HYTRONIK HC038V-BT Motion Sensor Instruction Manual

HYTRONIK®

HC038V-BT Motion Sensor
Instruction Manual

Detached Motion Sensor with Bluetooth® 5.0 SIG Mesh

CE emc RED CB IP65 UKCA

Contents

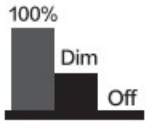
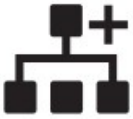
HC038V-BT Motion Sensor

HC038V/BT
0/1-10V Output
HCD038/BT
DALI Output

Product Description

HMW84 is a Bluetooth DALI high-bay HF motion sensor, with capability of up to 15m installation height. It is designed with robust IP65 structure, and offers 3 different installation methods. 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

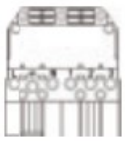
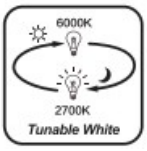
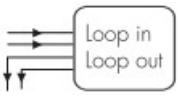
Koolmesh™ app.
App Features

	Quick setup mode & advanced setup mode
	Tri-level control
	Daylight harvest
	Circadian rhythm (Human centric lighting)
	Floorplan feature to simplify project planning
	Web app/platform for dedicated project management
	Koolmesh Pro iPad version for on-site conguration
	Grouping luminaires via mesh network
	Scenes
	Detailed motion sensor settings
	Dusk/Dawn photocell (Twilight function)

	Push switch conguration
	Schedule to run scenes based on time and date
	Astro timer (sunrise and sunset)
	Staircase function (master & slave)
	Internet-of-Things (IoT) featured
	Device firmware update over-the-air (OTA)
	Device social relations check
	Bulk commissioning (copy and paste settings)
	Dynamic daylight harvest auto-adaptation
	Power-on status (memory against power loss)
	Ofine 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 BLE switches
	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 fiexible installation and cost saving assemble
	Support to control DT8 LED drivers (HCD038/BT)
	2 Push inputs for fiexible 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

EnOcean

Self-powered IoT

Fully support EnOcean self-powered switch module PTM215B (HBES01/W & HBES01/B)

Bluetooth® 5.0 SIG mesh

for iOS	for Android
https://apps.apple.com/cn/app/koolmesh/id1483721878	https://play.google.com/store/apps/details?id=com.koolmesh.sig

Smortphone app for both iOS & Android platform

for iPad

https://apps.apple.com/cn/app/koolmesh/id1570378349
Koolmesh Pro app for iPad

http://www.iot.koolmesh.com
Web app/platform: www.iot.koolmesh.com

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
Certication	Semko, CB, CE , EMC, RED, RCM

Input & Output Characteristics

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

Input & Output Characteristics

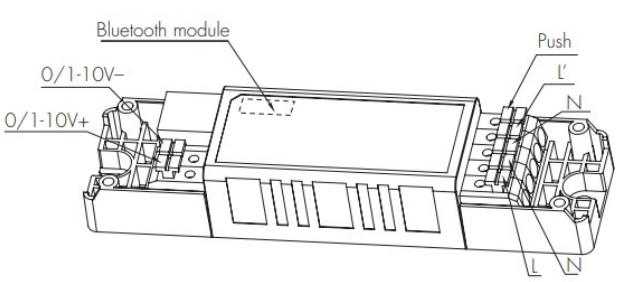
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
Load ratings: HC038V/BT HCD038/BT	Capacitive: 400W; Resistive: 800W 30mA (max. 15 devices)
Warming-up	20s

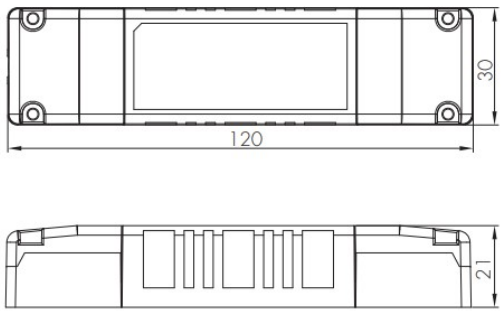
Environment

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

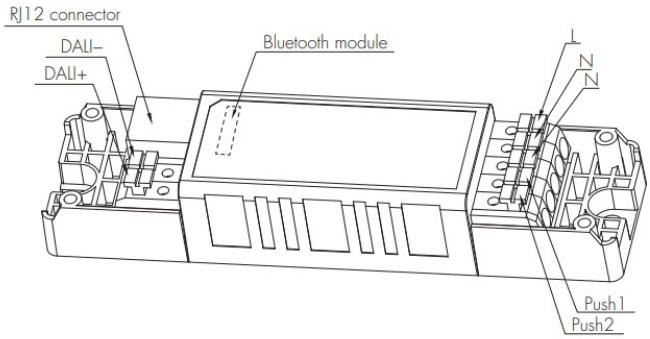
Mechanical Structure & Dimensions

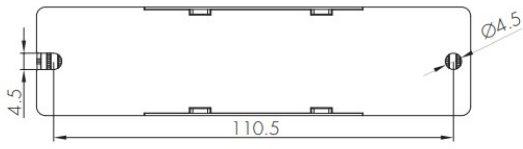
HC038V/BT (0/1-10V output)



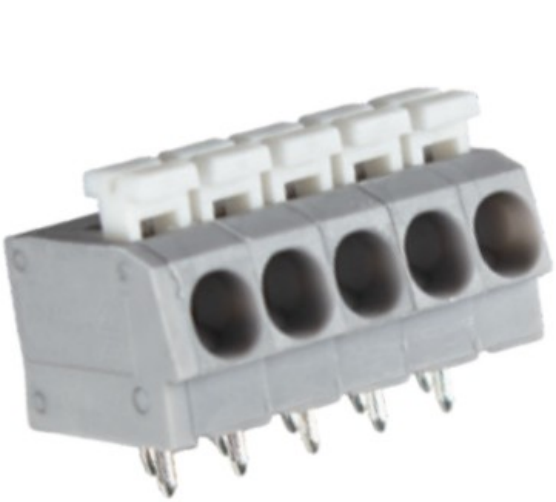


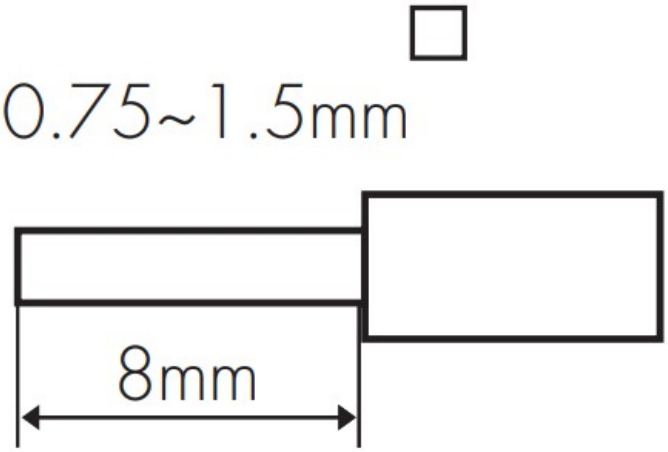
HCD038/BT (DALI output)





