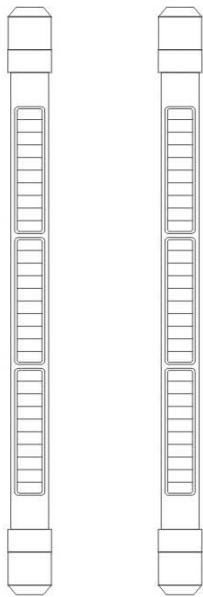
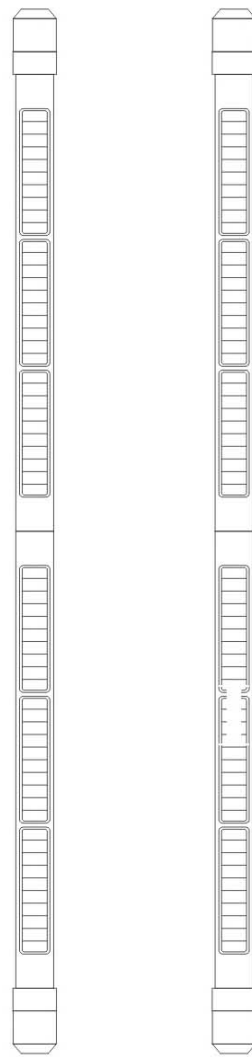


