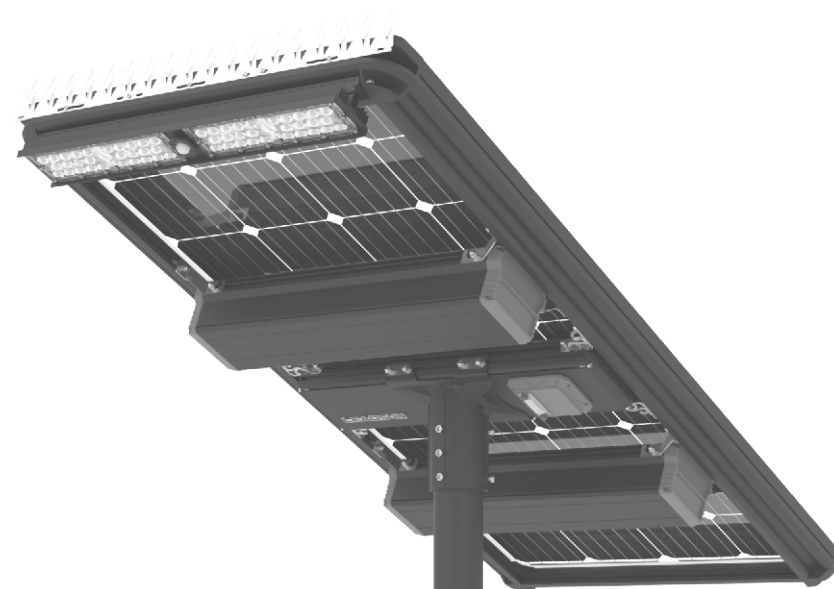# AE5 SOLAR STREET LIGHT
INSTRUCTION MANUAL

www.leadsunglobal.com

LEADSUN®
"Bright Ideas For An Even Brighter Future."

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AE5 SOLAR STREET LIGHT
INSTRUCTION MANUAL
ULTRON series

⚠ 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 IP65
- High tensile structure design can withstand level 3 typhoon (58m/s), beyond this level damage might be caused to the street light.
- Working temperature range from -20℃ to 60℃ (charging temperature is limited within 0℃ to 60℃). The product with heating function can work from -40℃ to 60℃.

- All internal parts of AE6 are waterproof and rated IP65. 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. The strong structural design can withstand wind speeds upto 180km/hr.

