LEADSUN ®

"Bright Ideas For An Even Brighter Future."

AE3C
Solar Street Light
User Manual

www.leadsunglobal.com

AE3C

Solar Street Light
User Manual

Thank you for choosing LEADSUN's solar street light.

If you have any question, please consult our customer services sales@leadsunglobal.com.

LEADSUN reserves the right to update product appearance, function and construction without notice.

For any discrepancies in illustration or description, please refer to individual/real objects.

LEADSUN assures the accuracy and reliability of this manual, but is not responsible for any loss or damage related to any operation of the products.

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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 custom product. Please confirm its 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). The street light might be damaged when wind speed beyond this level.
- Working temperature range from -20℃ to 60℃ (charging temperature is limited within 0℃ to 60℃). The product with battery heating function can work from -40℃ to 60℃.
- All AE3C part modules are IP65 waterproof. Vents and slits on the product are designed for heat dissipation and drainage. Metal parts are made of anodized rustproof aluminum, which can withstand high temperature and humid weather. However, it is recommended to avoid installing the street light in areas with heavy acid mist or salt influx. The strong structural design can withstand wind speed up to 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.
- Tier limit for fragile solar panel of the product is two layers. Stacking out of limits and press with heavy stuff are not allowed.
- Store the product within temperature from 0℃ to 45℃
- The product should be charged every six months if it is stored indoor for long time. Please charge the product with specialized charger (The charger is sold separately) 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 stains 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. It might 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 it along 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 to avoid potential negative effects to environment and human health.

Part Description

Standard

Gateway type

LORA terminal

Swivel

LED street light
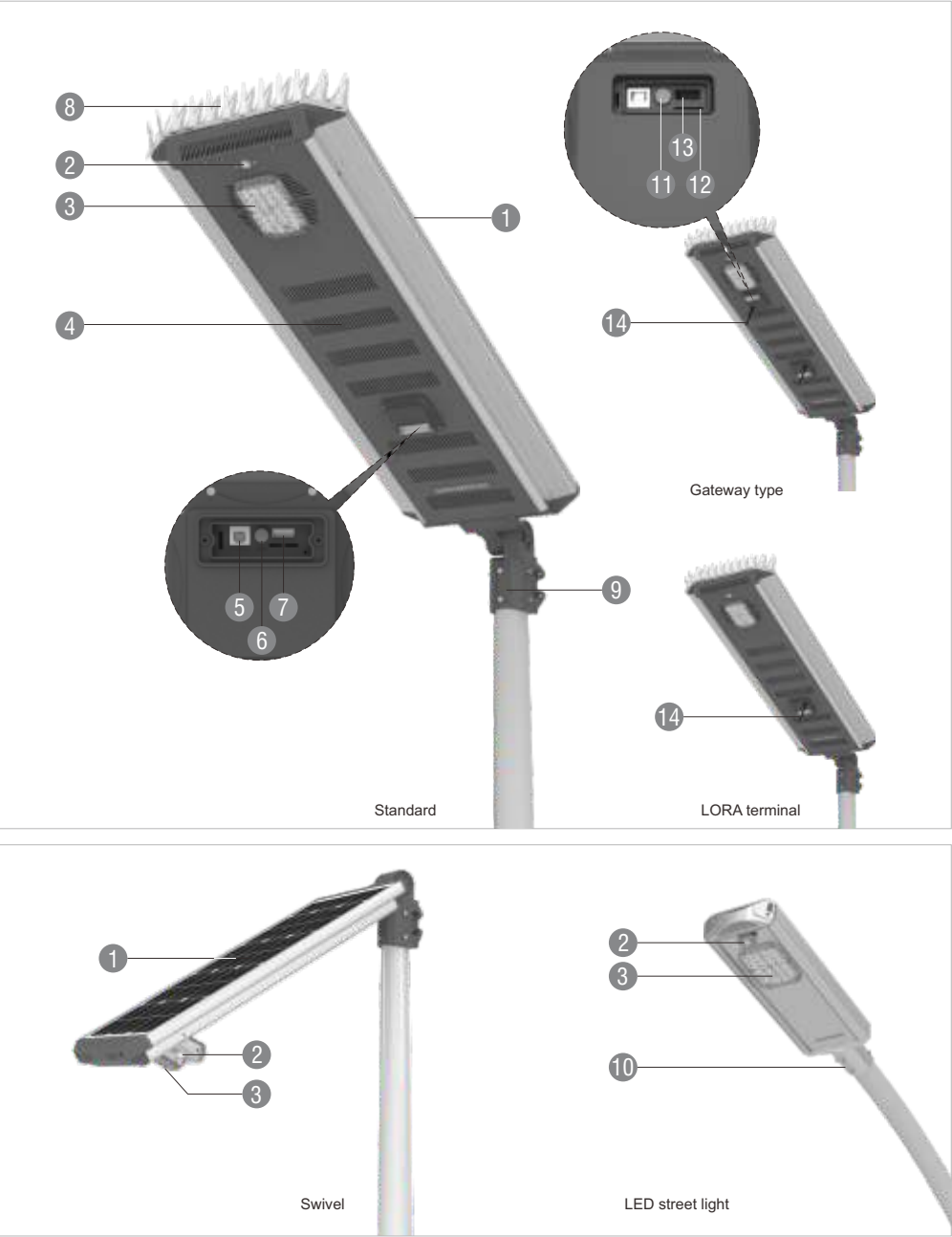
This Part List includes function description for each part. Users can look up the corresponding function based on their purchased product.