# User Manual for Solar-Powered Multi-beam Active Wireless Infrared Gratings



HB-T001 S4

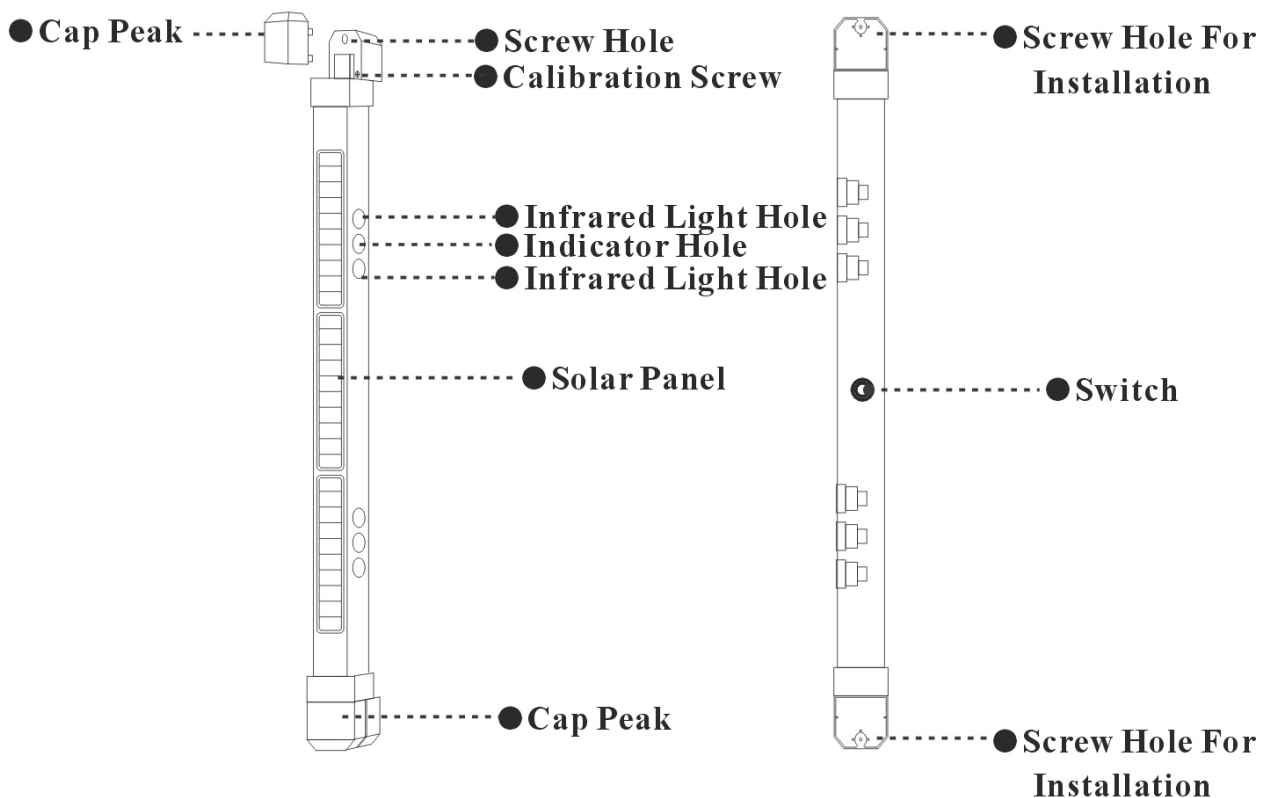


HB-T001 S8

## I Product Overview

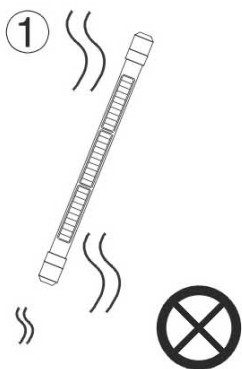
The solar-powered multi-beam active wireless infrared grating is a new-type hi-tech environmentally-friendly product and has obtained national patent. It applies sun's UV rays to supply power and charge for the detector, and adopts the wireless signal transmission device to transmit alarm signal instead of power cable and signal line. Our household active infrared gratings are classified into two types, namely 4-beam and 8-beam, which are widely applied in houses and offices etc.

## II Name of Components

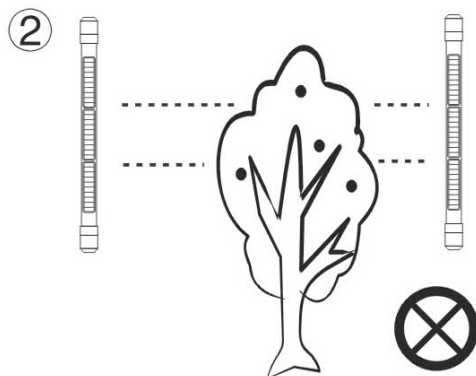


# III

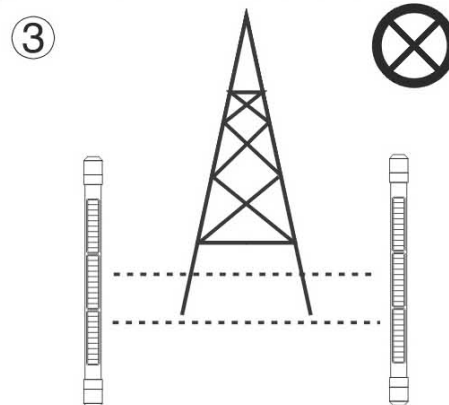
## Installation Precautions



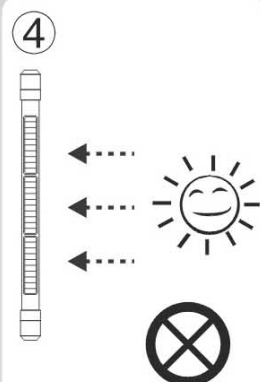
Note 1: Never install all gratings at an inclined angle.



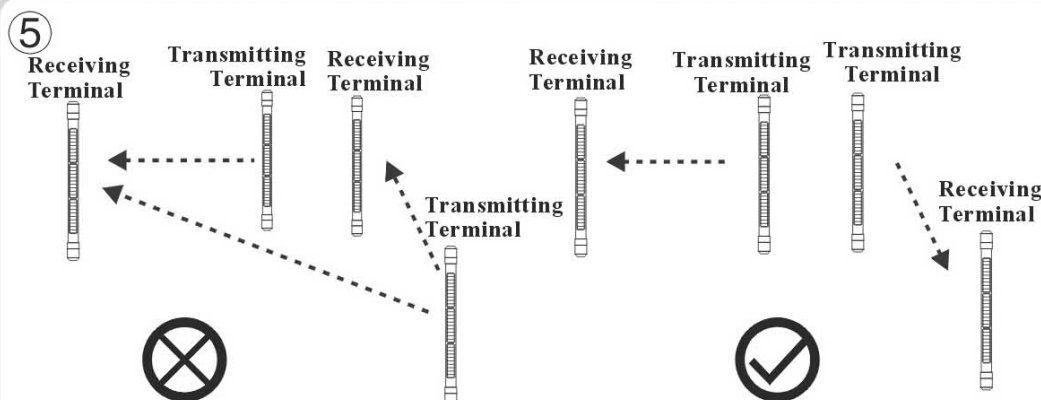
Note 2: Make sure that there is no obstacle between two gratings.



Note 3: The high-voltage tower and the signal tower may influence wireless transmission distance.