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℃ to 45℃
- 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.
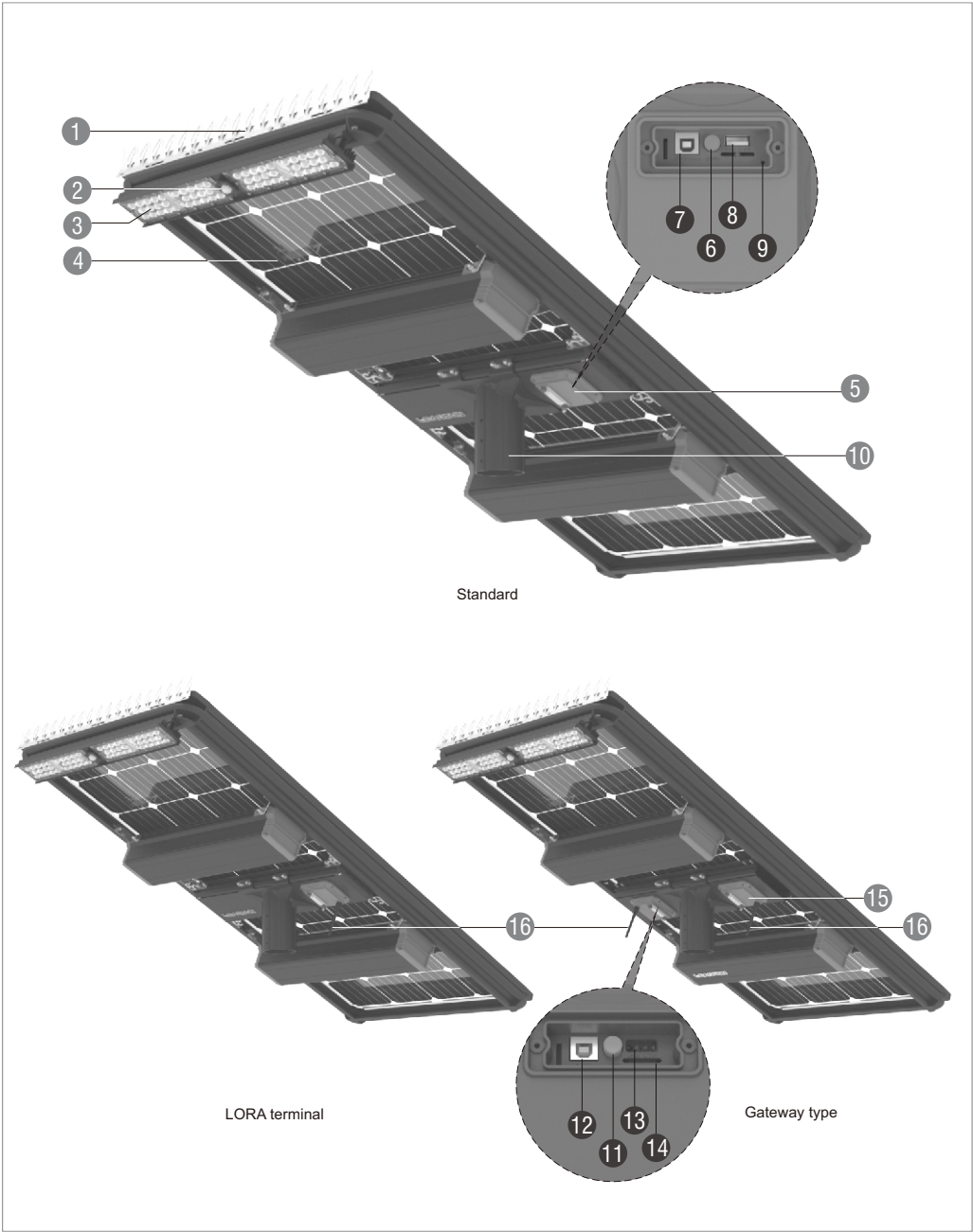
Product maintenance

- 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.leadsunglobal.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

Standard

LORA terminal

Gateway type

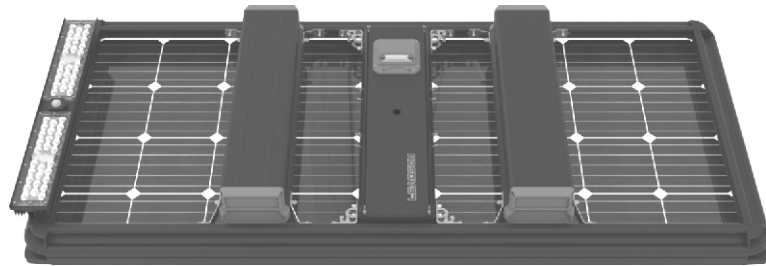The Part list is the whole product series functions instruction. The user can look up the corresponding function according to the purchased product.

No.	Component	Brief description
1	Bird spike	Prevents solar panel contamination from bird droppings
2	Motion sensor	Detects human movement
3	LED light	Lights the area
4	Solar panel	Absorb sunlight energy and transform it into electric power, control the light by light-operated switch
5	LED and Charging controller	Manage LED light, communication and control charging and discharging.
6	ON/OFF button	Turn on/off the light, or enter/exit the Transportation mode
7	Type B USB port	For program input
8	Type A USB port / Parameter Configuration Interface	For battery charging via a 14VDC 1.5A power supply / Parameter Configuration Interface
9	Infrared remote control receiver	Infrared remote control
10	X bracket	To fix the solar engine
11	Reset button	Restart the gateway
12	USB B port	Gateway program download only
13	Gateway indicator light	Red: gateway working, indicator keeps on; Green: 4G working, indicator keeps on; Blue: 4G data transfers, lamp flashing; Yellow: 4G connection succeed, indicator keeps on.
14	SIM card slot	Insert 2G/4G card
15	2G/4G Module	Wireless network communication
14	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:

