

# Modular Solar Panel / accessories



### *About this Manual*

This Manual is applicable to Solar Products

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website.

Please use this user manual under the guidance of professionals.

### *Legal Disclaimer*

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE PRODUCT DESCRIBED, WITH ITS HARDWARE, SOFTWARE AND FIRMWARE, IS PROVIDED "AS IS", WITH ALL FAULTS AND ERRORS, AND OUR COMPANY MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT OF THIRD PARTY. IN NO EVENT WILL OUR COMPANY, ITS DIRECTORS, OFFICERS, EMPLOYEES, OR AGENTS BE LIABLE TO YOU FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES, INCLUDING, AMONG OTHERS, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, OR LOSS OF DATA OR DOCUMENTATION, IN CONNECTION WITH THE USE OF THIS PRODUCT, EVEN IF OUR COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

REGARDING TO THE PRODUCT WITH INTERNET ACCESS, THE USE OF PRODUCT SHALL BE WHOLLY AT YOUR OWN RISKS. OUR COMPANY SHALL NOT TAKE ANY RESPONSIBILITIES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER ATTACK, HACKER ATTACK, VIRUS INSPECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, OUR COMPANY WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

SURVEILLANCE LAWS VARY BY JURISDICTION. PLEASE CHECK ALL RELEVANT LAWS IN YOUR JURISDICTION BEFORE USING THIS PRODUCT IN ORDER TO ENSURE THAT YOUR USE CONFORMS THE APPLICABLE LAW. OUR COMPANY SHALL NOT BE LIABLE IN THE EVENT THAT THIS PRODUCT IS USED WITH ILLEGITIMATE PURPOSES.

IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATER PREVAILS.

# Regulatory Information

## FCC Information

**FCC compliance:** This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### *FCC Conditions*

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

### *EU Conformity Statement*



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive

2004/108/EC, the RoHS Directive 2011/65/EU.



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or

dispose of it at designated collection points. For more information see: [www.recyclethis.info](http://www.recyclethis.info).



2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which

may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: [www.recyclethis.info](http://www.recyclethis.info).

## [Precautions]

- **Please do not use harsh chemicals or solvents to clean this product, dish soap and warm water applied with a soft sponge or cloth is the safest and simplest cleaning method. It is also recommended to use a squeegee to remove dirty water. Remember – avoid damaging or scratching the surface at all costs!**
- **This product does not contain any parts for purposes other than what it was designed for. Do NOT disassemble or modify the lithium battery circuit, otherwise the warranty will be void. If there are quality or technical problems, please contact the dealer or return the product to LT Security for maintenance. This product is covered by a “Platinum” 3-Years (back to base return) Warranty.**
- **The product must be correctly installed by an authorized professional and firmly secured to avoid unnecessary accidents and or damages.**
- **The manufacturer reserves the right to continuously improve the product, and subject to change without notice.**

# [Product Introduction]

## ➤ 2.1 Features & Functions

**This product is a professional smart solar power supply system, composed of three parts:**

- I. Solar panel
- II. Lithium battery
- III. Mounting bracket

This independent Smart Solar System was designed to be deployed rapidly with ease of use, long operational life & reliability. It can provide stable power output for equipment (within the recommended Current consumption) without being connected to the mains. It is widely used for urban construction, road monitoring, rural properties, environmental governance, water source protection, forest fire prevention, etc.

- This product is supplied with an integrated fixed bracket, adaptable to suit all **LTS** Turret, Dome & PTZ cameras. (**Appropriate Bracket will be supplied to match the Camera**).
- This product is supplied with a 4-Claw Loop pole-mount clamp, suitable for “Pole” (diameter 69~160 mm).
- This product can be expanded in a variety of combinations, equipped with expansion integrated modules to achieve high-power configuration to meet different environmental needs.
- The Mounting Bracket can be adjusted to any angle to generate and achieve maximum power efficiency.
- This product is designed to withstand strong wind loads yet still maintain stability in harsh weather conditions.
- All connectors are IP rated “**aviation**” style inline Plugs made for easy to installation
- This product uses high-performance micro-controller to monitor lithium battery activation and pre-charge functions, real-time (**BMS**) battery management system protection with an efficiency of more than 90%.
- This product supports RS-485 to communicate back, and supports real-time condition of battery load, remaining power, temperature and other information through the communication device.
- The power generation unit of this product uses high-efficiency monocrystalline silicon wafers with a conversion efficiency of 21.6% or more and a service life of 20+ years. (**3-Years back to base Warranty**).
- The energy storage unit of this product adopts deep cycle lithium battery technology, which is safe and reliable. (**3-Years back to base Warranty**).
- This product is manufactured using die-cast aluminum & fully galvanized mild steel, made with precision workmanship, designed to withstand rigorous environmental conditions.
- All components are IP67 rated for outdoor use and protection from the elements.
- (Optional) heating version supports “**0°C**” automatic heating, suitable for sub-Zero temperatures.

