

# Installation and Instruction Manual

**HYTRONIK**®

## PIR Standalone Motion Sensor with Bluetooth® 5.0 SIG Mesh

One DALI Channel Output

HBIR31/R

### 1. Technical Specifications

Operation frequency	2,4 GHz - 2,483 GHz
Transmission power	4 dBm
Range (Typical indoor)	10~30m
Protocol	Bluetooth® 5.0 SIG Mesh
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
Switched power	Max. 80mA
Warming-up	20s
Sensor principle	PIR detection
Detection range (Max.)*	Installation Height : 6m Detection Range (Ø) : 10m
Sensitivity	10% / 30% / 50% / 75% / 100%
Detection angle	360°
Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP20 / IP54

### 2. Download the App

Free App for set-up and commissioning

#### Bluetooth® 5.0 SIG mesh



Smartphone app for both iOS & Android platform



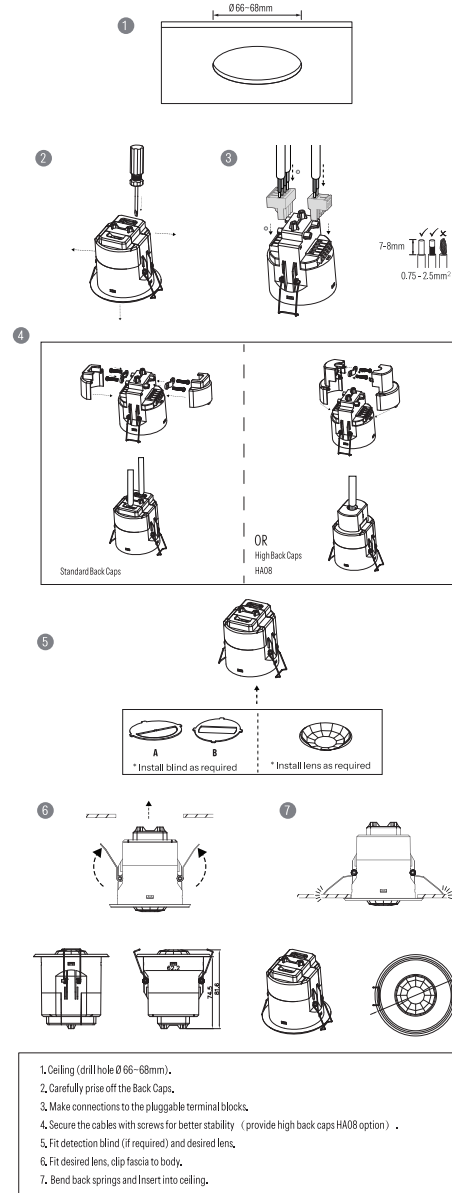
Koolmesh Pro app for iPad



Web app/platform: [www.iot.koolmesh.com](http://www.iot.koolmesh.com)

### 3. Installation

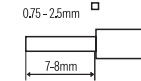
Mechanical Structure & Dimensions



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HBIR31/R-20230726-A1

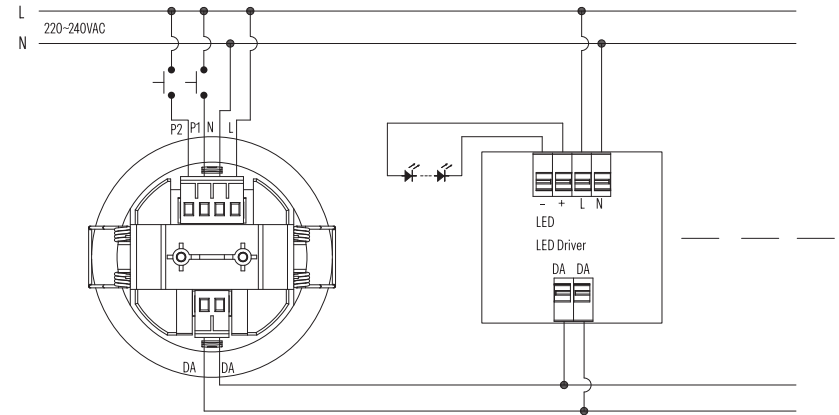
### Wire Preparation



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)

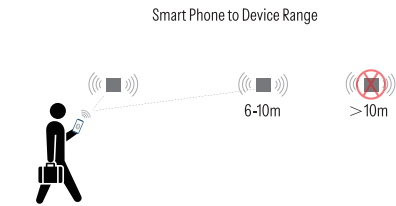
### Wiring Diagram



—This product should be installed by a qualified electrician.

### 4. Detection Pattern & Optional Accessories

#### Placement Guide and Typical Range



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.

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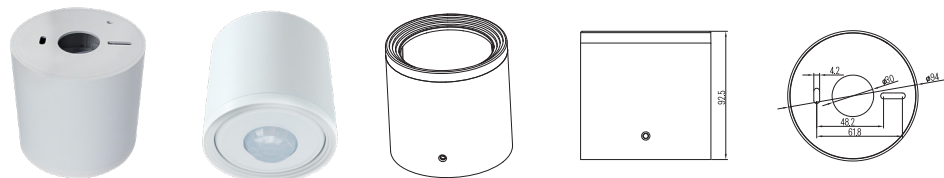
## HBIR31/R (Reinforced Low-bay)