AE5 solar street light

X bracket
1pc

Bracket
hasp 4pcs

M6 cap
nut 8pcs

M6 spring
washer 8pcs

M8*16
screw 7pcs

Bird spike 2pcs

Self-tapping
screw 6pcs

Tool 1pc
(optional)

LORA Antenna
1pc (Gateway type and LORA terminal standard)

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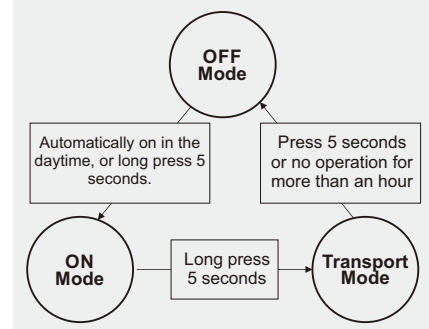
* **Power OFF:**
  Press the ON/OFF button for 5 seconds when the light is On, to see the light flashes for 3s and then switches off to come into Transport Mode; Then press the button for 5s again, or have no operation for one hour, to have the light flash for 1 second and switch off to get the solar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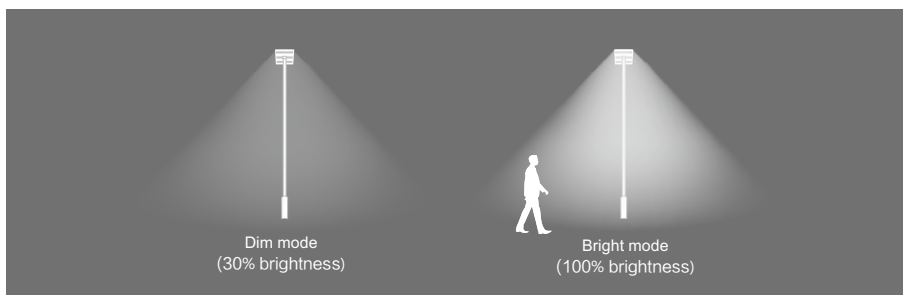

ON/OFF button

OFF Mode

Automatically on in the daytime, or long press 5 seconds.

Press 5 seconds or no operation for more than an hour

ON Mode

Long press 5 seconds

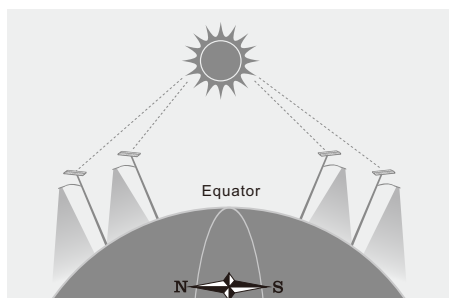Transport Mode

Before Installation

1. Working Mode Description

The product default setting controls the light through photo sensing of the solar panel.
The light will turn on automatically when it's dark and turn off automatically when it's bright.
At night it will go into the dim mode when no one is around and turn to full brightness when motion is detected.
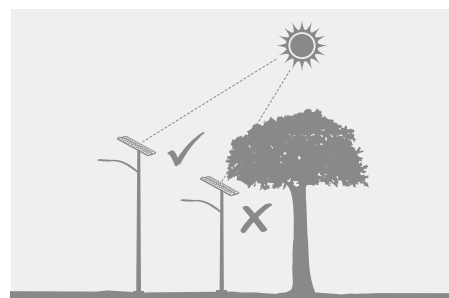
Dim mode
(30% brightness)

