

## Detached Motion Sensor with Bluetooth 5.0 SIG Mesh

625299 Base Controller BT HYT 1-10V HC038V/BT IoT  
WSEL116 Base Controller RJ12 BT HYT DALI HCD038/BT IoT  
IOT0021 Base Controller RJ12 BT HYT 1-10V HC038V/BT+ant IoT  
IOT0039 Base Controller RJ12 BT HYT 1-10V HC038V/BT+ant IoT without identification

### 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 Lena Lighting Clue app.

### App Features

- Quick setup mode & advanced setup mode
- Web app/platform for project deployment & data analysis
- Lena Lighting Clue app on iPad for on-site configuration
- Floorplan feature to simplify project planning
- One-key device replacement
- Device social relations check
- Staircase function (primary & secondary) Remote control via gateway support HBGW01 Heat map
- Dynamic daylight harvest auto-adaptation
- Grouping luminaires via mesh network
- Scenes
- Dusk/Dawn photocell (Twilight function)
- Tri-level control
- Daylight harvest
- Push switch configuration
- Detailed motion sensor settings
- Schedule
- Astro timer (sunrise and sunset)
- Power-on status (memory against power loss)
- Offline commissioning
- Bulk commissioning (copy and paste settings)
- Different permission levels via authority management
- Network sharing via QR code or keycode
- Interoperability with Hytronik Bluetooth product portfolio



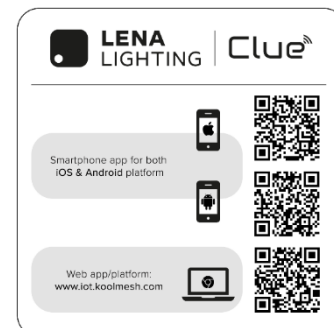
- Compatible with EnOcean BLE switches
- Internet-of-Things (IoT) featured
- Device firmware update over-the-air (OTA)
- Continuous development in progress...

### 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



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



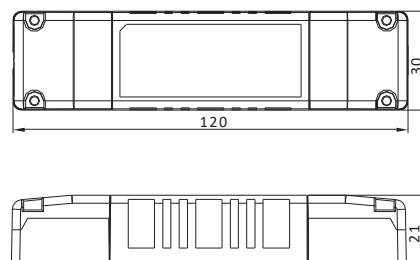
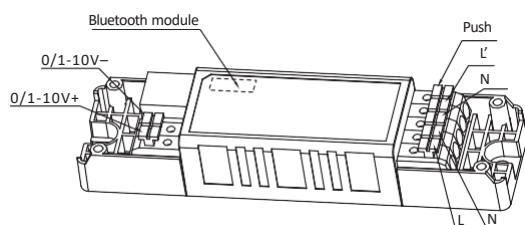
## Technical Specifications (HC038V/BT HCD038/BT)

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

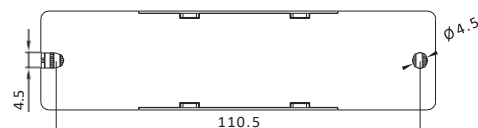
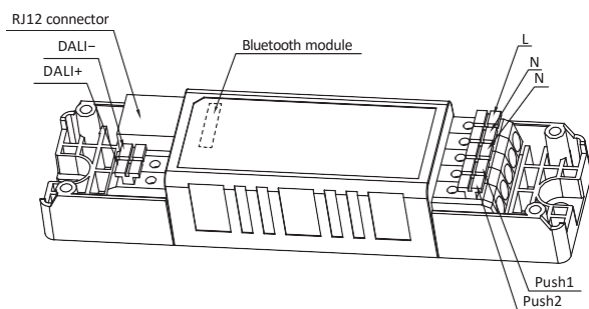
Input & Output Characteristics	
Operating voltage	220~240VAC 50/60Hz
Stand-by power	< 1 W
Load ratings:	Capacitive: 400W; Resistive: 800W 30mA (max. 15 devices)
HC038V/BT HCD038/BT	
Warming-up	20s
Environment	
Operation temperature	Ta: -20°C ~ +55°C
Case temperature(Max.)	Tc: +75°C
IP rating	IP20

## Mechanical Structure & Dimensions

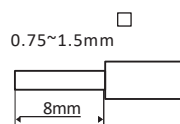
HC038V/BT (0/1-10V output)



HCD038/BT (DALI output)