Note 4: Keep the Infrared light hole exposed to direct sunlight.



Note 5: Multiple detectors shall be installed for long-distance alarm in accordance with the installation instructions shown in the above-mentioned figure to avoid mutual interference among beams.

## Other Precautions

- ① Before installation, remove the plastic film on the solar panel of the active infrared grating.
- ② Never install this grating in door access systems, passages, areas prone to trigger an alarm, or areas which could trigger an alarm more than 50 times per 24 hours.
- ③ This grating is a solar-powered wireless product, so it shall not be installed, tested or operated indoors or in any dark place with a sunlight intensity of less than 2200lux.
- ④ This product can trigger an alarm less than 50 times under normal sunlight conditions.  
Never try to test maximum alarm times indoors, otherwise, it may cause batteries subject to low voltage problem, which may impede normal operation of this product, and even cause damage to this product.
- ⑤ Before first operating this product, please follow the technical guide provided by the supplier.  
Special Statement: Any loss resulting from failure or damage caused by improper use or failure to observe precautions or instruction manual shall be borne by users.

## IV

## Operating Phenomena

Solar-Powered Multi-Beam Infrared Gratings (HB-T001S4, HB-T001S8)

① Short press the ON/OFF button at the rear of the transmitting terminal <F> and the receiving terminal <S> N times (N=3-10), and after about 3 seconds, there are 3-8 beeps respectively from the transmitting terminal <F> and the receiving terminal <S> of the grating, and at the same time, the indicator lamp of the grating will flash 3 times, which signifies the grating is normally powered on. When the “ON/OFF” key is pressed again, it means the grating is turned on if there is a “Beep” sound prompt.

② Once normal prompt is given out at start-up, the indicator lamp at the transmitting terminal <F> is continuously on for 30 seconds and then goes out, and the receiving terminal <S> will light up for a long time. Keep the transmitting terminal <F> aligned with the receiving terminal <S>. If the indicator lamp at the receiving terminal <S> flashes for 30 seconds and then goes out, it signifies the grating is normally operating.

③ After the indicator lamp at the receiving terminal <S> normally goes out, block up three infrared holes of the light wall with thick materials, let the receiving terminal <S> transmit wireless alarm signals, the indicator lamp at the receiving terminal will light up for about 5 seconds, and then the indicator lamp at the receiving terminal will flash for 30 seconds, which signifies the multi-beam light wall is operating again. Repeat the above-mentioned steps.

④ Press the ON/OFF button at the rear of the transmitting terminal <F> and the receiving terminal <S> N times (N=3-10), and after about 3 seconds, there are long beeps lasting for about 10 seconds respectively from the transmitting terminal <F> and the receiving terminal <S> of the grating, and at the same time, the indicator lamps at the transmitting terminal <F> and the receiving terminal <S> will light up, and later beeps stop and indicator lamps go out, which signifies the grating is normally powered off. When the “ON/OFF” key is pressed again, it means the grating is turned off if there are two “Beep, Beep” sound prompts.

