

# PBOX®

## P6 Solar Home System

### User Manual



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Manufacturer: Leadsun Technology Co. Ltd



PS6.043-D

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## Safety Notice

Please carefully read the following directions when you use the PBOX Portable Solar Power System in order to avoid damage or malfunction.



- The control box should be installed in a fireproof, waterproof, moisture-proof, ventilated, easily-operated environment.
- Do not put this product into fire. There is a potential danger of explosion.
- For long-term storage, batteries need to be recharged every 6 months to maintain battery life.
- The batteries and other components are not replaceable.
- Make sure the solar panel is not blocked from the sunlight by buildings or trees, as that will cause low efficiency and short working time.
- Don't carry PV module by the cable. Please make sure a drip loop when installing the PV module cable. And don't cut or heat cables.
- When lightning weather occurs, please unplug the solar panel output line and stop using it, and do not approach the indoor host device to prevent lightning risk.
- For high performance, regularly apply the neutral detergent with a damp cloth and gently clean the surface of the solar panel.
- The discharge temperature range of this product is -20°C to 51°C and charging temperature range is 0°C to 51°C. Please make sure the operating temperature does not exceed the above range.
- Store the products at a temperature between 0°C and 45°C.
- It will be not on the term of warranty if client does modify & refit the light leading to non-proper working without authorization of PBOX.
- If you need information or if you have any problem, please visit the PBOX website at [www.pboxlighting.com](http://www.pboxlighting.com) or contact your local distributor/dealer.

## DISPOSAL

Our product is made of recyclable high-performance materials and components. Do not throw away the appliances with the normal household waste, but hand them in at an official collection point for recycling. By doing this, you help to preserve the environment.

Please refer to local laws & regulations involved in classified collection of electrical products. Properly disposing of the waste can helpfully avoid potential negative influence to environment and human health.



## Product Introduction

### Product Features

- LiFePO4 Li-ion battery control box, Plug'n'Play easy to use.
- Compact, light weight and easy to install.
- Equipped with 4 USB ports, which can charge phones, tablet, Mp3 player, etc. And a DC output port to charge LED bulbs, fans, TV.
- With standard multi-interface mobile phone data cable, 4m extension cable, 4m T-cable, and a distribution box, flexible and user-friendly.

### Specifications

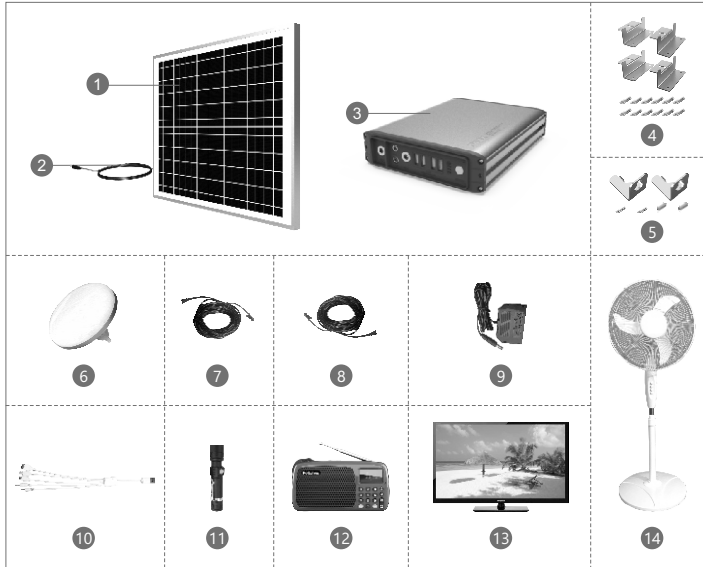
Model	PBOX P6B80S20	PBOX P6B160S35	PBOX P6B160S50	PBOX P6B240S50	PBOX P6B240S60	PBOX P6B320S60
Battery capacity (Wh)	77	154	154	230	230	308
Weight (kg)	0.9	1.5	1.5	2.5	2.5	3.3
Main unit size (mm)	150x162 x43	218x162x43		287x162x43		356x162x43
Solar panel (W)	20	35	50	50	60	60
Weight (kg)	2.2	3	5	5	5	5
PV size (mm)	430x345 x17	535x505 x17	535x670x25		535x670x25	
Approx charging time for the main unit (h)	6.5	7	5	7.5	6.5	8.5
Accessories	T-cable, extension wire, junction box, mobile phone data cable, LED light, Fan, torch, radio, TV(Please refer to the configuration table for the specific quantity)					

### Warranty

- 2 years for the PV module, controller, main unit with battery and PAYG keypad.
- 1 year for all appliances, including lamps, cables, switches, torch, radio, TV, fan, etc.

