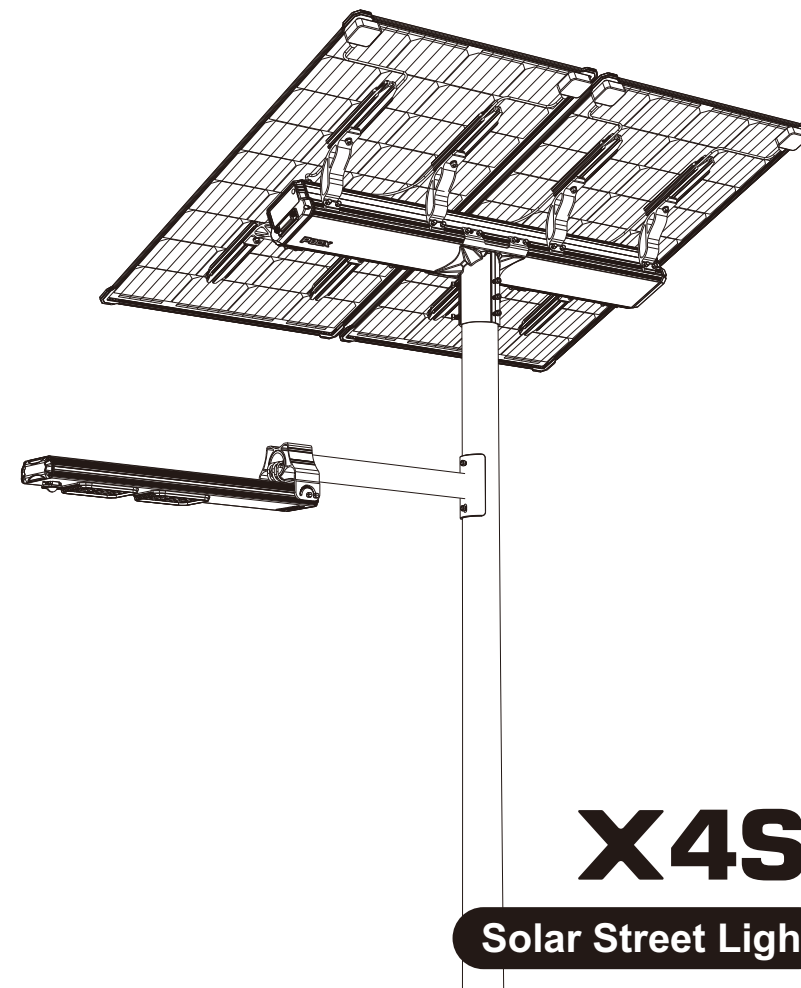


# Troubleshooting

No.	Symptoms	Troubleshooting Steps	Process
1	No light at night	Check that the lamp can be manually activated.	Refer to "Activation and Installation" section on this user guide and run activation tests.
		Check if the solar panel is blocked from the sunlight by houses, trees and other obstacles.	Clear obstructions or change installation location.
		Check if there is any artificial light source(s) shining on the solar panel during the night.	Remove the artificial light source(s) of interference or change the installation location.
		Examine status of each component based on the repair guide.	Replace the damaged component(s).
2	A serious shortage of working time at night	Check if the solar panel is blocked from the sunlight by houses, trees and other obstacles.	Clear obstructions or change installation location.
		Check if the surface of the solar panel is dusty or covered.	Clean the surface of solar panels as detailed above.
		Examine if the battery pack is damaged as per the repair guide instructions.	Replace damaged battery.
3	Lighting does not follow the normal operation mode of turning on and off		Replace controller(s) and reprogram.
4	Abnormal motion sensor	Check if the air temperature close to human body temperature.	When the air temperature is close to human temperature, motion detection may slow down. It will return to normal after the air temperature changes.
		Check if the installation height is too high.	It is out of motion detection range when installation height exceeds 8m. It is recommended to reduce the height or use other operating modes.
		Check if the motion sensor or controller(s) is damaged.	Replace damaged motion sensor or controller(s).

**PBOX®**  
www.pboxlighting.com



**X4S**

**Solar Street Light**

## Powerband Green Energy Ltd

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Guangdong, P.R. China 519060.

Tel: 86-756-8680199 Fax: 86-756-8682090

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# User Manual

Thank you for using PBOX X4S series solar street lights. For any questions, pls call service hot line at +86-756-8680199. Please refer to the actual products if the provided diagrams show slight differences.