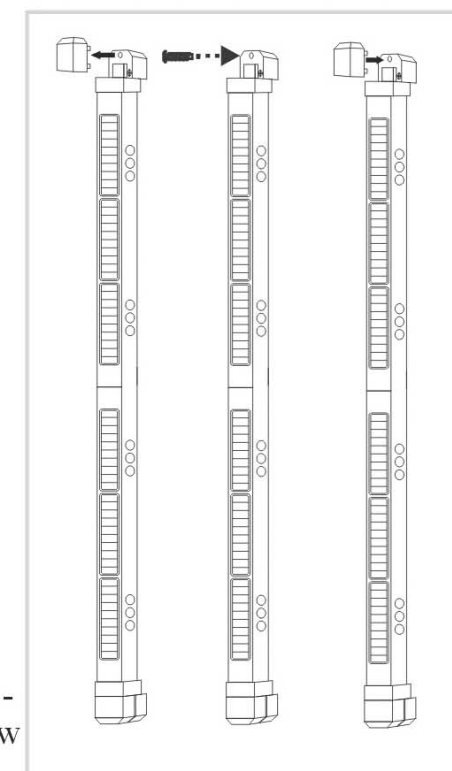
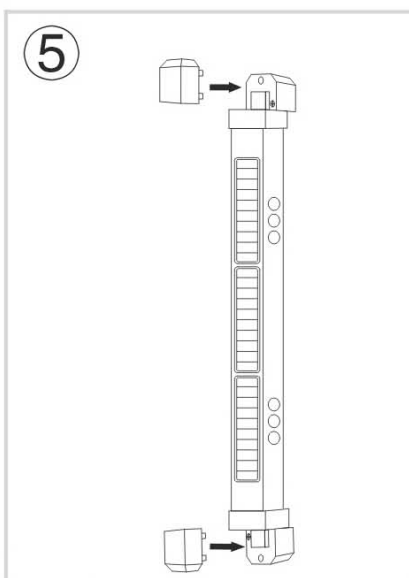
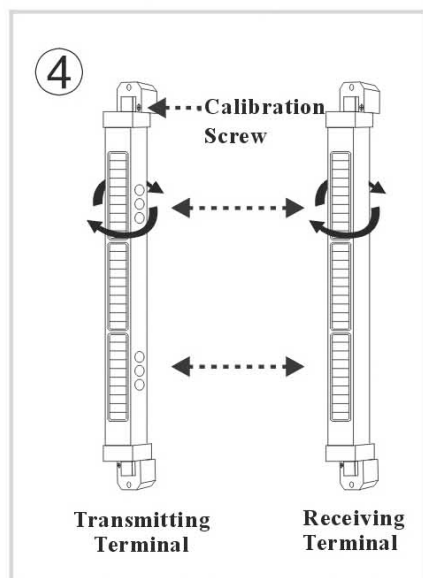
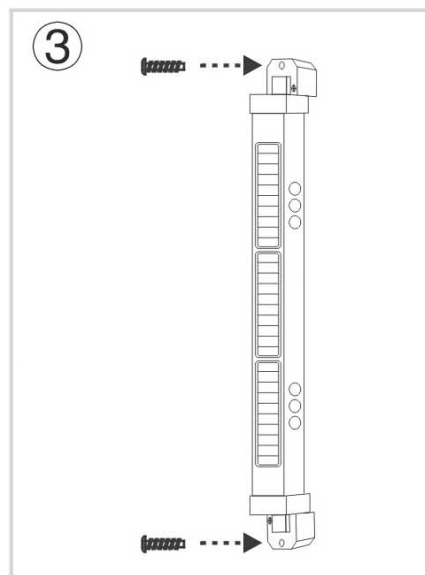
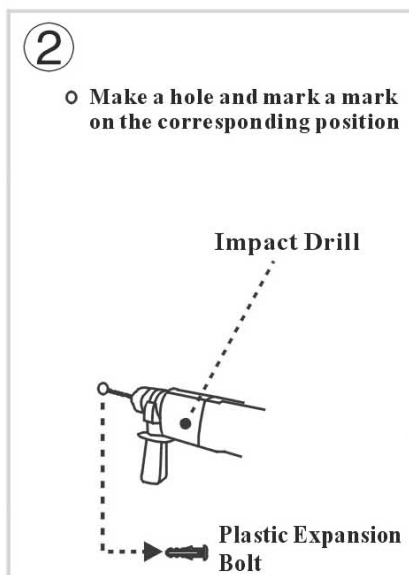
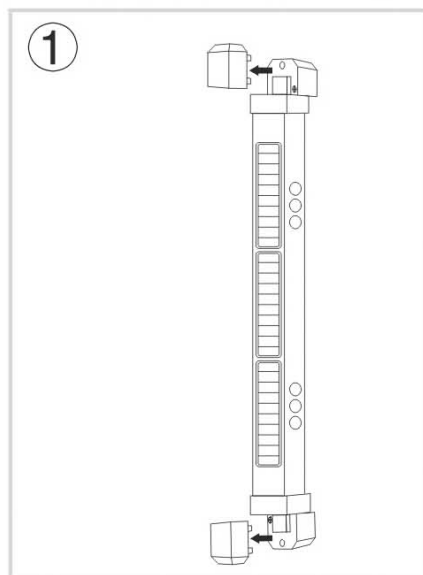
### Other Precautions

