




## HYTRONIK HC038V/BT Detached Motion Sensor with Bluetooth 5.0 SIG Mesh Instruction Manual

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# HYTRONIK®

Detached Motion Sensor with  Bluetooth® 5.0 SIG Mesh  
HC038V/BT HCD038/BT  
0/1-10V Output DALI Output



HC038V/BT




HCD038/BT


### Product Description

HC038V/BT is a Bluetooth 0/1-10V control base whereas HCD038/BT is a Bluetooth DALI control base with a 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 signals can transmit through the 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 value to luminaires and saves costs for projects. Meanwhile, simple device setup and commissioning can be done via **Koolmesh™** the app.

App Features








-  Grouping luminaires via mesh network
- Two levels: room & group
  - Synchronization 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

App Features

	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 key code
	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 : <ul style="list-style-type: none"><li>– 400VA (capacitive)</li><li>– 800W (resistive)</li></ul>
	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



Fully support EnOcean switch EWSSB/EWSDB

## Technical Specifications (HC038V/BT HCD038/BT)

### Bluetooth Transceiver

Operation frequency	2.4 GHz – 2.483 GHz
Transmission power	4 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

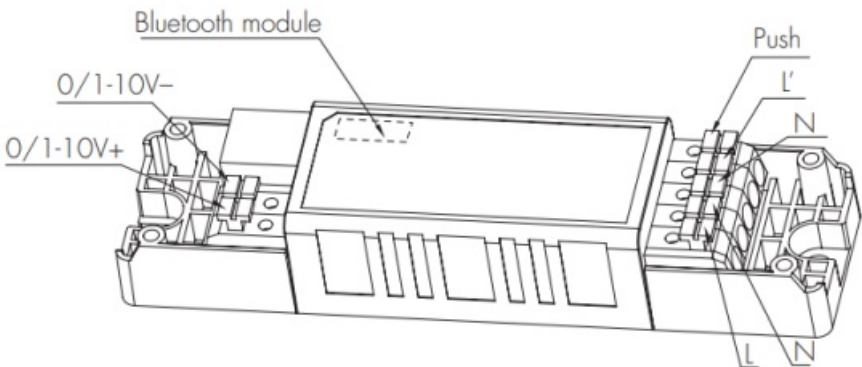
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
Load ratings: HC038V/BT HCD038/BT	Capacitive: 400W; Resistive: 800W 30mA (max. 15 devices)
Warming-up	The 20s

Environment

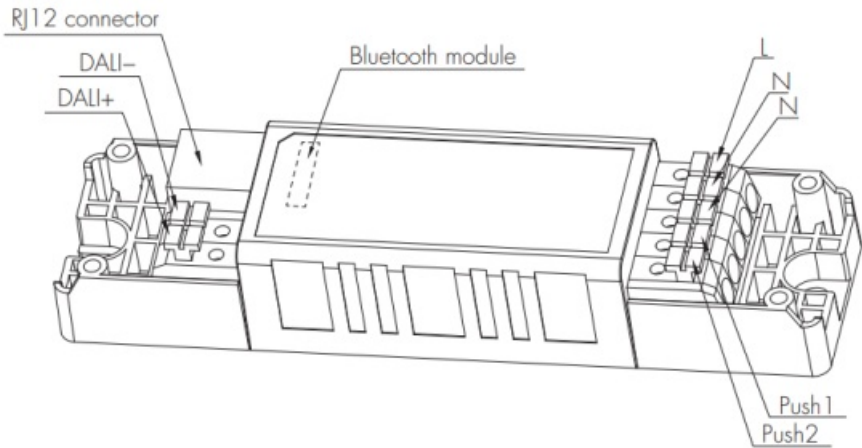
Operation temperature	Ta: -20 °C ~ +55°C
Case temperature (Max.)	Tc: +75 °C
IP rating	IP20

