

*Warning

- 1) Do not store this product over a long period of time (over 1 month). If you require long term storage, please contact your vendor or L-Kougen.
- 2) Do not use any batteries besides the one's we provide.

Safety Considerations

The User's Manual contains important information on safe and correct use, and is meant to prevent accidents and damages to people and their property.

With regards to construction of lighting equipment, the construction manager of the qualified electrical worker holds responsibility.

In Order to Use This Product Safely

Thank you for purchasing the L-Kougen Capa Series. This manual contains information regarding specifications, usage, system configurations, maintenance / inspection etc. Please read this manual thoroughly before using this product. Do not touch the parts inside this product if it malfunctions. Instead, please contact your vendor or L-Kougen.

To the Construction Company Construction Considerations

After construction, please give this manual to the customer.



Warning

Ignoring this warning and mishandling the product can lead to death or serious injury.

- Please refer to the installation manual for assembly instructions. Failure to assemble correctly may result in equipment falling, electric shock, and fire.
- Do not work in rainy weather. This can cause falling, injury, electric shock, and product failure.
- Please pay attention during loading / unloading / installation. Failure to do so can result in falling and injury.
- Please secure the assembly bolts, screws, and nuts tightly. This can cause falling, injuries, and accidents.
- Please do not modify the product. This can cause faulty insulation and equipment failure.
- Do not remove the battery from the enclosure. This is extremely dangerous and can cause electrocution.
- Please do not use the battery for applications besides our product's light. This is extremely dangerous and can cause breakage, rupture, and fire.
- Do not use this product in locations exposed to corrosive gases. If used without any treatment, this can cause falling, deterioration, discoloration, faulty insulation, an equipment failure.
- Do not use this product in places subject to violent vibrations or shocks, such as near bridge piers. If constructed without countermeasures, this can cause falling and equipment failure.
- Although this product is salt resistant, please contact us when installing in coastal areas.
- Please do not climb the pole. This can cause falling and falling of equipment.
- Do not shake the pole or apply a strong shock or vibration. This can cause falling and falling of equipment.
- Please do not apply a force to rotating parts. This can cause falling and falling of equipment.
- Please do not touch the charging area with your hands or metal. This can cause faulty insulation, electric shock, and fire.
- Please perform corrosion prevention treatment on the pole base as necessary.
- Please protect electric wires and cables as necessary.



Caution

Ignoring this warning and mishandling the product can lead to damages and serious injury

- Please make sure that the solar panels face the South. An inappropriate mounting direction can lead to the battery not charging fully and the light to not turn on.
- Do not use in environments with an ambient temperature below -20°C or above 45°C. This can cause failure to light and can cause a fire.
- Please do not use in places where shadows can form on the solar panel during the daytime, such as besides tall trees or buildings. The battery will not charge fully, and can cause failure to light.
- The pole can withstand a wind load of up to 60 m/s. Please do not install in areas with wind speeds greater than this.
- Please do not install in areas where there is a chance of snow cover corresponding to more than 1 meter of snow. (When installing in areas like this, it is necessary to remove the snow and ice regularly).
- Please start construction promptly after receiving the parts. If the storage battery is kept stored for a long period of time, the battery may over-discharge.
When storing parts for a short period before construction, please keep parts somewhere away from direct sunlight and with low humidity. Failure to do so may cause the battery to deteriorate.

- Due to variations in each solar panel's power generation, the time the light turns on and off may vary, even among products with the same model name.
- Do not conduct dielectric strength tests and insulation resistance tests on this product.

■ For the Customer Usage Precautions

Please be sure to store this document safely



Caution

Ignoring this warning and mishandling the product can lead to damages and serious injury

- During operation and right after operation, please do not touch the light because it may be very hot. This can cause burns.
- Please perform routine inspections.
- Please do not climb the pole. This can cause falling and falling of equipment.
- Please hand in this manual along with the product when relocating or transferring the product.
- Do not shake the pole or apply a strong shock or vibration. This can cause falling and falling of equipment.
- Remove any snow, leaves, volcanic ash, dust, etc. that may interfere with power generation. Failure to do so may cause malfunctioning.