## Before using the X4S solar street light, carefully read the follow precautions to avoid damage or error.

### Operation Conditions & Limits

- This project is rated as IP66 protection grade.
- The operating temperature range is from -20°C to 45°C and the charging temperature limit is within 0°C to 45°C.
- The heavy-duty structure will survive up to a Category 12 typhoon or cyclone. (Storms above Category 12 may cause damages to the product).

### Transportation & Storage

- This product contains lithium batteries. Please follow air transport regulations when shipping. It should be regarded as potentially flammable and explosive, and be isolated from other goods when stored, so as to avoid any damage.
- The solar panels of this product should be considered as fragile. There should never be more than 4 layers of boxes when stacked. To avoid damage to the panels, make sure no heavy pressure is applied to the boxes.
- Please store the product in temperature between 0°C to 45°C.
- If stored for a long period, the product should be recharged every 6 months. Please only use the special charger (purchased from manufacturer) to avoid damage to the battery or device. The charging method is: first fully charge the battery power, then discharge the battery power, and finally charge to 50% power.

### Product Recycling


- This product is made from recyclable, high-performance materials. All materials are compliant to the ROHS standard. Do not dispose of this product with other household waste.
- Please check your local regulations on collection and disposal of electronic items. Proper disposal of used product helps prevent negative impacts on the environment.

### Product Maintenance

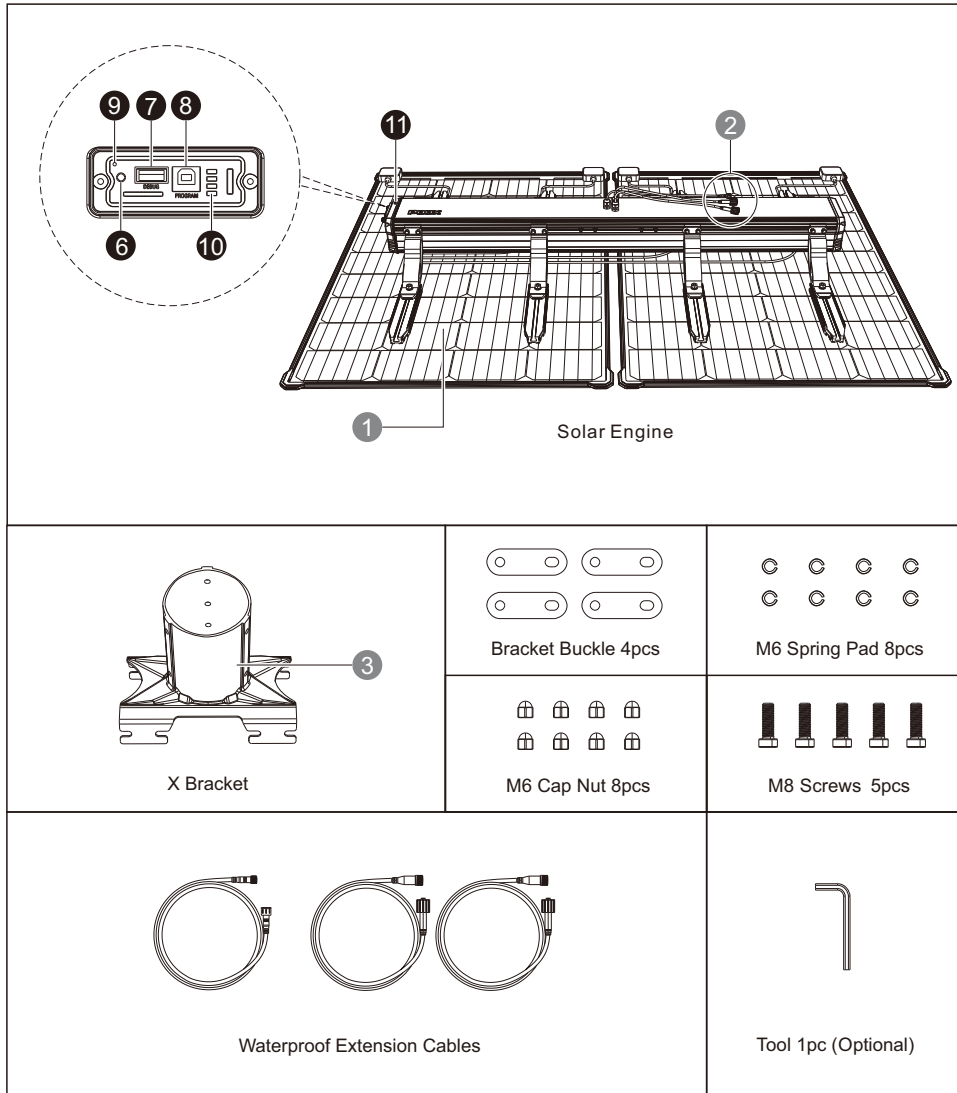
- To ensure effective solar light absorbance, clean the surface of the solar panels regularly with water and a soft cloth. Don't use highly soluble chemicals and abrasives containing aminobenzene.
- This solar street light operates on a low voltage DC current. Unless customized otherwise, do no connect components or ports to an AC current or any higher rated DC voltage.
- This light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person.
- Using the third party components to replace the original ones without authorization is forbidden. The product will lose warranty if the users disassemble the product by himself.
- To order replacement parts or to have them fitted, please visit [www.pboxlighting.com](http://www.pboxlighting.com) or contact your local distributor.



