

LEADSUN[®]

"Bright Ideas For An Even Brighter Future."

AE6 SOLAR STREET LIGHT

INSTRUCTION MANUAL

ULTRON series

www.leadsglobal.com



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ULTRON series

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Cautions

Please read the below cautions carefully before using the AE series solar street light to avoid physical injury and product failure caused by improper use.



Attention to the Electric Shock

- To avoid electric shock, street light with AC adapter must be installed by qualified electricians and constructors.
- The street light with AC adapter is customized product, please confirm the street light AC adapter is in accord with the local electric supply standard.
- Make sure the electric supply power is cut off during the installation and implement waterproof and insulation protection.



Working Condition

- Product protection grade IP66
- The product is high-strength structural designed and can pass the 16-level wind speed simulation test. But the product may still be damaged when used in the harsh hurricane environment.
- Working temperature range from -20°C to 51°C (charging temperature is limited within 0°C to 51°C). The product with heating function can work from -40°C to 51°C.
- All internal parts of AE6 are waterproof and rated IP66. Holes and slits on the luminaires are designed for heat dissipation and drainage. Metal parts are made of anodized rustproof aluminum, which can withstand high temperatures and humid weather. However, it is recommended that you avoid installing the street light in areas with heavy acid mist or salt influx.



Transportation and Storage

- The product contains high capacity lithium-ion battery components, please follow the aviation transport law. Please regard the product as the flammable and explosive hazardous substance and store it separately from other goods.
- The solar panel of the product is fragile, tier limitation is two layers. No stacking out of limits and No press with heavy stuff.
- Store the product under the temperature from 0°C to 25°C
- It should be charged every six months if the product is stored for long time. please use the special charger to charge the product (the charger needs additional purchase) in order to avoid battery or device damage.



Product Maintenance

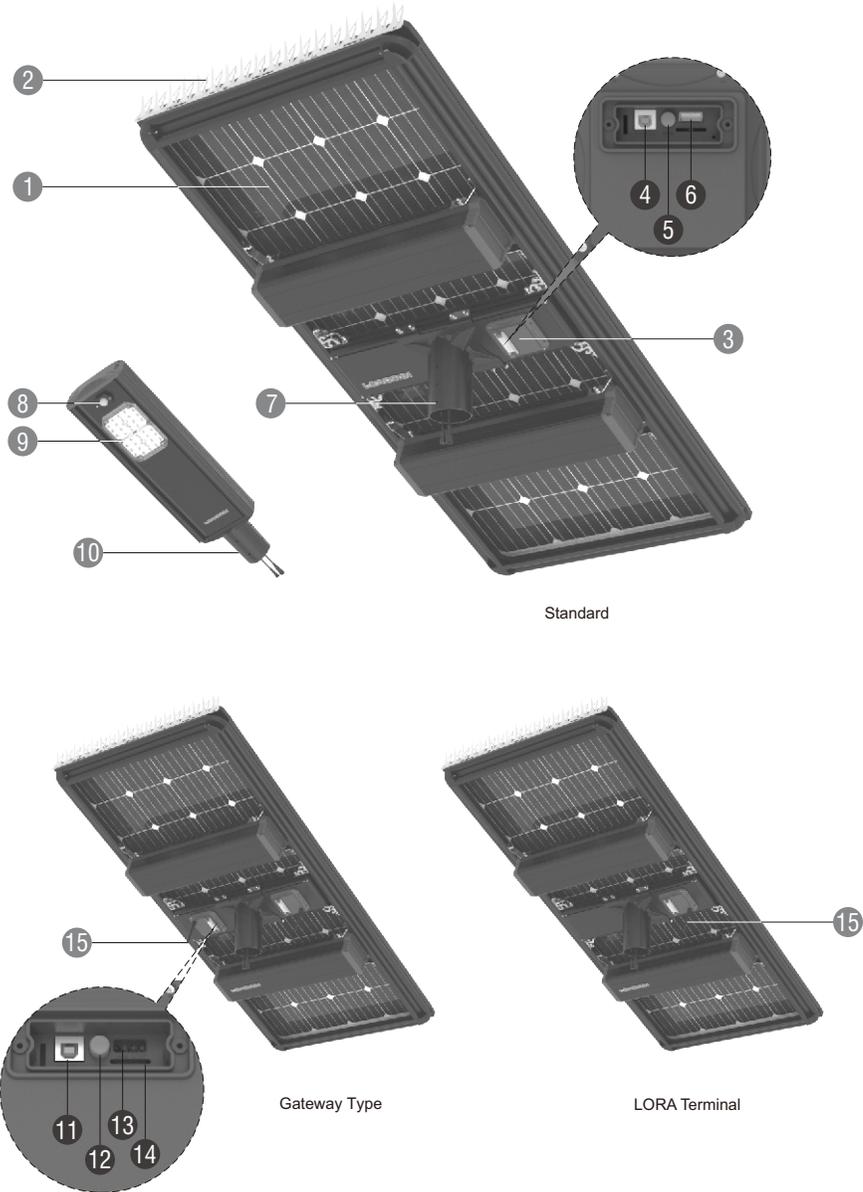
- In order to assure that the solar panel receive the light efficiently, please use clear water to clean the dirt mark on the surface of the panel regularly and prohibit the use of chemical or abradant which includes chlorobenzene.
- Only manufacturer, service agent or qualified personnel can replace the light source or other circuit components of the lighting device. Without authorization, using the third party component to replace is prohibited or it would cause serious damage to the product. if the user disassembles the product without authorization, warranty becomes void.
- If you need to replace the components /accessories, please go to www.leadsglobal.com, or contact the local distributor.