- ① In normal operation state, when the “ON/OFF” key is pressed twice, a turn-off signal will be sent after an alarm signal is transmitted.
- ② If the receiving terminal fails to receive the infrared light pulse emitted by the transmitting terminal, the indicator lamp at the receiving terminal will light up continuously for 30 minutes, and then go out. Once the receiving terminal has received the infrared light pulse emitted by the transmitting terminal, the indicator lamp at the receiving terminal will light up intermittently, and then flash, which signifies the grating is normally operating.
- ③ After the grating is normally powered on, if no natural light or light with an intensity of more than 2200LX is reflected onto the grating every 100 hours, the grating will be automatically powered off.
- ④ For the finished grating, the transmitting terminal has been well paired with the receiving terminal. Any unauthorized pairing of the transmitting terminal and the receiving terminal is impermissible. If any special circumstance occurs, please contact the manufacturer or distributor immediately.
- ⑤ Never put the grating in any dark place or cover the solar panel with any materials at power-on, otherwise, the grating may not be normally powered on.
- ⑥ Press the ON/OFF button of the grating to confirm if the grating is under power on or power off mode. If a beep prompt is given out, it means the grating is under power on mode, otherwise, it is under power off mode.

# V

## Installation Method

### Installation Steps



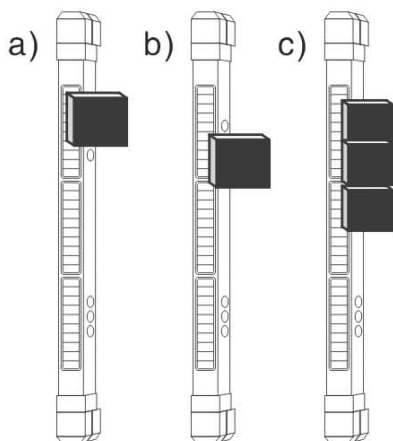
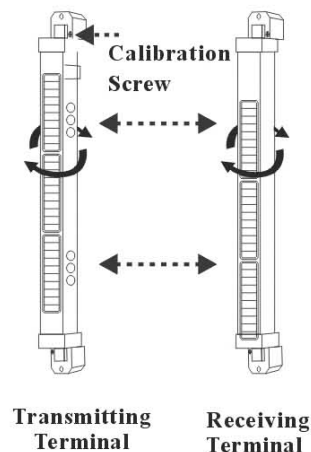
- ① Remove the caps respectively from the upper and lower ends of the grating.
- ② Get the grating prepared for installation, keep it in a horizontal plane, make a mark at the wall surface opposite to screw hole with a marker pen, make a hole with a percussion drill, and then insert a plastic expansion bolt into the hole.
- ③ Keep the grating aligned with the screw hole, and then mount the grating onto the wall with the metal screw.
- ④ When calibrating the grating, loosen the calibration screw, move the grating left or right, and then adjust the calibration angle. After completing calibration, fasten the calibration screw. For more calibration precautions and calibration verification method, please refer to Part VI in this user manual.
- ⑤ Put the caps back on the grating after completing calibration. Note: The installation procedures of HB-T001 S8 Grating are the same as those of HB-T001 S4 Grating.

# VI

## Installation & Calibration Precautions and Test Method

### Calibration Precautions

- ① Make sure that the power switch of the grating is turned on.
- ② Make sure that the grating is normally operating.
- ③ Get gratings prepared for installation, and adjust the gratings to ensure they are located in the same vertical and horizontal planes. If any deviation occurs during calibration, move the grating left or right; after completing calibration, fasten the calibration screw.



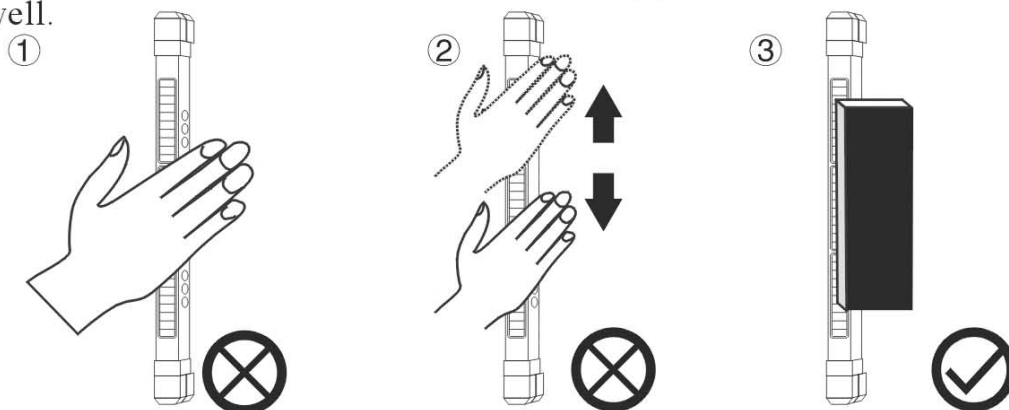
### Test Method for Verifying if Gratings are Well Mounted