The warranty is valid from the date of purchase. Please contact the point of purchase to receive your replacement product. The distributor/retailer will confirm that the product is within the warranty period. If the product fails during the normal use under warranty period, a replacement unit will be provided free of charge.

## Components List

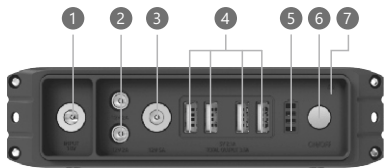


No.	Parts	No.	Parts
1	Solar Panel	8	4m Extension Cable
2	PV Output Cable	9	Distribution Box
3	Host Device	10	Mobile Phone Data Cable (Optional)
4	PV Mounting Bracket & screws	11	Torch (Optional)
5	Mounting Parts for Host Device	12	Radio (Optional)
6	LED Lamp	13	TV (Optional)
7	4m T-Cable	14	Fan (Optional)

## System Configuration Table

System Name	Number of each component included in each system					
	PBOX P6B80S20	PBOX P6B160S35	PBOX P6B160S50	PBOX P6B240S50	PBOX P6B240S60	PBOX P6B320S60
20Wp PV	1					
35Wp PV		1				
50Wp PV			1	1		
60Wp PV					1	1
77WH LFP Battery	1					
154WH LFP Battery		1	1			
230WH LFP Battery				1	1	
308WH LFP Battery						1
B250 LED Bulb	4	0-6	0-6	0-6	0-6	0-6
B500 LED Bulb		0-6	0-6	0-6	0-6	0-6
PAYG keypad	0-1	0-1	0-1	0-1	0-1	0-1
Radio	0-1	0-1	0-1	0-1	0-1	0-1
Torch	0-1	0-1	0-1	0-1	0-1	0-1
Standing Fan 16"		0-1	0-1	0-1	0-1	0-1
19" TV		0-1	0-1	0-1	0-1	0-1
24" TV		0-1	0-1	0-1	0-1	0-1
32" TV				0-1	0-1	0-1

## Instruction for Interfaces



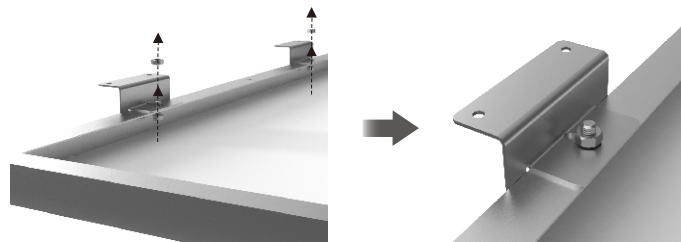
No.	Name of interface	Application specification
1	PV Input (18V PV)DC5525	Operating voltage: 17VDC~22VDC; Max power of solar panel: ≤90Wp
2	DC Output (12V2A) DC5521	Output Voltage: 10-15VDC( max 22VDC) 2A Maximum total output current 5.5A
3	DC Output (12V5A) DC5521	Output Voltage: 10-15VDC( max 22VDC) 5A Maximum total output current 5.5A
4	USB Output port (4pcs)	Working voltage: 5V; Max current: ≤2100mA; USB total output max 3.6A
5	Power Indicator light	
6	Switch	Press the button for 5s to Turn ON/Turn OFF the system.
7	Fault indicating light	

**WARNING:** Do not use any equipment that goes beyond the limit of above statement, or the controller will be damaged.

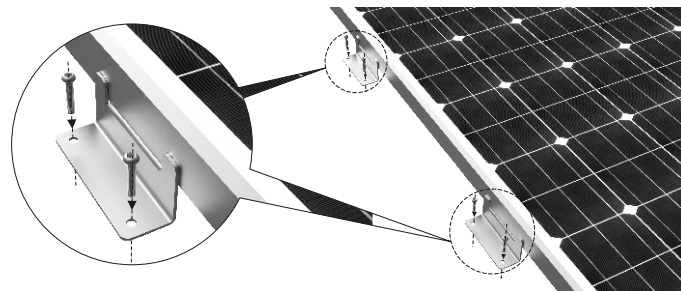
## Installation Guide

### Install the solar panel

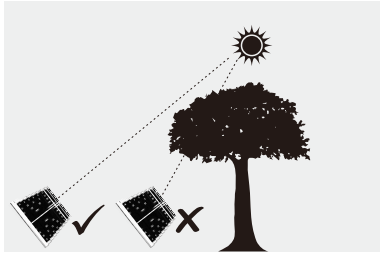
1. Fix the solar mounting bracket to the solar panel frame with nuts and bolts.