Product Recycling

- The product is made of recyclable high-performance materials and components, please don't dispose with other household garbage.
- Please understand the local rules about the separate collection of electronics and electrical products, dispose the waste products in the right way that avoids potential negative effects to environment and human health.

Part Description



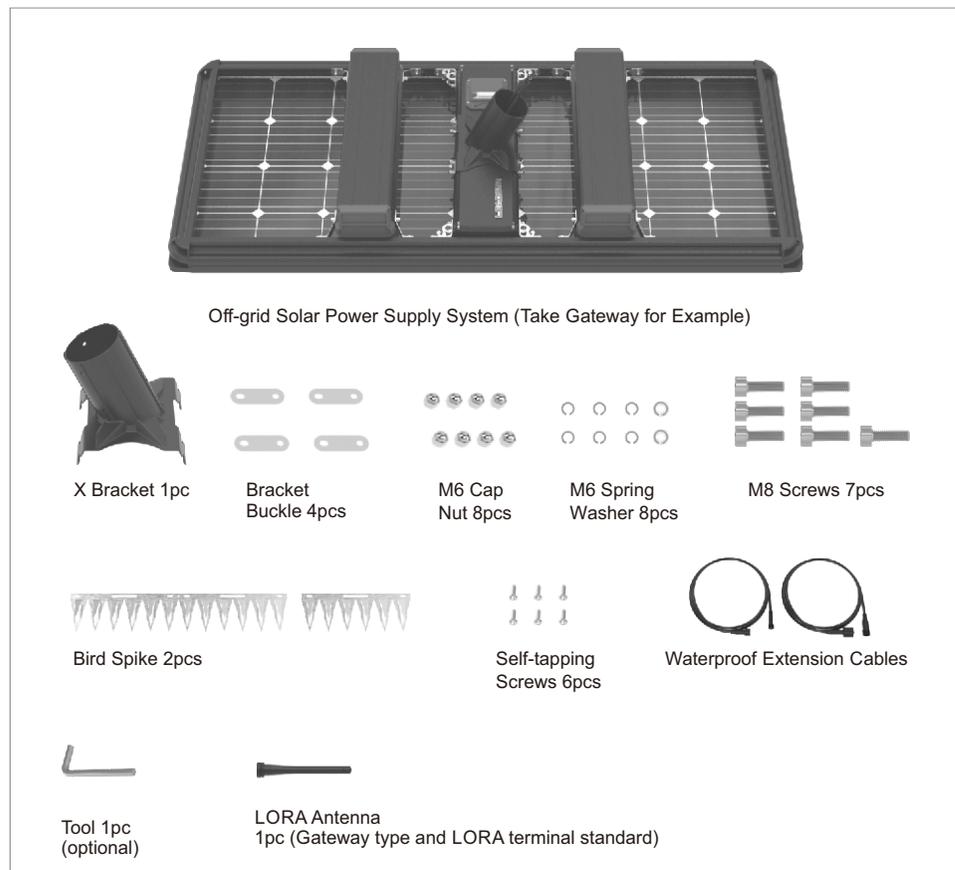
No.	Parts	Functions
1	Solar Panel	Absorbs and converts solar energy into electricity.
2	Bird Spike	Prevents solar panel contamination from bird droppings
3	LED and Charging controller	Manage LED light, communication and control charging and discharging.
4	Type B USB Port of Controller	For program input
5	Switch Button of Solar Light	To turn on/off the light or switch the light to a different mode
6	Type A USB Port of Controller	For battery charging via 14VDC 1.5A power supply
7	X Bracket	Use to fasten the AE6 solar power supply system
8	Motion Sensor	Detects human movement and control lighting intensity.
9	LED Lamp	Lighting.
10	Street Light Bracket	Use to fasten the LED street light
11	Type B USB port of Gateway	For Gateway programming only
12	Switch Button of Gateway	To start/restart the gateway
13	Gateway Indicator Lamps	Red indicator is on: Gateway is powered; Green indicator is on: 4G module is working; Blue indicator is flashing: 4G data is being transmitted; Yellow indicator is on: 4G module has access to the Internet.
14	SIM Card Slot	Insert 2G/4G card
15	LoRa Antenna	Network group communication

