HYTRONIK ®

CB ⚠ CE SELV IP20 ☐ emc

Product Description

HC038V/BT is a Bluetooth 0/1-10V control base whereas HCD038/BT is a Bluetooth DALI control base with 30mA DALI power supply built in. They work with a wide range of microwave and PIR sensor heads. They are ideal for plastic luminaires as compared to metal luminaires because Bluetooth signal can transmit through plastic. They are suitable for any typical indoor applications such as office, classroom, car park, warehouse and other commercial/industrial areas. With Bluetooth wireless mesh networking, it makes communication much easier without any hardwiring, which eventually adds values to luminaires and saves costs for projects. Meanwhile, simple device setup and commissioning can be done via **Koolmesh**™ app.

HC038V/BT

HCD038/BT

App Features

- 📊 Grouping luminaires via mesh network
  - Two levels: room & group
  - Sychronization control

- 🔲 7 types of scene options to set up:
  - Generic Scenes
  - Lux ON/OFF Scenes
  - Daylight Harvest (Open loop)
  - Daylight Harvest (Closed loop)
  - Simple circadian rhythm without daylight sensor (HCD038/BT)
  - Advanced circadian rhythm with daylight sensor (HCD038/BT)
  - Time-based Scene

- 🔲 Push switch configuration

- 🏃 Detailed motion sensor settings

- 📅 Schedule to run scenes based on time and date

- 🌀 Astro timer (sunrise and sunset)

- 🖼 Floorplan feature to simplify project planning

- 📶 Staircase function (master & slave)

- 📡 Offline commissioning

- 🔑 Different permission levels via authority management

- 🔗 Network sharing via QR code or keycode

- 📲 Remote control via gateway support HBGW01

- 🔄 Interoperability with Hytronik Bluetooth product portfolio

- 〰 Compatible with EnOcean range of wireless switches

- ☁ Device firmware update over-the-air (OTA)

- 📦 Continuous development in progress…

Hardware Features

- 🔲 HC038V/BT: 0/1-10V output :
  - – 400VA (capacitive)
  - – 800W (resistive)

- ⬡ HCD038/BT: 30mA DALI broadcast output for up to 15 LED drivers

- 🔲 Plug'n'Play for flexible installation and cost saving assemble

- 🔲 Support to control DT8 LED drivers (HCD038/BT)

- 🔲 2 Push inputs for flexible manual control(HCD038/BT)

- 🔲 Zero crossing detection circuit to reduce in-rush current and prolong relay lifetime (HC038V/BT)

- 🔲 Loop-in and loop-out terminals for efficient installation (HC038V/BT only)

- 🕔 5-year warranty

Bluetooth 5.0 SIG mesh

iOS 10.0 or later

Android 5.0 or later

Web app/platform: iot.koolmesh.com

EnOcean
Self-powered IoT

Fully support EnOcean switch EWSSB/EWSDB

Technical Specifications (HC038V/BT HCD038/BT)

Bluetooth Transceiver	
Operation frequency	2.4 GHz - 2.483 GHz
Transmission power	7 dBm
Range (Typical indoor)	10~30m
Protocol	Bluetooth® 5.0 SIG Mesh

Safety & EMC	
EMC standard (EMC)	EN55015, EN61000, EN61547
Safety standard (LVD)	EN60669-1, EN60669-2-1
RED	EN300328, EN301489-1/-17
Certification	Semko, CB, CE , EMC, RED, RCM

Input & Output Characteristics	
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
Load ratings: HC038V/BT HCD038/BT	Capacitive: 400W; Resistive: 800W 30mA (max. 15 devices)
Warming-up	20s

Environment	
Operation temperature	Ta: -20°C ~ +55°C
Case temperature (Max.)	Tc: +75°C
IP rating	IP20

Mechanical Structure & Dimensions

HC038V/BT (0/1-10V output)
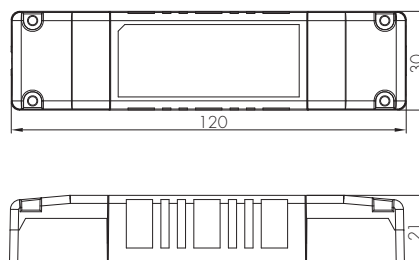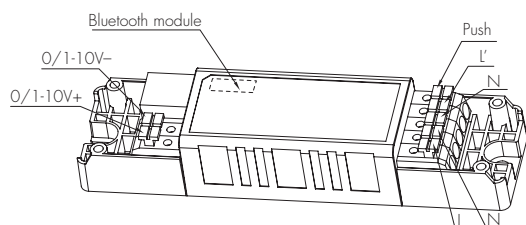
HCD038/BT (DALI output)

