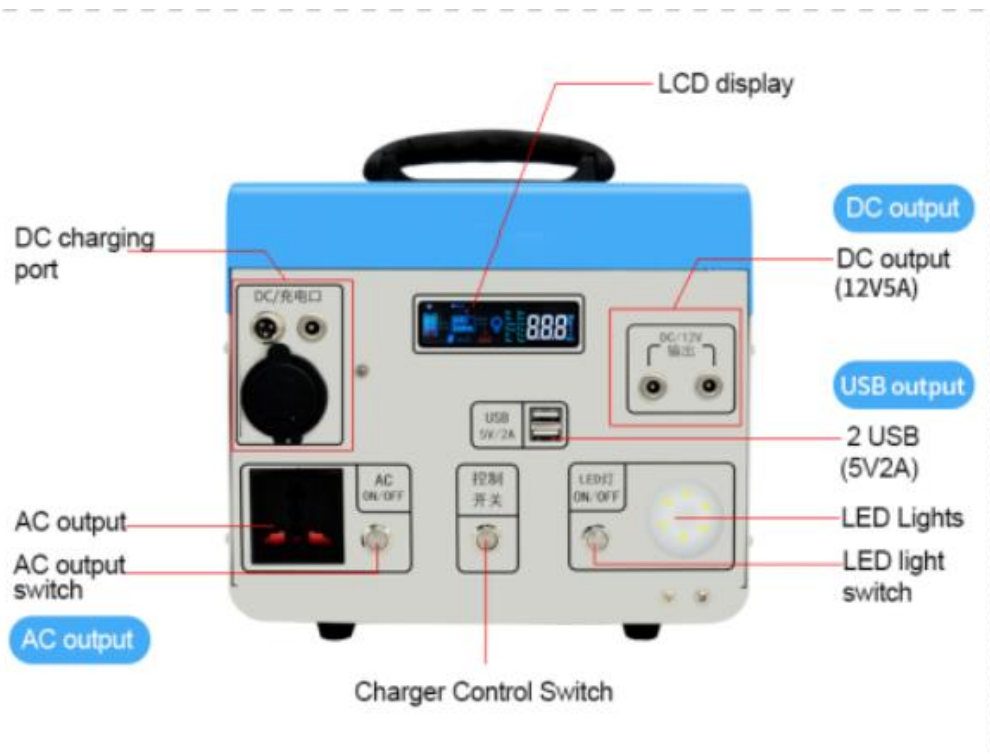


Table 2-1 Introduction of the interface function

Key / Interface	Function	Remarks
AC ON/OFF	Press the AC switch, can realize the AC output on/off	
Control Switch	Turn on the control switch, the display screen is bright, you can use DC output, can also be charged, when not in use, press to turn off.	
LED ON/OFF	Press the LED switch to achieve lighting on/off	
DC Charging Port	This interface is a multi-choice, must open the control switch can be used, can be connected to solar panels, mains, car charging;	Pay attention to positive and negative poles
DC/12V Output	Out port of 12V DC;	
USB 5V/2A	5. V U S B output port, with the maximum output current of 2A;	

## 2.3 Display screen introduction



Table 2-2 icon function function






Icon name	Definition	Function declaration
	Load	The icon highlights the AC load output
	Charge Display	The icon indicates the voltage to the charging end
	Battery Capacity	The icon light indicates the battery access, and the inside indicates the battery charge
	Status Icon	Icons light up and scroll to indicate the charging and discharge states, respectively
	Fault Icon	The icon flashing indicates a failure of the system

Table 2-3 Field Function Introduction

Field name	Definition	Function declaration
U bat	Accumulator Voltage	The field lights up to display the current battery voltage in the data display area
U pv	Charging Voltage	The field lights up to display the voltage of the current charging end in the data display area
I charge	Charging Current	The field lights to display the current battery charging current in the data display area
P charge	Charging Power	The field lights to display the battery charging power in the data display area
U load	Inverse Voltage	The field opens to display the current inverter output voltage in the data display area
Freq	Inverse Frequency	The field opens to display the inverter AC frequency in the data display area
P load	Discharge Power	The field lights to display the battery discharge power in the data display area

Temp	Radiator Temperature	The field lights and displays the radiator temperature in the current charge state in the data display area
ERROR	Alarm Instructions	The field lights when there is a fault

### 3. Operation instructions

#### 3.1 Introduction of product charging port



#### Municipal power charging:

Connect the AC connector of the standard charging adapter to the household AC jack, and connect the standard charger DC connection head to the DC input interface of the product. At this time, the photovoltaic panel icon will be lit up, and the arrow will run up to indicate the normal charging of the product. The power is full, shown battery icon is full, please remove the charger then.