Part List



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

Solar Panel Components:



Lighting:



Product Activation

- * **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 ON/OFF 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:

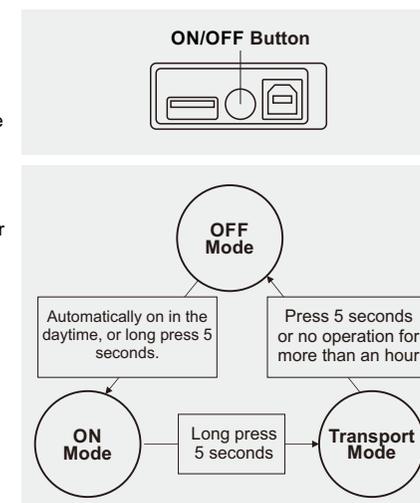
Long press the ON/OFF button for 5 seconds to get the solar street light activated manually (i.e. to switch on), with the solar engine connected to the led light.

* Power OFF:

Press the ON/OFF 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:

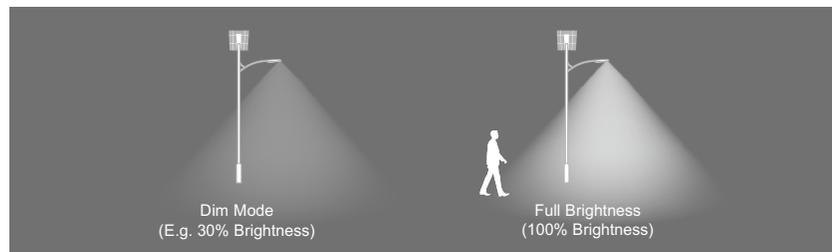
When the solar street light is activated and powered on, short press the ON/OFF button, and then the light will switch between on and off.



Before Installation

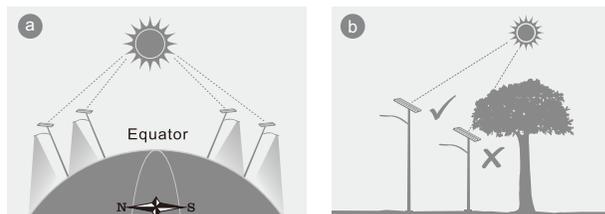
Working Mode Description

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.



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.
- For maximum operation efficiency of the solar panels, make sure the sunlight is not blocked by buildings or trees.