### **Working temperature:**

**Conventional version:** discharge temperature: -20~40°C, charging temperature: 0°C~50°C,

**Heating version:** Discharge temperature: -20~40°C, charging temperature: -20°C~50°C.

# [Product Installation]

## ➤ 2.1 Packing List

Prior to installation, please confirm the equipment in the packing box is in good condition according to the packing list and all the parts are complete.

Name	QTY.
Solar kit (without camera)	1 Set
Compass	1pcs
M8*80 Screw nut	4 Sets
Pole-Mount Clamp	2pcs
Hexagon screwdriver (M14, M8)	1pc of each
Output power cord (1.5 meters)	1pc
Manual	1pc
Certificate of conformity	1pc

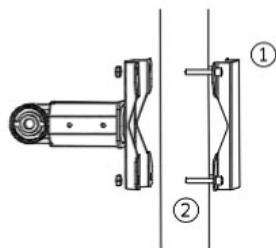
## ➤ 2.2 Installation Method



**Note:** All hardware must be installed & tensioned securely.

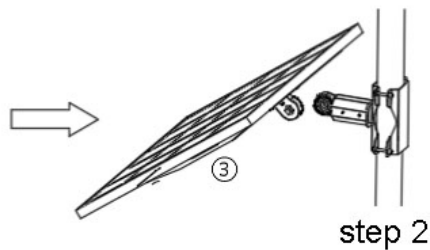
### 2.2 Single system installation method

Bullet style camera version illustrated as an example; the system pole installation is shown below:



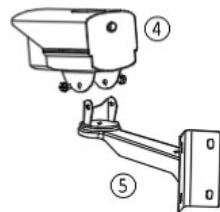
step 1

Take out the Four claw fixed plate ① and the hexagonal screws ②, South-facing installation the fixing tube and ①, then use a wrench to fix ① on the monitoring pole



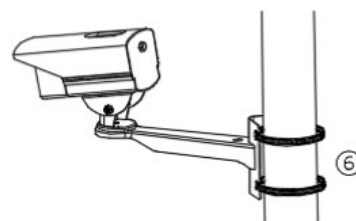
step 2

Take out the solar panel ③, check the local installation angle, install it according to the scale, and tighten the screws with M14



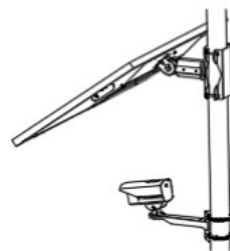
step 3

Take out the camera ④ and the bracket ⑤, fix the camera on the universal joint, and fix the bracket on the monitoring pole with a hoop



step 4

Plug and tighten the photovoltaic cable of the solar kit, confirm that the indicator light works normally, connect the output power cord to the camera plug, and confirm that the camera works normally



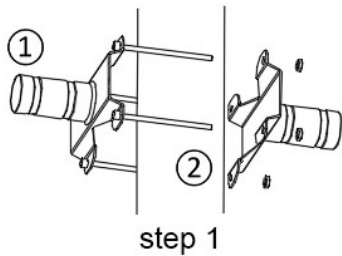
step 5

Adjust the angle of the universal joint (up and down), the angle of the bracket (left and right), tighten and fix after confirmation, the installation is complete

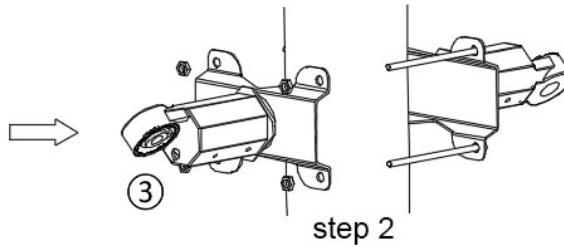
\*\*\* Schematic diagram of pole installation (*pole is purchased separately*) \*\*\*