## Wire Preparation

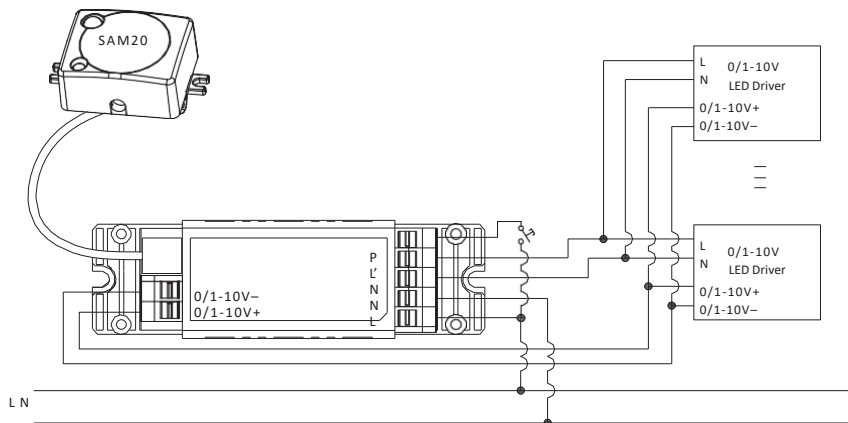


To make or release the wire from the terminal, use a screwdriver to push down the button.

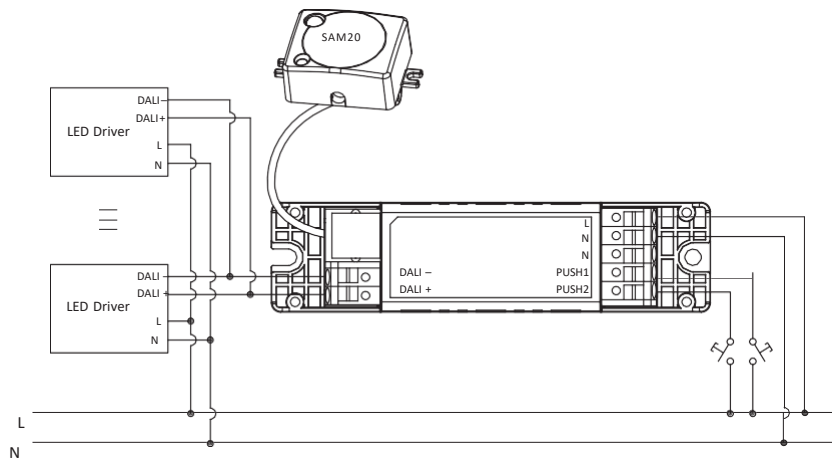
1. 200 metres (total) max. for 1mm<sup>2</sup> CSA (Ta = 50°C)
2. 300 metres (total) max. for 1.5mm<sup>2</sup> CSA (Ta = 50°C)

## Wiring Diagram

### HC038V/BT



### HCD038/BT



## Technical Specifications for Sensor Heads

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)

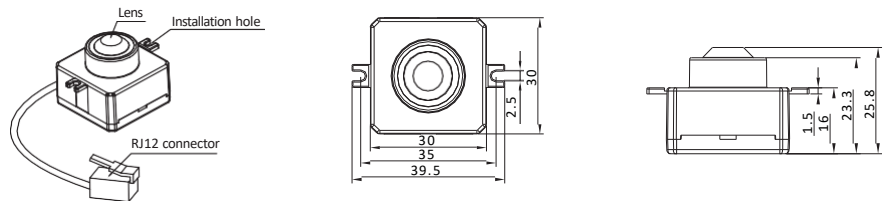
HF Sensor Properties		
Sensor principle	High Frequency (microwave)	
Operating voltage	5VDC	
Operation frequency	5.8GHz +/- 75MHz	
Transmission power	<0.2mW	
Detection range *	SAM20 & SAM21 SAM22 & SAM22/AA	Max installation height: 3m; Max detection range: 12m (diameter)
	SAM23	Max installation height: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