Installation Altitude and Distance Parameters

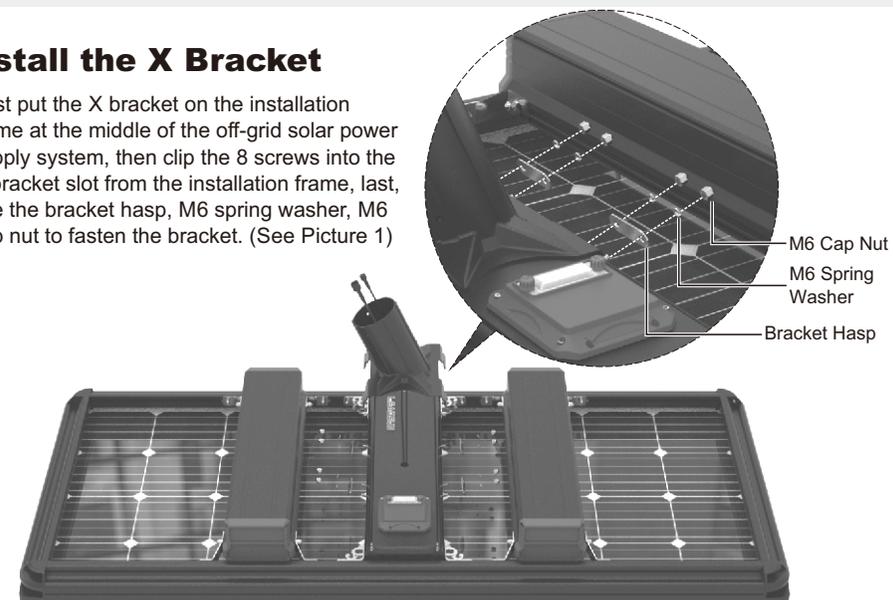
Before installing, please according to the height and distance (between the street lights) restrictions by each respective product type. Consult our product specialists for special lighting requirements.

Power	Bat Wing Light Source	
	Installation Height	Installation Distance
15W	4~6m	15~25m
20W	4~6m	15~25m
30W	5~8m	20~30m
50W	7~10m	25~35m
80W	10~12m	30~40m

Product Installation

1. Install the X Bracket

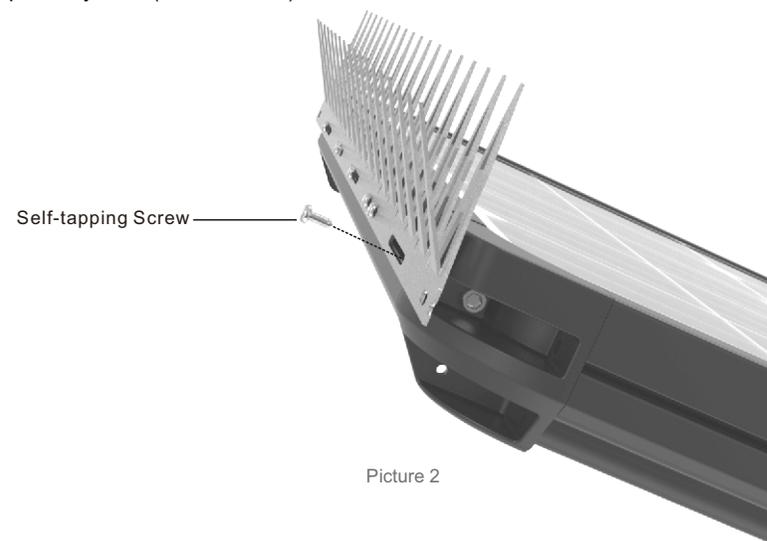
First put the X bracket on the installation frame at the middle of the off-grid solar power supply system, then clip the 8 screws into the X bracket slot from the installation frame, last, use the bracket hasp, M6 spring washer, M6 cap nut to fasten the bracket. (See Picture 1)



Picture 1

2. Install the Bird Spike

Using the self-tapping screw in the accessory to fasten the bird spike on the top frame of the solar power system. (See Picture 2)

