Manuals+ — User Manuals Simplified.

HYTRONIK HIR32 Series PIR Standalone Motion Sensor Installation Guide

HBIR32 HBIR32/R HBIR32/W
HBIR32/H HBIR32/RH
Installation and Instruction Manual

PIR Standalone Motion Sensor with Bluetooth® 5.0 SIG Mesh Two DALI Channels Output

Contents

Technical Specifications

Operation frequency	2.4 GHz – 2.483 GHz
Transmission power	4 dBm
Range (Typical indoor)	10~30m
Protocol	5.0 SIG Mesh
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
DALI Channel 1	50mA, Max. 25 LED drivers
DALI Channel 2	30mA, Max. 15 LED drivers
Sensor principle	PIR detection
Detection range (Max.)* HBIR32	Installation Height : 6m Detection Range (Ø) :9m
Detection range (Max.)* HBIR32/R	Installation Height : 6m Detection Range(Ø) :10m
Detection range (Max.)* HBIR32/W	Installation Height : 6m Detection Range(Ø) :18m
Detection range (Max.)* HBIR32/H	Installation height 15m (forklift) 12m (person) Detection range (Ø) 24m
Detection range (Max.)* HBIR32/RH	Installation height 20m (forklift) 12m (person) Detection range (Ø) 40m
Detection angle	360O
Operation temperature	Ta:-20OC~+50OC
IP rating	IP20
EMC standard (EMC)	EN55015, EN61000, EN61547
Safety standard (LVD)	EN60669-1/-2-1 AS/NZS60669-1/-2-1
RED	EN300328, EN301489-1/-17
Certification	CB, CE , EMC, RED, RCM

Download the App

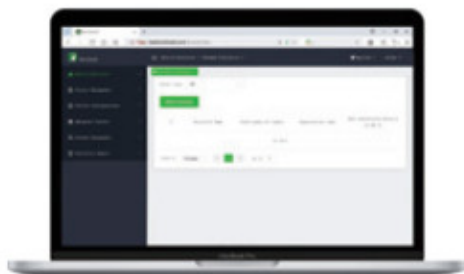Free App for set-up and commissioning

Bluetooth 5.0 SIG mesh

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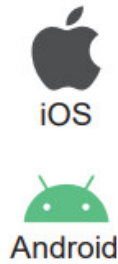
Smartphone app for both iOS & Android platform

https://apps.apple.com/cn/app/koolmesh/id1570378349
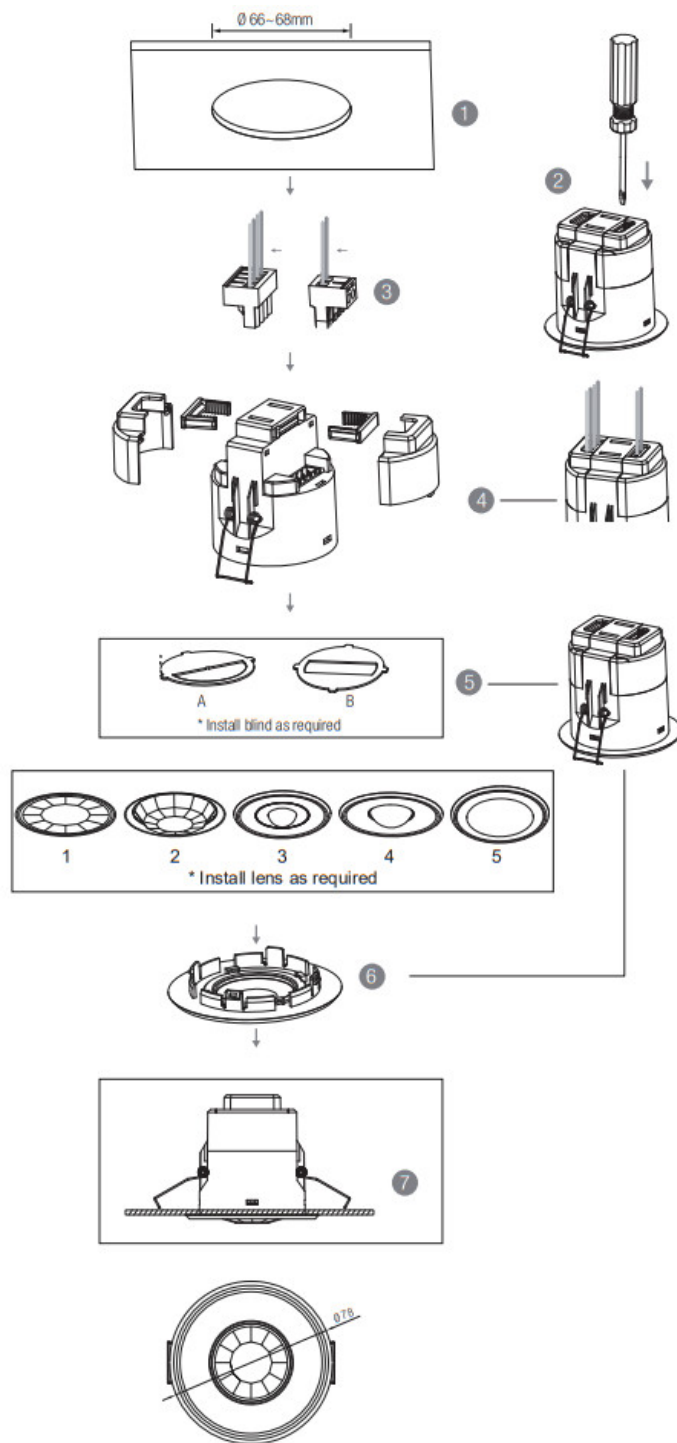