Wire Preparation

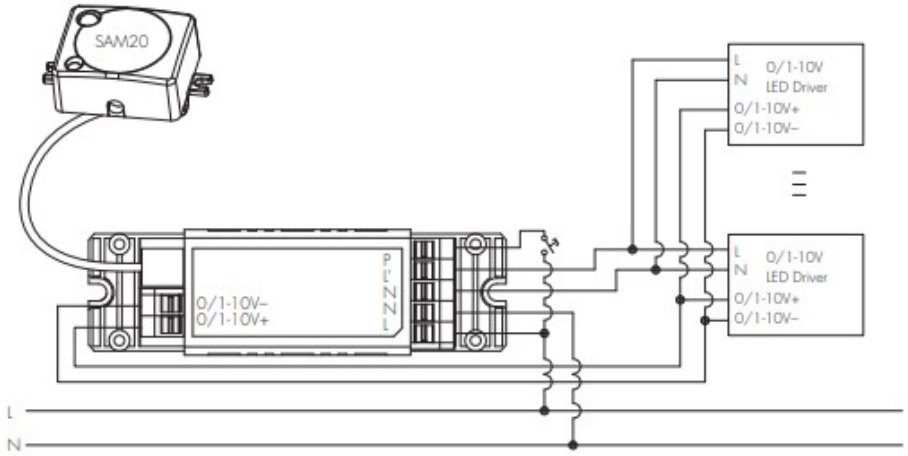




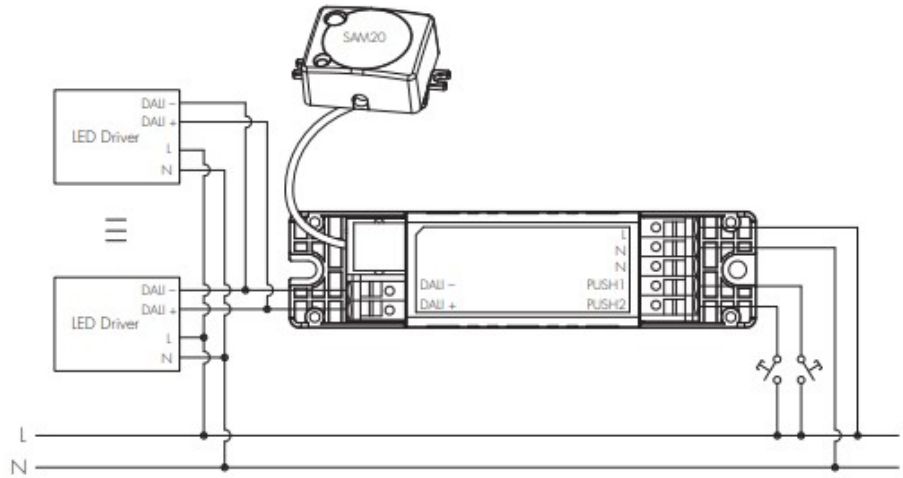
To make or release the wire from the terminal, use a screwdriver to push down the button.

Wiring Diagram

HC038V/BT



HCD038/BT



Technical Specifications for Sensor Heads

PIR Sensor Properties

PIR Sensor Properties		
Sensor principle	PIR detection	
Operating voltage	5VDC	
Detection range *	HIR05 & HIR05/FM HIR05/AA & & HIR07	Max installation height: 3m; Max detection range: 6m (diameter)
	HIR11	Max installation height: 15m (forklift); 12m (single person); Max detection range: 24m (diameter)
	HIR12	Max installation height: 15m (forklift); 12m (single person); Max detection range: 18m*6m (L*W)
	HIR63	Max installation height: 3m; Max detection range: 12m (diameter)
	HIR63/R	Max installation height: 12m (forklift); 8m (single person); Max detection range: 14m (diameter)

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 & SAM22/AA	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

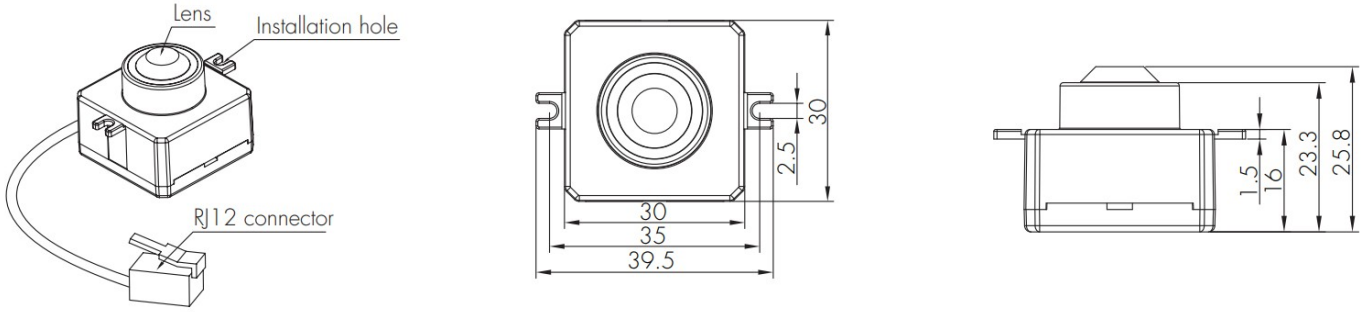
The range of PIR and microwave sensor heads below offers powerful number of Plug’n’Play feature options to

expand the fiexibility of luminaires design. This approach to luminaire design reduces space requirements and component costs whilst simplifying production.