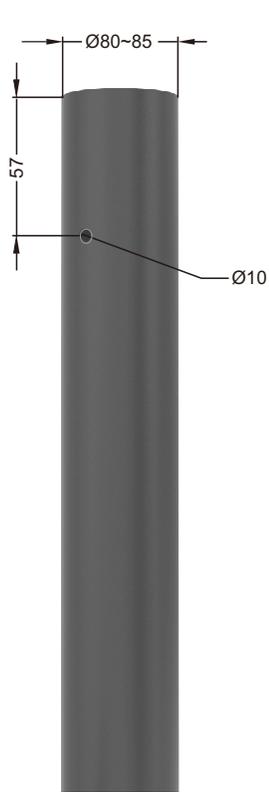


Picture 2

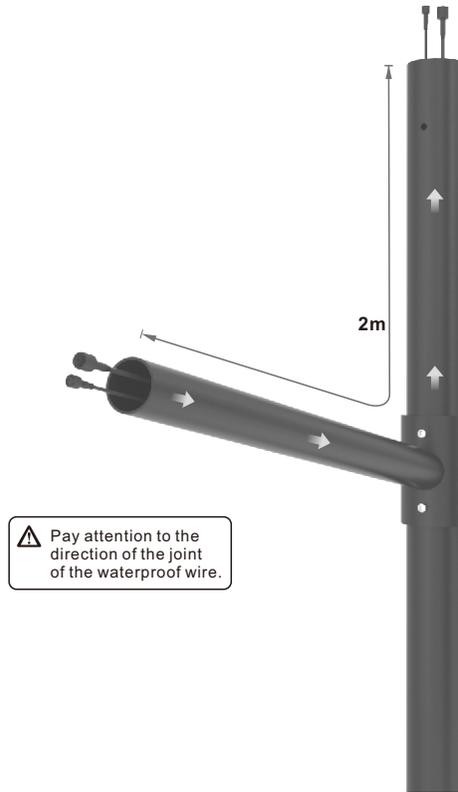
Product Installation

3. 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 3)
- 2 To thread the 2 extended cables into the cantilever and lead out from the top of light pole. (Picture 4 light pole only for reference)