No.	Name	Brief Function
1	Solar module	To absorb solar energy and convert into electricity
2	PIR sensor	Motion detection
3	LED module	Illumination
4	Heat-sink hole	Heat dissipation
5	Type B USB female connector	For program input
6	Switch button	ON/OFF or Turn ON/OFF the light
7	Type A USB female connector	For battery charging via 14VDC 1.5A power supply
8	Bird spike	Prevents solar panel contamination from bird droppings
9	Mounting bracket	Fix AE3C unit
10	Luminaire bracket	Fasten the luminaire
11	Reset button	Restart the gateway
12	SIM Card slot	Insert 4G SIM card
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	LORA Antenna	Network group communication

Part List

Please open the package and confirm that all parts were received prior to installation. The parts of each type are listed below:

"All-in-one": ① ④ ⑤ ⑥ ⑦ ⑨ ⑬ ⑭

"Swivel Type": ② ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑬ ⑭

"Split Type": ③ ④ ⑤ ⑥ ⑦ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮

① AE3C all-in-one	④ Mounting bracket	⑤ M12 × 85 screw bolt 1pc
② AE3C swivel	⑥ Bird spike	⑦ M8 × 16 screw 6pcs M4 × 8 screw 3pcs M4 lock washer 3pcs M4 flat washer 3pcs
③ AE3C split	⑧ Open spanner	⑨ User manual
⑩ FREEDOM Classic LED street light	⑪ M8 × 16 Screw 6pcs	⑫ Waterproof cables
⑬ LORA Antenna (optional)	⑭ Special spanner (Optional)	⑮ RHEA MINI LED street light (Optional)

Product Activation

* Daytime: While connecting the luminaire to solar engine and solar panel exposing to sunlight, the luminaire lights for 20 seconds and then off. That means the AE3C has been activated automatically.

* Nighttime: Press the controller button and hold for 5 seconds, the luminare is on. Short press the button, it will be switching between ON and OFF.

✱✱✱ Tips:

ON mode: the system works normally, charging in the daytime and discharging at night.

Transport (idle) mode: the system will power off in an hour and then switch to OFF mode, for transport packing or maintenance status.

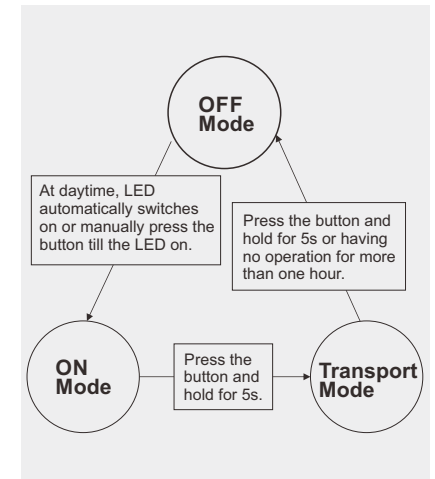OFF mode: The system doesn't work, no charging or discharging.

Turn ON the light:

a. Connect the luminaire to solar engine in daytime, it will be activated automatically (lights 20s and then OFF).

b. Press the controller button and hold for 5s to turn on the light when it is OFF.

Turn OFF the light:

Press the controller button and hold for 5s when it is ON, the light comes into TRANSPORT MODE. Press the button and hold for 5s again or have no operation in one hour, the light turns off.