Wire Preparation

0.5~1.5mm

8mm
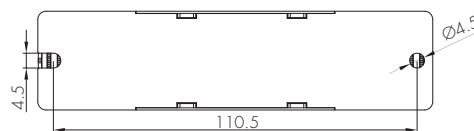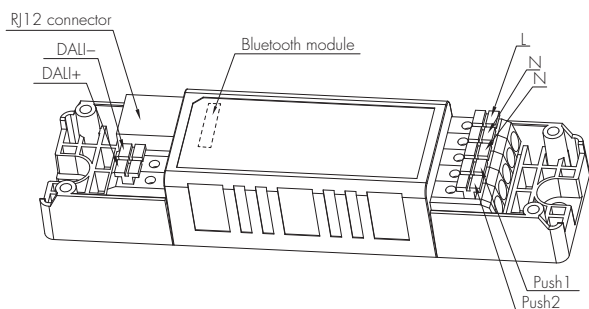
To make or release the wire from the terminal, use a screwdriver to push down the button.

Wiring Diagram

HC038V/BT

HCD038/BT

Technical Specifications for Sensor Heads

PIR Sensor Properties	
Sensor principle	PIR detection
Operating voltage	5VDC
Detection range *	HIR05 / HIR07 Max installation height: 3m Max detection range: 6m (diameter) HIR11 Max installation height: 12m Max detection range: 16m (diameter) HIR12 Max installation height: 15m Max detection range: 18m (length) Max detection range: 6m (width)

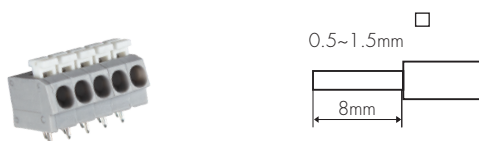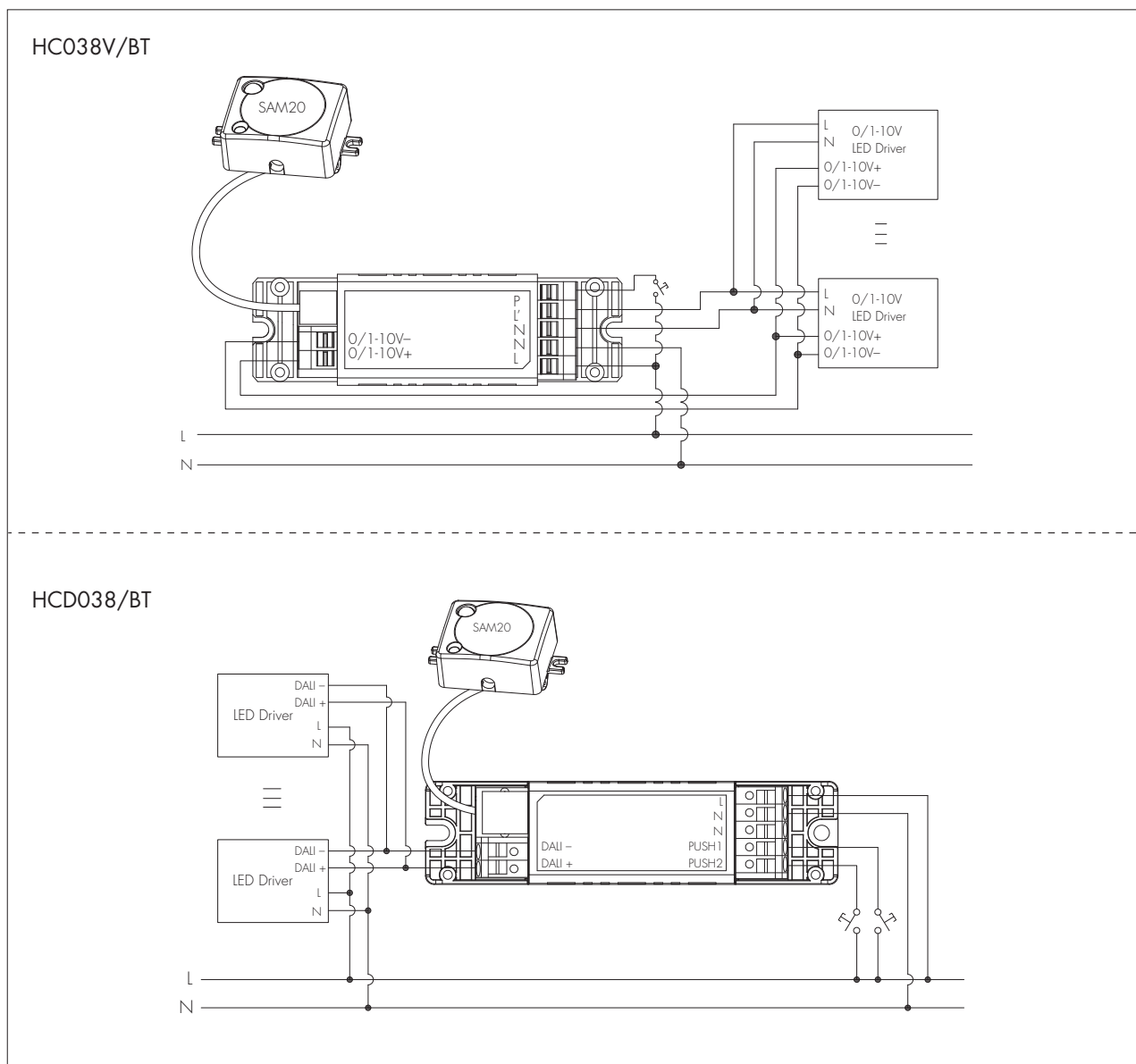| HF Sensor Properties	
Sensor principle	High Frequency (microwave)
Operating voltage	5VDC
Operation frequency	5.8GHz +/- 75MHz
Transmission power	<0.2mW
Detection range *	SAM20 / SAM21 / SAM22 Max installation height: 3m Max detection range: 12m (diameter) SAM23 Max installation height: 12m Max detection range: 16m (diameter)