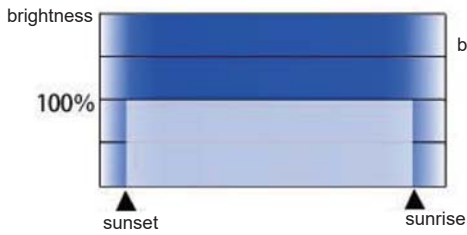


1. Specifications for Standard Lighting Modes

Lighting Modes

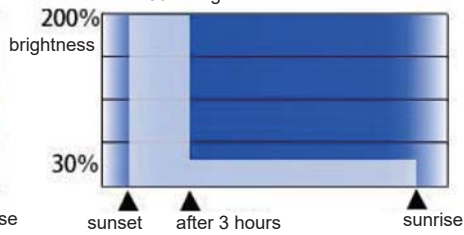
Mode A

100% brightness from sunset to sunrise



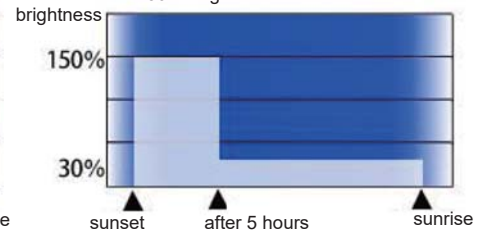
Mode B

200% brightness for 3 hours after sunset, then 30% brightness until sunrise



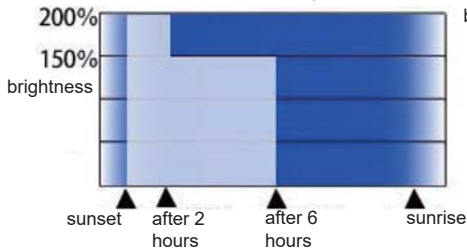
Mode C

150% brightness for 5 hours after sunset, then 30% brightness until sunrise



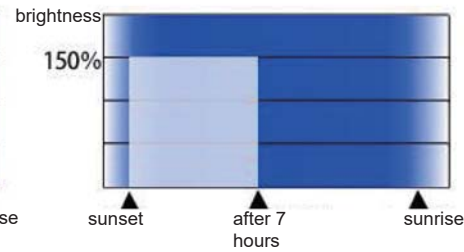
Mode D

200% brightness for 2 hours after sunset, then 150% for four hours, then turn off



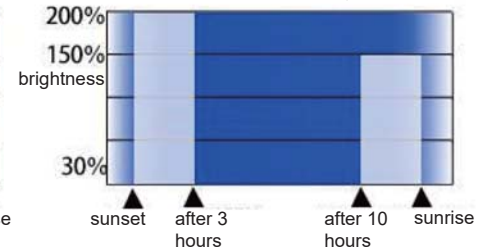
Mode E

150% brightness for 7 hours after sunset, then turn off



Mode F

200% brightness for 3 hours after sunset, turn off for 7 hours, 150% brightness until sunrise



*Mode G: Test lighting mode (forced lighting mode)

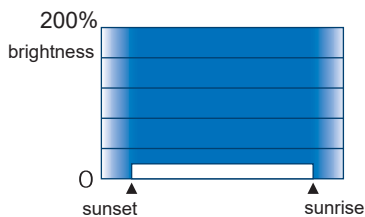
* Motion sensor lighting specifications (optional)

Modes A to F are the same as the standard mode specifications listed above.

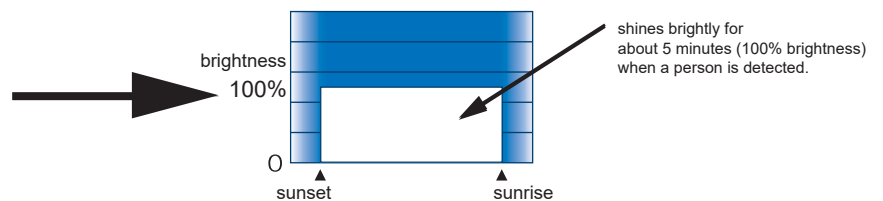
Mode G is motion sensor lighting (there is no test lighting mode).

Mode G (motion sensor lighting)

Shines dimly from sunset to sunrise, and shines brightly for about 5 minutes (100% brightness) when a person is detected.



when not detected



when a person is detected

2. LED Solar Light Details

- (1) This system converts sunlight to electricity, stores the electricity in a built-in battery, and operates the lights with a nighttime battery.
- (2) There is an overcharging protection circuit that protects the battery when it is fully charged. If the battery voltage drops to an acceptable voltage, it will begin charging again (overcharge protection functionality).
- (3) The solar panel efficiently converts sunlight into electricity, which is stored in the battery.
- (4) The controller monitors the solar panel's output voltage; i.e. when the ambient light dims and the output voltage decreases, the controller determines it is nighttime and turns on the light (nighttime detection).
After the light is turned on, a predetermined time elapses (timer control). After this time, when the solar panel's output voltage increases, the light is turned off (daytime detection).
- (5) The controller has built-in overcharge and over-discharge protection to prevent shortening of the battery's service life and decrease in performance (over charge / discharge protection functionality).
- (6) The Weather Synchronization System adjusts the lighting output to match the amount the battery charged during the day. This allows the solar light to operate regardless of weather conditions, although the light may illuminate below its rated brightness.

3. Maintenance (For safe use)

3.1 Cleaning

- (1) If the front side (side facing the sun) of the solar panel is not clean, the efficiency of the solar panel decreases, which can lead to insufficient charging. Please clean the front side of the solar panel with a cloth.
- (2) If the light cover is not clean, the efficiency of the light will decrease. Please clean the light cover with a cloth.
- (3) When cleaning, please use soapy water or neutral detergent. Please do not use organic solvents such as thinner, gasoline, benzene, and alcohol.