- ① Verify if the grating is normally operating by confirming if the indicator lamp of the grating normally flashes.
- ② Hole Block-up:
  - a) The grating does not alarm when blocking up two infrared light holes at the upper end of the grating.
  - b) The grating does not alarm when blocking up two infrared light holes at the lower end of the grating.
  - c) The grating alarms when blocking up three infrared light holes.
- ③ Three infrared light holes constitutes a complete group. The above-mentioned calibration verification method is applicable to any group of infrared light holes, including 8-beam infrared gratings (HB-T001S80).

### Alarm Modes

- ① Infrared light holes are not completely blocked up (Fingers do not completely block up two infrared light holes which are operating when the transmitting terminal is aligned with the receiving terminal).
- ② The grating does not alarm if the intruding object moves under free fall.
- ③ The infrared light holes of the grating are completely blocked up for more than 1s by thick materials.
- ④ If the host can receive alarm information when the grating correctly alarms more than 3 times, that means the grating is well installed.

**Note:** The above-mentioned alarm modes are applicable to HB-T001S8 infrared grating as well.



# VII

## Check for Abnormality

Failure Symptoms	Failure Reasons	Failure Recovery Methods
<b>The grating does not alarm, but the alarm lamp lights up</b>	①The infrared light holes of the grating are not completely blocked up.	Completely block up infrared light holes with thick materials
	②The host is not armed.	Arm the host by remote control, and then trigger an alarm
	③The antenna of the host is not retracted, and wireless distance does not conform to product specifications.	Retract the antenna
	④The grating does not automatically learn code with the host.	Keep the grating automatically learn code with the host
<b>The alarm lamp of grating does not light up</b>	①The grating has been not calibrated for a long time, and battery protection works.	Calibrate the grating again
	②The battery voltage of grating is too low, so that the grating automatically runs in battery protection mode.	Charge the grating in a sunny place. Return batteries to the manufacturer if batteries fail to work
	③If the alarm lamp does not light up, but the grating can alarm, it means the lamp does not work.	Return the alarm lamp to the manufacturer
<b>The grating does not normally work when powered on</b>	①Inappropriately powered on	Check if the active infrared gratings work normally when powered on
	②Not keep the transmitting terminal of the grating aligned with the receiving terminal of the grating	Keep the transmitting terminal of the grating aligned with the receiving terminal of the grating
<b>The grating gives out a prompt sound lasting for 2 seconds when powered on</b>	①The battery voltage of grating is too low	Charge the grating in a sunny place.
	②When powered on, the grating shall be kept in a shady place or the solar panel of the grating shall be covered with something.	Make sure the solar panel of the grating is kept in a sunny place when turning on the grating.
<b>The grating does not give out a sound prompt when powered on</b>	①Any operation error occurs when pressing the ON/OFF button	Press the ON/OFF button in a proper way
	②The grating is kept in a dark place or the solar panel is covered with any materials when powered on.	Keep the grating in a sunny place when powered on
	③The grating does not work.	Return the grating to the manufacturer

# VIII

## Technical Parameters

Technical Parameters Parameter Items	Product Name Solar-Powered Multi-Beam Infrared Grating Household Multi-Beam Infrared Grating (HB-T001S4\HB-T001S8)
Infrared Distance	6m
Wireless Transmitting Distance	100m
Wireless Transmitting Frequency	FM:433MHz
Maximum alarm times in 24 hours	Not more than 50 times
Battery Capacity	500mA (Transmitting Terminal), 500mA (Receiving Terminal)
Working environment temperature range	-30°C~70°C
Number of infrared beams	4 beams, 8 beams
Operating Voltage	3.3V
Battery Type	LiFePO4 Battery
Static Operating Current	Transmitting terminal ≤0.6mA, receiving terminal ≤0.6mA (HB-T001S4) Transmitting terminal ≤1.0mA, receiving terminal ≤1.0mA (HB-T001S8)
Infrared light frequency	secondary modulation & encoding based on 38KHZ
Infrared light wavelength	940nm ± 20nm
Solar electric panel output current	≥1.5mA at a light intensity of 1800LX (HB-T001S4) ≥3mA at a light intensity of 1800LX (HB-T001S8) (Note: The outdoor light intensity in cloudy or rainy days is about 2000LX)

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, and  
(2) this device must accept any interference received, including interference that may cause undesired operation.