#### Solar charging:

- A. Please try to put the solar panels in a place where the direct sunlight is strong;
- b. The output of the solar panel should be connected to the charging port of the product (note the positive and negative electrodes when connecting the photovoltaic panel).At this time, the photovoltaic panel icon will be lit up, and the running arrow will run up, indicating the normal charging of the product;
- c. The charging time of the solar plate is related to the actual light intensity of the sun;

#### On-board charging:

Use the standard accessories of this product and connect the 12V cigarette lighter port in the car to charge this product (only support 12V car charging). At this time, the photovoltaic panel icon will be lit up, and the running arrow will run up, indicating the normal charging of the product;

### 3.2 Introduction of the product output port



#### DC-12V Output port:

Please determine whether the DC12V electrical or lighting equipment interface is DC5521 header interface (power plug external diameter: 5.5mm, inner diameter 2.1mm), otherwise it cannot be connected to the DC output base of this machine, you can consult the electrical manufacturer to purchase the corresponding adapter with the product.



#### Pay attention!

Because the battery is a chemical, the voltage decreases with the decline of the capacity, the DC-12V output voltage of the product will fluctuate slightly. If the DC12V appliance you connect does not have the voltage stabilization function, when the DC end voltage of the product drops with the internal battery voltage, the appliance may not work normally, please stop using the appliance.

#### USB-5V output port:




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The standard USB cable of the digital device to the USB interface of this product can realize the power supply for the digital device. We will continue to quickly charge smart USB devices for mobile phones and tablets that support fast charging technology. The actual charging voltage and current size are related to the actual USB smart device, please prevail according to the actual situation.

AC AC output:

A. Connect the power cord and cable plug of the electrical appliance to the AC interface of the product, and then click the AC ON / OFF switch on the product. At this time, the LED display shows the

luminous bulb and  the load running arrow, representing the AC output, and the electrical appliance starts to work (the combined peak power of all electrical appliances can not exceed the rated power of the inverter).

b. When the AC socket is not used, please turn off the AC switch in time to save energy.

LED lamp:

Turn on the LED switch for lighting. When you need to turn it off, press the LED switch to turn it off.



Pay attention!

a. Different national interface specifications have different voltage standards. Before use, be sure to carefully check whether the product specifications are the same as the use specifications of electrical appliances, otherwise it may lead to dangerous situations.

b. When customers do not use AC output, they must close the switch of AC output on the machine. If you open the inverter in it for a long time, it will always work and lose the power of the battery.

## Four. Attention

### 4.1 Use skills

This product has been strictly inspected before leaving the factory, but it may be damaged during transportation, so the product needs unpacking inspection before installation. If any damage is found after unpacking, please contact the transportation company or our company in time for proper settlement.

1. When charging, in order to avoid interference, please try to stay away from TV, radio and other equipment;

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2. If the product has not been used for a long time, please stop charging and turn off all the switches for storage;
  3. Please open the control switch before charging, for more, please check the corresponding equipment use manual;
  4. To extend the life of the product (lithium battery), it is best to charge once within three months and at least once within six months.
  5. This product is built-in high quality original lithium ion battery, no memory effect, large capacity, durable. However, we still recommend users to use the range from 10°C to 30°C to obtain the optimal charging capacity;