A. HIR05

PIR sensor head

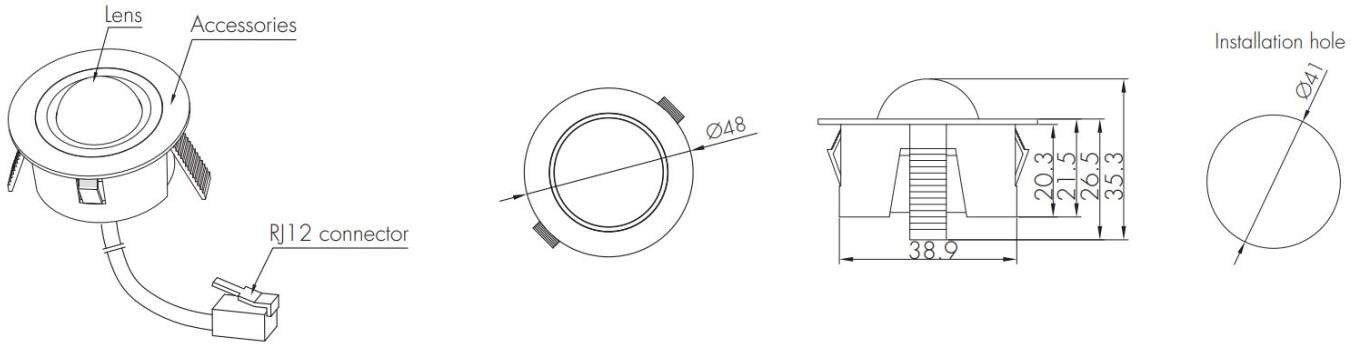
The cable length is around 30cm.



B. HIR05/FM

PIR sensor head

The cable length is around 30cm.

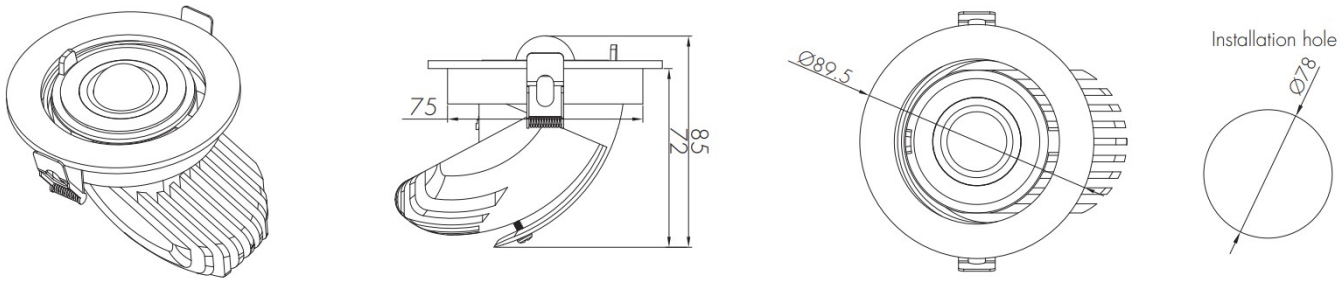


C. HIR05/AA

PIR sensor head

Adjustable angle

The cable length is around 30cm.

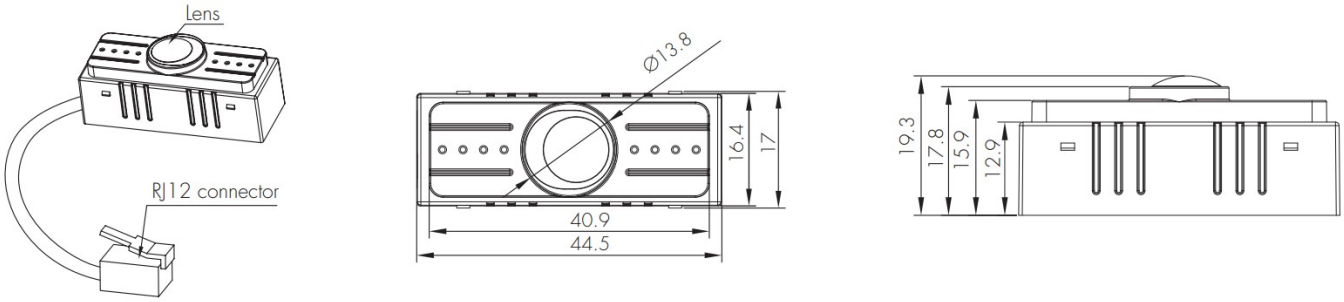


D. HIR07

PIR sensor head

Photocell AdvanceTM

The cable length is around 30cm.



E. HIR11/S

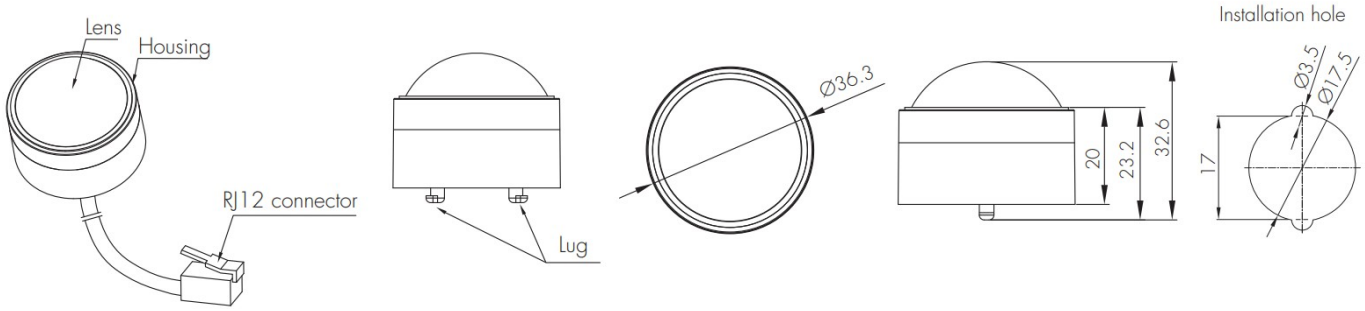
PIR sensor head

Surface mounting

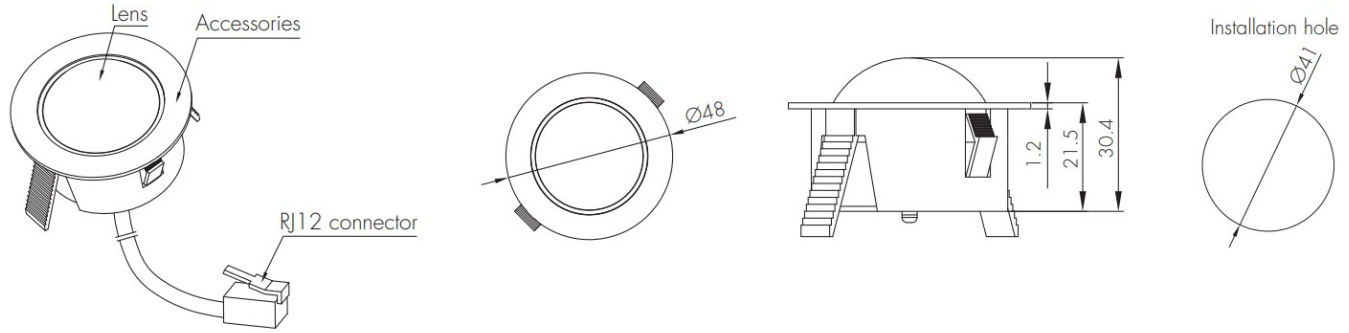
For highbay application

IP65 (facia / lens part)