Switch Button

OFF Mode

At daytime, LED automatically switches on or manually press the button till the LED on.

Press the button and hold for 5s or having no operation for more than one hour.

ON Mode

Press the button and hold for 5s.

Transport Mode

Before Installation

1. Installation Direction of Solar Panel

① Please choose the appropriate model depending on the sunlight intensity of the place and required working time.

If the installation site is on the northern hemisphere, the solar panel should face to the south as far as possible and if it is on the southern hemisphere, the panel should face to the north as much as possible. (See Picture 1)

② Make sure the sunlight is not blocked by any construction or trees during the installation. Otherwise it will affect the charging and discharging efficiency of solar engine and the operation of the street light. (See Picture 2)
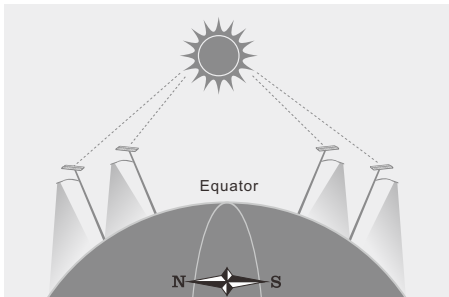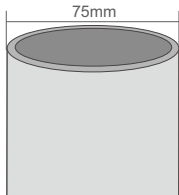

Picture 1
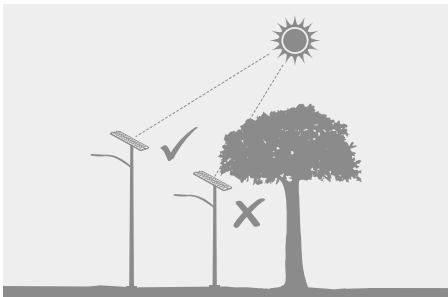
Picture 2

2. How users choose the right lamp pole?

It is suggested to choose the cantilever lamp pole for the solar street light and the diameter of cantilever should be not wider than 60mm. The top diameter of the pole which is used to install the solar engine should be no more than 75mm.
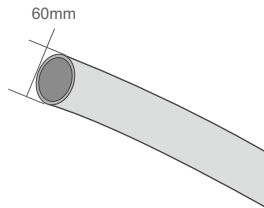

Cantilever

Top of the light pole

3. 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.
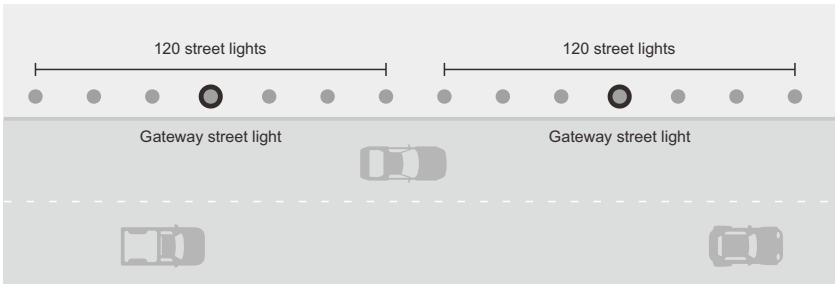
② **Village/Factory/Park installation:**

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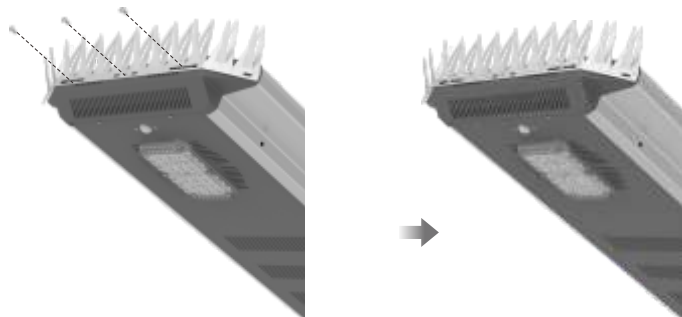
Product Installation

ALL IN ONE/SWIVEL

1. Install the bird spike

Use 3 sets of M4×8 screws, lock washers and flat washers to fix the bird spike along the rim of the top of solar engine. (See Picture 1)
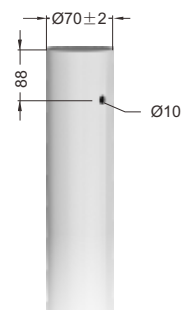
Picture 1