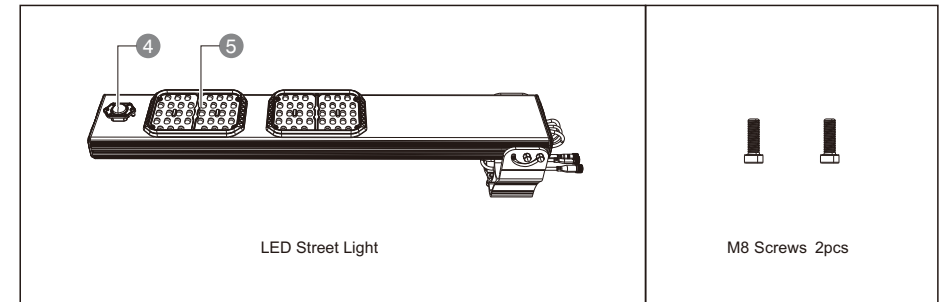
# Parts Description

 Check if all the components are complete before installation, the components and quantity of each set as follows:

## X4S Split Type



## LED Street Light



No.	Name	Brief Function
1	Double-sided Solar Panel	Convert solar energy into electricity & light control switch.
2	Waterproof Connection Port	Connect with waterproof extension cord.
3	X Bracket	Use to fasten the solar power supply system.
4	PIR Sensor	Motion detection.
5	LED	Lighting.
6	Switch Button of Solar Light	ON/OFF or Turn ON/OFF the light.
7	Type B USB Connector Female	For program input.
8	Type A USB Connector Female	For battery charging via 14VDC 1.5A power supply.
9	LED Indicator	Flicker after starting up.
10	Function Indicator Lamps	To indicate the product's working status. (See "Indicating Descriptions" on page 10 for more information.)
11	Infrared Remote Control Area	Receive remote control information. (See "Indicating Descriptions" on page 11 for more information.)

- \* **In the daytime:** When connecting the LED street light to the solar engine, the street light lights up for 20 seconds, and then turns off. It means the solar street light has been activated automatically.
- \* **At night:** Press the switch button for 5 seconds, and then the LED street light switches on. It means the solar street light has been activated manually. Then, If you short press the button, the light will switch between ON and OFF.

### \*\*\* Remarks:

#### \* ON mode:

The system will work normally, charging in the daytime and discharging at night.

#### \* Transport (idle) mode:

The solar street light will power off in one hour and then stay in the OFF mode, for transportation, storage, or maintenance purpose, until it's re-activated.

#### \* OFF mode:

The system will not work, charge or discharge.

#### \* Power ON:

##### a. In the daytime:

The solar street lights gets activated and powered on automatically (i.e. to light up for 20s and then switch off), once it is taken out of the carton (for the all in one type), or when the LED street light is connected to the solar engine (for the split type).

##### b. At night:

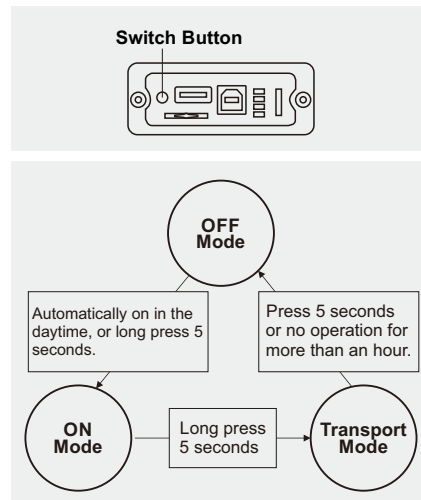
Long press the switch button for 5 seconds to get the solar street light activated manually (i.e. to switch on), with the solar engine connected to the led light.