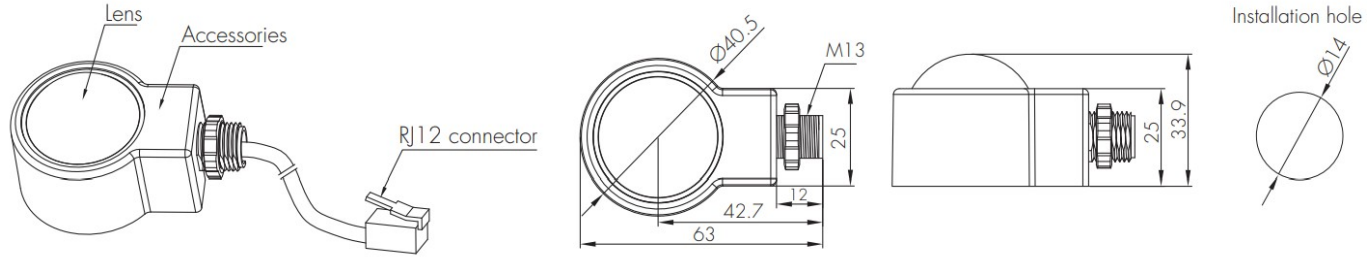
The cable length is around 30cm.



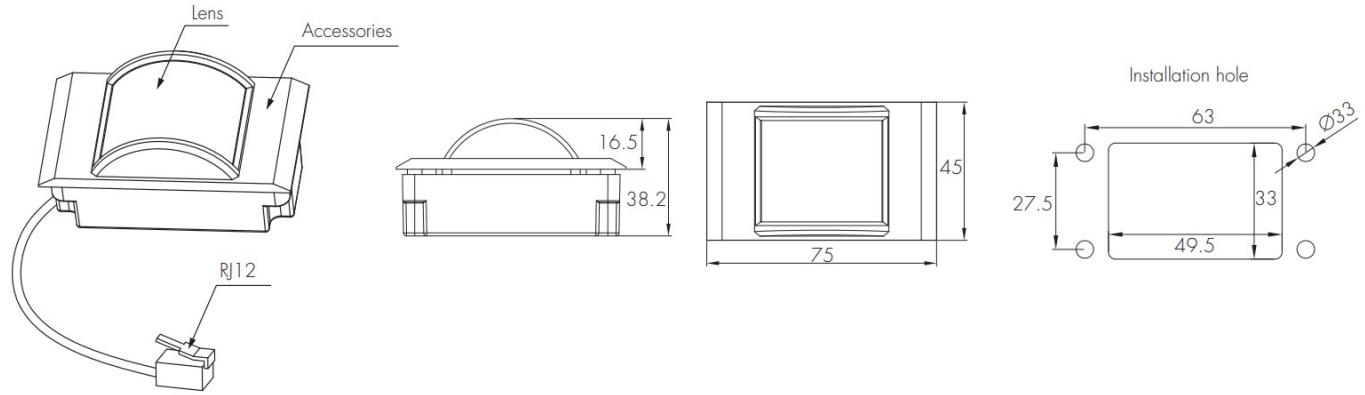
F. HIR11/F
PIR sensor head
Flush mounting
For highbay application
IP65 (facia / lens part)
The cable length is around 30cm.



G. HIR11/C
PIR sensor head
Screw to the luminaire by conduit
For highbay application
IP65 (facia / lens part)
The cable length is around 30cm.



H. HIR12
PIR sensor head
For highbay application
IP65 (facia / lens part)
The cable length is around 30cm.



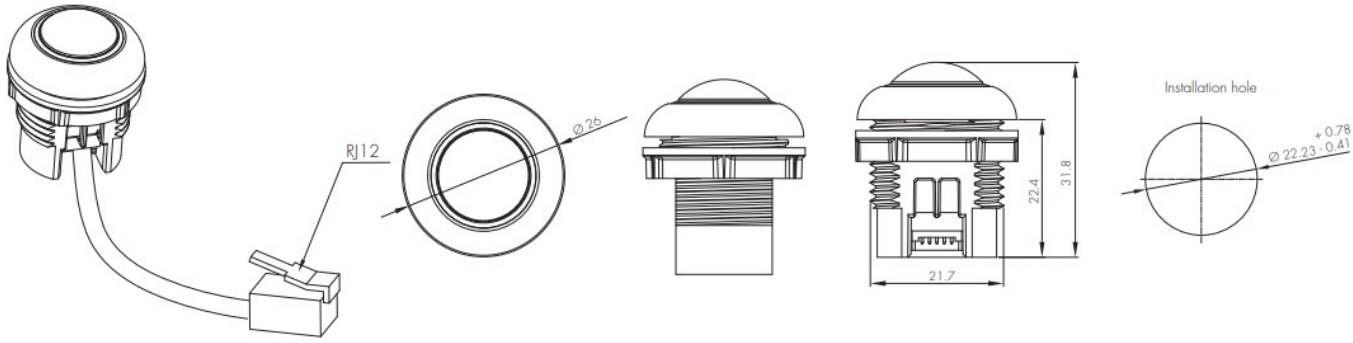
Installation for HIR12

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

I. HIR63

PIR sensor head

The cable length is around 30cm.