Web app/platform: www.iot.koolmesh.com

Installation

Mechanical Structure & Dimensions

1. Ceiling (drill hole φ66~68mm)

2. Carefully prise off the cable clamps.

3. Make connections to the pluggable terminal blocks.

4. Insert plug connectors and secure using the provided cable clamps, then clip terminal covers to the base.

5. Fit detection blind (if required) and desired lens.

6. Clip fascia to body.

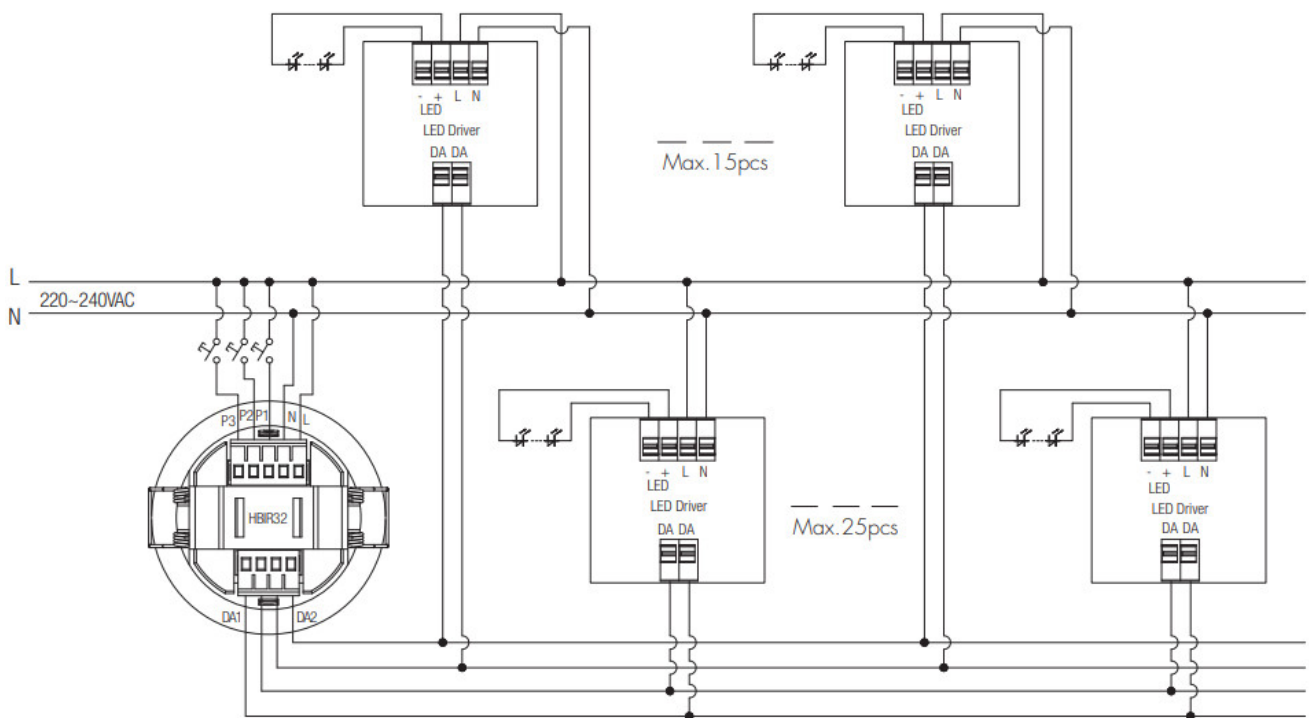7. Bend back springs and insert into ceiling.

HBIR32   HBIR32/R   HBIR32/W   HBIR32/H   HBIR32/RH

Wire Preparation

0.75 - 2.5mm²

7-8mm
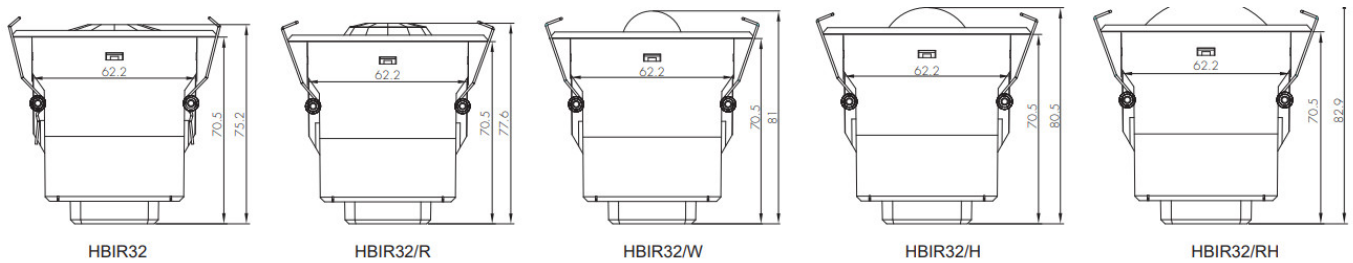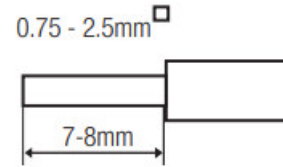
Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor.