#### \* Power OFF:

Press the switch button for 5 seconds when the light is On, to see the light flashes for 3s and then switches off to come into Transport Mode; Then press the button for 5s again, or have no operation for one hour, to have the light flash for 1 second and switch off to get the solar street light power off.

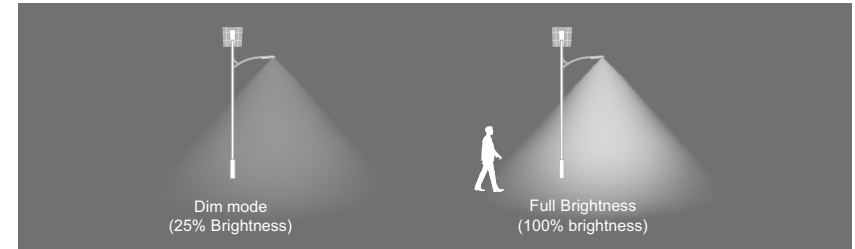
#### \* Switch on/off the light:

When the solar street light is activated and powered on, short press the switch button, and then the light will switch between on and off.



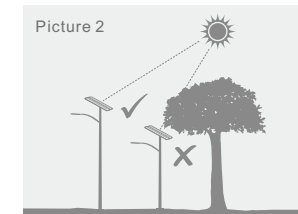
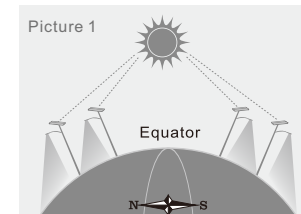
## 1. Working Mode Description

The product default setting controls the light through photo sensing of the solar panel, and the light will turn on automatically when it's dark, and turn off automatically when it's bright. The street light will go into the dim mode when no one around at night and it will full brightness when someone around.



## 2. Installation Direction of Solar Panel

- Please select the appropriate product according to the installation site's sunlight intensity and required operating time. If you are in the northern hemisphere, face the solar panels towards the south as far as possible when installing the solar street light; if you are in the southern hemisphere, face the solar panels towards the north. (see picture 1)
- For maximum operation efficiency of the solar panels, make sure the sunlight is not blocked by buildings or trees. (see picture 2)



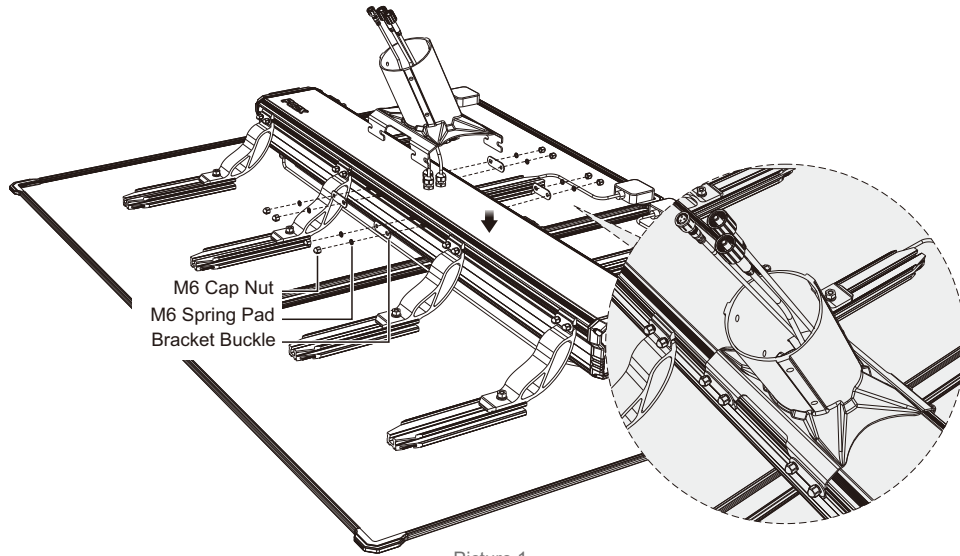
## 3. Installation Altitude and Distance Parameters

Before installing, please according to the height and distance (between the street lights) restrictions by each respective product type. Consult our product specialists for special lighting requirements.