* The detection range is heavily influenced by sensor placement (angle) and different walking paces.
  It may be reduced under certain conditions.

Subject to change without notice.

PIR & microwave sensor heads

The range of PIR and microwave sensor heads below offers powerful number of Plug'n'Play feature options to expand the flexibility of luminaires design. This approach to luminaire design reduces space requirements and component costs whilst simplifying production.
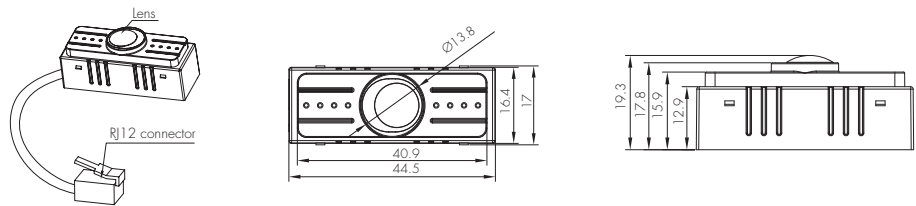
A. HIR05
PIR sensor head
The cable length is around 65cm.
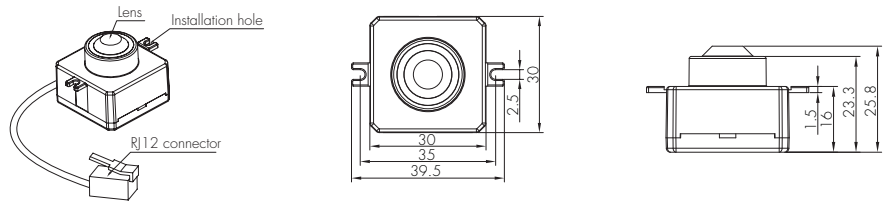
B. HIR07
PIR sensor head
Photocell Advance™
The cable length is around 30cm.