Bright mode
(100% brightness)

2. Installation Direction of Solar Panel

1　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)

2　For maximum operation efficiency of the solar panels, make sure the sunlight is not blocked by buildings or trees. (see picture 2)
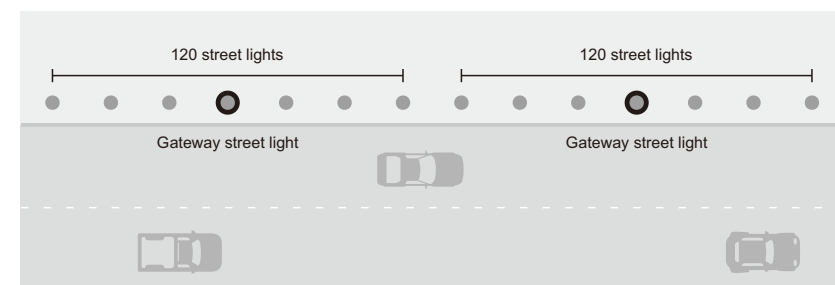
Equator

N　S

Picture 1

Picture 2

3. How to place the Gateway ?

Each Gateway covers a range from 800m to 3000m, depends if there are barriers to block signal transmission. One Gateway can control 120 slave units.
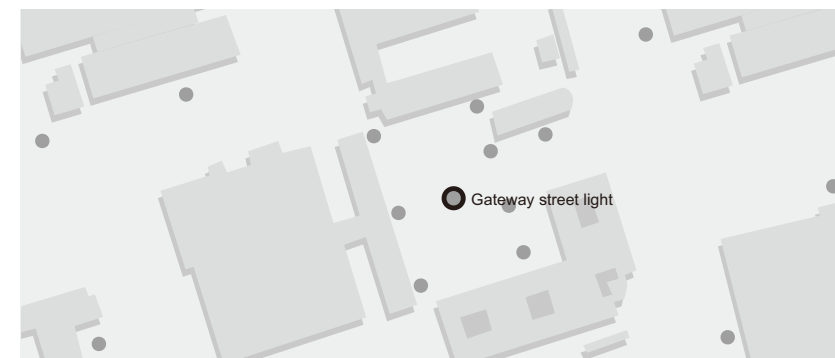
1　**Road installation**

Build wireless solar street light along the road, lamps have to divided into one or several groups. Each group contains a Gateway and max 120 slave units. The Gateway should be on the middle of each group.

120 street lights

120 street lights

Gateway street light

Gateway street light

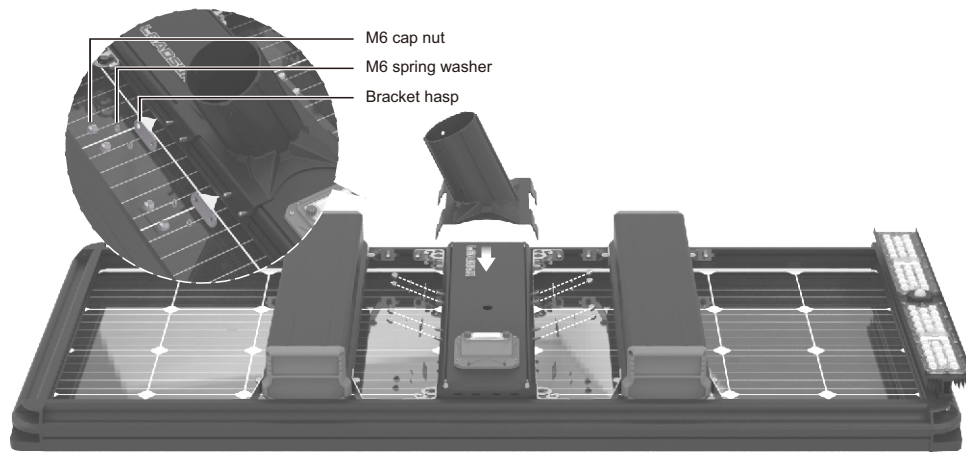2　**Village/Factory/Park installation:**

For installation at village/factory/park location, the Gateway is recommended placement on the center of the area.