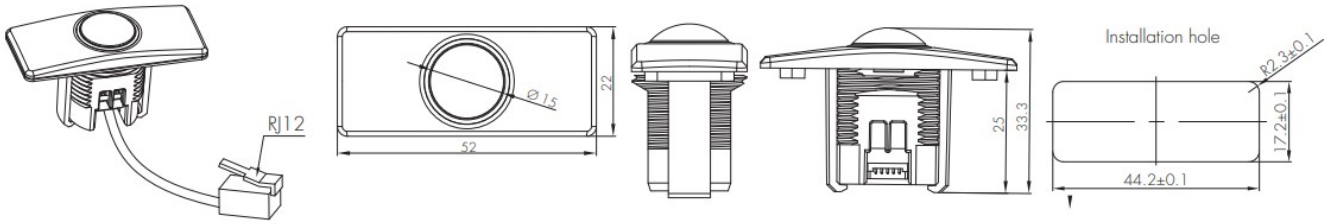


J. HIR63 with HA04

PIR sensor head

Optional accessory

The cable length is around 30cm.

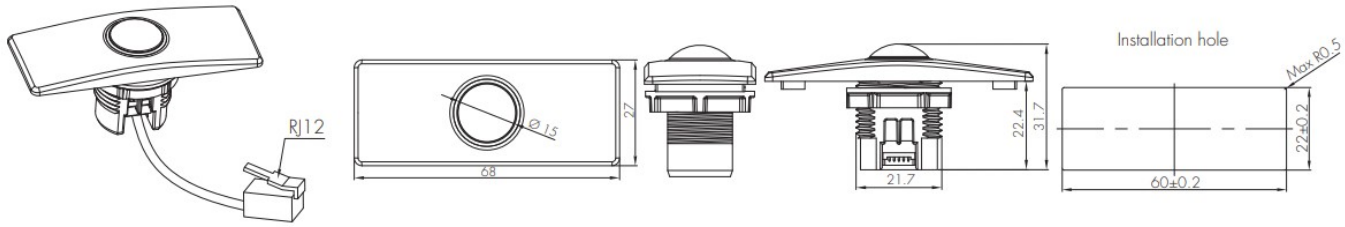


K. HIR63 with HA05

PIR sensor head

Optional accessory

The cable length is around 30cm.

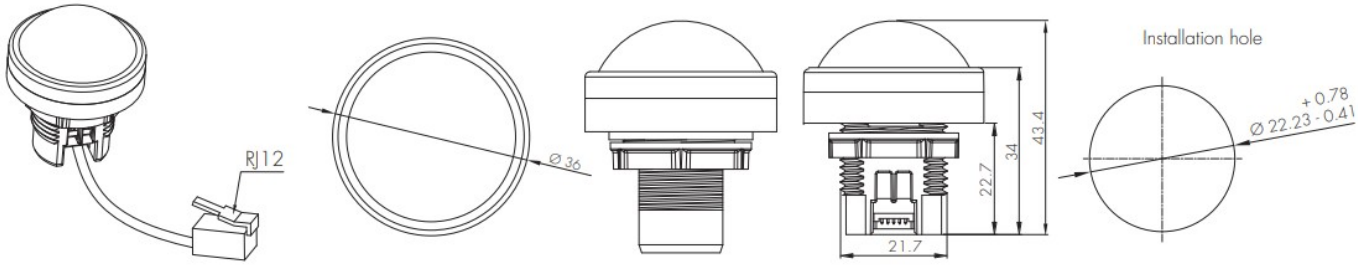


L. HIR63/R

PIR sensor head

IP65 (facia / lens part)

The cable length is around 30cm.

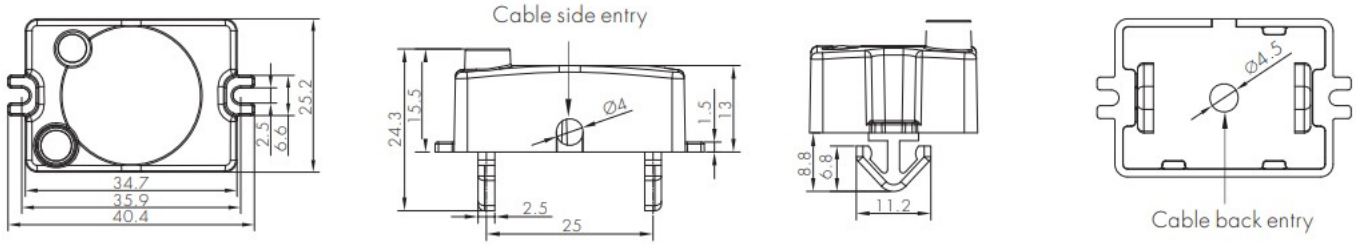


M. SAM20

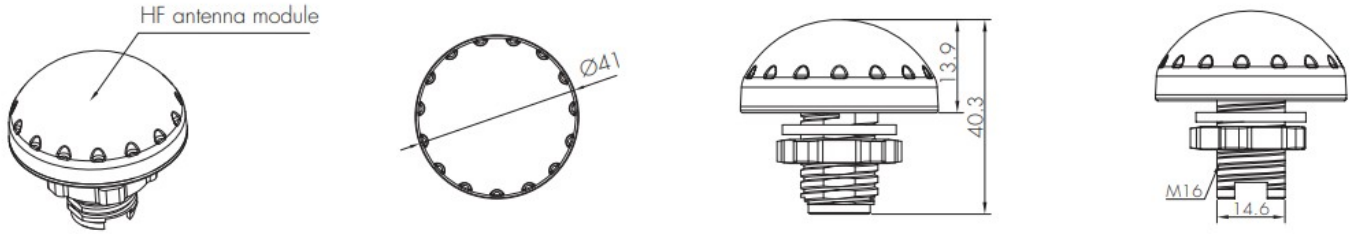
HF sensor head

Photocell AdvanceTM

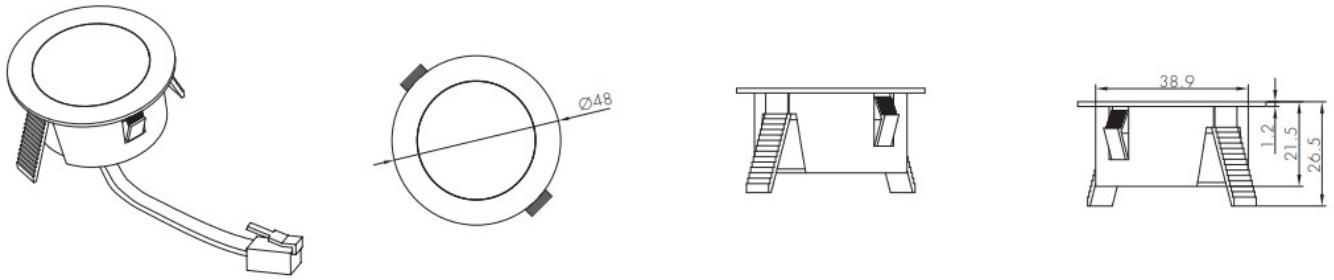
The cable length is around 30cm.