C. HIR11/S
PIR sensor head
Surface mounting
For highbay application
Lens part IP42 (IP64 can be made upon request)
The cable length is around 65cm.
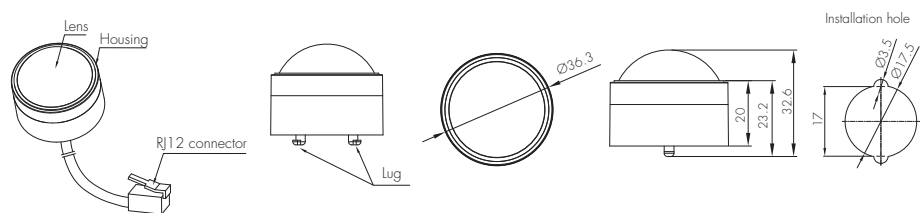
D. HIR11/F
PIR sensor head
Flush mounting
For highbay application
Lens part IP42 (IP64 can be made upon request)
The cable length is around 65cm.

E. HIR11/C
PIR sensor head
Screw to the luminaire by conduit
For highbay application
Lens part IP42 (IP64 can be made upon request)
The cable length is around 65cm.

F. HIR12
PIR sensor head
For highbay application
IP65(lens part)
The cable length is around 65cm.

Installation for HIR12
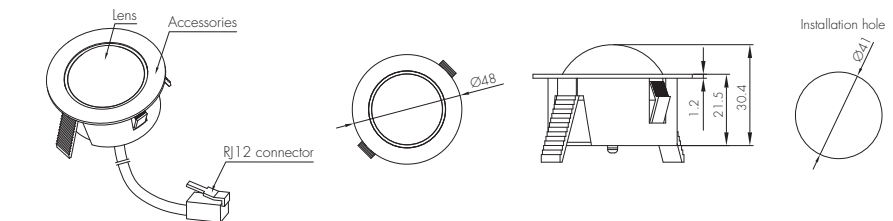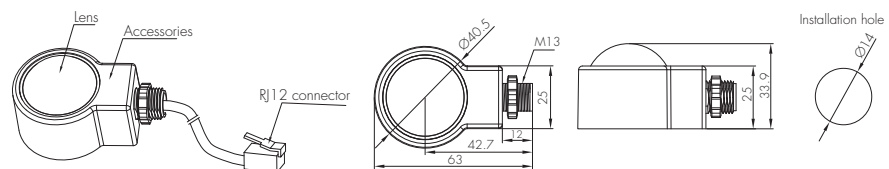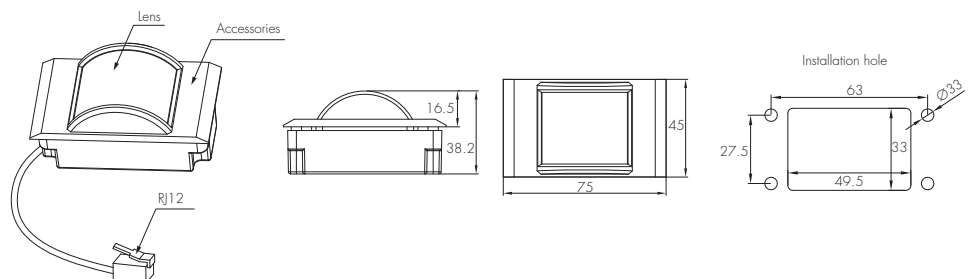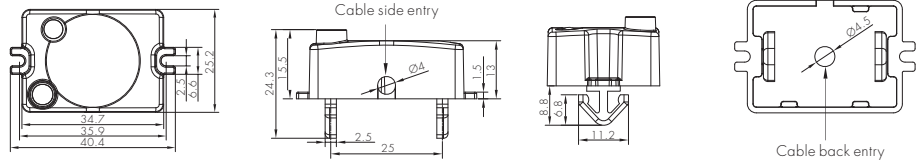
← Thickness: 0.8mm – 1.6mm

We suggest that the metal plate thickness to be 0.8mm – 1.6mm to ensure perfect focal length for the PIR lens.

