


























## Product Description

HBIR29/AA is a Bluetooth PIR standalone motion sensor, with one DALI channel output (90mA DALI power supply built-in). It is designed with a metal surface mount box and the detection angle is adjustable by needs. It is ideal for typical indoor applications such as offices, classrooms, healthcare, and other commercial areas (corridors and warehouses). With Bluetooth wireless mesh networking, it makes communication between luminaires much easier without time-consuming hardwiring, which eventually saves costs for projects (especially for retrofit upgrade projects!). All simple device setup and commissioning can be done via **Koolmesh®** app.









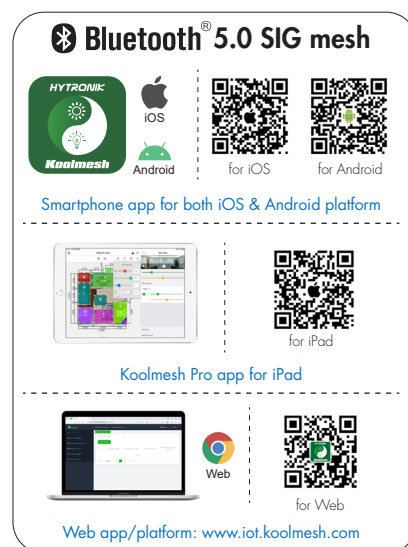
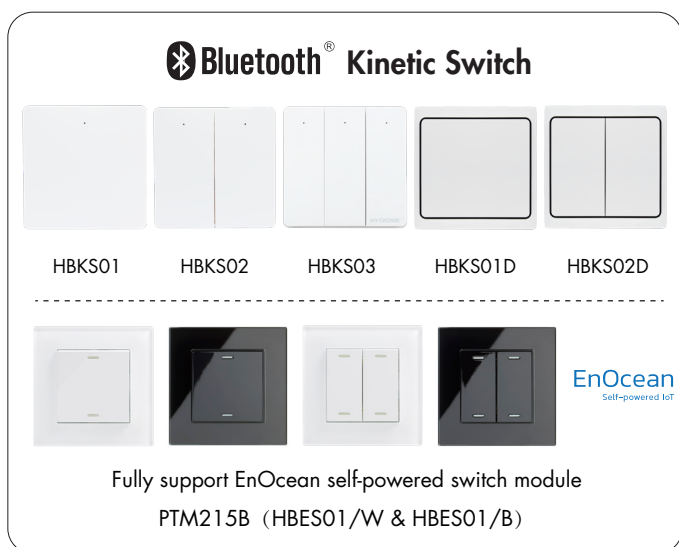
## App Features

-  Quick setup mode & advanced setup mode
-  Web app/platform for project deployment & data analysis
-  Koolmesh Pro app on iPad for on-site configuration
-  Floorplan feature to simplify project planning
-  coming soon
-  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
-  Circadian rhythm (Human centric lighting)
-  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

-  DALI bus power supply  
I guaranteed: 60mA  
I max: 90mA  
U rated: 1.5VDC
-  Support to control DT8 LED drivers
-  1 Push inputs for flexible manual control
-  Black & White & Gray metal surface mount box option
-  User-friendly design for installation
-  5-year warranty



## Technical Specifications

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

Sensor Data	
Sensor Model	PIR detection
Ceiling-mounted Detection Range	Installation Height : 3m Max. Detection Range (∅) : 12m
	Installation Height : 6m Max. Detection Range(∅) : 13m
Wall-mounted Detection Range	Installation Height : 2.5m Max. Detection Range(∅) : 16m
Detection angle	360°

\* For more details of detection range, please refer to "detection pattern" section.