2. Install the bracket

Thread cables from the hole of the bracket and set a proper angle so that the solar panel can obtain the maximum energy from the sun (each scale on the bracket is 6 degrees). Fix the bracket by fastening a M12×85 bolt. (See Picture 2)

Angle mark
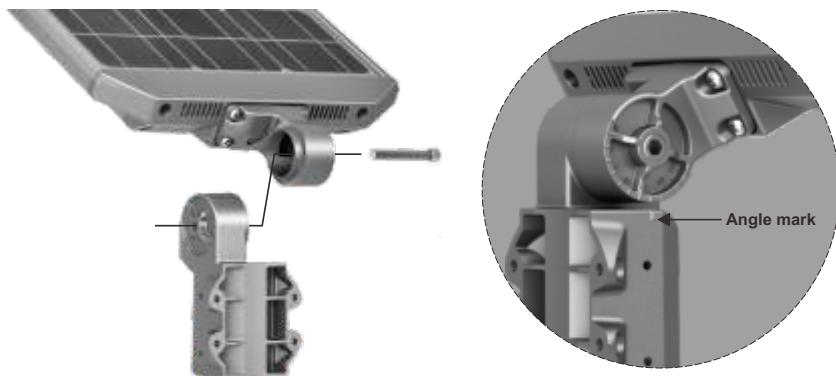
Picture 2

3. Drill holes on the pole and install the light

a. Drill a Φ10 hole on the lamp pole (88mm away from the top of pole) for bracket mounting. The hole should align to one of holes on bracket and keep the light on right way. (See Picture 3)

b. Place the lamp onto the pole and fasten with 6pcs M8×16 screws. Make sure one of screws is screwed into the hole on the pole. (See Picture 4)
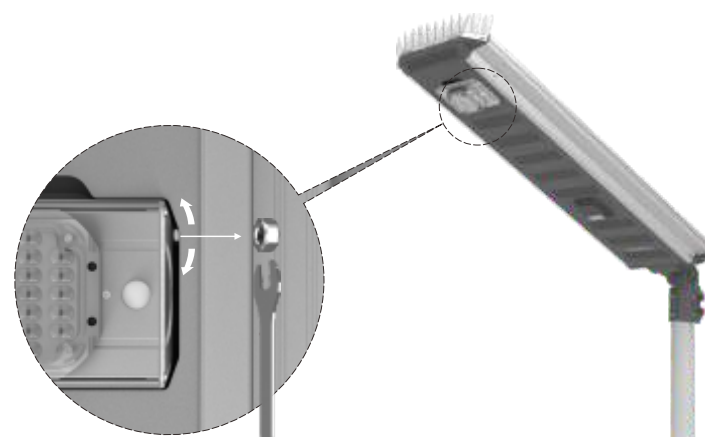
Ø70±2

88

Ø10

Picture 3

Picture 4

4. For Swivel Type

The LED module angle can be adjusted. Use the attached open spanner to loose screws on sides of LED module, and adjust it to suitable position and lock screws. (See Picture 5)
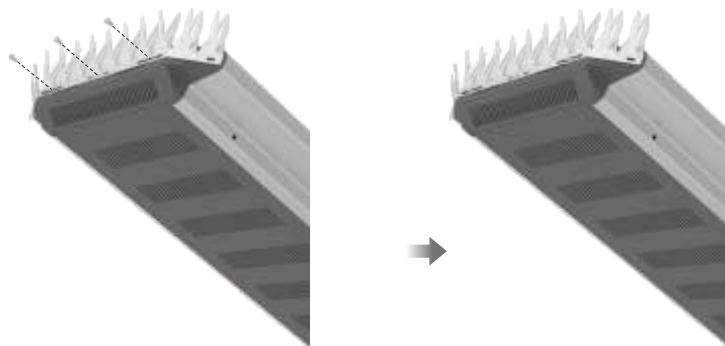
Picture 5