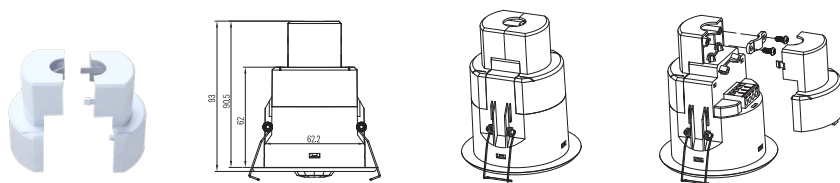
**HBIR31/R:** Low-bay convex lens detection pattern for **single person** @  $T_a = 20^\circ\text{C}$   
(Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 79m <sup>2</sup> (Ø = 10m)	max 20m <sup>2</sup> (Ø = 5m)
		3m	max 79m <sup>2</sup> (Ø = 10m)	max 20m <sup>2</sup> (Ø = 5m)
		4m	max 64m <sup>2</sup> (Ø = 9m)	max 20m <sup>2</sup> (Ø = 5m)
		5m	max 50m <sup>2</sup> (Ø = 8m)	max 20m <sup>2</sup> (Ø = 5m)
		6m	max 50m <sup>2</sup> (Ø = 8m)	max 20m <sup>2</sup> (Ø = 5m)

Optional Accessory --- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G

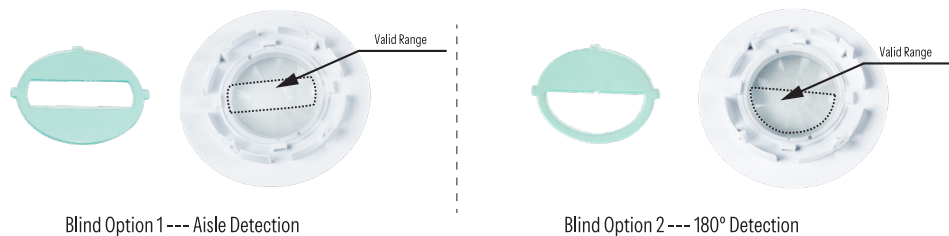


Optional Accessory --- HA08



\*Note: Optional Accessory HA09 & HA08 can not be used together.

Optional Accessory --- Blind Insert for Blocking Certain Detection Angles

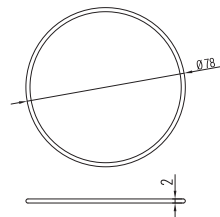


Blind Option 1 --- Aisle Detection

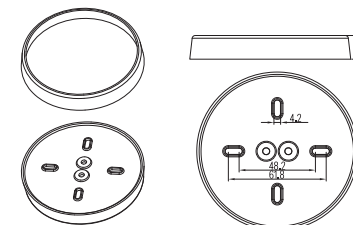
Blind Option 2 --- 180° Detection

Big and small silicon gasket used to make IP54 degree protection (mounted into HA09 housing for ceiling mount)

Small silicon water-proof gasket dimension (size:mm)



Big silicon water-proof gasket dimension (size:mm)



## 5. 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.	<ul style="list-style-type: none"> <li>- Turn on/off</li> <li>- Turn on only</li> <li>- Turn off only</li> </ul> <ul style="list-style-type: none"> <li>- Recall a scene</li> <li>- Quit manual mode</li> <li>- Do nothing</li> </ul>
	Double push	<ul style="list-style-type: none"> <li>- Turn on only</li> <li>- Turn off only</li> <li>- Recall a scene</li> </ul> <ul style="list-style-type: none"> <li>- Quit manual mode</li> <li>- Do nothing</li> </ul>
	Long press (≥1 second)	<ul style="list-style-type: none"> <li>- Dimming</li> <li>- Colour tuning</li> <li>- Do nothing</li> </ul>
Sensor-link (VFC signal only)	/	<ul style="list-style-type: none"> <li>- Upgrade a normal on/off motion sensor to a Bluetooth controlled motion sensor</li> </ul>
Emergency Self-Test Function	Short press (<1 second) * Short press has to be longer than 0.1s, or it will be invalid.	<ul style="list-style-type: none"> <li>- Start Self test (Monthly)</li> <li>- Stop Self test</li> </ul> <ul style="list-style-type: none"> <li>- Start Self test (Annually)</li> <li>- Invalid</li> </ul>
	Long press (≥1 second)	<ul style="list-style-type: none"> <li>- Start Self test (Monthly)</li> <li>- Stop Self test</li> </ul> <ul style="list-style-type: none"> <li>- Start Self test (Annually)</li> <li>- Invalid</li> </ul>
Fire Alarm (VFC signal only)	Refer to <b>Koolmesh</b> ® App User Manual V2.1	<ul style="list-style-type: none"> <li>- Able to connect the Fire Alarm system</li> <li>- 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.</li> </ul>

## 6. Additional Information / Documents

- To learn more about detailed product features/functions, please refer to [www.hytronik.com/download](http://www.hytronik.com/download) → knowledge → Introduction of App Scenes and Product Functions
- Regarding precautions for Bluetooth product installation and operation, please kindly refer to [www.hytronik.com](http://www.hytronik.com) → download/knowledge → Bluetooth Products - Precautions for Product Installation and Operation
- Data sheet is subject to change without notice. Please always refer to the most recent release on [www.hytronik.com/products/bluetooth-technology](http://www.hytronik.com/products/bluetooth-technology) → Bluetooth Sensors
- Regarding Hytronik standard guarantee policy, please refer to [www.hytronik.com/download](http://www.hytronik.com/download) → knowledge → Hytronik Standard Guarantee Policy