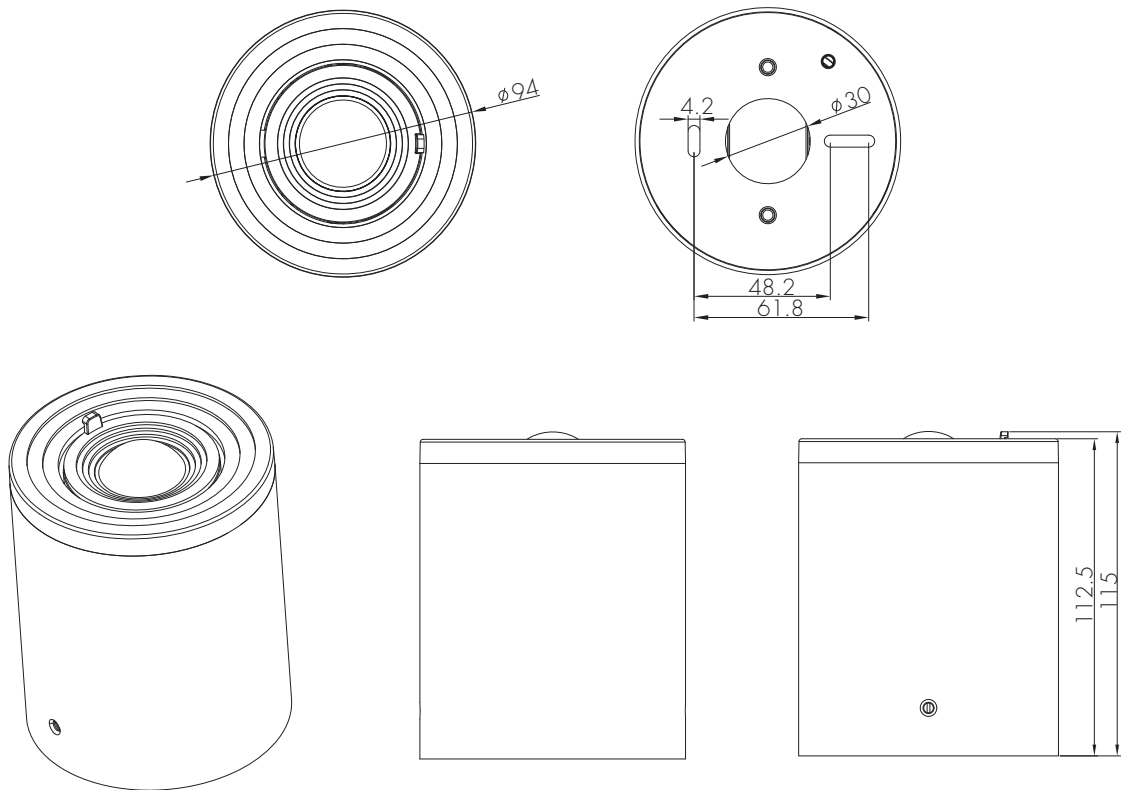
Environment	
Operation temperature	Ta: -15°C ~ +45°C
Storage temperature	-40°C ~ +70°C
Relative humidity	20~90%
IP rating	IP20

Input & Output Characteristics	
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
DALI Input voltage	9.5~22.5V

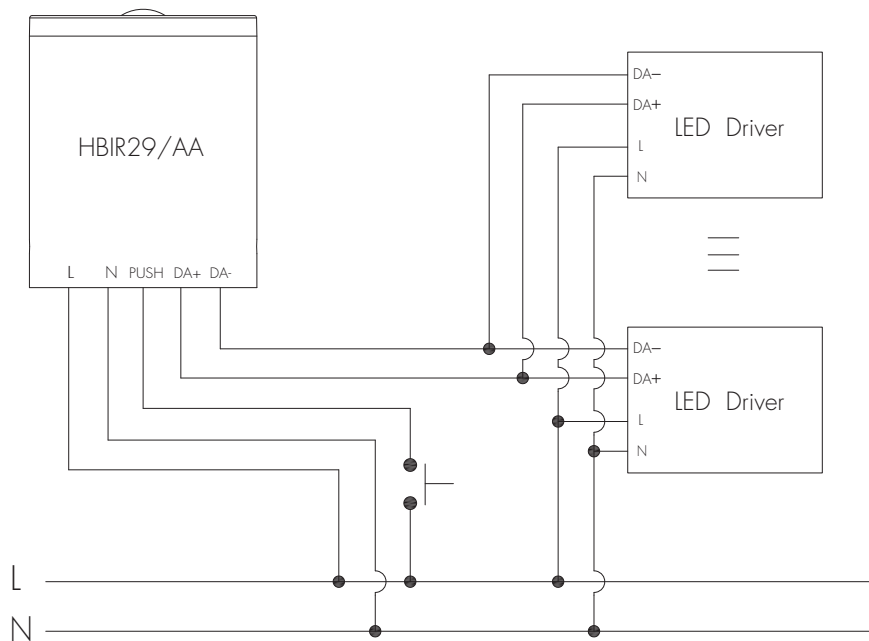
DALI Bus Power Supply	
I guaranteed	60mA
I max	90mA
U rated	15VDC

Safety & EMC	
EMC standard (EMC)	EN55015, EN61000-3-2/-3-3, EN61547
Safety standard (LVD)	EN60669-1, EN60669-2-1
RED	EN300328, EN301489-1/-17, EN50663
Certification	CE, UKCA, RED, RCM