1. 200 metres (total) max. for 1mm² CSA (Ta = 50 °C)
2. 300 metres (total) max. for 1.5mm² CSA (Ta = 50 °C)

Wiring Diagram

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.
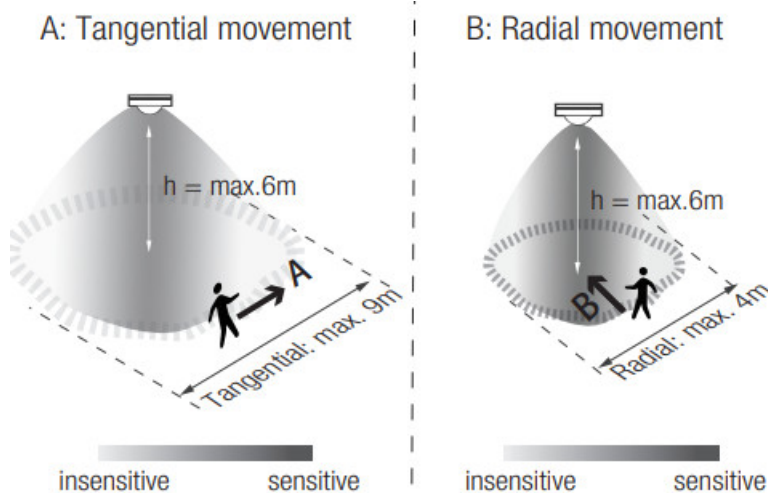
Switch Function	Action	Descriptions
Push switch	Short press (<1 second) * Short press has to be longer than 0.1 s, or it will be invalid.	– Turn on/off – Recall a scene – Turn on only – Exit manual mode – Turn off only – Do nothing
	Double push	– Turn on only – Exit manual mode – Turn off only – Do nothing – 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

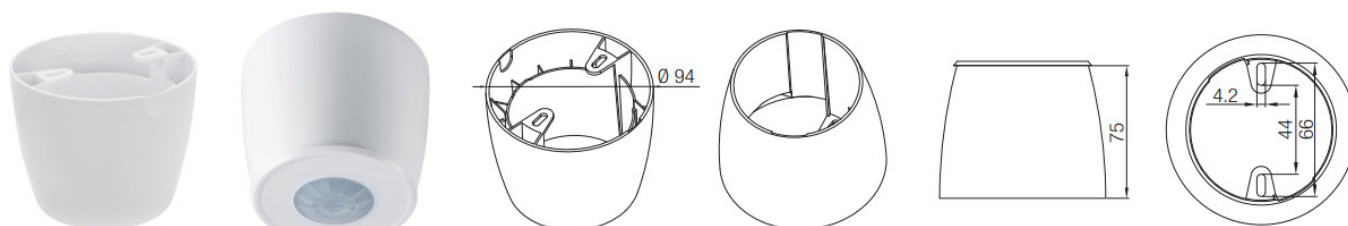## Detection Pattern & Optional Accessories

1. HBIR32 (Low-bay)

HBIR32: Low-bay flat lens detection pattern for single person @ Ta = 20ºC (Recommended ceiling mount installation height 2.5m-6m)

A: Tangential movement

B: Radial movement

h = max.6m

h = max.6m

Tangential: max. 9m

Radial: max. 4m

insensitive   sensitive

insensitive   sensitive

Mount height	Tangential (A)	Radial (B)
2.5m	max 50m2 (0= 8m)	max 13m' (0= 4m)
3m	max 64m2 (0= 8m)	max 13m2 (0= 4m)
4m	max 38m2 (0= 8m)	max 13m' (0= 4m)
5m	max 38m2 (0= 8m)	max 13m2 (0= 4m)
6m	max 38m2 (0= 8m)	max 13m' (0= 4m)

Optional Accessory — Ceiling/Surface Mount Box: HA03

Optional Accessory — Blind Insert for Blocking Certain Detection Angles

Blind Option 1 --- Aisle Detection

Blind Option 2 --- 180º Detection

2. HBIR32/R (Reinforced Low-bay)

 HBIR32: Low-bay flat lens detection pattern for single person @ Ta = 20ºC (Recommended ceiling mount installation height 2.5m-6m)