Picture 3



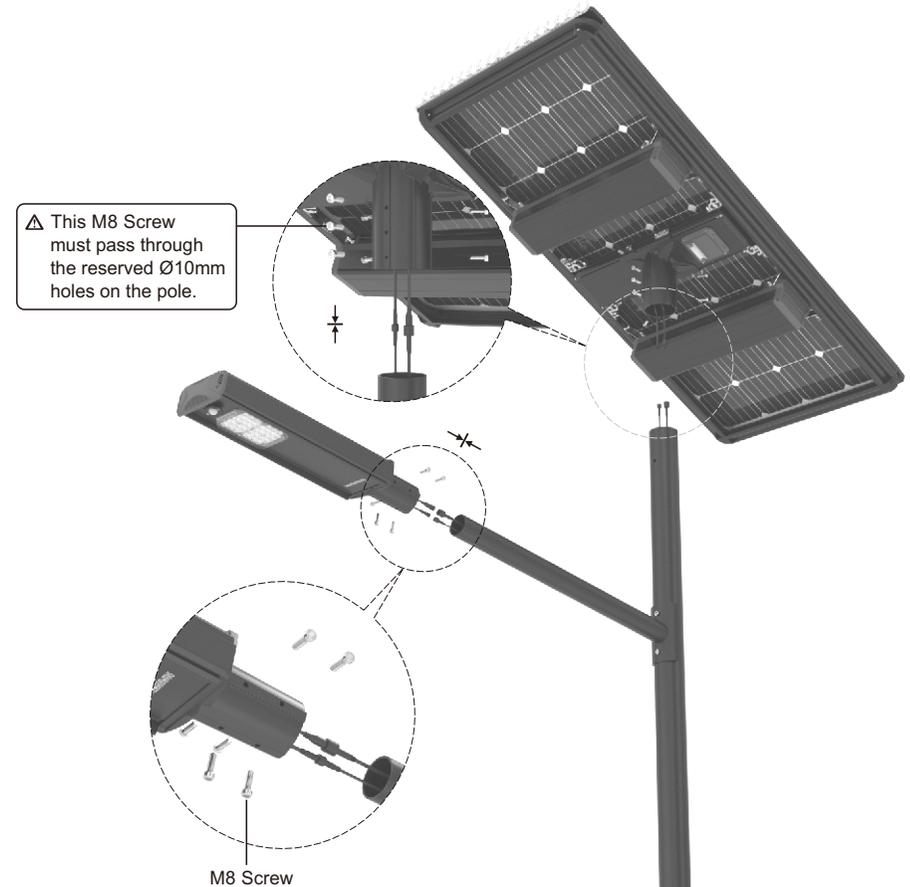
Picture 4

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 $14\text{N}\cdot\text{m}$) (See Picture 5)

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 $14\text{N}\cdot\text{m}$) (See Picture 5).



Picture 5

Product Installation

6. Wireless System Installation (Suitable for Wireless Type)

Cautions:

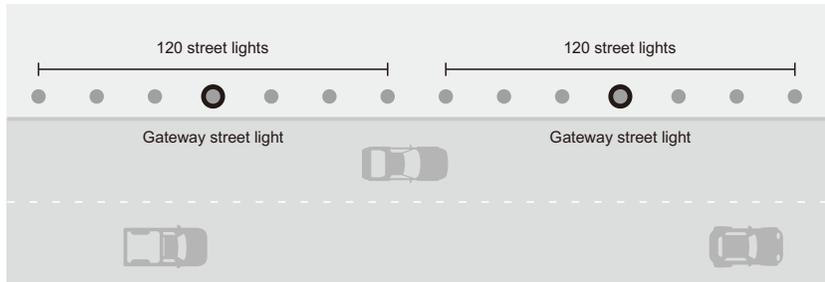
1. Please confirm if the 4G module in the gateway can support the data network covered by the local carrier before installation.
2. When using the inbuilt gateway with 4G module , users need to insert a SIM card which has the data service into the gateway. Relevant fee of data service will be charged by the local carrier.

How users place the Gateway?

Each Gateway covers a range from 800m to 3000m, depending on if there are barriers to block signal transmission. One Gateway can control 120 slave units.

1 Road Installation

Build lighting group of wireless solar street light along the road. All lamps must be divided into one or several groups. Each group contains a Gateway and max 120 slave units. The Gateway should be in the middle of the group.



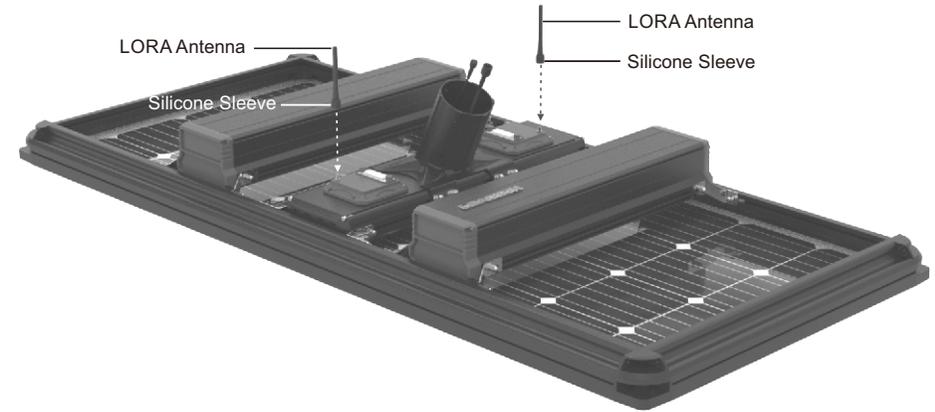
2 Village/Factory/Park Installation:

For installation in village/factory/park area, the Gateway is recommended to be placed in the center of the area.