## Mechanical Structure & Dimensions



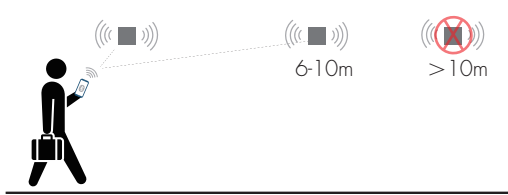
## Wiring Diagram



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

# Placement Guide and Typical Range

Smart Phone to Device Range



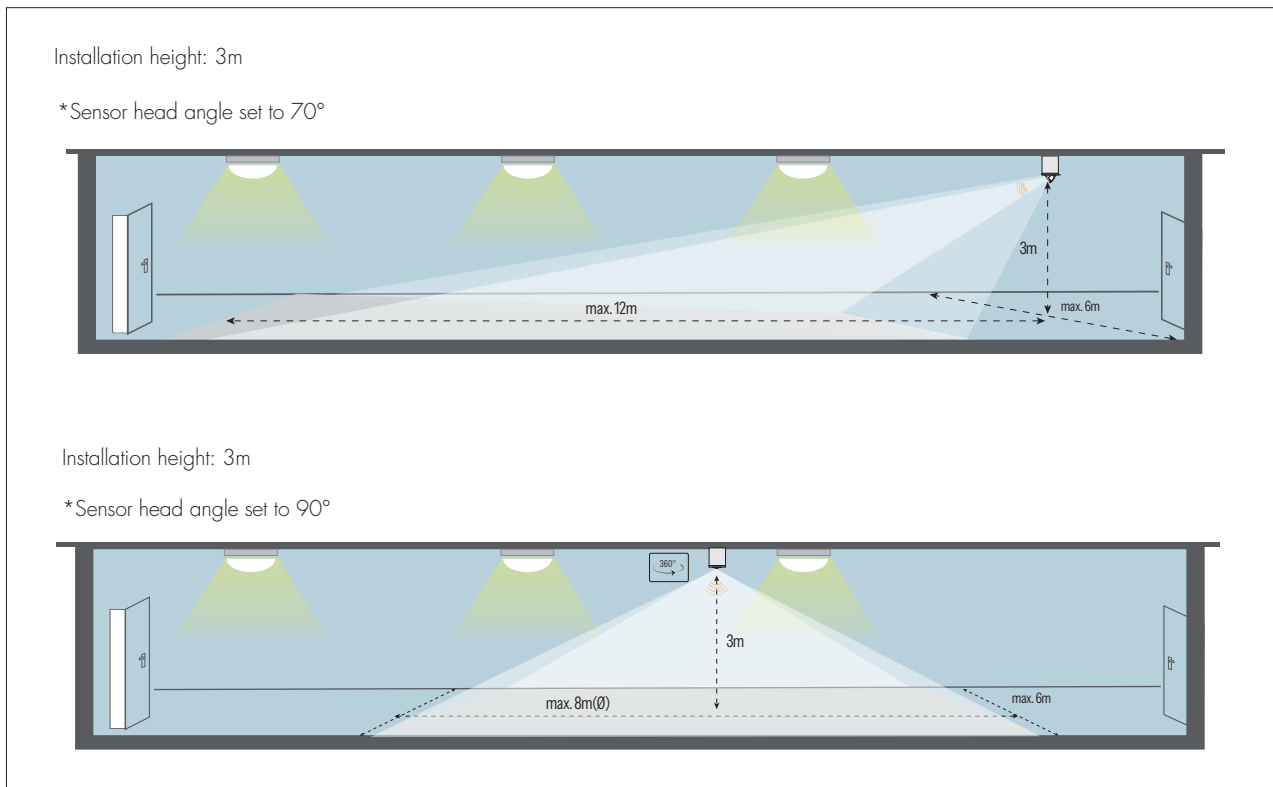
The smart device with the App installed will have a typical range of 10m, but varies from device to device. During commissioning, the installer will need to be in range of the devices when searching for devices to add to the network.

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.