Gateway street light

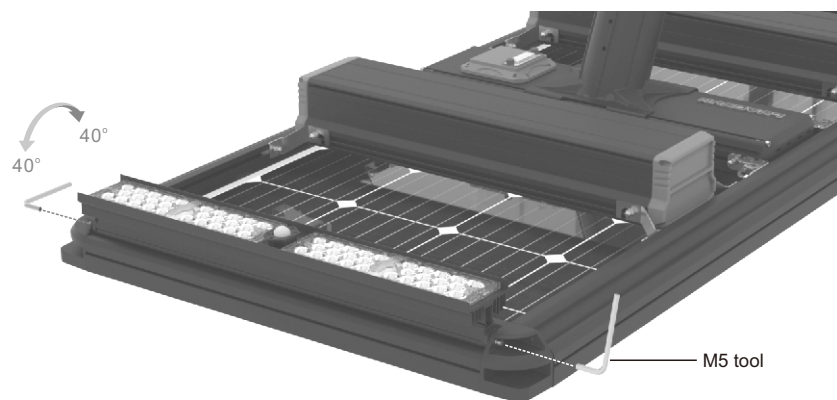# Product Installation

1. Install the X bracket

First put the X bracket on the installation frame at the middle of the AE5 solar street light, 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)
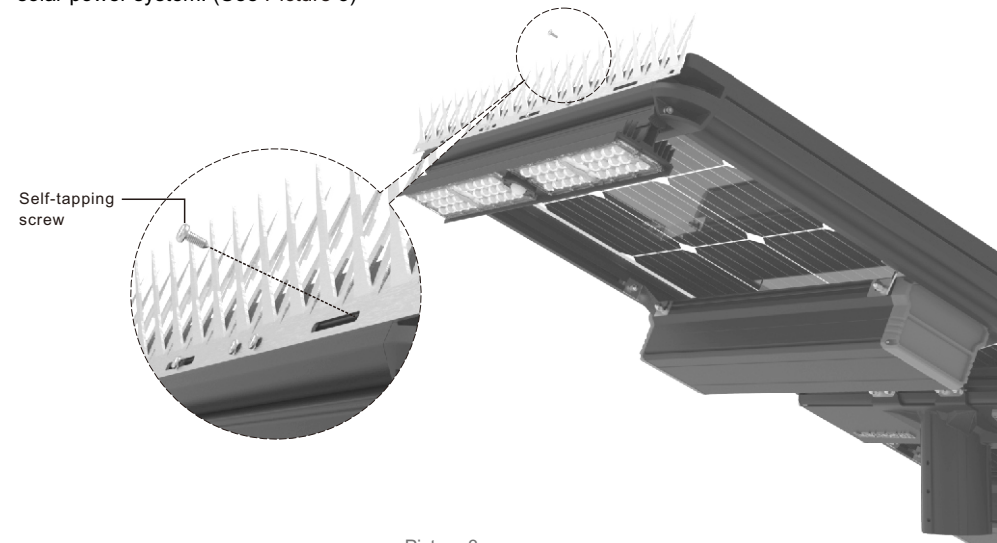
M6 cap nut
M6 spring washer
Bracket hasp

Picture 1

2. 调整灯管角度

用M5六角扳手扭松灯管两端的螺丝，向外转动灯管到适合的角度后，再锁紧灯管两端的螺丝。(See Picture 2)
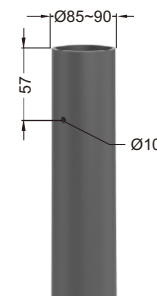
40°
40°

M5 tool

Picture 2

3. 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 3)