5. Cover the PV module, the light should be on.

Product Installation

SPLIT TYPE

1. Install the bird spike

Use 3 sets of M4×8 screws, lock washers and flat washers to fix the bird spike along the rim of the top of solar engine. (See Picture 1)
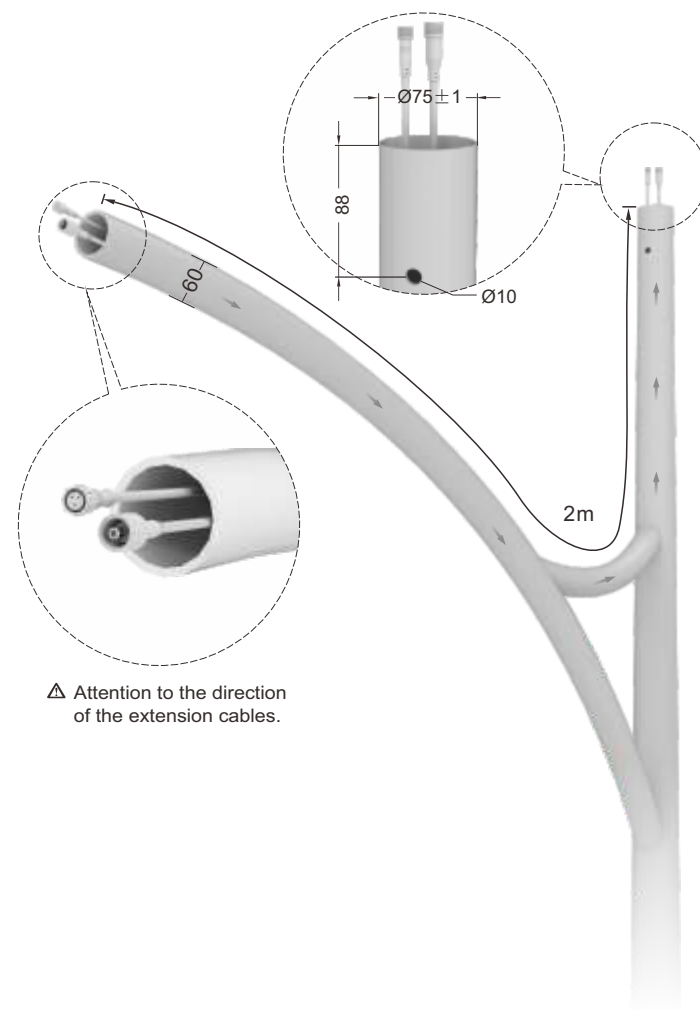

Picture 1

2. Install the bracket

Thread cables from the hole of the bracket and set a proper angle so that the solar panel can obtain the maximum energy from the sun (each scale on the bracket is 6 degrees). Fix the bracket by fastening a M12×85 bolt. (See Picture 2)

Picture 2

3. FREEDOM Classic LED street light installation.

1 **Determine.** Lamp Pole Opening. Determine the light installation direction first. Drill a Φ10mm hole at the position which is 88mm away from the top of the pole to fix bracket. (See Picture 3)

2 **Cantilever Threading.** The diameter of the cantilever shall not exceed 60mm. Pass two extension cables through the cantilever and the top of the lamp pole. (Lamp pole shape in the Picture 3 for reference only)

⚠ Attention to the direction of the extension cables.
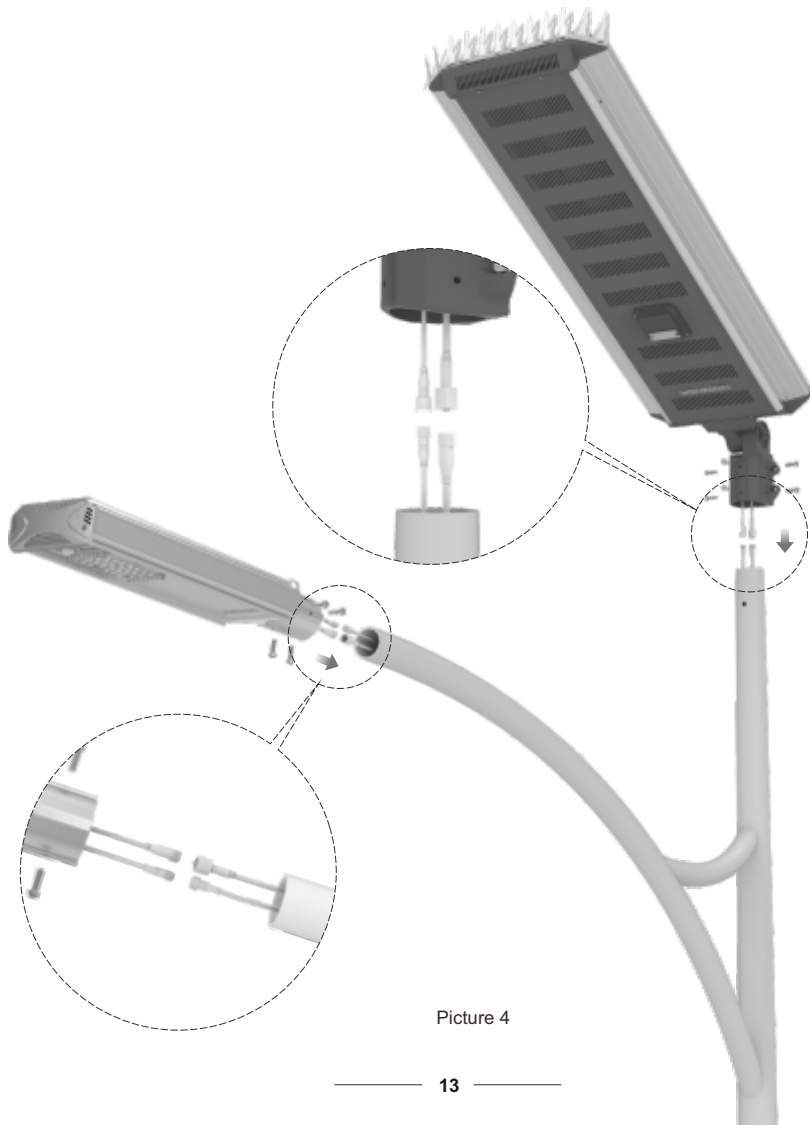
Picture 3