### FCC Warning

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

### FCC Statement

NOTE: This equipment has been tested and found to comply with the Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications..

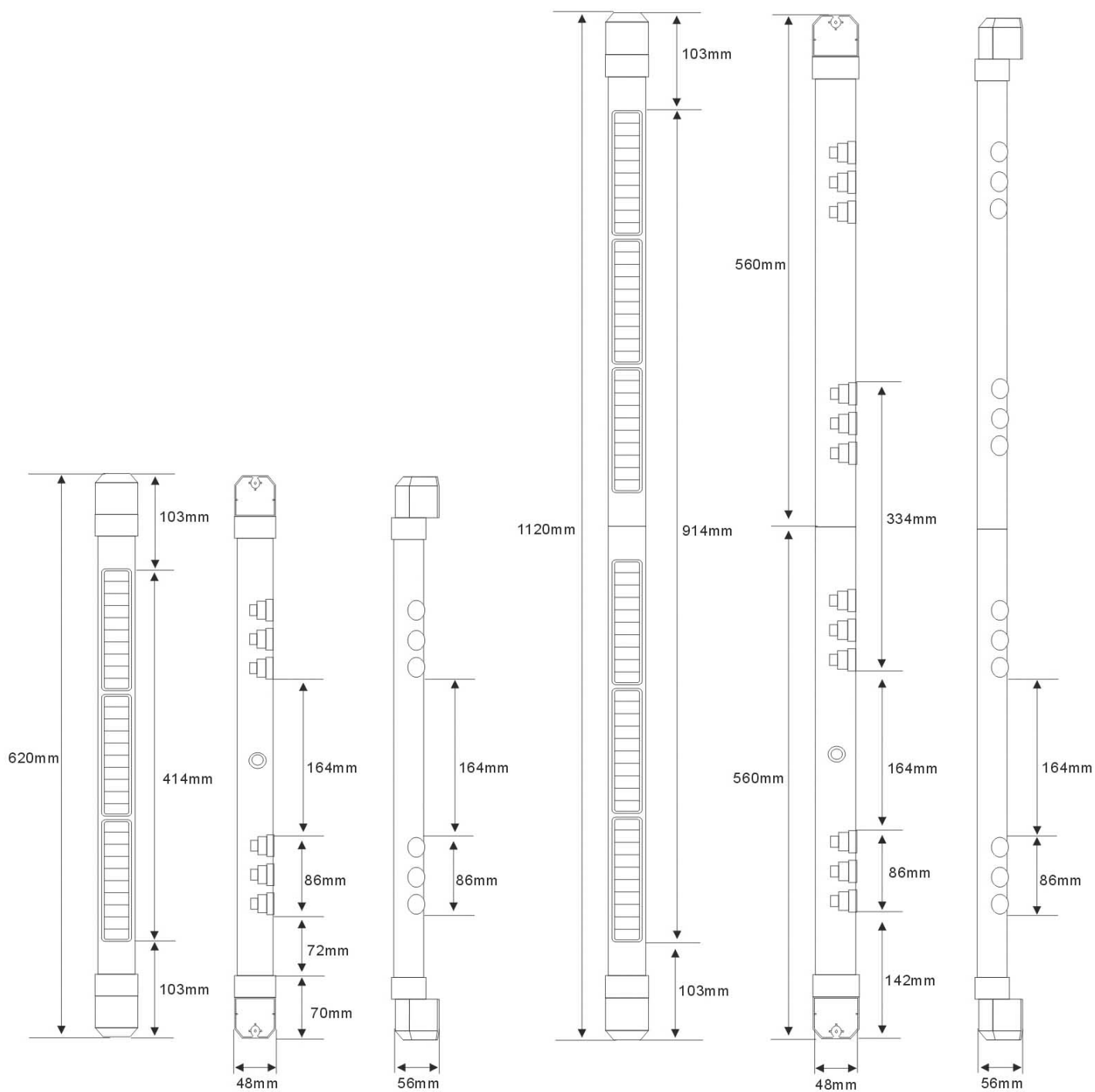
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1.Reorient or relocate the receiving antenna.
- 2.Increase the separation between the equipment and receiver.
- 3.Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 4.Consult the dealer or an experienced radio/TV technician for help.



## IX

## Product Dimension



HB-T001 S4

HB-T001 S8