### 2.3 Capacity expansion installation method

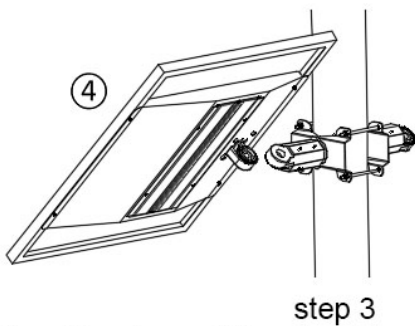
Take Bullet style camera version as an example, the equipment pole installation as shown below:



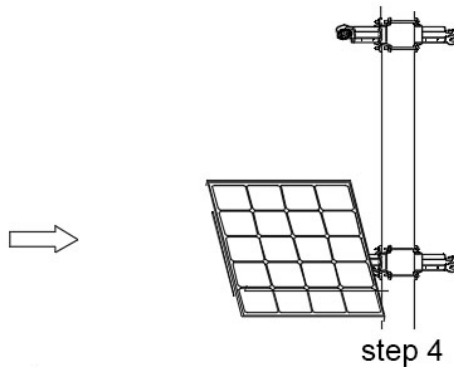
Take out two sets of four-claw plates with fixed pipes ① and hexagon socket screws ⑥, install the two four-claw plates face to face and tighten them with screws



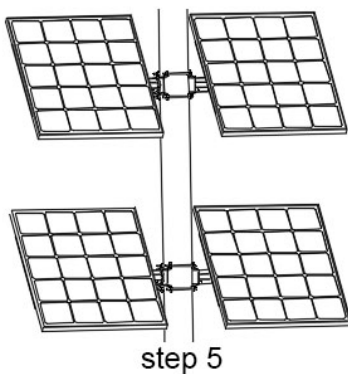
Adjust the octagonal tube ③, the other reverse rotation angle, corresponding to the best local sunshine angle, tighten the screws to fix



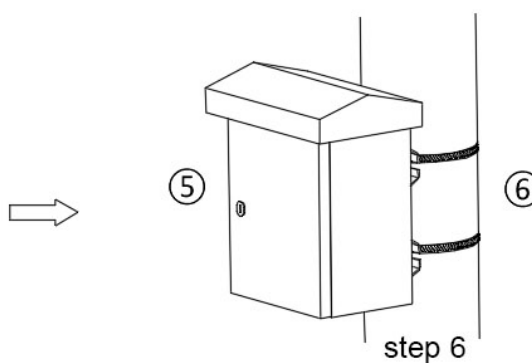
Take out the solar panel ④ and install it corresponding to the zero degree of the scale, and fix it with M14 hexagon socket screws



Follow step 3 to install the remaining solar panels one by one, the solar panels must be facing south

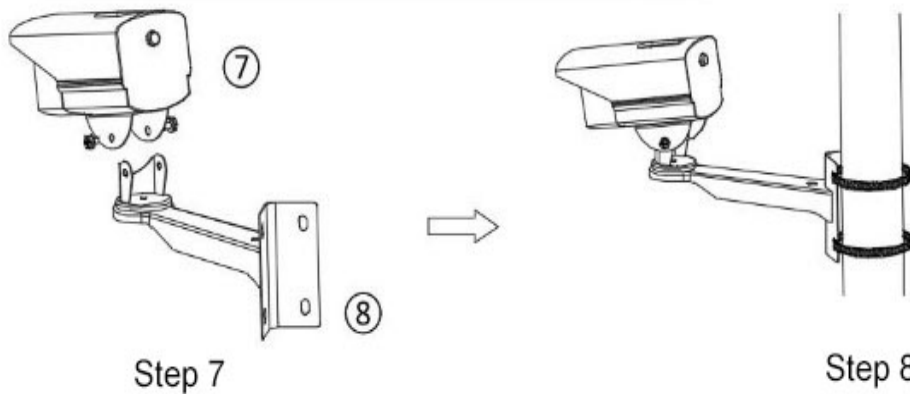


The installation distance between the upper and lower solar panels is greater than 1 meter