Power	Bat Wing Light Source	
	Installation Height	Installation Distance
20W	4~7m	15~25m
30W	5~8m	20~30m
40W	5~8m	20~30m
50W	7~10m	25~40m
60W	7~10m	30~45m
80W	8~12m	35~45m

## 1. Install the X Bracket

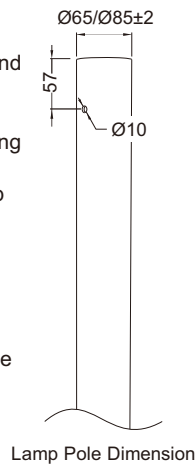
First put the X bracket on the installation frame at the middle of the off-grid solar power supply system, then clip the 8 screws into the X bracket slot from the installation frame, last, use the bracket hasp, M6 spring washer, M6 cap nut to fasten the bracket. (See Picture 1)



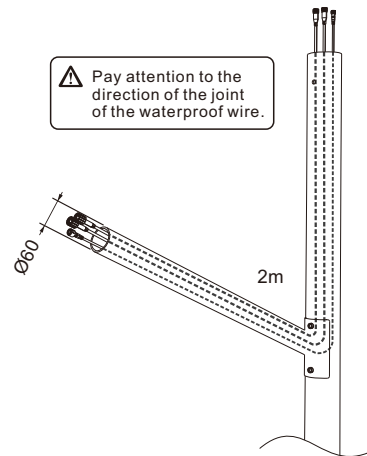
Picture 1

## 2. Light Pole Cantilever Wire Threading

- 1 Set the solar power supply system and street light installation direction according to the street condition and make a mark on the light pole. Tapping a 10mm diameter double-sided through-hole 57mm from the light top in advanced, use for fastening the x bracket. (See Picture 2-1)
- 2 To thread the 3 extended cables into the cantilever and lead out from the top of light pole. (Picture 2-2 light pole only for reference)



Picture 2-1



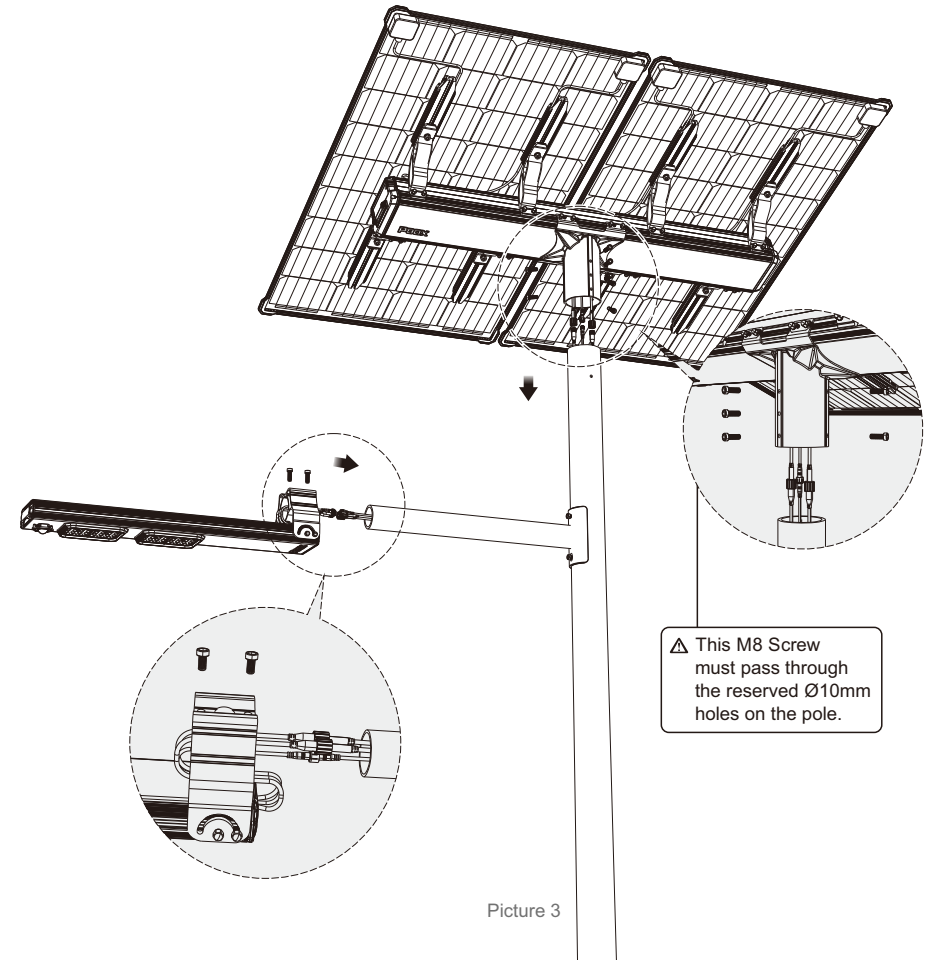
Picture 2-2

## 4. Install the solar power system

Connect the solar power system with the extended cables in the light pole and lock the connectors in turns. Embed the light pole into the X bracket and use the dedicated tools to fasten 7 M8 screws. (If you use the electric wrench, torsion should be set to 14N·m) (See Picture 3)