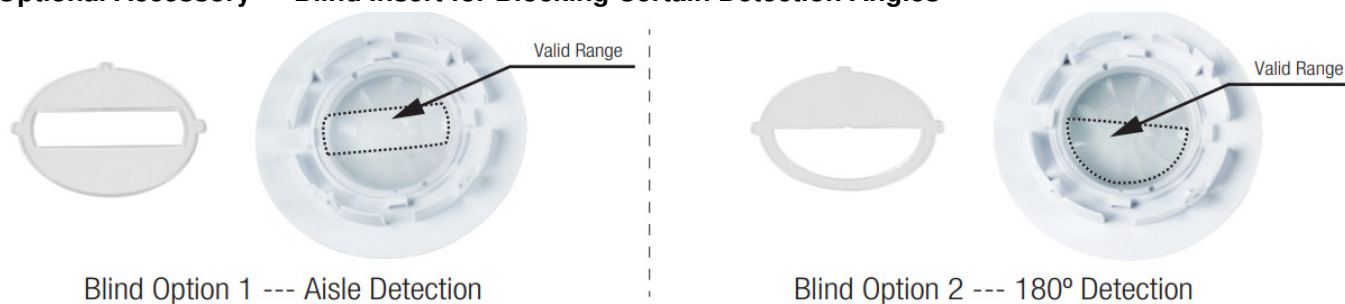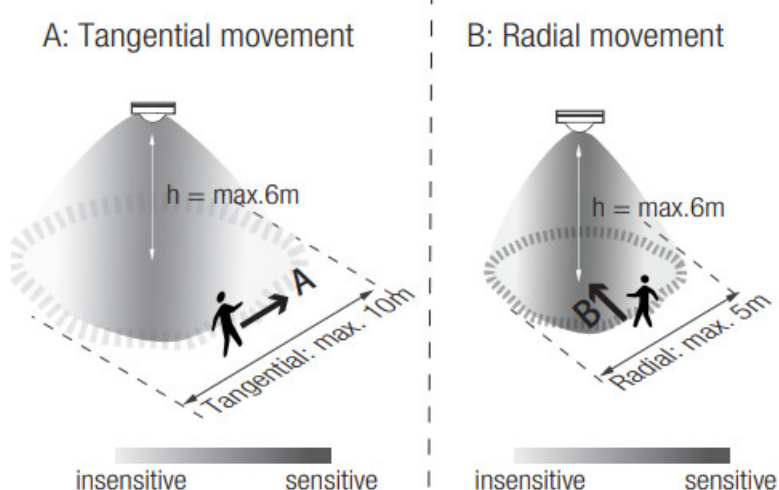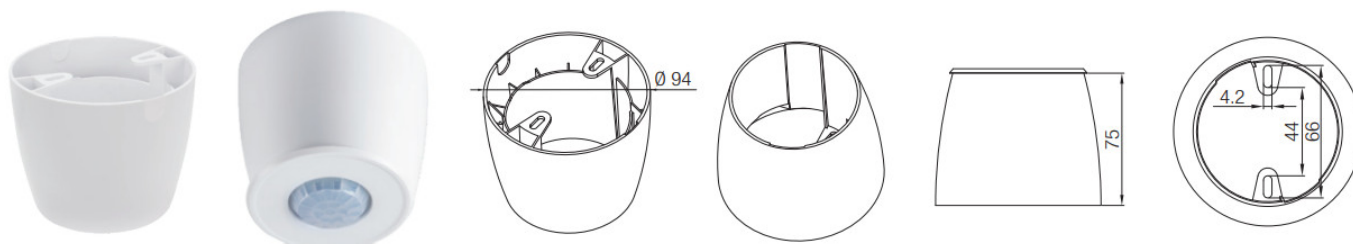A: Tangential movement

B: Radial movement

Mount height	Tangential (A)	Radial (B)
2.5m	max 79m2 (Ø = 10m)	max 20m2 (Ø = 5m)
3m	max 79m2 (Ø = 10m)	max 20m2 (Ø = 5m)
4m	max 64m2 (Ø = 9m)	max 20m2 (Ø = 5m)
5m	max 50m2 (Ø = 8m)	max 20m2 (Ø = 5m)
6m	max 50m2 (Ø = 8m)	max 20m2 (Ø = 5m)