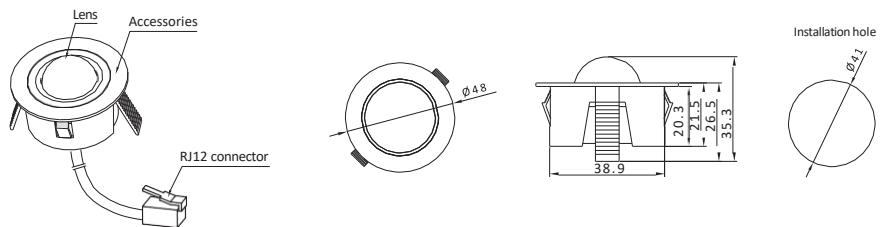
### PIR & microwave sensor heads

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

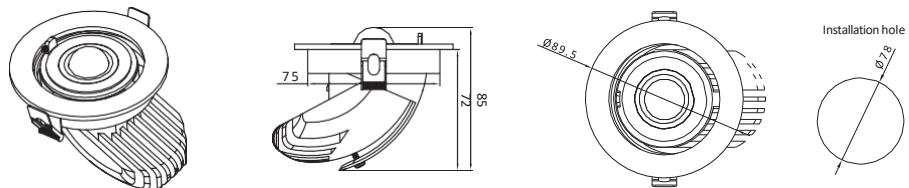
A. HIR05 (IOT0005 Sensor  
PIR HYT HIR05 to be clipped  
in IoT)  
PIR sensor head  
The cable length is around 30cm.



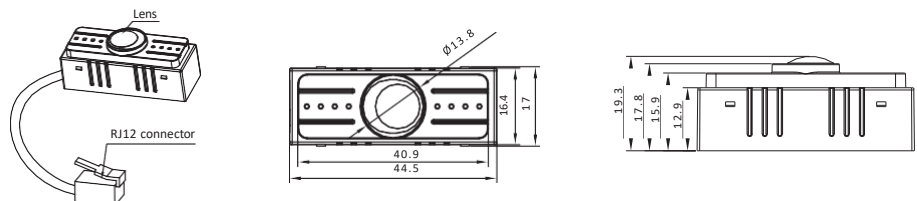
B. HIR05/FM  
PIR sensor head  
The cable length is around 30cm.



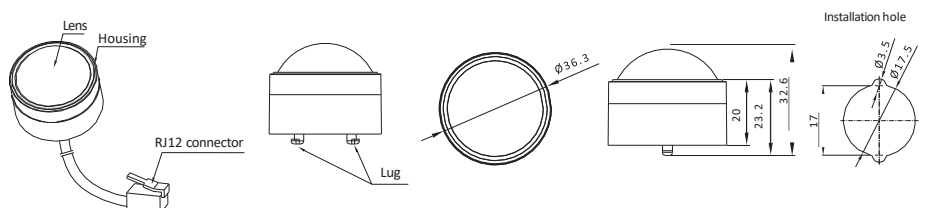
C. HIR05/AA  
PIR sensor head  
Adjustable angle  
The cable length is around 30cm.



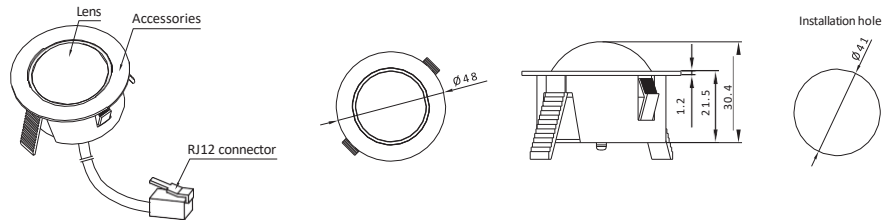
D. HIR07 (IOT0006 Sensor  
PIR HYT HIR07 to be clipped  
in IoT)  
PIR sensor head  
PhotoCell Advance™  
The cable length is around 30cm.



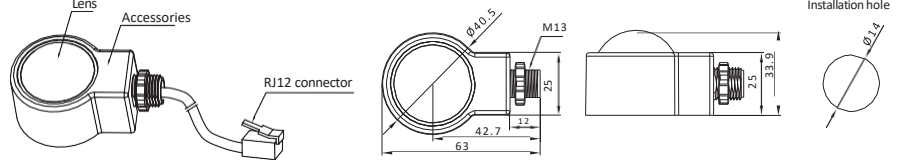
E. HIR11/S  
PIR sensor head  
Surface mounting  
For highbay application  
IP65 (facia / lens part)  
The cable length is around 30cm.