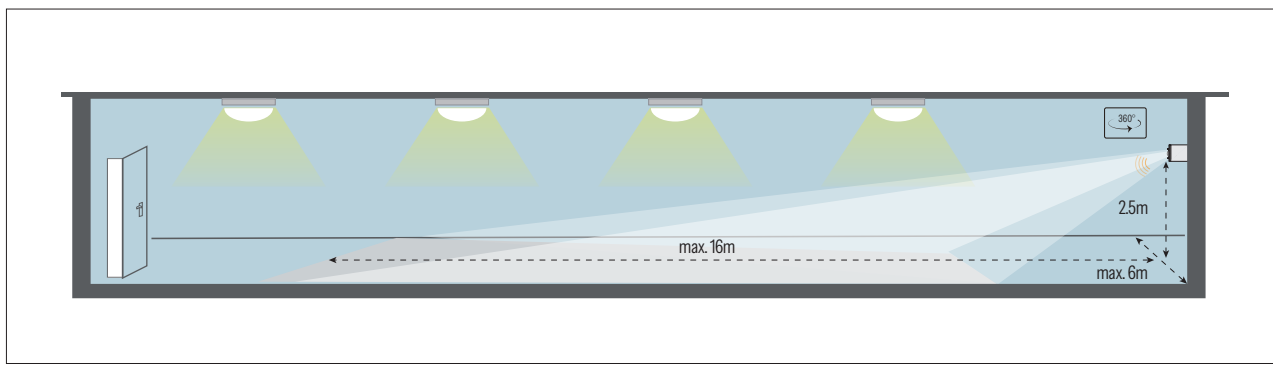
## Detection pattern

\*Sensitivity set to maximum

### Ceiling-mounted application



### Wall-mounted application



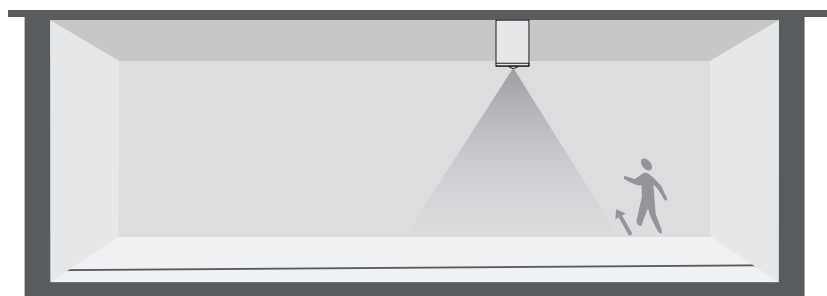
The installation data conduct by following testing conditions:

1. Environmental humidity: 88.5%;
2. Single person walking;
3. Sensor not connected to any driver that may have soft-on period;
4. Testing temperature  $T_a = 29.6^{\circ}\text{C}$ ;
5. The testing is conducted in an open and spacious indoor field, without noticeable obstacles or influences that may affect PIR performances.

Application	Angle	Height	Tangential/Radial	Detection Range
Ceiling-mounted	90°	3m	Tangential	8m(Ø)
			Radial	2m(Ø)
	70°	3m	Tangential	12m
			Radial	3m
	90°	6m	Tangential	14m(Ø)
			Radial	5m(Ø)
70°	6m	Tangential	13m	
		Radial	8m	
Wall-mounted	90°	2.5m	Tangential	16m(Ø)
			Radial	3m(Ø)

Note: The unit of 90 degree detection data is diameter.

### Ceiling-mounted application



### Wall-mounted application



## 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.	- Turn on/off - Turn on only - Turn off only - Recall a scene - Quit manual mode - Do nothing
	Double push	- Turn on only - Turn off only - Recall a scene - Quit manual mode - Do nothing
	Long press (≥1 second)	- Dimming - Colour tuning - Do nothing
Sensorlink	/	- 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) - Stop Self test - Start Self test (Annually) - Invalid
	Long press (≥1 second)	- Start Self test (Monthly) - Stop Self test - Start Self test (Annually) - Invalid
Fire Alarm (VFC signal only)	Refer to <b>Koolmesh</b> ® 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.

## Additional Information / Documents

- To learn more about detailed product features/functions, please refer to [www.hytronik.com/download ->knowledge ->Introduction of App Scenes and Product Functions](http://www.hytronik.com/download->knowledge->Introduction%20of%20App%20Scenes%20and%20Product%20Functions)
- 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](http://www.hytronik.com/download->knowledge->Bluetooth%20Products%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
- 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](http://www.hytronik.com/download->knowledge->PIR%20Sensors%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
- 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](http://www.hytronik.com/products/bluetooth%20technology->Bluetooth%20Sensors)
- Regarding Hytronik standard guarantee policy, please refer to [www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy](http://www.hytronik.com/download->knowledge->Hytronik%20Standard%20Guarantee%20Policy)