Product Installation

③ Mount the AE3C solar engine:

Connect all cables together and lock the terminals. Mount the AE3C solar engine on the pole with 6pcs of M8×16 screws. Make sure one of the screws is screwed into the Φ10 hole. (See Picture 4)
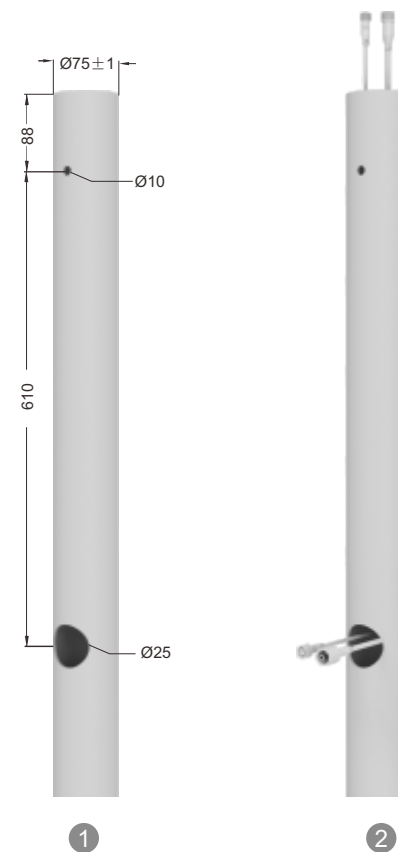
④ Mount the luminaire:

Connect the extension cables from the cantilever to the cables of the luminaire and lock the connectors. Embed the luminaire bracket into the cantilever and fasten it by 6 M8×16 screw and make sure the luminaire has been installed stably on the pole. Then the installation is finished. If you use a electric wrench, torque should be set to 14N·m) (See Picture4).

Picture 4

4. RHEA MINI LED street light (Optional) installation.

① Drill holes on the pole. Firstly, determine and mark the AE3C solar engine and luminaire position according to the optimum sun radiation and road condition. Then drill a Φ10mm hole at the position which is 88mm away from the top of the pole to fix bracket. Drill the other Φ25 hole on the pole where the luminaire is installed for threading extension cables. (See Picture 5)

② Thread 2 extension cables from the small hole for luminaire to the top of lamp pole.