Mechanical Structure & Dimensions

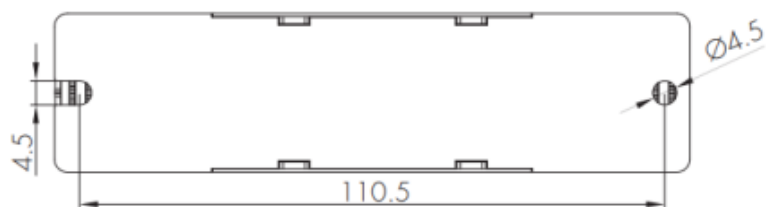
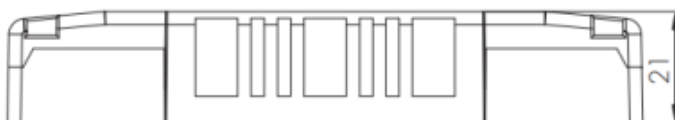
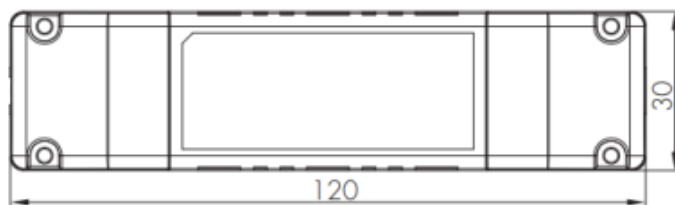
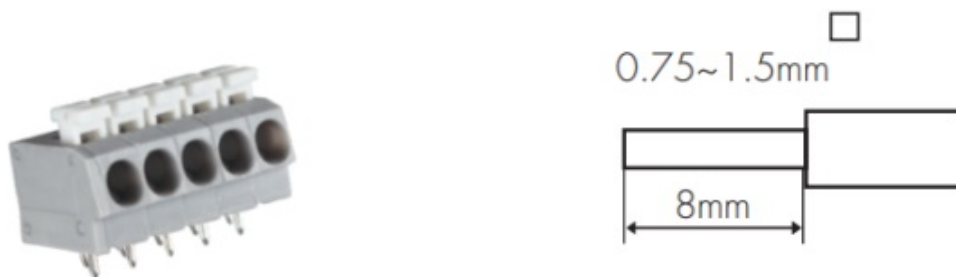
HC038V/BT (0/1-10V output)



HCD038/BT (DALI output)



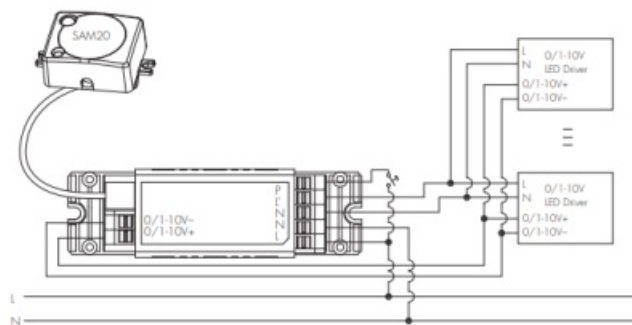
Wire Preparation



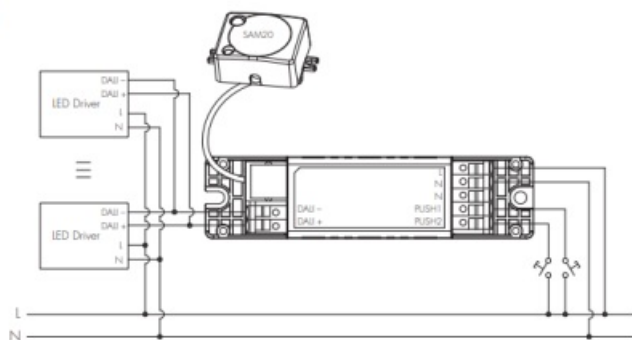
To make or release the wire from the terminal, use a screwdriver to push down the button.

### Wiring Diagram

HC038V/BT



HCD038/BT



## Technical Specifications for Sensor Heads

### PIR Sensor Properties

Sensor principle	PIR detection
Operating voltage	5VDC
Detection range*	<p>HIR05 &amp; HIR05/FM &amp; HIR05/E &amp; HIR07</p> <p>Max installation height 3m</p> <p>Max detection range 6m (diameter)</p> <p>HIR11</p> <p>Max installation height 15m (forklift)</p> <p>12m (single person)</p> <p>Max detection range 20m (diameter)</p> <p>HIR12</p> <p>Max installation height 15m (forklift)</p> <p>12m (single person)</p> <p>Max detection range 18m * 6m (L * W)</p>

### 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 15m (forklift) 12m (single person) Max detection range 20m (diameter)

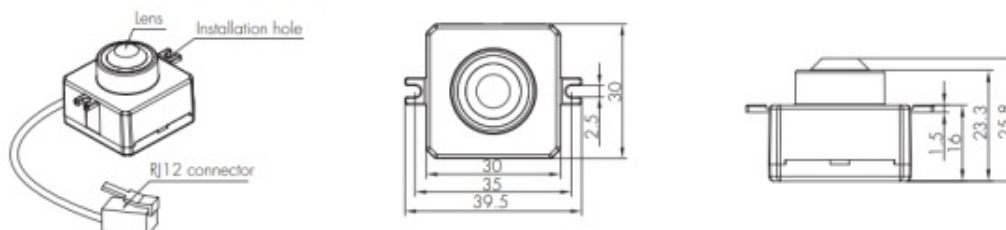
\* The detection range is heavily influenced by sensor placement (angle) and different walking paces. It may be reduced under certain conditions.