Optional Accessory — Ceiling/Surface Mount Box: HA03

Optional Accessory — Blind Insert for Blocking Certain Detection Angles

Blind Option 1 --- Aisle Detection

Blind Option 2 --- 180º Detection

3. HBHC25/W (Wide range Low-bay)

HBIR32: Low-bay flat lens detection pattern for single person @ Ta = 20ºC (Recommended ceiling mount installation height 2.5m-6m)
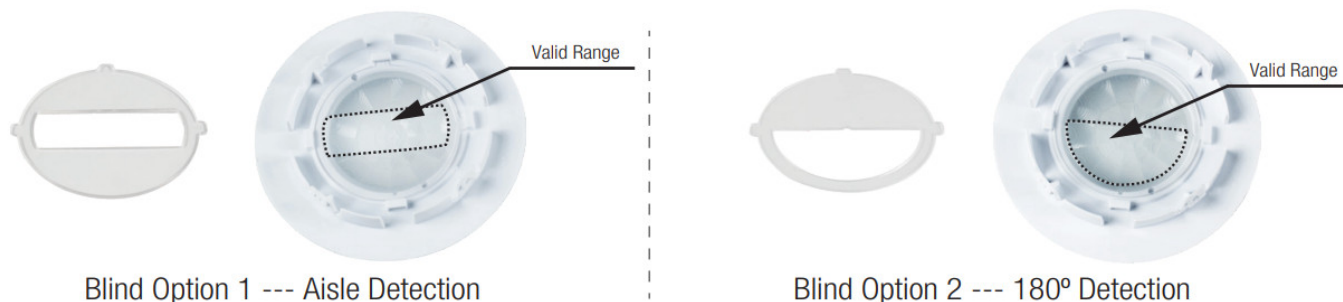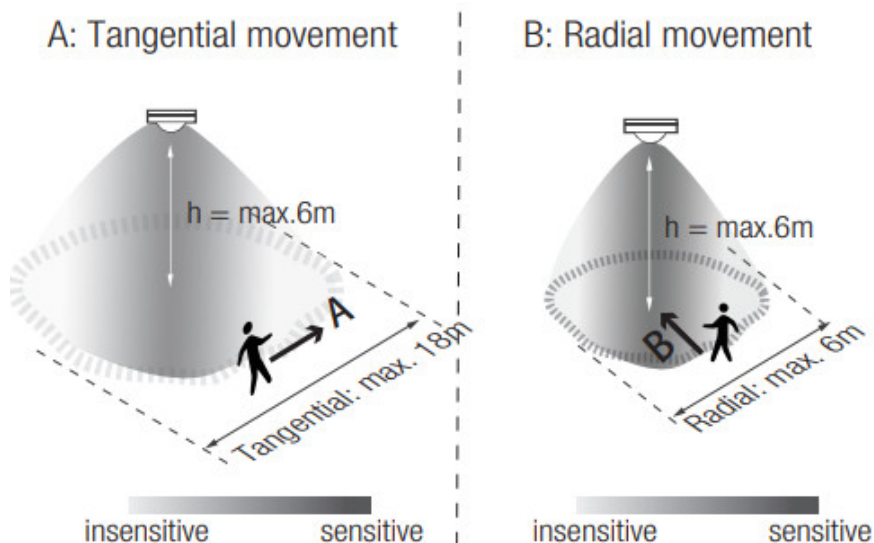

A: Tangential movement

B: Radial movement

h = max.6m

h = max.6m

Tangential: max. 18m

Radial: max. 6m

insensitive   sensitive

insensitive   sensitive

Mount height	Tangential (A)	Radial (B)
2.5m	max 254m² (Ø = 18m)	max 28m² (Ø = 6m)
3m	max 254m² (Ø = 18m)	max 28m² (Ø = 6m)
4m	max 154m² (Ø = 14m)	max 28m² (Ø = 6m)
5m	max 113m² (Ø = 12m)	max 28m² (Ø = 6m)
6m	max 79m² (Ø = 10m)	max 13m² (Ø = 4m)

Ceiling/Surface Mount Accessory HA03: Default IP20, IP65 can be request with extra big & small water-proof gaskets
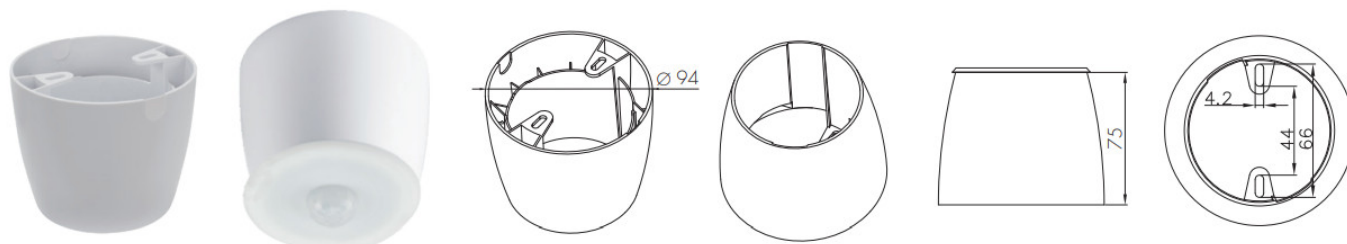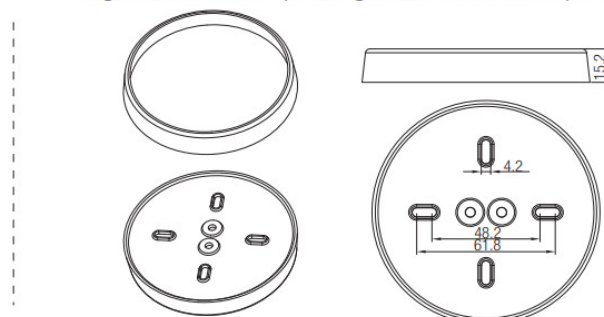