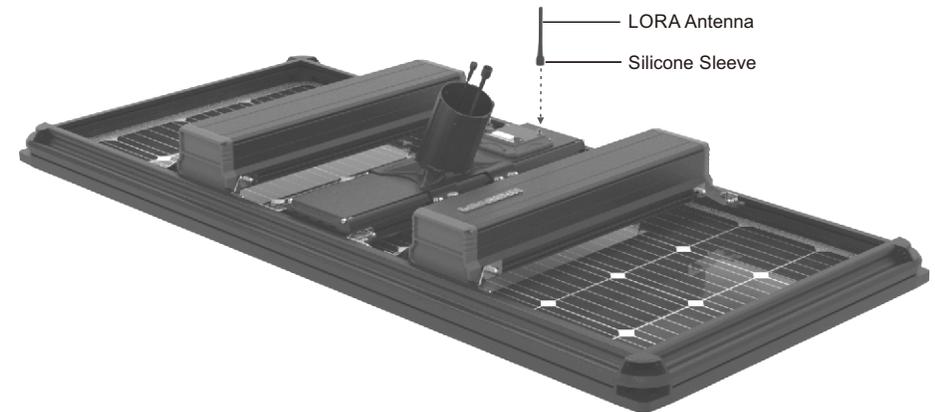


Antenna Installation

Connect the antenna to the corresponding positions according to the picture below.



Gateway Antenna Installation



LORA Terminal Antenna Installation

Product Installation

Insert SIM Card

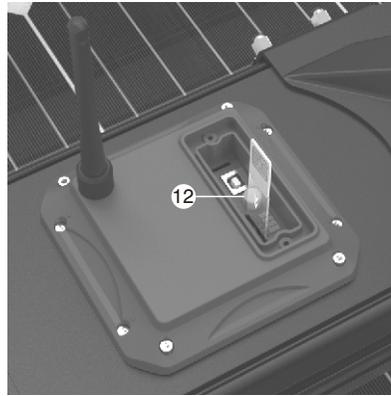
1 With the gateway switched off, i.e., its red indicator lamp is off, insert the 2G/4G SIM card into the slot according to the picture.

2 Gateway Communication

Push the switch button of the solar engine controller for 5 seconds to activate it (This step is not needed if the solar engine has been activated), then push the switch button of the Gateway for 5 seconds to see its red indicator lamp turns on.

Wait until the Gateway's communication is connected successfully, i.e., its yellow indicator lamp turns on.

⚠ #12 is the switch button of the Gateway.



Cautions:
Ensure the SIM card cutting edge is face down and the magnetic stripe is away from the indicator light.

Software Operation Instruction

- 1 Please use LEADSUN EDGE APP to remotely control and configure the street light, visit www.leadsglobal.com and follow the steps to Download the LEADSUN EDGE.
 - A. For APPLE users please go to the APP STORE and install the APP 'LEADSUN EDGE' .
 - B. Android cellphone please visit www.leadsglobal.com or go to the software platforms like Google Play to download and install 'LEADSUN EDGE'.
 - C. PC App please visit <http://47.52.88.104:8083/Home/Login>

2 Add Gateways/Lights on App

Open APP 'LEADSUN EDGE' → Project 'Add Project' → Gateway 'Add Gateway' → Gateway column 'Add Equipment' → Gateway column 'Reboot'

⌚ Wait for 2~5 minutes and then refresh the page in APP, the lights are online and displayed under the Gateway column.

3 Test Network Communication

Click the light column → Click 'Remote Control' to turn on/off the lights remotely via the App, for testing the network communication is successful, before you proceed to install the solar light.

4 Mark Pole Numbers

After the solar light is installed, mark a serial number on its pole as the pole number. And on the App, change the Equipment Name of the solar light to the same as its pole number for future maintenance convenience. Open and keep the GPS access of your mobile phone, open LEADSUN EDGE App within 1m of the light pole, and update/get the Longitude and Latitude coordinates of the solar light on the page of "Edit Equipment". This is very important for analyzing the light's network signal status.

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	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 operating mode of turning on and off		Reprogram.
4	Lights fail to turn on properly when humans approach	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.
			Replace damaged motion sensor or controllers.