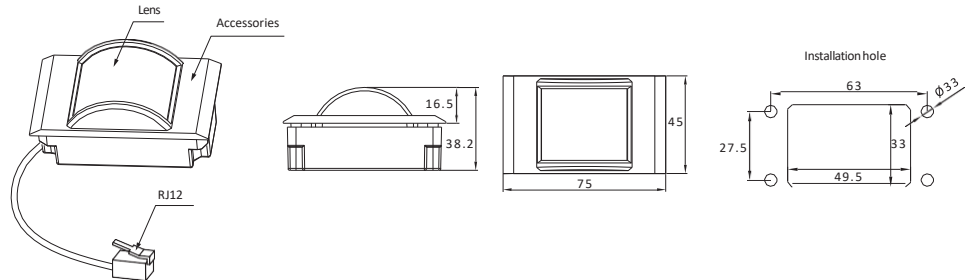
F. HIR11/F  
 PIR sensor head  
 Flush mounting  
 For highbay application  
 IP65 (facia / lens part)  
 The cable length is around 30cm.



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.



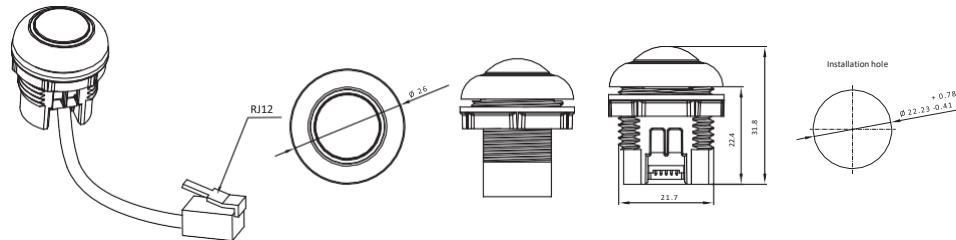
H. HIR12  
 PIR sensor head  
 For highbay application  
 IP65 (facia / lens part)  
 The cable length is around 30cm.



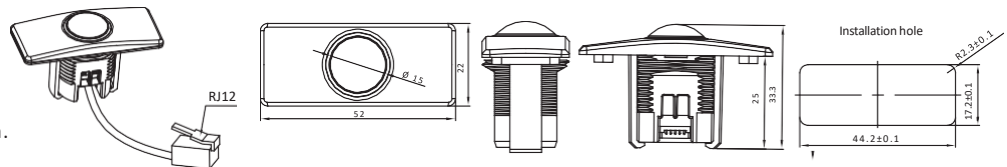
Installation for HIR12

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

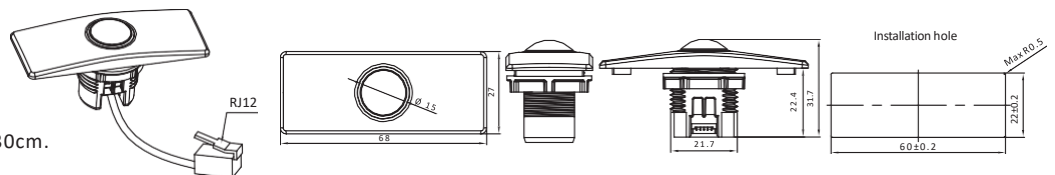
I. HIR63  
 PIR sensor head  
 The cable length is around 30cm.



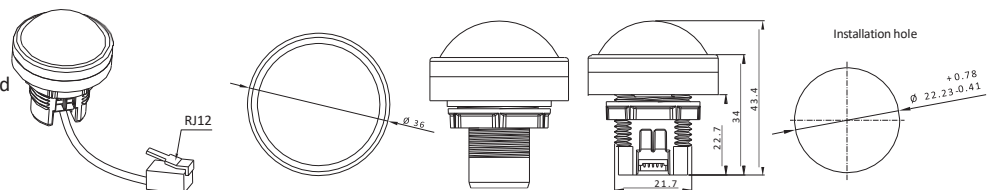
J. HIR63 with HA04  
 PIR sensor head  
 Optional accessory  
 The cable length is around 30cm.



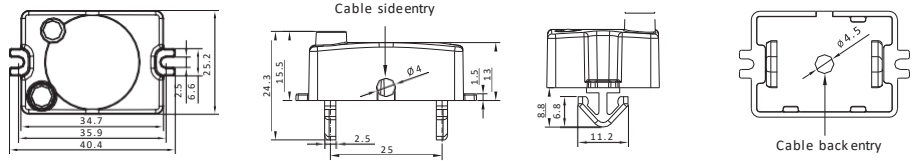
K. HIR63 with HA05  
 PIR sensor head  
 Optional accessory  
 The cable length is around 30cm.