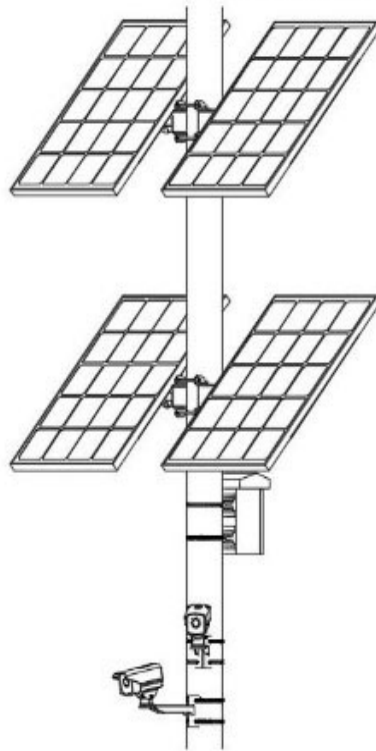
Take out the control box ⑤ and the hoop ⑥, fix them on the monitor pole higher than the height, tighten them





Take out the camera and the bracket ⑧, first fix the camera on the universal joint, and then fix the bracket user hoop on the monitoring pole.

Plug and tighten the photovoltaic cable of the solar kit, Confirm that the indicator light is working, Then connect the output power cord to the camera plug, Confirm that the camera is working



Step 9

Install the equipment in turn and fix it on the monitoring rod, adjust the angle of the universal joint (up and down), adjust the angle of the bracket (left and right), tighten and fix after confirmation. The installation is complete.

## ➤ 3.1 Technical parameters

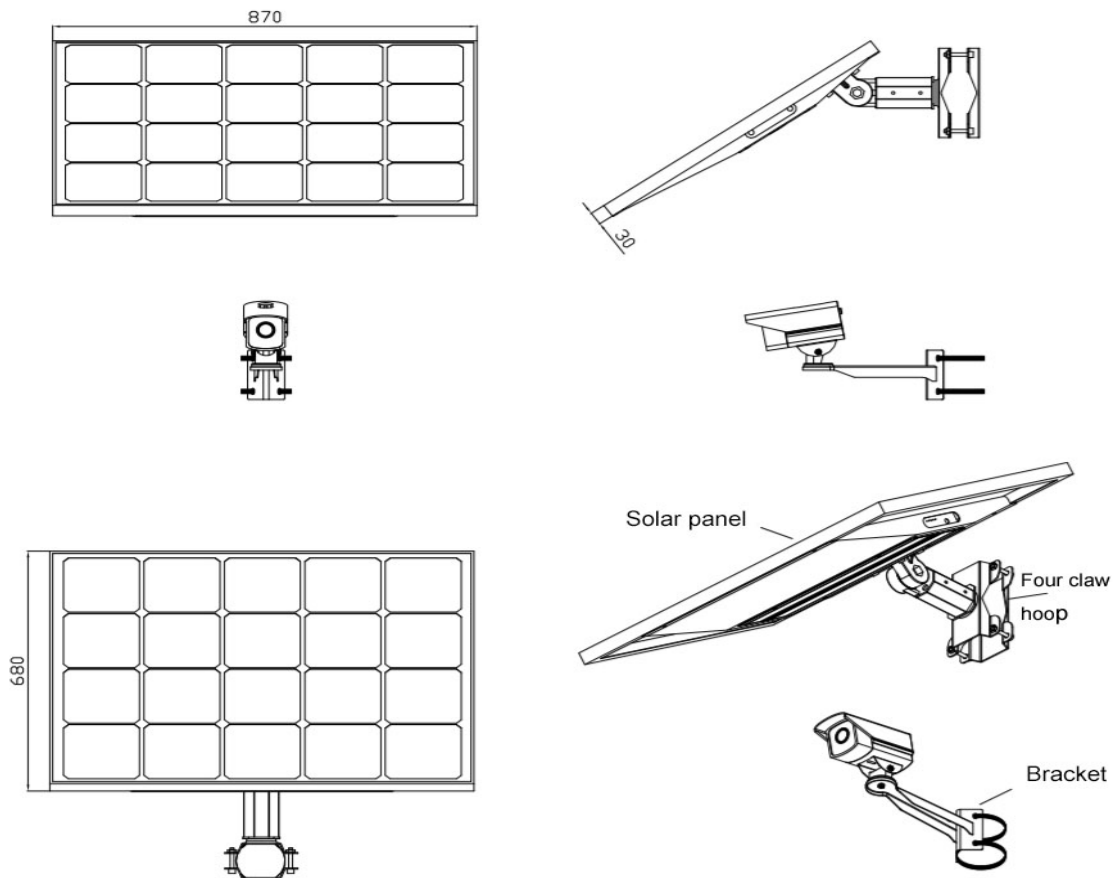
Technical data								
	Model number	Solar panel	battery	Load voltage	Maximum load power	Load conversion efficiency	Maximum charging current	Solar input voltage
Lithium iron phosphate	<b>LT-MSP-369X</b>	100	36	10~14.6 V	40 W	90%~96%	10A	18 V