Picture 5

③ **Mount the luminaire:** Connect the luminaire and solar engine with the corresponding cables. Mount the luminaire on the pole with 4pcs of M8×90 bolts. The maximum torque for those M8 bolts is 14Nm. Do not surpass this torque specification. (See Picture 6)

④ **Mount the AE3C solar engine:** Connect all cables together and lock the terminals. Mount the AE3C solar engine on the pole with 6pcs of M8×16 screws. Make sure one of the screws is screwed into the Φ10 hole. (See Picture 6)
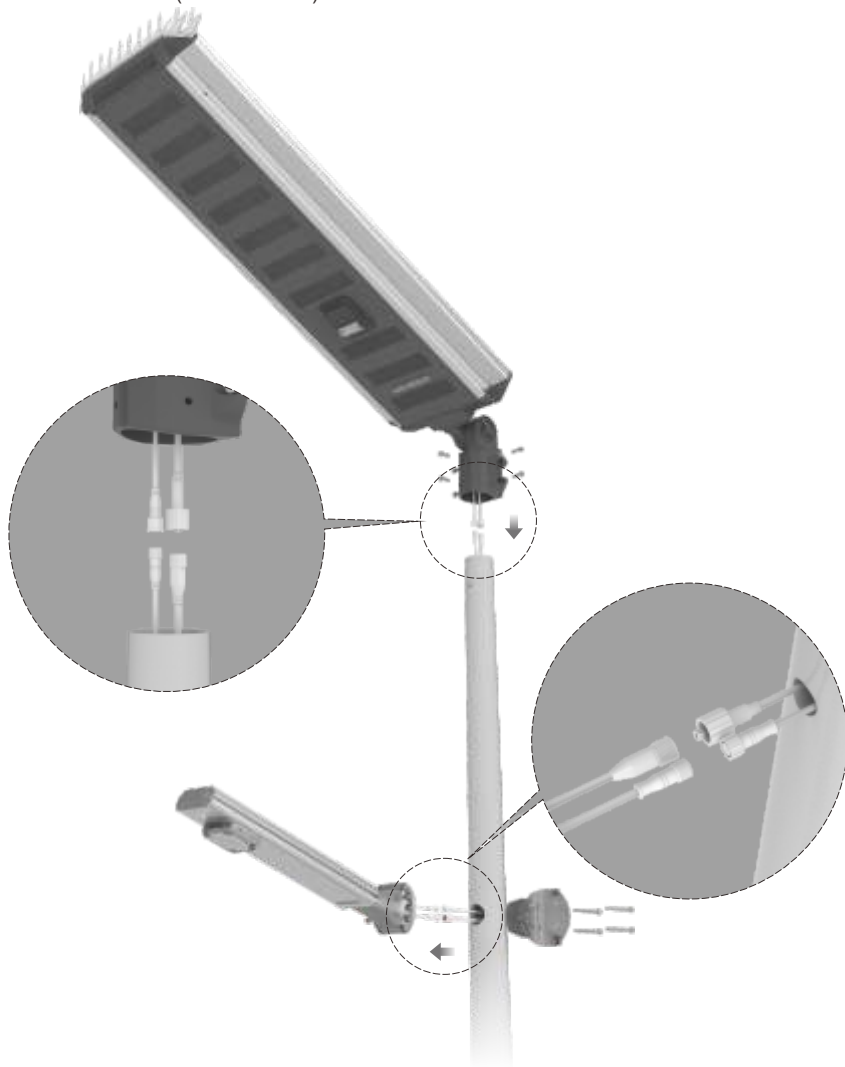
Picture 6

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.

① **Antenna installation**

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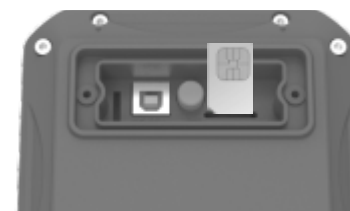

LORA Antenna

LORA Antenna
Silicone Sleeve
Dust Cover

Gateway antenna intallation

LORA Terminal antenna 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.

Product Installation

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 IOS users , please download "LEADSUN EDGE" from APP STORE.

B. For Android users, please download "LEADSUN EDGE" from www.leadsunglobal.com or software platforms like Google Play.

C. Web version for computers: please visit http://47.52.88.104:8083/Home/Login

With LEADSUN EDGE, the following operation are available:

1. Register to become a member

2. lighting control

3. Working mode setting

4. Real-time view.

For detailed 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 "Product Activation" in this user manual and follow the steps to activate the lamp.
		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.
		Test each component according to the maintenance 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 panel as detailed above.
		Examine if the battery pack is damaged as per the maintenance guide.	Replace the damaged battery.
3	The lamp does not run as per the normal operating mode.	Check if the working mode setting is correct.	Contact the dealer/supplier
4	The lamp fails to change its brightness properly when humans approach and motion sensor triggered.	Check if the air temperature is 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 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.
		Examine if the sensor is damaged.	Replace damaged motion sensor or controllers.