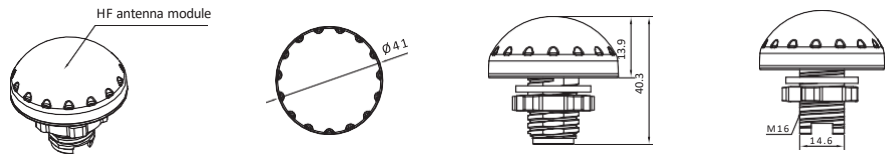
L. HIR63/R (IOT0020 Sensor  
 PIR HYT HIR63/R to be clipped  
 in IoT)  
 PIR sensor head  
 IP65 (facia / lens part)  
 The cable length is around 30cm.



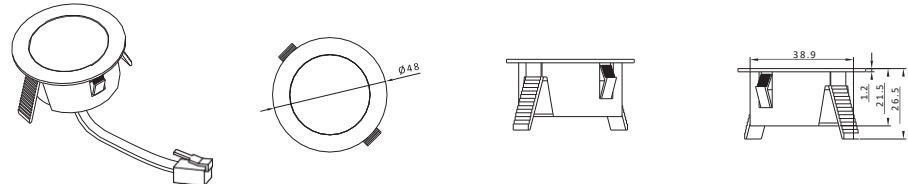
M. SAM20 (624537 Sensor RCR HYT SAM20 to be clipped in IoT)  
HF sensor head  
Photocell Advance™  
The cable length is around 30cm.



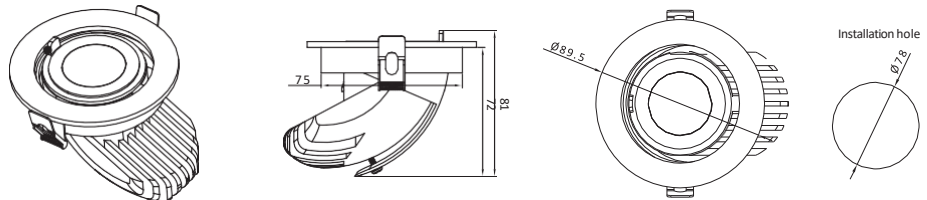
N. SAM21 (624629 Sensor RCR HYT SAM21 to be clipped in IoT)  
HF sensor head  
IP65  
The cable length is around 30cm.



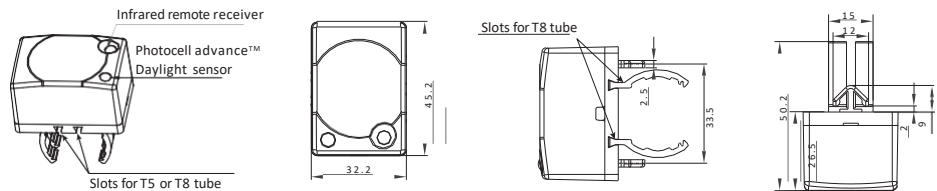
O. SAM22  
HF sensor head  
Flush mount  
The cable length is around 30cm.



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

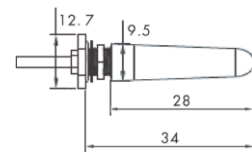
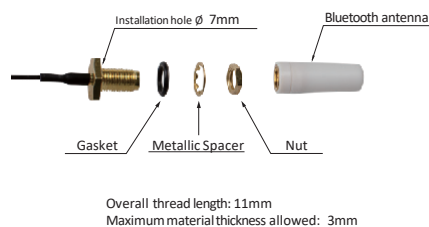
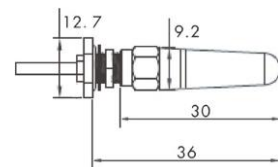
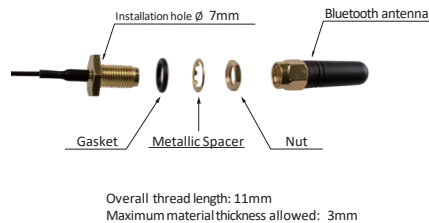


Q. SAM23  
HF sensor head  
Photocell advance™  
Daylight sensor  
For highbay application  
The cable length is around 30cm.