#### **4.2 Safety and Maintenance**

1. Please avoid letting the children play with this product;
2. Do not reverse and roll the packing box.
3. Do not collide or disassemble this product privately;
4. The charging time shall not exceed the required charging time for this product;
5. Do not drop, put heavy objects on, or strongly hit the product;
6. Do not place this product in a humid, dusty environment;
7. Do not cover it with towels, clothes and other items.
8. After the electronic equipment is fully charged, please disconnect it from the product timely;
9. In the process of transport should avoid strong vibration, fall, bump;
10. Do not heat the product or throw it in the fire, in water and other liquids, in high temperature, Do not expose the product in the sun directly.
11. Please dispose of scrapped products in accordance with the regulations, do not dispose of the built-in battery as household garbage to avoid explosion and pollution;
12. Do not short circuit this product. Please avoid storing this product together with coins, hand accessories, keys and other metal objects;
13. Products only used as emergency power supply, they can not replace standard DC power supply or AC power supply of household appliances or digital products.
14. Please keep this product out of the reach of people with low physical, perceptual and mental abilities (, including children), inexperienced and relevant knowledge. Products should not be used unless under the supervision or direction of a person responsible for their safety.
15. All installation operations of this product must be done by professional technicians. Professional and technical personnel must pass special training, fully read this manual and master the operation related safety matters.
16. The Company will not be liable for personnel injury caused by non-professional installation operations.

### 4.3 Troubleshooting

If the following faults occur, check and troubleshoot as follows:

Table 4-1. The Troubleshooting Table

Hint	Light status and alarm icon	Possible Cause	Solutions
The array over voltage	Upv and, the icon flashes 	1. The number of photovoltaic array series groups is too large; 2. The charging end voltage is too high;	1. Disconnect the photovoltaic array, reduce the number of photovoltaic array groups in series, and ensure that the open-circuit voltage of the photovoltaic array does not exceed the set value; 2. Check the voltage of the charging end;
Battery over voltage (overcharge)	<b>Ubat and the icon flicker</b> 	1. The overvoltage protection point of the lithium battery integrated machine is below the highest value of the charging range; 2. Battery aging; 3. Large and dynamic change of the load;	1. Remove the battery charging equipment first; 2. Battery aging needs to be replaced with the battery; 3. Reduce the large and dynamic changes of the load;
Battery under voltage (overdischarge)	<b>Ubat and the icon flicker</b> 	1. The voltage value of the lithium battery integrated machine is lower than the setting value of the undervoltage protection 2. Battery aging; 3. The battery is not used for a long time;	1. Reduce or disconnect the load. If the alarm is lifted, the battery voltage returns to normal, indicating that the load power is large or the battery voltage and capacity are low, and the heavy load is easy to lead to the under voltage protection phenomenon; 2. Disconnect the load lithium all-in-one machine still alarm, the battery voltage is not restored to the over discharge recovery set point, the need to charge the battery pack through photovoltaic or other ways, so that the battery pack voltage reaches the recovery point set point before the fault is removed,
Heat radiator overheating	Temp and the icon flicker 	1. The ambient temperature is too high, the equipment heat dissipation is poor, and the fan ventilation is not smooth; 2. The fan is damaged	1. Check the installation environment of the equipment, remove the debris of the air duct to ensure the smooth ventilation of the fan; 2. The fan is damaged, and the fan should be replaced;
Over current	<b>The Icharge fields and icons flash</b> 	Check the charging over current protection for abnormal current detection and mis-operation	If the reboot for several times can not be solved, then return to the factory for maintenance;

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#### 4.4 System Maintenance

To maintain optimum long-term performance, the following checks are recommended twice a year:

1. Check whether the lithium battery integrated machine is placed in a clean and dry environment.
2. Ensure that the air flow around the lithium engine will not be blocked and remove dirt or debris from the inlet / outlet.
3. Check whether all exposed wires are damaged by insulation caused by sun exposure, friction with other surrounding objects, dry decay, insect or rodent damage, etc. If there is damage, you must repair or replace the wires.
4. Tighten the screws for all electrical connection terminals as recommended.
5. If the lightning arrester has failed, replace the failed lightning arrester in time to prevent lightning damage from the lithium battery integrated machine or even other equipment of the user.
6. Check the terminals for corrosion, insulation damage, high temperature or combustion, discoloration, and tighten the terminal screws to the recommended torque.
7. Check for dirt, nesting insects and corrosion, and clean them up as required.



Note: Electric shock hazard!

When performing the above operation, make sure that all the power supply of the lithium battery integrated machine is disconnected, and then conduct the corresponding inspection or operation!



danger!