### PIR & microwave sensor heads

The range of PIR and microwave sensor heads below offers a powerful number of Plug'n'Play feature options to expand the flexibility of luminaire design. This approach to luminaire design reduces space requirements and component costs whilst simplifying production.

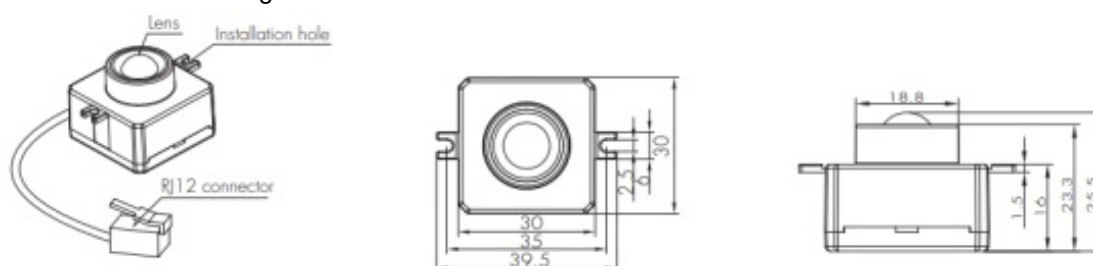
#### A. HIR05

PIR sensor head The cable length is around 65cm.



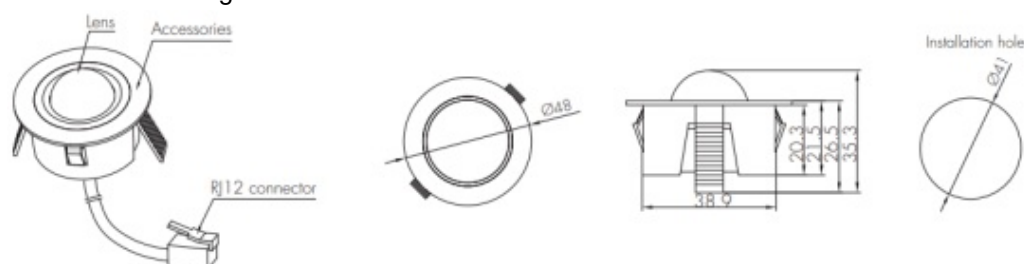
#### B. HIR05/E

PIR sensor head The cable length is around 65cm.



#### C. HIR05/FM

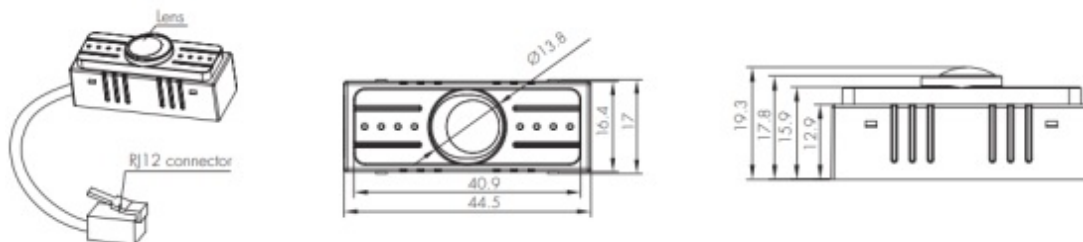
PIR sensor head The cable length is around 65cm.



#### B. HIR07

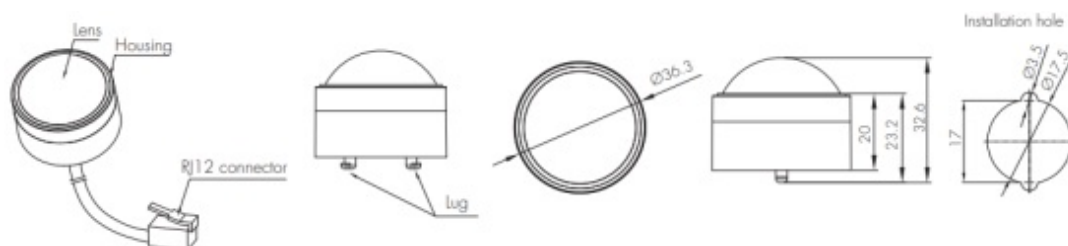


PIR sensor head Photocell Advance™ The cable length is around 30cm.