3.2 Inspection and Maintenance

Please perform the following inspection and maintenance once a year for safe and effective use.

- (1) Confirm that the lighting time and dimming time are working properly.
- (2) If the light is turning off early or if it is dark, you will need to replace the faulty parts. If you see these signs, please contact your vendor (construction company) and exchange the necessary parts.

(3) Inspection List

| Routine Inspection Items | | |
|--------------------------|---|--|
| What to inspect | Inspection method | What to look for |
| Overall | Visual, miscellaneous inspections | Peeling or contamination of paint |
| | | Bolts and parts that have fallen |
| | | Loose bolts |
| | | Damages, scratches, dents, bends, cracks |
| | | Damage / looseness in electrical path |
| | | Loose anchor bolt |
| System | Visual | Light turns on / off at appropriate times |
| | | Does not turn off shortly after it starts to light |
| Pole / support | Miscellaneous inspections | Please inspect according to “(One company) Lighting Industry Association steel lighting poles inspection / diagnosis recommendation” |
| Light | Visual | Proper lighting |
| | | Cracks in the cover |

If you suspect a defect

In the following cases, there may not be a defect. Please check again before requesting repair.

| Symptom | Cause | Explanation / how to treat |
|-------------------|--|--|
| Does not light up | Battery over-discharge due to insufficient sunshine or deterioration | The battery voltage may be below the over-discharge voltage. Since the control circuit is protecting the battery from over-discharging, there will be no output until the battery recovers a predetermined voltage. Once this is recovered, the light will turn on again. Insufficient sunshine is often the cause for this. |
| | The switch is turned off | If the lighting mode switch is mistakenly turned to off after installation, the light will not turn on. Turn the lighting mode switch to the desired lighting mode. |
| | The surrounding environment does not become dark, and the light is unable to detect sunset | If there are street lights using a commercial power supply nearby, the solar panel may be constantly generating electricity and may be unable to detect the decrease in output voltage associated with sunset. |

If you suspect a defect

In the following cases, there may not be a defect. Please check again before requesting repair.

| Situation | System Operation |
|---|---|
| Rainy days have continued, are the solar panels still generating electricity? | Although its power generation capacity is reduced in cloudy weather, this product can still be charged (not always fully). Additionally, this product is equipped with the Weather Synchronization System, which adjusts the output (brightness) according to the amount of charge accumulated during the day. As a result, the Weather Synchronization System allows the light to keep its mode time regardless of weather conditions. |
| What is the solar panel is damaged? | If there is an abnormality (breakage, breakdown, etc.) in the solar panel, it will not be able to charge the battery. If you leave the battery in this state for a long time, the battery will over-discharge to the point where the battery cannot be recovered. Please consult your vendor (construction company) as soon as possible. |
| What is the battery has reached the end of its lifespan? | If the light is not turning on during its operating time, the battery may have reached the end of its service life. If sunlight exposure is bad and the over-discharge protection is activated for an extended period of time, the battery life will be shortened. Batteries that have reached the end of their service life must be replaced. Please consult with your vendor (construction company). |

About the Warranty

The warranty period is two years from the product delivery date.

Warranty Disclaimer

1. The following situations are not covered by the warranty.
 - (1) Damages due to misuse, inappropriate repairs, and modifications.
 - (2) Damages due to accidents during relocation and transportation after purchase.
 - (3) Damages and failure caused by fires, earthquakes, floods, lightning, natural disasters, pollution, salt damage, abnormal voltage.
 - (4) Damages due to contact with people and animals (e.g. birds).
 - (5) Damages due to inadequate construction and damages due to factors unrelated to this product.
 - (6) Damages due to neglecting maintenance and inspection required by the User Manual, law, and regulations.
 - (7) Damages due to reasons that could not have been foreseen with the science and technology available at the time of shipment.
 - (8) Damages due to use in areas with sunlight levels that do not meet standards and snowy areas with inadequate sunlight levels.
 - (9) Damages due to use in areas directly exposed to sea water or corrosive gasses.
 - (10) Damages due to over-discharge resulting from long-term storage of the battery.
 - (11) Damages due to over discharge of the battery by long term non use strage.
2. You will be charged travel expenses for repairs in remote locations such as remote islands.

About the parts

- We will collect specific parts (such as storage batteries) removed during repair unless instructed otherwise.
- During repair, we may use recycled parts that conform to our quality standards.

About the parts

- During the warranty period, please contact your vendor (construction company) with an item that can be used to specify the date of purchase.
- When the warranty period has expired, please consult your vendor (construction company).
If we determine that the product is repairable, we will repair the product, and charge an applicable fee based on the repairs.
- For questions regarding after-sales service and repair, please consult your vendor (construction company).
Please prepare information on the model name and time of purchase for this consultation.