H. SAM20
HF sensor head
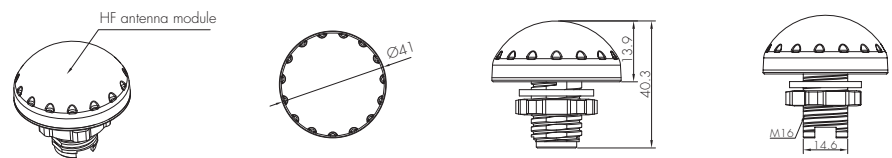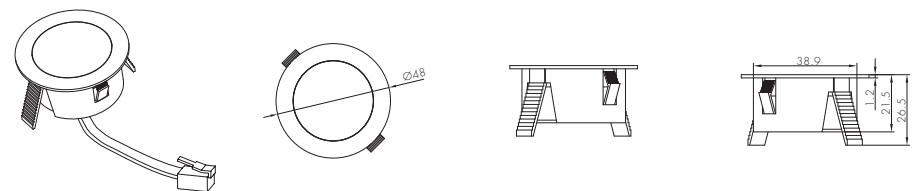Photocell Advance™
The cable length is around 30cm.

Cable side entry

Cable back entry

I. SAM21
HF sensor head
Photocell Advance™
IP65
The cable length is around 65cm.

HF antenna module

J. SAM22
HF sensor head
Flush mount
The cable length is around 65cm.

K. SAM23
HF sensor head
Photocell advance™
For highbay application
The cable length is around 30cm.

Infrared remote receiver

Photocell advance™
Daylight sensor

Slots for T5 or T8 tube

Slots for T8 tube
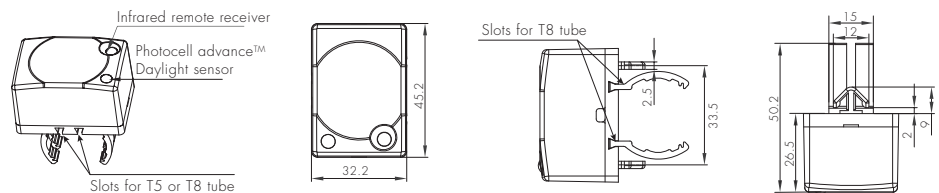
Optional Accessory: Reinforced Bluetooth Antenna

For some special applications, customers may need a larger Bluetooth transmission for both smartphone to device and device to device. Thanks to the reinforced Bluetooth antenna, with it being added to the control base HC038V/BT & HCD038/BT, the transmission distance (smartphone to device) enlarges to 20m, the distance of device to device is around 50m.

Installation hole 6.5mm

Bluetooth antenna
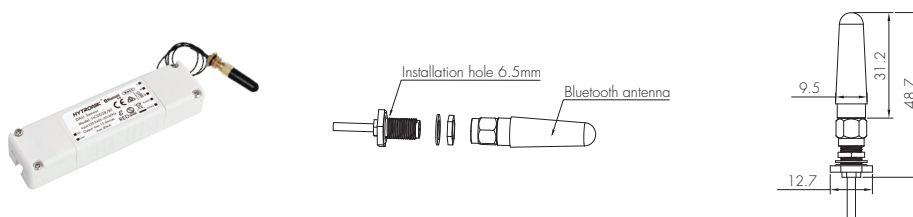
Detection Pattern

SAM23
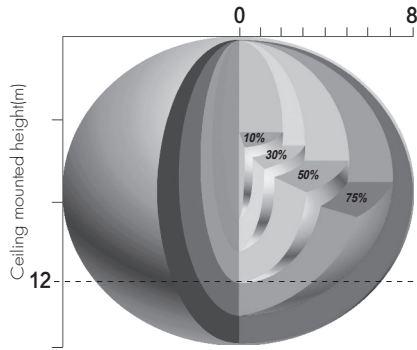
Ceiling mounted detection pattern (m)

SAM20 / SAM21 / SAM22

Ceiling mounted detection pattern (m)