Big and small silicon gasket used to make IP54 degree protection when HBIR32 series device mounted into HA03 housing for ceiling mount
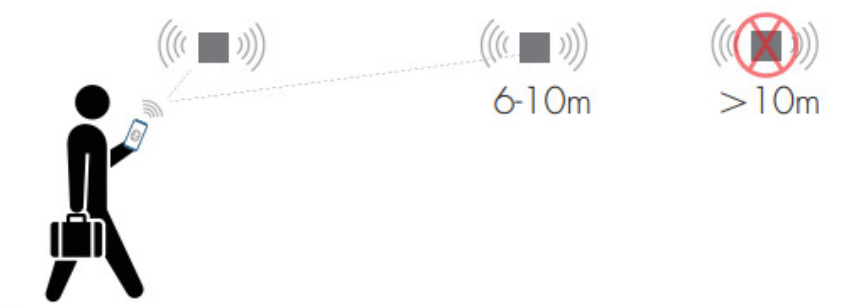
Small silicon water-proof gasket dimension(size:mm)
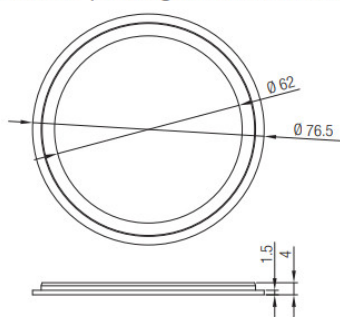
Big silicon water-proof gasket dimension(size:mm)

Placement Guide and Typical Range

Smart Phone to Device Range

6-10m   >10m

The smart device with the App installed will have a typical range of 10m, but varies from device to device. During commissioning, the installer will need to be in range of the devices when searching for devices to add to the network.

Once the devices have been added to the network via the App, the devices will start communicating within the wireless mesh. This means that once the network is complete, all devices are accessible from the smart device when in a 20m range of a single point.
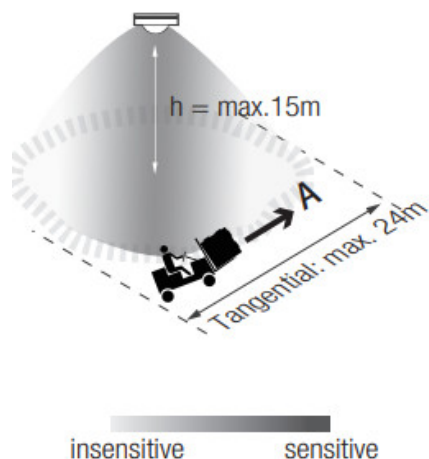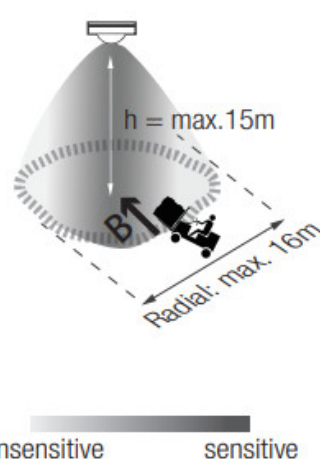
4. HBIR32/H (High-bay)

HBIR32/R: High-bay lens detection pattern for forklift @ Ta = 20ºC (Recommended ceiling mount

installation height 10m-15m)
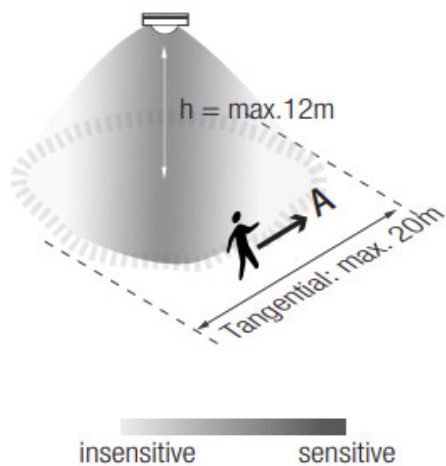

A: Tangential movement

B: Radial movement

h = max.15m

h = max.15m

Tangential: max. 24m

Radial: max. 16m

insensitive — sensitive

insensitive — sensitive

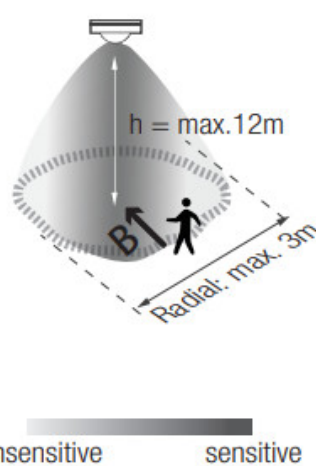| Mount height	Tangential (A)	Radial (B)
10m	max 380m2 (Ø = 22m)	max 201m2 (Ø = 16m)
11m	max 452m2 (Ø = 24m)	max 201m2 (Ø = 16m)
12m	max 452m2 (Ø = 24m)	max 201m2 (Ø = 16m)
13m	max 452m2 (Ø = 24m)	max 177m2 (Ø = 15m)
14m	max 452m2 (Ø = 24m)	max 133m2 (Ø = 13m)
15m	max 452m2 (Ø = 24m)	max 113m2 (Ø = 12m)