Self-tapping screw

Picture 3

4. Light pole cantilever wire threading

Set the AE5 solar 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 90mm from the light top in advanced, use for fastening the X bracket. (See Picture 4)
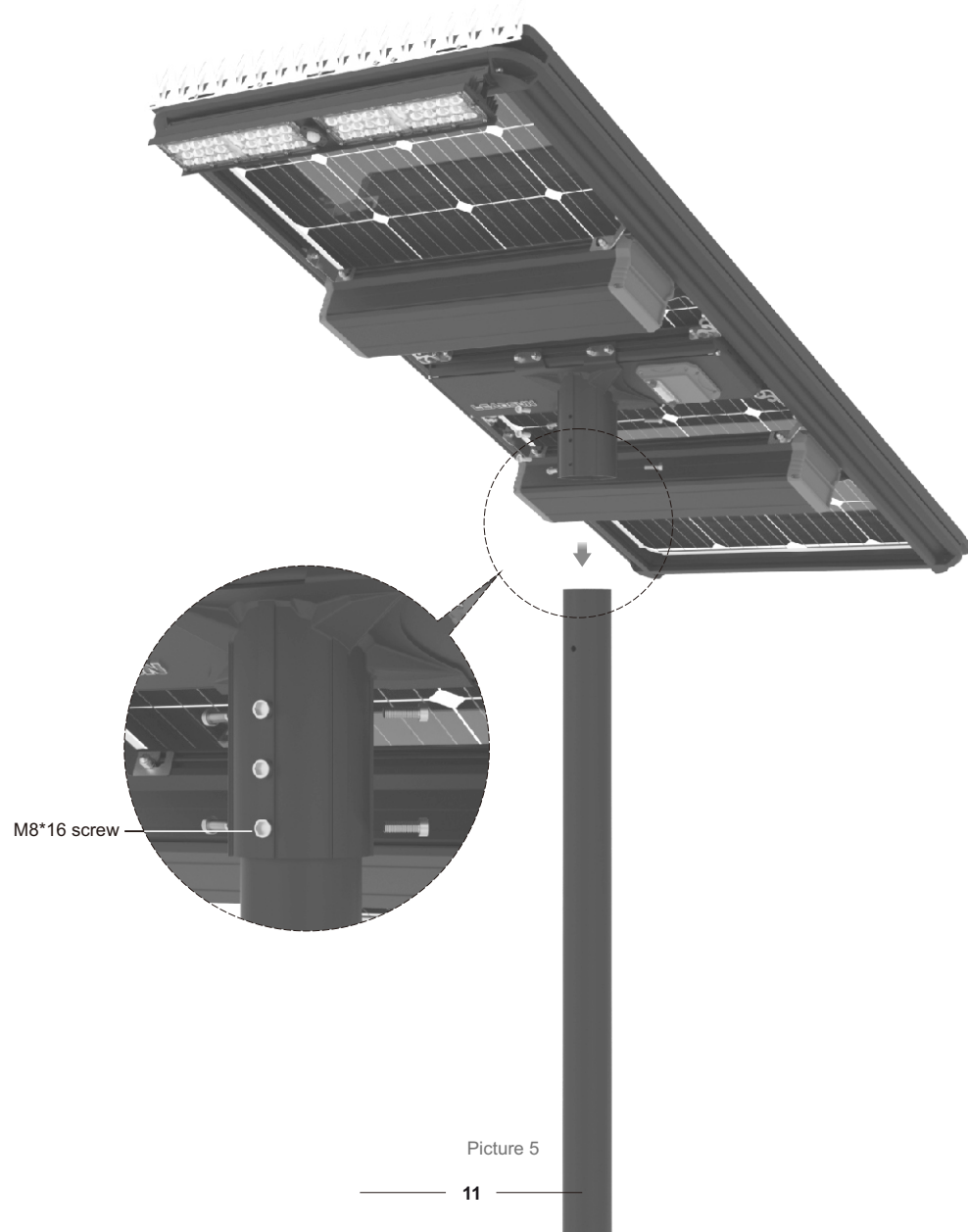
Ø85~90
57
Ø10