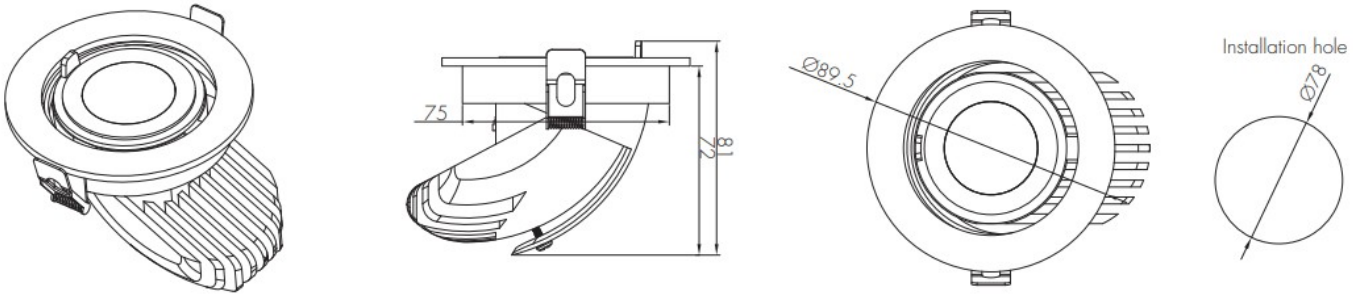
N. SAM21
HF sensor head
IP65
The cable length is around 30cm.



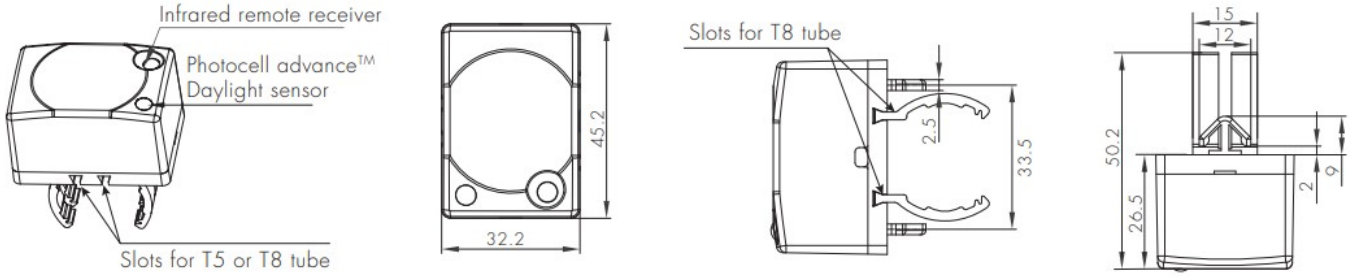
O. SAM22
HF sensor head
Flush mount
The cable length is around 30cm.



P. SAM22/AA
HF sensor head
Adjustable angle
The cable length is around 30cm.

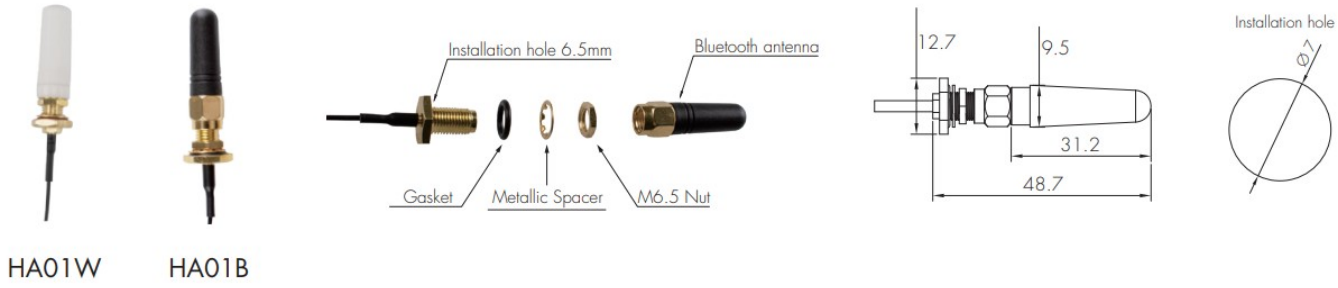


Q. SAM23
HF sensor head
Photocell advanceTM
For highbay application
The cable length is around 30cm.



Optional Accessory: Reinforced Bluetooth Antenna

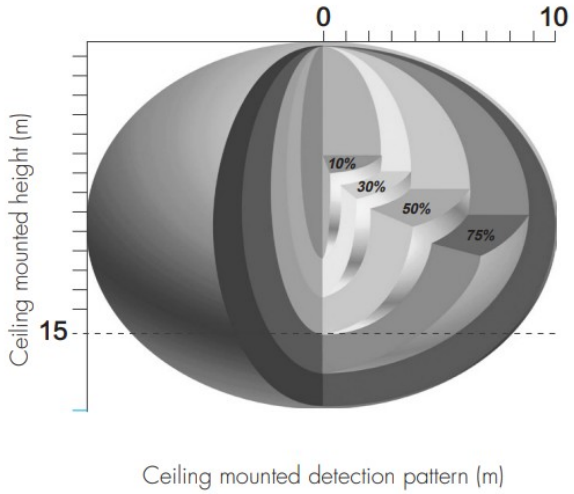
For some special applications, customers may need a larger Bluetooth transmission for both smartphone to device and device to device. Thanks to the reinforced Bluetooth antenna (optional black or white color to choose from), with it being added to the control base HC038V/BT & HCD038/BT, the transmission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



HA01W HA01B

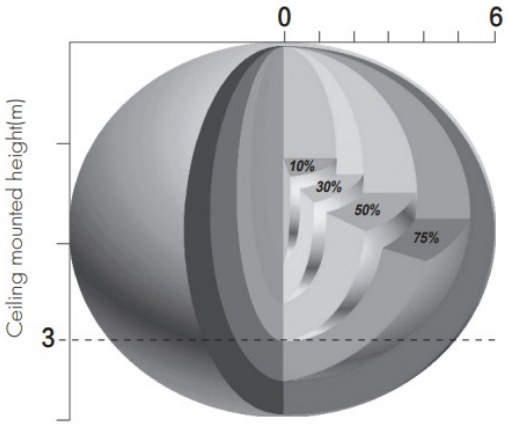
Detection Pattern

SAM23



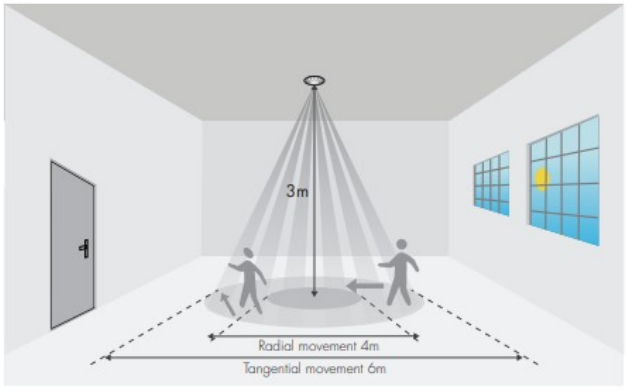
Ceiling mounted detection pattern (m)