HBIR32/H: High-bay lens detection pattern for single person @ Ta = 20ºC (Recommended ceiling mount installation height 2.5m-12m)


A: Tangential movement

B: Radial movement

h = max.12m

h = max.12m

Tangential: max. 20m

Radial: max. 3m

insensitive — sensitive

insensitive — sensitive

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)

Optional Accessory — Ceiling/Surface Mount Box: HA03
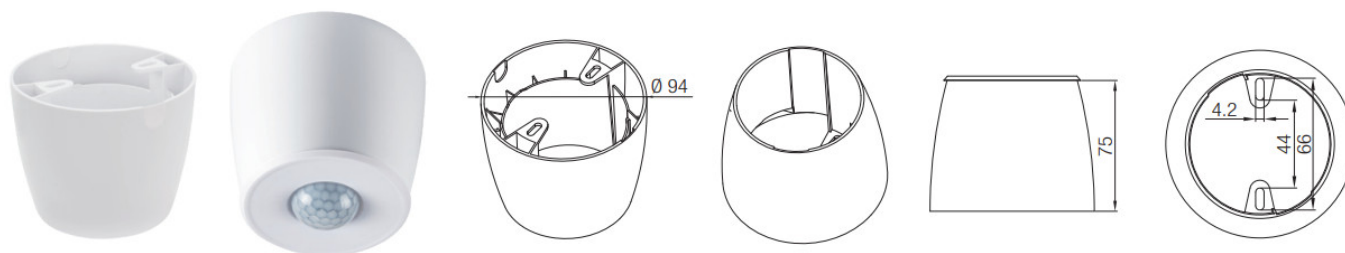
Optional Accessory — Blind Insert for Blocking Certain Detection Angles
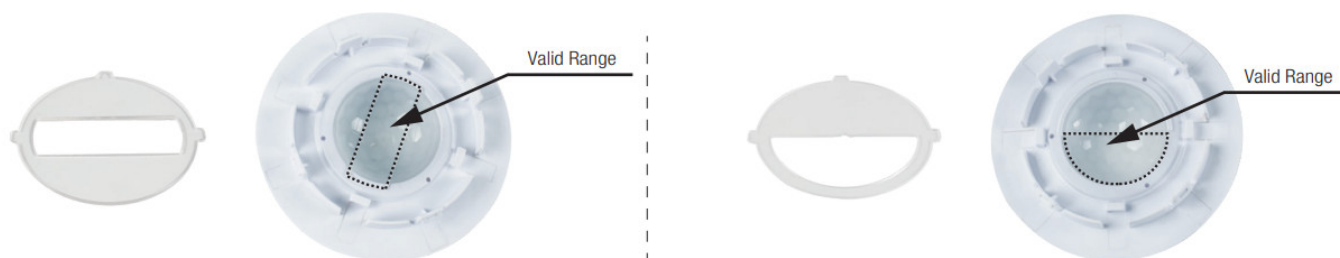
Blind Option 1 --- Aisle Detection
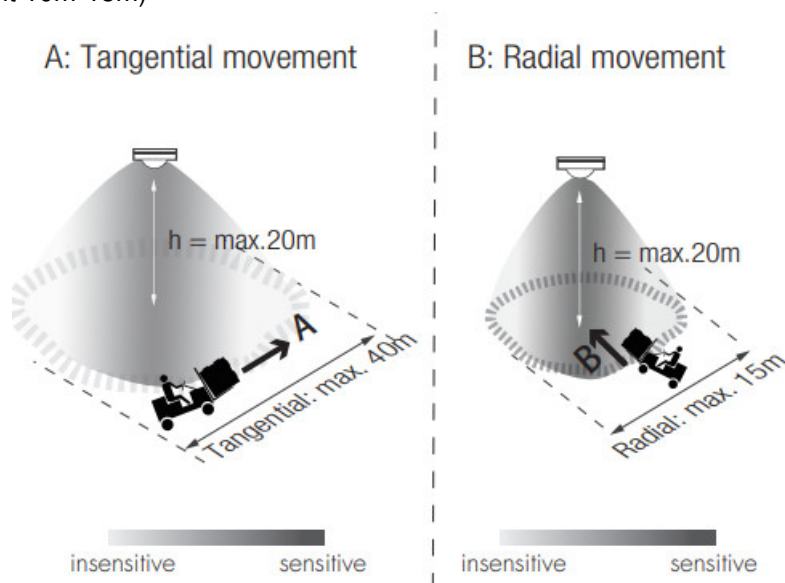
Blind Option 2 --- 180º Detection

5. HBIR32/RH (Reinforced High-bay with 3-Pyro)

HBIR32/RH: Reinforced high-bay lens detection pattern for forklift @ Ta = 20ºC (Recommended ceiling mount installation height 10m-15m)