1. The device has a built-in non-removable rechargeable battery. Do not try to remove the battery to not destroy the equipment and cause safety accidents!
2. Please be sure to send waste electronic products, batteries and packaging materials to special recycling points!

#### **FiVE: Guarantees repair commitment**

This product has 1-year warranty period starting from the date of sale.

Maintenance routine:

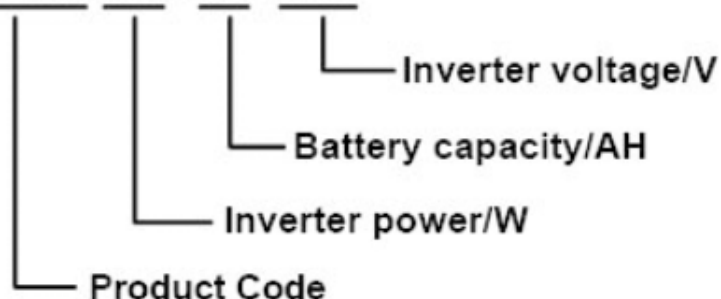
Before requesting the service, refer to the user manual to determine any problem with the machine. If not, deliver the faulty machine back to the company with the freight prepaid (the company does not receive the payment) and provide the date and location information related to the purchase. In order to enjoy the rapid repair guarantee service, the returned product must indicate the model and detailed cause of the fault, as well as the type of components in the system and related parameters, which is important for quickly addressing your maintenance requirements.

The Company shall not be responsible for machine damage caused by improper use or failure to follow this manual! Maintenance procedures refer to the above process, and only charge maintenance costs.

Statement: The Company reserves the right to change the product, subject to product updates without notice!

## Six Equipment Parameters

Model: **SG-BX300/55-220**



**Parameter table of lithium battery integrated machine**

Parameter name		SG-BX parameter table (and adjustable range)							
Battery type		LiFePo4							
Battery capacity		3.2V/208000mA/670wh		3.2V/400000mA/1280wh			3.2V/600000mA/1920wh		
Voltage		12.8V		12.8V			12.8V		
Model		SG-BX300/55-220	SG-BX500/55-220	SG-BX300/100-220	SG-BX500/100-220	SG-BX1000/100-220	SG-BX1000/150-220	SG-BX1500/150-220	SG-BX2000/150-220
Inverter parameters	Power rating	300W	500W	300W	500W	1000W	1000W	1500W	2000W
	Wave form	Pure sine wave							
	Output voltage range	110Vac ± 5% or 220VAC ± 5% (can be customized)							
	Output frequency	50HZ/60HZ							
	Maximum inverter efficiency	> 92%							
Controller parameter	Photovoltaic charging maximum current	10A							

	Maximum voltage of the PV panels	30V		
	Municipal electricity charging	16V DC / 5A max		
	DC output	DC-12V/5A、USB-5V/2A		
Battery working scope		11.2V~15.6V		
Internal battery		High-quality lithium iron phosphate batteries		
Display mode		LCD color screen		
Work environment		-10°C ~ +40°C		
Cooling mode		Intelligent air cooling		
Equipment protection level		IP21		
Humidity		10% ~ 90% No condensation		
Net weight KG				
Product size		225*175*205mm	280*228*230mm	340*243*323mm
Weight KG				

**Seven packing list and communication mode module accessories selection**

order number	name	quantity	remarks
1	All-in-one machine	A	
2	Product Use Manual	A	
4	Municipal electric charger	1 pc	
5	On-board charger	1 pc	
6	Photovoltaic charging interface	1 pc	