## 5. LED Street light installation

Connect the cantilever part to the extended cables of the LED street light and lock the connectors in turns; Embed the LED street light bracket into the cantilever and fasten it by 6 M8 screws, make sure the LED street light has installed stably on the light pole then the installation is finished. (If you use the electric wrench, torsion should be set to 14N·m) (See Picture 3).



Picture 3

No.	Indicator Lamps' Working Status	Product Function Descriptions
1	Blue lamp slowly flashing, red lamp instantly flashing.	Battery cannot get recharged.
2	Blue lamp constantly on, red lamp instantly flashing.	Battery cannot get discharged.
3	Blue lamp instantly flashing, red lamp off.	Battery over-discharged.
4	Blue lamp constantly on, red lamp quickly flashing.	DCOUT short-circuited.
5	Blue lamp slowly flashing, red lamp quickly flashing.	LED lamp short-circuited.
6	Blue lamp constantly on, red lamp constantly on.	LED lamp has no power supply.
7	Blue lamp instantly flashing, red lamp constantly on.	No voltage increase to the led lamp.
8	Blue lamp quickly flashing, red lamp constantly on.	LED lamp open-circuited.
9	Blue lamp slowly flashing, red lamp constantly on.	Abnormal Voltage of LED lamp.
10	Blue lamp constantly on, red lamp off.	Normal discharging
11	Blue lamp off, red lamp off, green lamps off.	No indication
12	Both green lamps 1 and 2 slowly flashing.	Battery recharging
13	Both green lamps 1 and 2 constantly on.	Battery fully recharged.
14	Both green lamps 1 and 2 quickly flashing.	Charging exceeds protection current.
15	Both green lamps 1 and 2 quickly flashing, red lamp quickly flashing.	Charging exceeds inhibit current (short circuit)

## ⚠ Remarks:

### 1. Annotations:

Slowly flashing: The indicator lamp turns on, and then turns off in 640ms, then turns on again in another 640ms, then turns off again in another 640ms, .....

Instantly flashing: The indicator lamp turns on, and then turns off in 80ms, then turns on again in another 1.2s, then turns off again in another 80ms, then turns on again in another 1.2s, .....

Quickly flashing: The indicator lamp turns on, and then turns off in 80ms, then turns on again in another 80ms, then turns off again in another 80ms, .....

2. In case you have any difficulty to determine the indicator lamps' working status, please just take a short video of the indicator lamps' working and send it to our factory for further analysis.

## Infrared Remote Control Area

You can manually control the solar street light within a range of 0-9 meters forward and 60 degrees below the light fixture using a handheld remote control device.

## General Operations

(These operations are invalid when setting the light's working mode.)

To switch ON/OFF the light.	
To enter into Transportation Mode.	
To enter into OFF mode. (In Transportation Mode)	



IR Remote Control

## Working Modes Operating Instructions

<b>Mode 1</b>	100% if detection and 25% if no detection	+  +
<b>Mode 2</b>	100% if detection and 0% if no detection	+  +
<b>Mode 3</b>	2 fix hours 100% and 100% if detection and 20% if no detect	+  +
<b>Mode 4</b>	2 fix hours 100% and 100% if detection and 0% if no detect	+  +
<b>Mode 5</b>	3 fix hours 100% and 100% if detection and 20% if no detect	+  +
<b>Mode 6</b>	3 fix hours 100% and 100% if detection and 0% if no detect	+  +
<b>Mode 7</b>	3 fix hours 100% and stop 0%	+  +
<b>Mode 8</b>	4 fix hours 100% and 100% if detection and 20% if no detect	+  +
<b>Mode 9</b>	4 fix hours 100% and 100% if detection and 0% if no detect	+  +
<b>Mode 10</b>	4 fix hours 100% and stop 0%	+  +

## ⚠ Notes

- 1 Every time when pressing the button, the indicator light of the remote control unit flashes once. From this the user can directly know whether the button works properly and whether the battery in the remote control has electricity. Please use CR2025 3V batteries for the remote control.
- 2 Every time when the light controller receives an effective command from the remote control, the light/LED flashes once or more times.