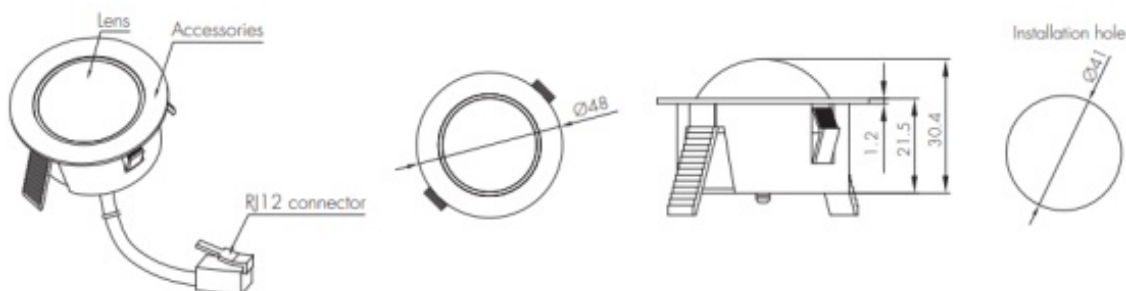
### C. HIR11/S

PIR sensor head Surface mounting For high bay application IP65 (facia/lens part) The cable length is around 65cm.



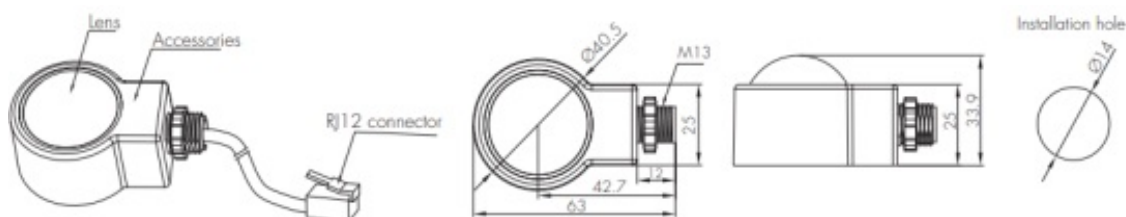
### D. HIR11/F

PIR sensor head Flush-mounting For high bay application IP65 (facia/lens part) The cable length is around 65cm.



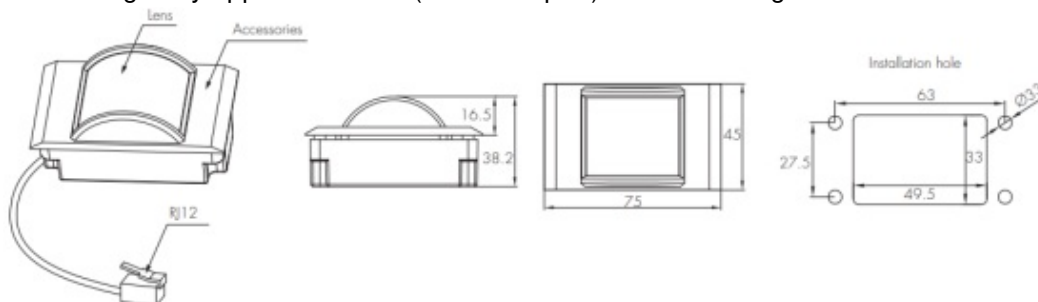
### E. HIR11/C

PIR sensor head Screw to the luminaire by conduit For high bay application IP65 (facia/lens part) The cable length is around 65cm.



### F. HIR12

PIR sensor head For high bay application IP65 (facia/lens part) The cable length is around 65cm.



#### Installation for HIR12

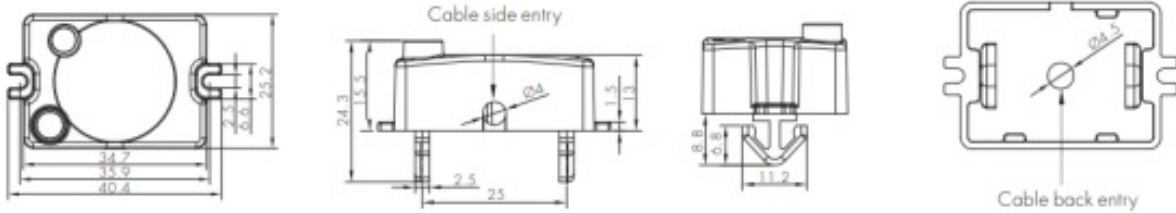


Thickness: 0.8mm - 1.6mm

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.