## 8 Installation size

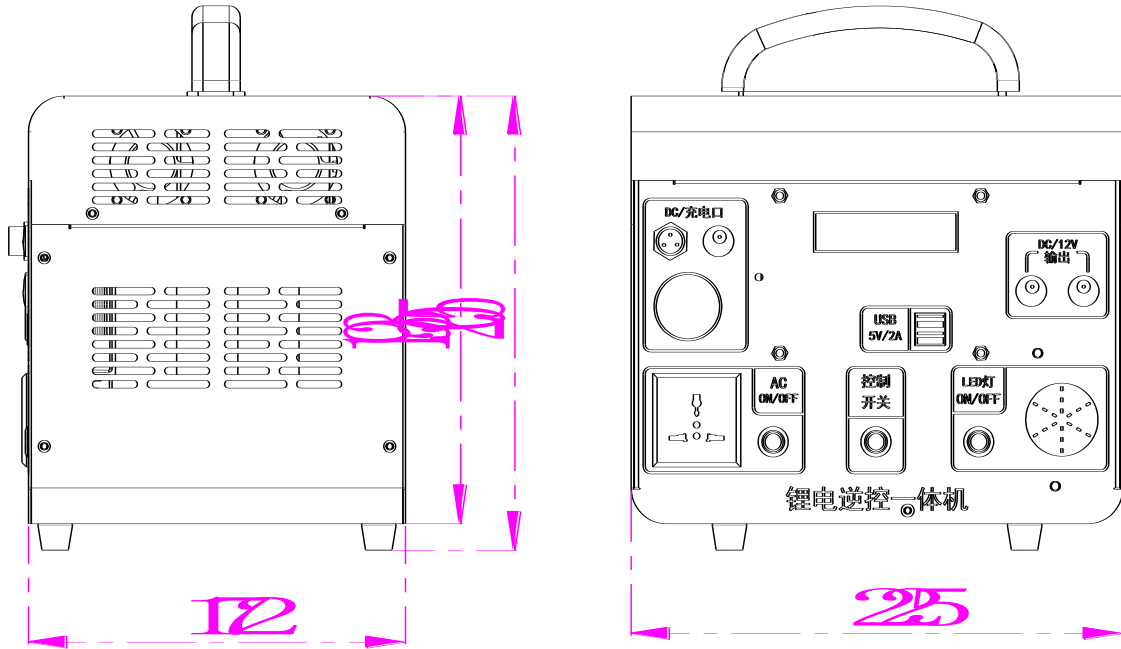


Fig. 8-1 Installation dimensions of SG-BX300W / 500W-55AH Lithium battery integrated machine