SAM20 & SAM21 & SAM22 & SAM22/AA

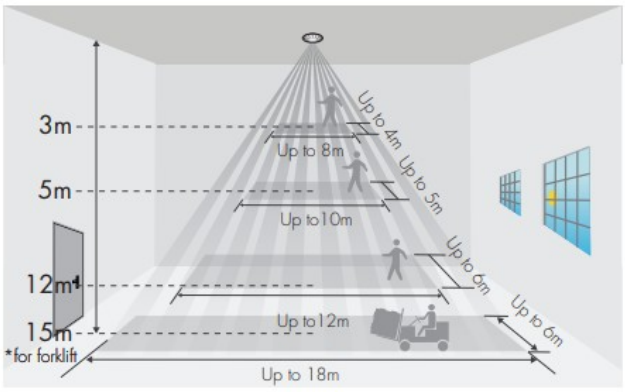


Ceiling mounted detection pattern (m)

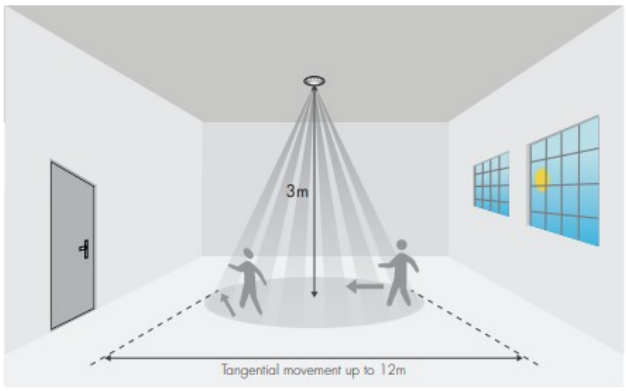
HIR05 & HIR05/FM & HIR05/AA & HIR07



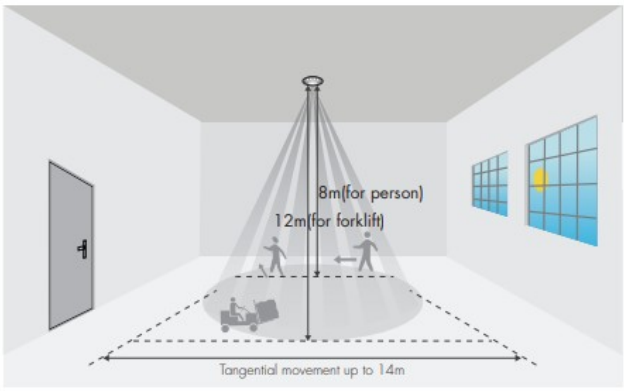
HIR12



HIR63



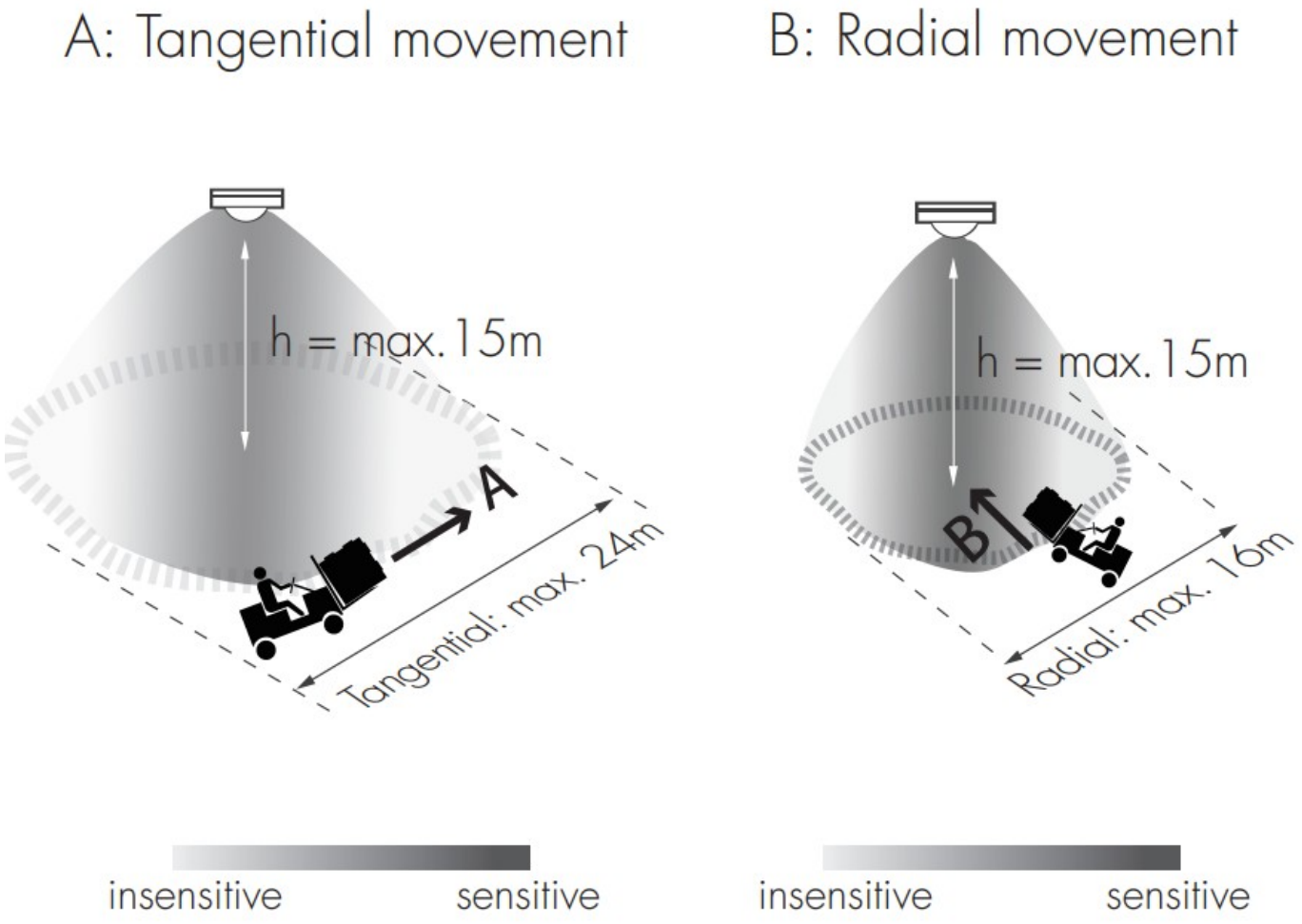
HIR63/R



*The detection patterns are based upon 5km/h movement speed.