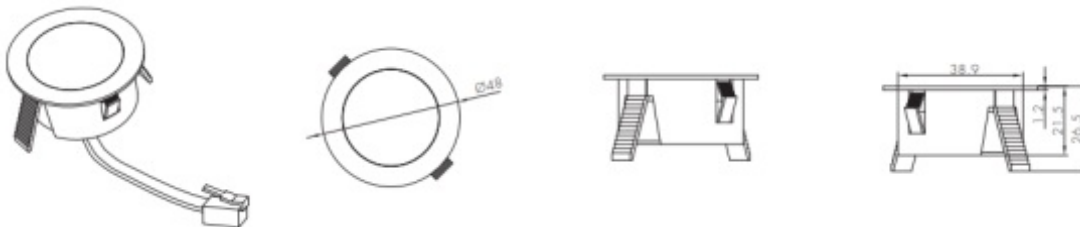
#### I. SAM21

HF sensor head IP65 The cable length is around 65cm.



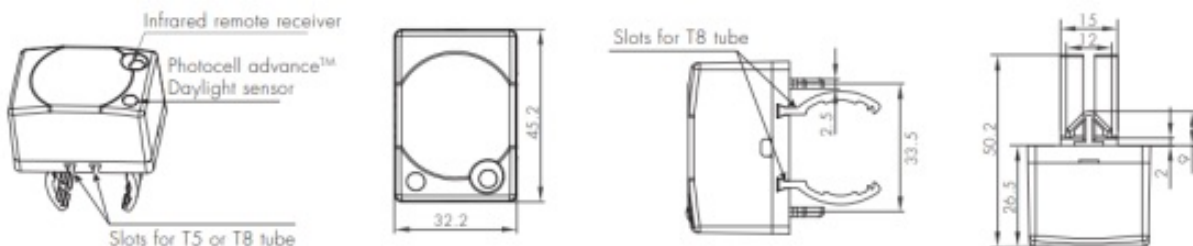
#### J. SAM22

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



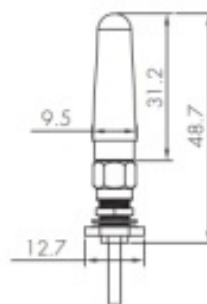
#### K. SAM23

HF sensor head Photocell advance For high bay application The cable length is around 30cm



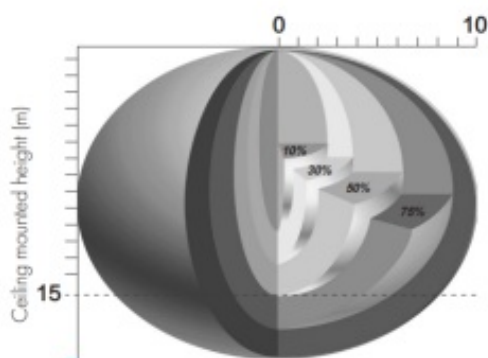
#### Optional Accessory: Reinforced Bluetooth Antenna

For some special applications, customers may need a larger Bluetooth transmission for both smartphones 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 the device to device is around 50m.



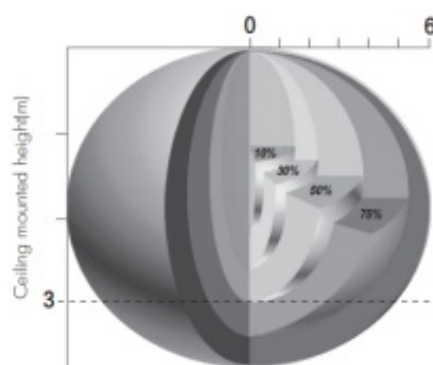
## Detection Pattern

SAM23



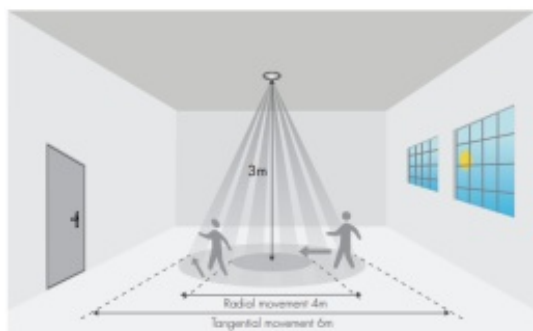
Ceiling mounted detection pattern (m)