A: Tangential movement

B: Radial movement

h = max.20m

Tangential: max. 40m

h = max.20m

Radial: max. 15m

insensitive — sensitive

insensitive — sensitive

Mount height	Tangential (A)	Radial (B)
10m	max 346m2 (Ø = 21m)	max 177m2 (Ø = 15m)
11m	max 660m2 (Ø = 29m)	max 177m2 (Ø = 15m)
12m	max 907m2 (Ø = 34m)	max 154m2 (Ø = 14m)
13m	max 962m2 (Ø = 35m)	max 154m2 (Ø = 14m)
14m	max 1075m2 (Ø = 37m)	max 113m2 (Ø = 12m)
15m	max 1256m2 (Ø = 40m)	max 113m2 (Ø = 12m)
20m	max 707m2 (Ø = 30m)	max 113m2 (Ø = 12m)

HBIR32/RH: Reinforced high-bay lens detection pattern for single person @ Ta = 20OC
(Recommended ceiling mount installation height 2.5m-12m)
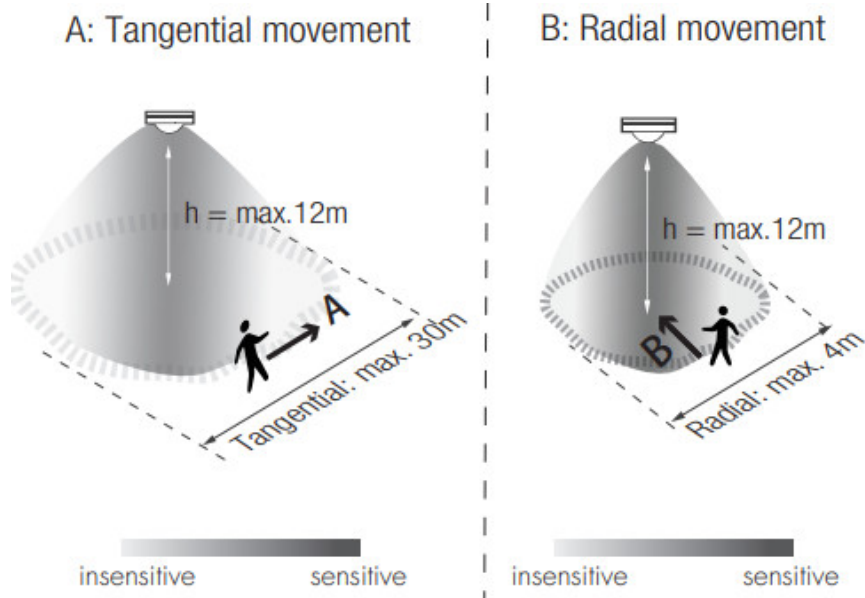
Mount height	Tangential (A)	Radial (B)
2.5m	max 38m2 (Ø = 7m)	max 7m2 (Ø = 3m)
6m	max 154m2 (Ø = 14m)	max 7m2 (Ø = 3m)
8m	max 314m2 (Ø = 20m)	max 7m2 (Ø = 3m)
10m	max 531m2 (Ø = 26m)	max 13m2 (Ø = 4m)
11m	max 615m2 (Ø = 28m)	max 13m2 (Ø = 4m)
12m	max 707m2 (Ø = 30m)	max 13m2 (Ø = 4m)
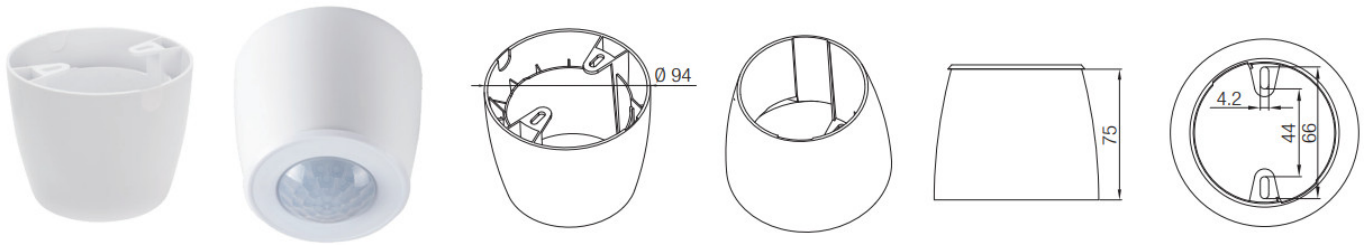
Additional Information / Documents

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

2. 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

3. 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

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

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Documents / Resources

	HYTRONIK HIR32 Series PIR Standalone Motion Sensor [pdf] Installation Guide HBIR32, HBIR32-R, HBIR32-W, HBIR32-H, HBIR32-RH, HIR32 Series PIR Standalone Motion Sensor, HIR32 Series Motion Sensor, PIR Standalone Motion Sensor, Standalone Motion Sensor, PIR Motion Sensor, HIR32 Series PIR Standalone Motion Sensor with Bluetooth 5.0 SIG Mesh

References

- Ⓦ **Microwave sensor_Microwave motion sensor_Hytronik Electronics Co., Ltd.**
- Ⓦ **Catalogue_Hytronik**
- **iot.koolmesh.com**