## ➤ 3.2 Schematic & Dimensions

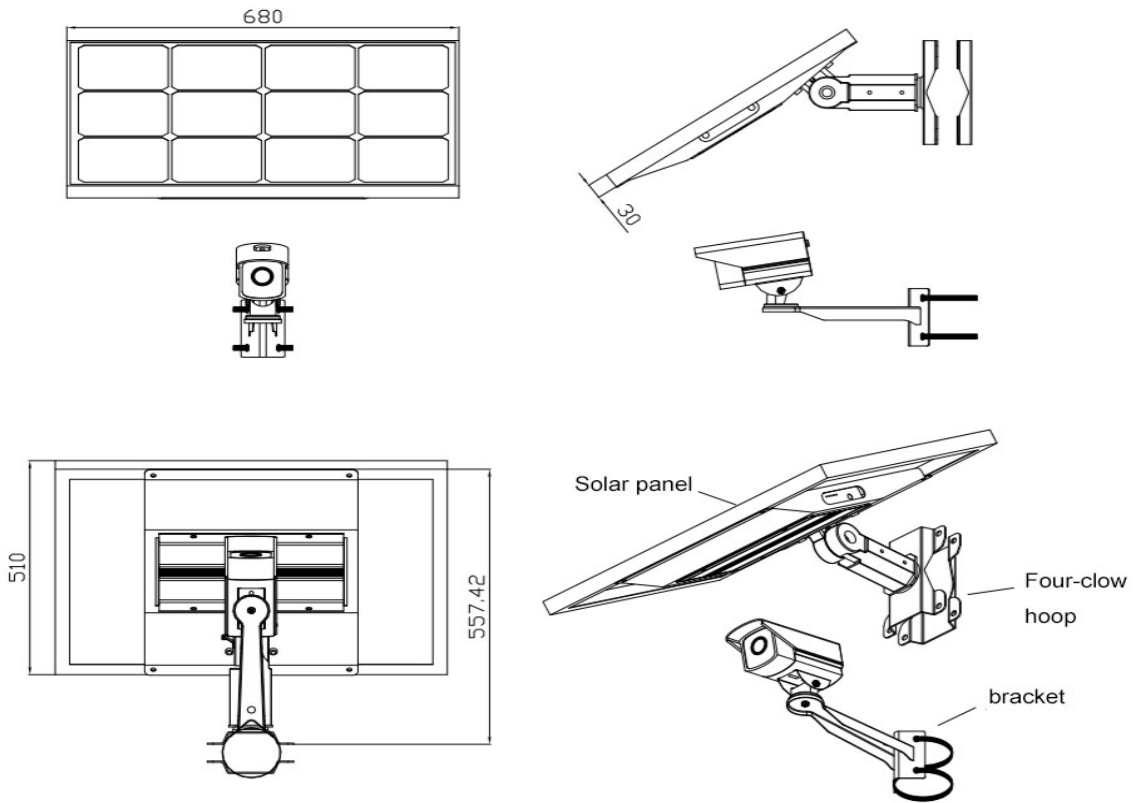
### 3.2.1 Dimensions

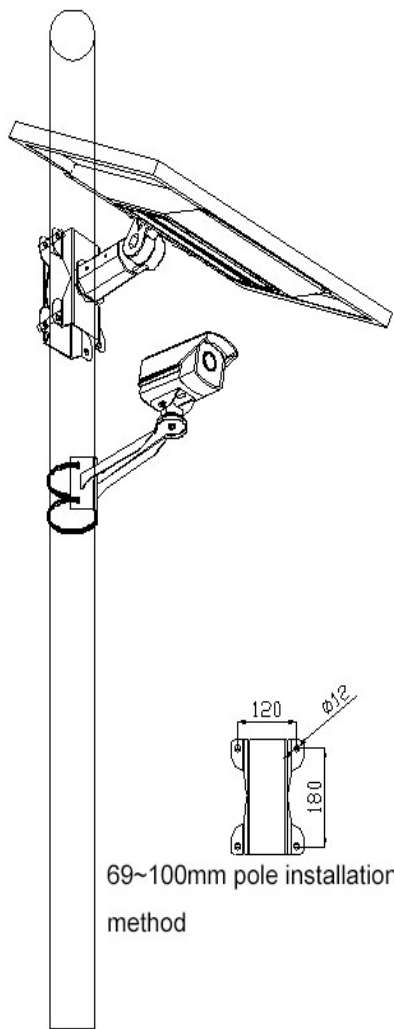
The external dimensions of the equipment as shown below:

Products number	Equipment	Size mm
<b>LT-MSP-369X</b>		870*680*30

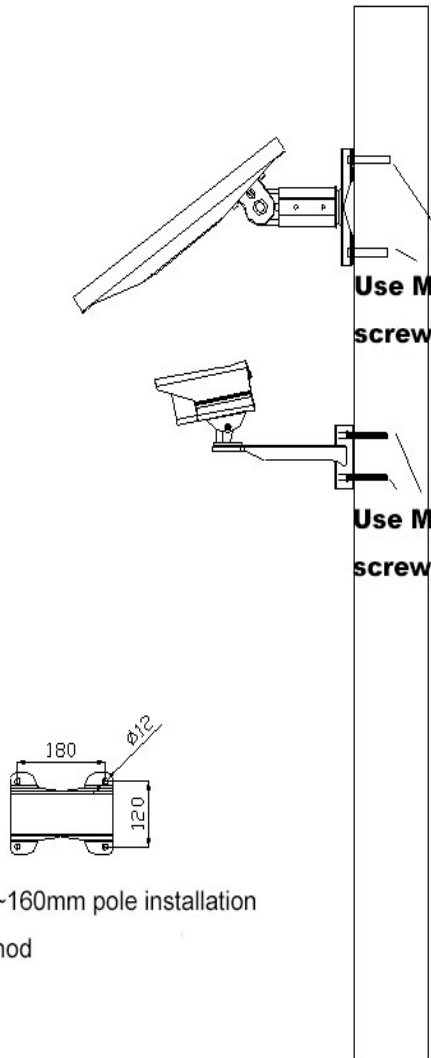


Model number	Approx. weight (kg)	Net weight (kg)	Carton size mm
<b>LT-MSP-369X</b>	26.36	23.36	1020×760×240





69~100mm pole installation method



100~160mm pole installation method

**Use 69~160mm monitor rod**

**Fix with concrete or brick wall**

## ➤ 4.1 Maintenance

- To generate maximum power efficiency, place the solar panel facing 5-10° North/West; Please avoid shadow from obstacles such as houses, trees, etc. during installation.
- Please ensure to plug the matching male and female connectors (Solar Panel / Battery) in the correct orientation to avoid potential damage.
- Clean the surface of the solar panels on a regular basis by removing (dust layer, leaves, stains, etc.) to maintain maximum operating efficiency.

## ➤ 4.2 Indicator Status LED's

### SOLAR PANEL – LED

Colour	Status	Reference
Green	ON	Charging
Green	Flashing	Maximum Charge
-	OFF	Low Voltage

### BATTERY – LED

Colour	Status	Reference
Green	ON	Battery Normal
Green	Flashing	Fully Charged
Red / Green	ON	Low Voltage
Red	ON	Fully Discharged

### OUTPUT – LED

Colour	Status	Reference
Yellow	ON	Output ON
-	OFF	Output OFF
Yellow	Rapid Flashing	<b>(Short)</b> or <b>(Open)</b> circuit
Yellow	Slow Blink	Overload