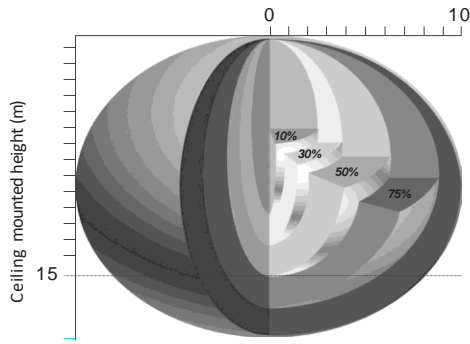
### Optional Accessory: Reinforced Bluetooth Antenna

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.



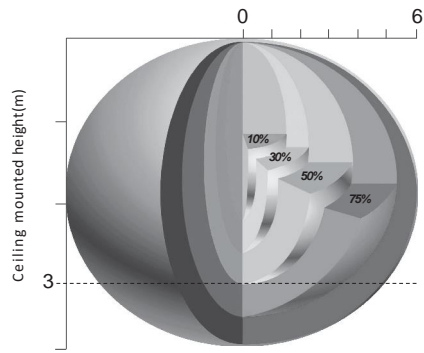
Detection Pattern

SAM23



Ceiling mounted detection pattern (m)

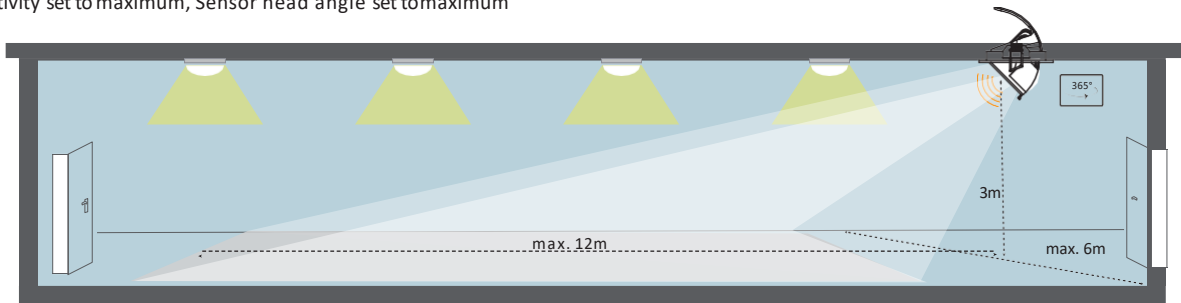
SAM20 & SAM21 & SAM22



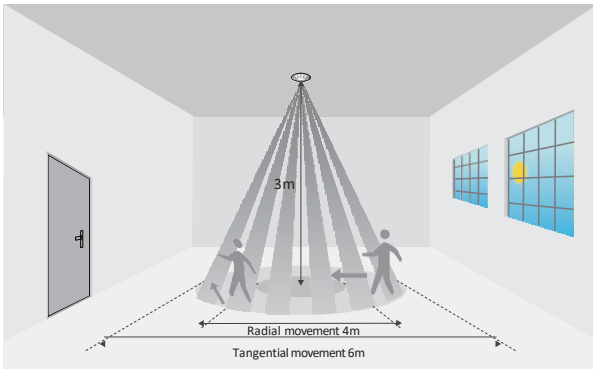
Ceiling mounted detection pattern (m)

Model SAM22/AA

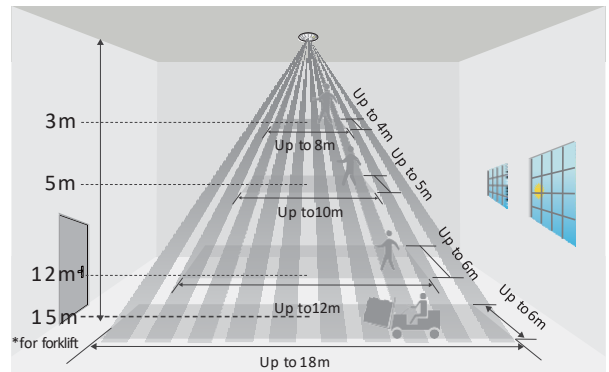
Sensitivity set to maximum, Sensor head angle set to maximum