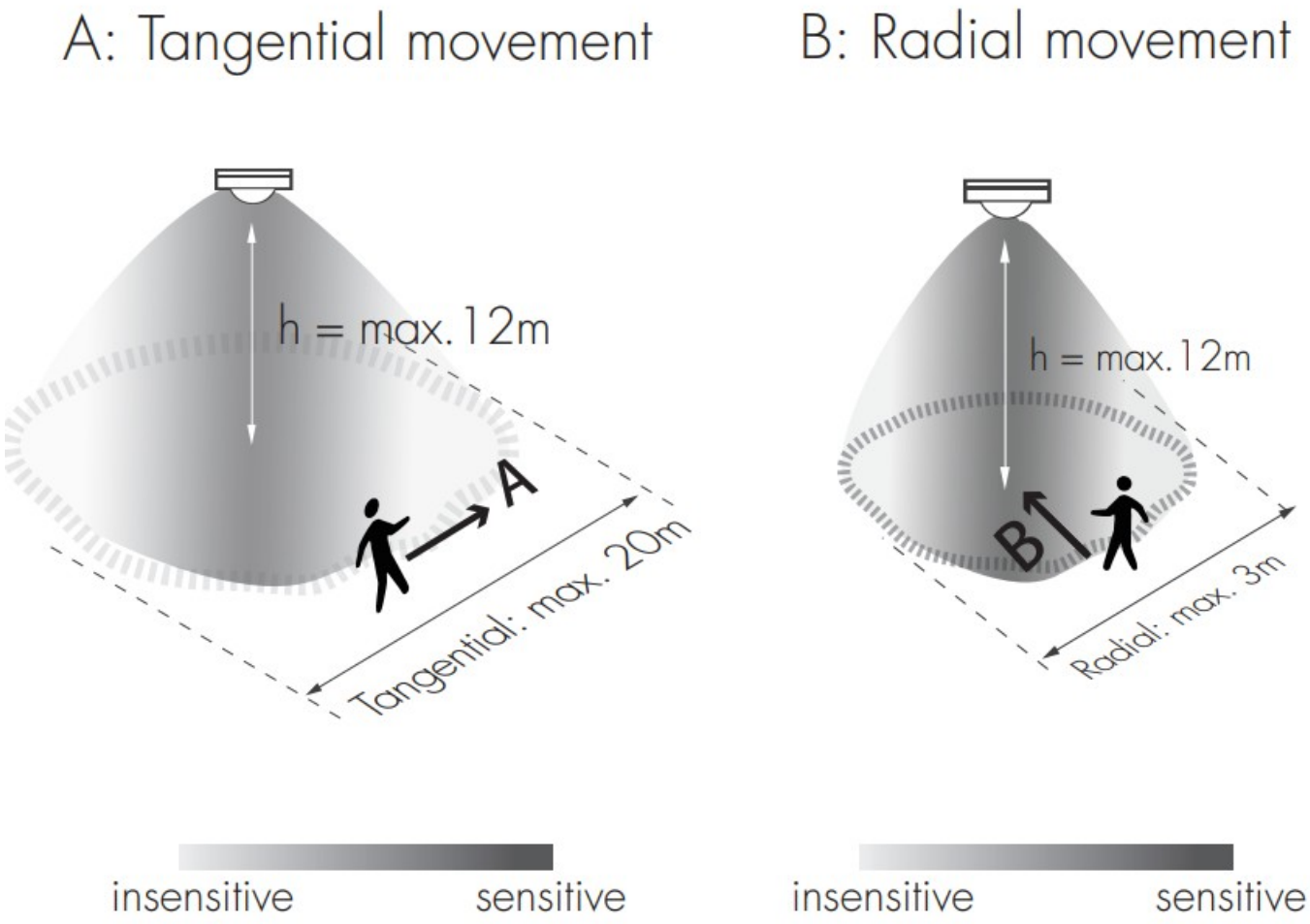
HIR11 (High-bay)

HIR11: High-bay lens detection pattern for forklift @ Ta = 20°C
(Recommended installation height 10m-15m)



Mount height	Tangential (A)	Radial (B)
10m	max 380m2 (Ø = 22m)	max 201m2 (Ø = 16m)
11m	max 452m2 (Ø = 24m)	max 201m2 (Ø = 16m)
12m	max 452m2 (Ø = 24m)	max 201m2 (Ø = 16m)
13m	max 452m2 (Ø = 24m)	max 177m2 (Ø = 15m)
14m	max 452m2 (Ø = 24m)	max 133m2 (Ø = 13m)
15m	max 452m2 (Ø = 24m)	max 113m2 (Ø = 12m)

HIR11: High-bay lens detection pattern for **single person** @ Ta = 20°C
(Recommended installation height **2.5m-12m**)



Mount height	Tangential (A)	Radial (B)
2.5m	max 50m2 (Ø = 8m)	max 7m2 (Ø = 3m)
6m	max 104m2 (Ø = 11.5m)	max 7m2 (Ø = 3m)
8m	max 154m2 (Ø = 14m)	max 7m2 (Ø = 3m)
10m	max 227m2 (Ø = 17m)	max 7m2 (Ø = 3m)
11m	max 269m2 (Ø = 18.5m)	max 7m2 (Ø = 3m)
12m	max 314m2 (Ø = 20m)	max 7m2 (Ø = 3m)

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 0.1 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 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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Documents / Resources

	**HYTRONIK HC038V-BT Motion Sensor** [pdf] Instruction Manual HC038V-BT, HCD038-BT, HC038V-BT Motion Sensor, Motion Sensor, Sensor

References

- Catalogue_Hytronik
- iot.koolmesh.com