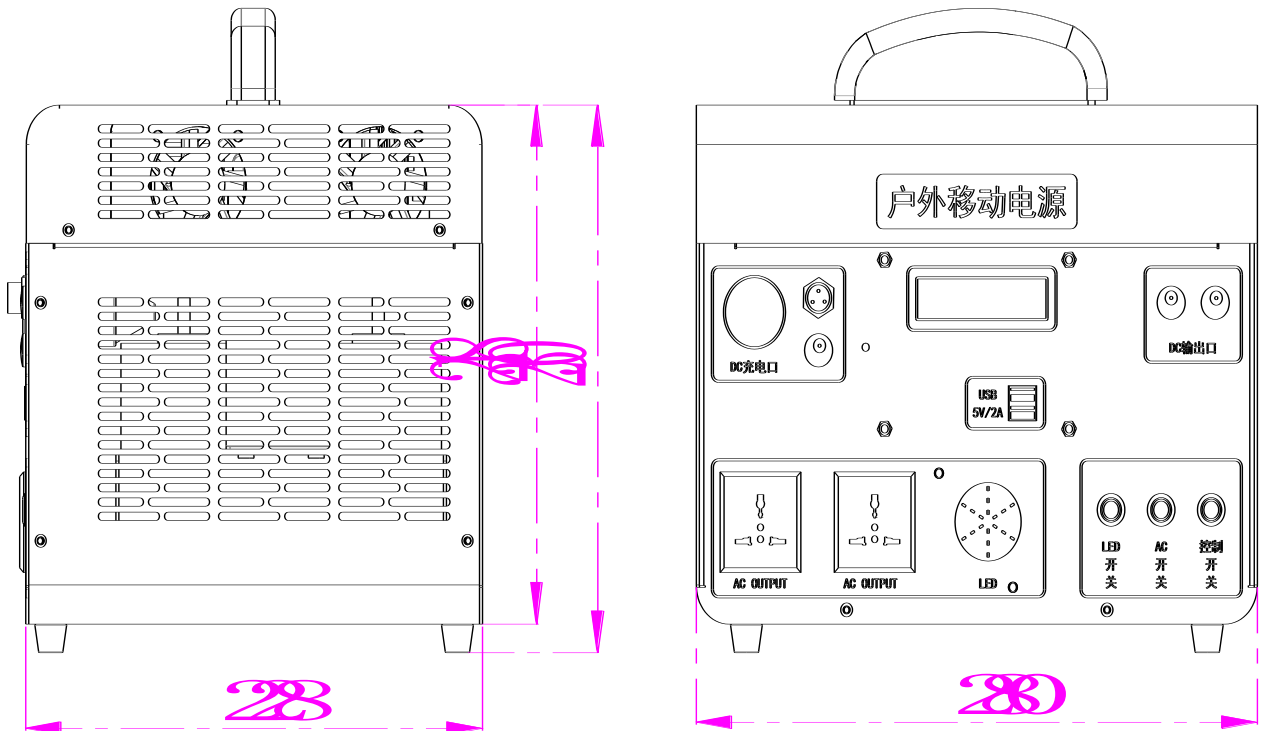


Fig. 8-2 Installation dimensions of SG-BX300W / 500W / 1000W-100AH Lithium Battery Integrated Machine

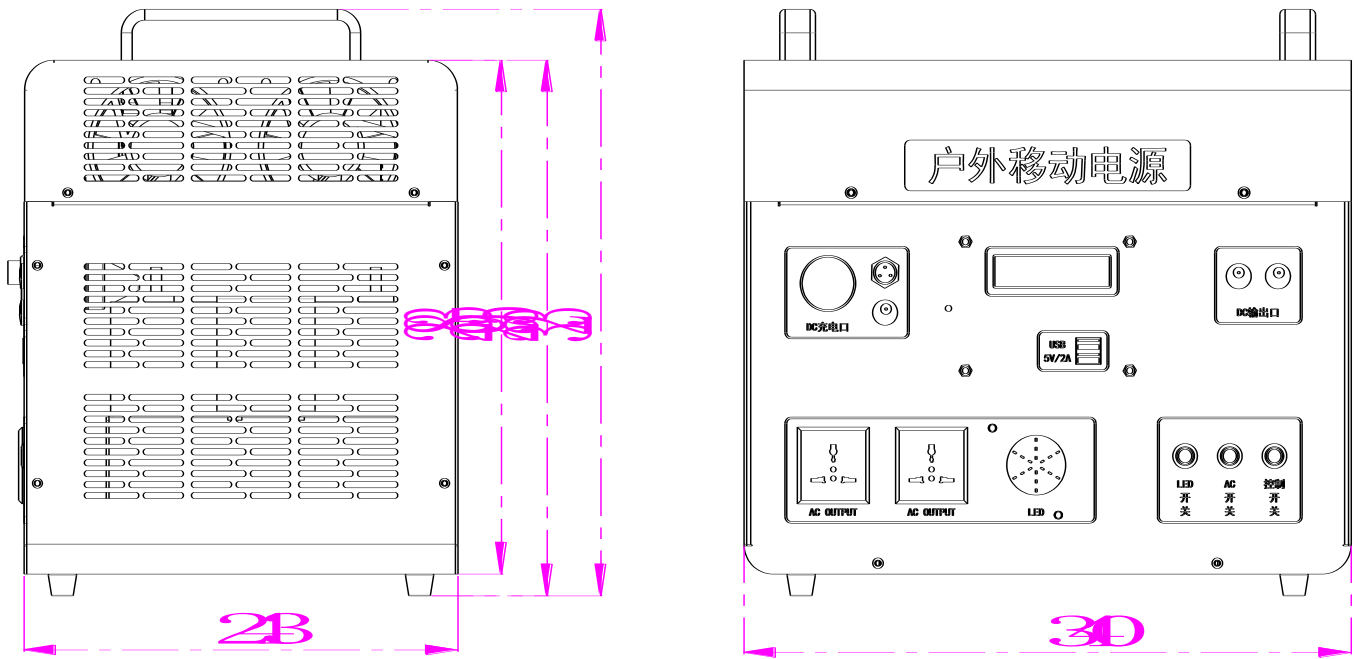


Fig. 8-3 Installation dimensions of SG-BX1000W / 1500W / 2000W-150AH Lithium Battery Integrated Unit