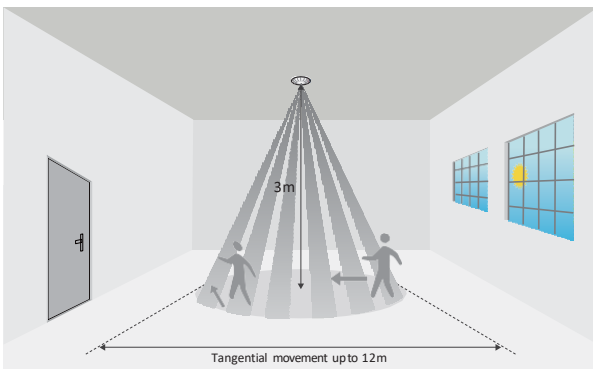
HIR05 & HIR05/FM & HIR05/AA & HIR07



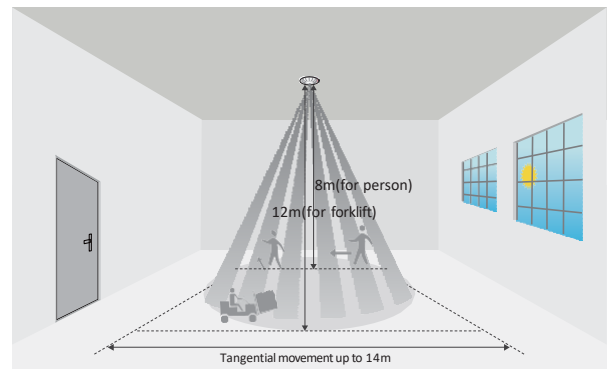
HIR12



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**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		10m	max 380m <sup>2</sup> (∅ = 22m)	max 201m <sup>2</sup> (∅ = 16m)
		11m	max 452m <sup>2</sup> (∅ = 24m)	max 201m <sup>2</sup> (∅ = 16m)
		12m	max 452m <sup>2</sup> (∅ = 24m)	max 201m <sup>2</sup> (∅ = 16m)
		13m	max 452m <sup>2</sup> (∅ = 24m)	max 177m <sup>2</sup> (∅ = 15m)
		14m	max 452m <sup>2</sup> (∅ = 24m)	max 133m <sup>2</sup> (∅ = 13m)
		15m	max 452m <sup>2</sup> (∅ = 24m)	max 113m <sup>2</sup> (∅ = 12m)



**HIR11:** High-bay lens detection pattern for **single person** @ Ta = 20 °C

(Recommended installation height **2.5m-12m**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 50m <sup>2</sup> (∅ = 8m)	max 7m <sup>2</sup> (∅ = 3m)
		6m	max 104m <sup>2</sup> (∅ = 11.5m)	max 7m <sup>2</sup> (∅ = 3m)
		8m	max 154m <sup>2</sup> (∅ = 14m)	max 7m <sup>2</sup> (∅ = 3m)
		10m	max 227m <sup>2</sup> (∅ = 17m)	max 7m <sup>2</sup> (∅ = 3m)
		11m	max 269m <sup>2</sup> (∅ = 18.5m)	max 7m <sup>2</sup> (∅ = 3m)
		12m	max 314m <sup>2</sup> (∅ = 20m)	max 7m <sup>2</sup> (∅ = 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 Lena Lighting Clue 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 - Quit manual mode - Turn off only - Do nothing
	Double push	- Turn on only - Quit manual mode - Turn off only - Do nothing - Recall a scene
	Long press (≥1 second)	- Dimming - Colour tuning - Do nothing
Sensor-link	/	- Upgrade a normal on/off motion sensor to a Bluetooth controlled motion sensor
Emergency Self-Test Function	Short press (<1 second) * Short press has to be longer than 0.1s, or it will be invalid.	- Start Self test (Monthly) - Start Self test (Annually) - Stop Self test - Invalid
	Long press (≥1 second)	- Start Self test (Monthly) - Start Self test (Annually) - Stop Self test - Invalid
Fire Alarm (VFC signal only)	Refer to Lena Lighting Clue App User Manual V2.1	- Able to connect the Fire Alarm system - Once the fire alarm system is triggered, all the luminaries controlled by the Push Switch will enter the preset scene (normally it's full on), after the fire alarm system gives the ending signal, all the luminaries controlled by this Push Switch will revert back to normal status.

For more information, contact [iot@lenalighting.pl](mailto:iot@lenalighting.pl)