SAM20 / SAM21 / SAM22

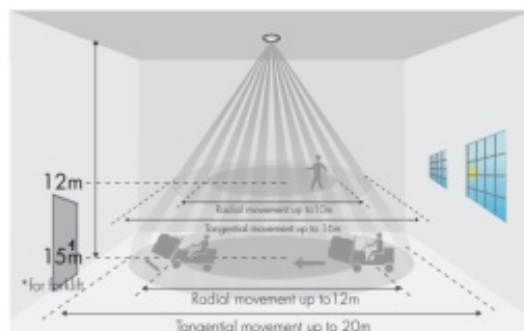


Ceiling mounted detection pattern (m)

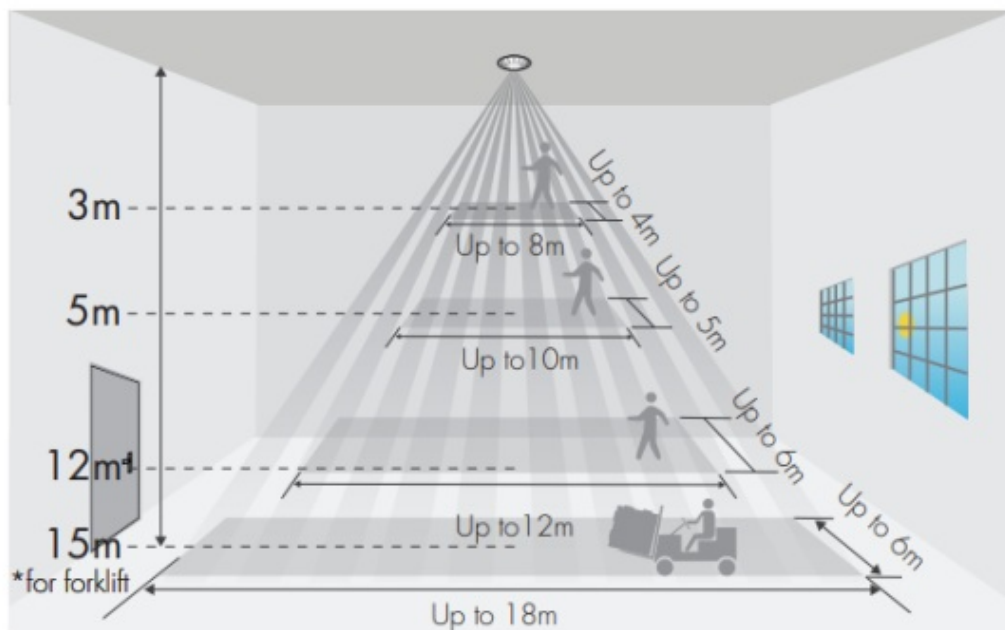
HIRO5 & HIRO5/FM & HIRO5/E & HIRO7



HIR11



HIR12



## 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 the Koolmesh app.

Switch Function	Action	Descriptions
Push switch	Short press (<1 second) * Short press has to be longer than 0.1 s, 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 the 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](http://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](http://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](http://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](http://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](http://www.hytronik.com/download->knowledge->PIR) Sensors – Precautions for Product Installation and Operation
6. Datasheet is subject to change without notice. Please always refer to the most recent release on [www.hytronik.com/products/bluetooth](http://www.hytronik.com/products/bluetooth) technology ->Bluetooth Sensors
7. Regarding Hytronik standard guarantee policy, please refer to [www.hytronik.com/download->knowledge->Hytronik](http://www.hytronik.com/download->knowledge->Hytronik) Standard Guarantee Policy



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## Contents

### 1 Documents / Resources

#### 1.1 References

#### 2 Related Posts

## Documents / Resources

	<p><a href="#">HYTRONIK HC038V/BT Detached Motion Sensor with Bluetooth 5.0 SIG Mesh</a> [pdf] Instruction Manual</p> <p>Detached Motion Sensor with Bluetooth 5.0 SIG Mesh, HC038V BT, Detached Motion Sensor with Bluetooth 5.0 SIG Mesh, HC038V BT Detached Motion Sensor with Bluetooth 5.0 SIG Mesh, HCD038 BT</p>
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## References

- [iot.koolmesh.com](https://www.iot.koolmesh.com)
- [Catalogue\\_Hytronik](#)

Manuals+.