HIR05 / HIR07

3m

Radial movement 4m

Tangential movement 6m

HIR11

12m

Radial movement 10m

Tangential movement 16m

HIR12

3m — Up to 4m

Up to 8m

5m — Up to 5m

Up to 10m

12m — Up to 6m

15m — Up to 12m

Up to 6m

Up to 18m
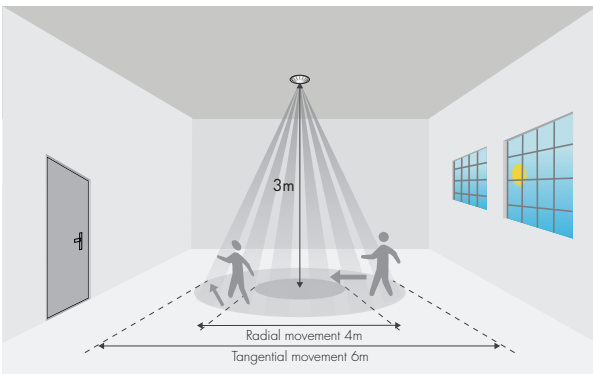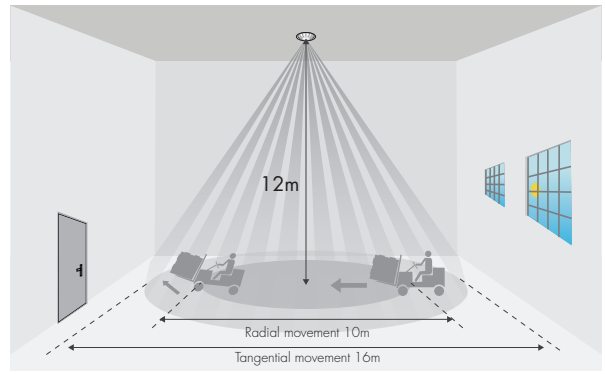
Dimming Interface Operation Notes

Switch-Dim
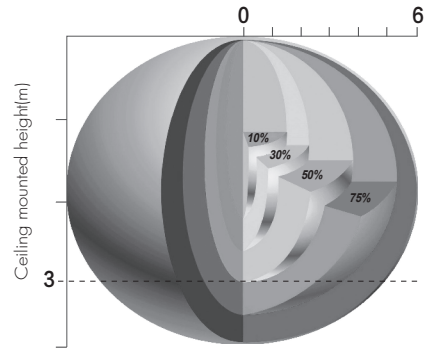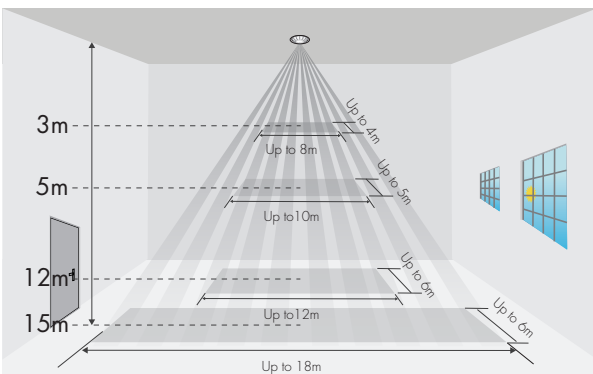
The provided Switch-Dim interface allows for a simple dimming method using commercially available non-latching (momentary) wall switches. Detailed Push switch configurations can be set on Koolmesh app.

Switch Function	Action	Descriptions
Push switch	Short press (<1 second) * Short press has to be longer than 0.1s, or it will be invalid.	- Turn on/off - Recall a scene - Turn on only - Exit manual mode - Turn off only - Do nothing
	Double push	- Turn on only - Exit manual mode - Turn off only - Do nothing - Recall a scene
	Long press (≥1 second)	- Dimming - Colour tuning - Do nothing
Simulate sensor	/	- Upgrade a normal on/off motion sensor to a Bluetooth controlled motion sensor

Additional Information / Documents

1. For full explanation of Hytronik Photocell Advance™ technology, please kindly refer to
   www.hytronik.com/download ->knowledge ->Introduction of Photocell Advance

2. To learn more about detailed product features/functions, please refer to
   www.hytronik.com/download ->knowledge ->Introduction of App Scenes and Product Functions

3. Regarding precautions for Bluetooth product installation and operation, please kindly refer to
   www.hytronik.com/download ->knowledge ->Bluetooth Products - Precautions for Product Installation and Operation

4. Regarding precautions for microwave sensor installation and operation, please kindly refer to
   www.hytronik.com/download ->knowledge ->Microwave Sensors - Precautions for Product Installation and Operation

5. Regarding precautions for PIR Sensors installation and operation, please kindly refer to
   www.hytronik.com/download ->knowledge ->PIR Sensors - Precautions for Product Installation and Operation

6. Data sheet is subject to change without notice. Please always refer to the most recent release on
   www.hytronik.com/products/bluetooth technology ->Bluetooth Sensors

7. Regarding Hytronik standard guarantee policy, please refer to
   www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy

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