Picture 4

Product Installation

5. Mount AE5 on the pole.

Connect the AE5 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*16mm screws. (If you use the electric wrench, torsion should be set to 14N·m)(See Picture 5)
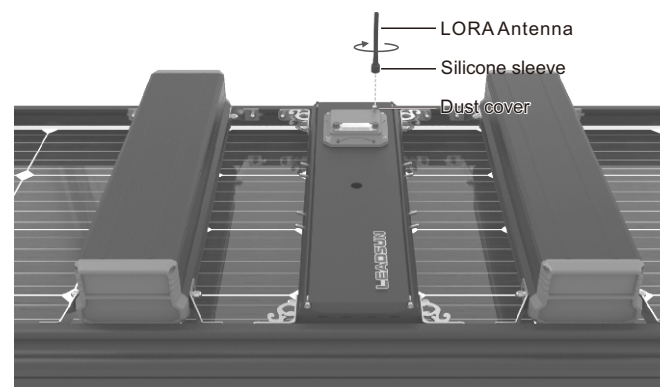
M8*16 screw

Picture 5

6. Wireless system installation (Suitable for wireless type)
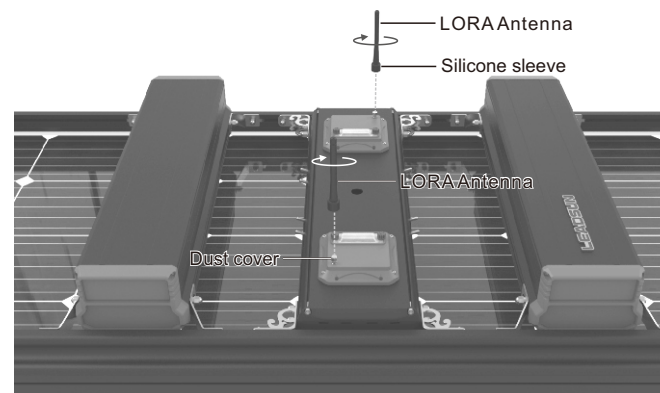
⚠ Cautions:

1. Please confirm if the 2G/4G module in the gateway supports the data network covered by the local carrier before installation.

2. When using the inbuilt 2G/4G module gateway, you need to insert a SIM card which has the data service. The data service will cause the service fee, and you need to pay the relevant service fee to the local carrier.

① Antenna installation

The way to install the antenna has shown below. Attention: please don't omit the silicone sleeve, before installation, remove the dust cover from the original antenna first, then put on the silicone sleeve, install the antenna, and the antenna must be set into place.

LORA Antenna
Silicone sleeve
Dust cover

LORA Terminal antenna installation
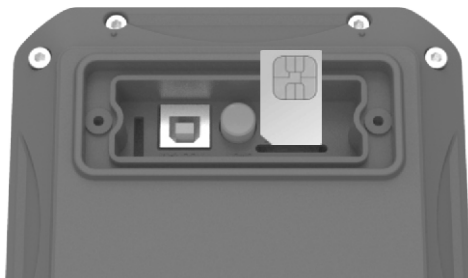
LORA Antenna
Silicone sleeve
LORA Antenna
Dust cover

Gateway antenna intallation

Product Installation

② Insert SIM Card

Insert the 4G SIM card into the slot according to the below picture. Press the button next to the slot to restart the gateway and then cover it with the waterproof plate.

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

③ Software operation instruction

Please use LEDSUN EDGE APP to remotely control and configure the street light, visit www.leadsunglobal.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.leadsunglobal.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

With LEADSUN EDGE, you can do the following operation:

1. Register to become a member

2. lighting control

3. History data query

4. Working mode configuration

5. Real-time view.

For detail instructions, please see the "APP User Guide" under "More Functions" in the software.

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).