2. Fix the solar panel to the roof with screws.



3. Do not shade the PV module, and face the surface toward sun.

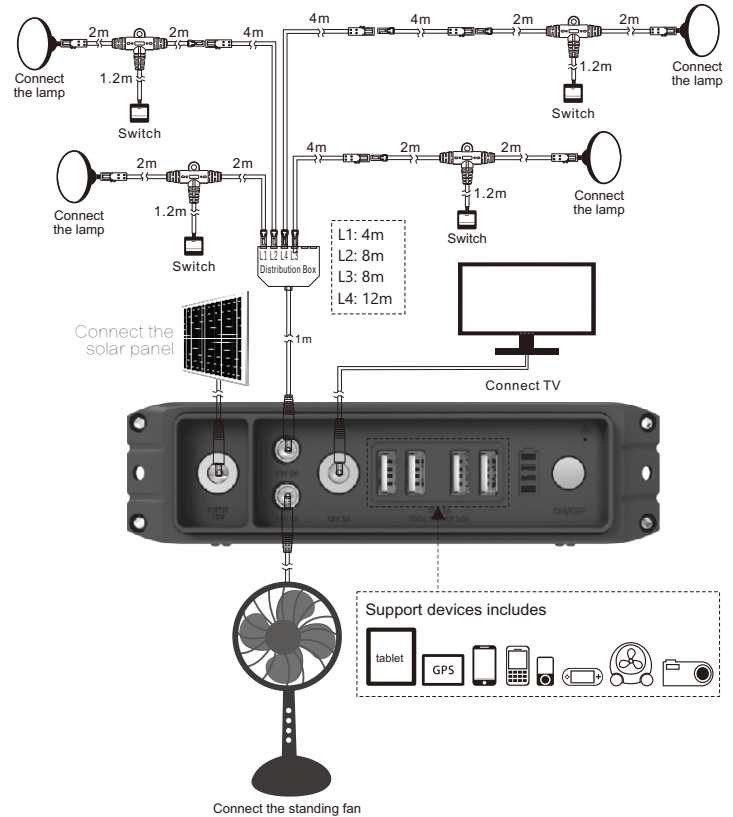


**Warning:** If the solar panel is to be placed in somewhere where it is at risk of being struck by lightning e.g. on top of tall roof tops or high mountains, then connect a ground wire from the metal structure of the panel to a ground rod.

### Install the main unit



### How to connect the load?



### Notice:

Lamp connect to the cables: Lamp → T-Cable → Extension Wire(Optional) → Distribution Box → Main Unit

Each extension cord is 4 meters long, and the appropriate number can be selected according to the actual lamp distance. And connected between the distribution box and the T-cable.

## How to Use the Solar Home System?

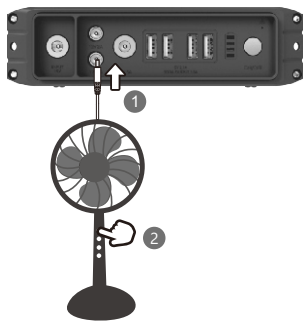
### Turn ON the system

1. The system will be activated automatically when the solar panel connected to the main unit in daytime.
2. Or press the Switch button for 5s to turn ON the system anytime.



### How to power the load?

- 1 Connect the loads as shown on the load connection diagram. (i.e. LED Light, TV, radio, torch, fans, etc)
- 2 Turn on the load devices for use



## Indicator Light

Indicators	Color of LED	LED Status	Function Type
Charging indicator	Green LED		Charging. The flashing light indicates the level at which the battery is being charged at
Battery power indicator	Green LED		Battery capacity $\geq 75\%$
			Battery capacity between 50%~75%
			Battery capacity between 25%~50%
			Battery capacity $< 25\%$
Fault indicator	Red LED	Light on	Indicates failure such as a short circuit or overload
		Light off	Normal operation

## Trouble Shooting:

No.	Symptoms	Troubleshooting Steps	Process
1	No charge	Check if the solar panel is blocked from the sunlight by buildings or trees.	Change the installation position.
		Check if the solar panel and the main unit are well connected.	Re-connection.
2	Can't turn on lamps	If the power is on, and the minimum power indicator is blinking or light-off, it indicates that the battery is short of power supply.	Charge the battery.
		If the battery indicator is on, check whether the lamp head switch is on.	Turn on the lamps switches.
3	Can't charge mobile phone	If the battery level indicator is on, switch on, check whether the lamp and cables are well connected.	Re-connection.
		When the system is ON, if the minimum power indicator flashes or light-off, it indicates that the battery is short of power supply.	Charging the battery.
		If the battery indicator is light-on, check the USB cable to see whether the connection is correct.	Re-connect USB cable or replace it with a new one.