HYTRONIK HBIR29 PIR Standalone Motion Sensor with Mesh Owner's Manual

HBIR29 PIR Standalone Motion Sensor with Mesh
Owner's Manual

Contents

HBIR29 PIR Standalone Motion Sensor with Mesh

PIR Standalone Motion Sensor with Bluetooth Mesh

HBIR29/SV	Low-bay
HBIR29/SV/R	Reinforced Low-bay
HBIR29/SV/H	High-bay
HBIR29/SV/RH	Reinforced High-bay

Product Description

HBIR29/SV is a Bluetooth PIR standalone motion sensor with 80mA DALI power supply built in, which can control up to 40 LED drivers. It is ideal for typical indoor applications such as ofce, classroom, healthcare and other commercial areas.
Meanwhile, all commissioning and settings can be done via SILVAIR app.

Functions and Features

- Bluetooth® mesh compliant
- 80mA DALI broadcast output for up to 40 LED drivers
- Surface mount kit available as accessory
- PIR occupancy detection with 2 types of blind inserts / blanking plates
- Daylight harvesting
  (Note: The component may not be suitable for daylight harvesting usage due to not being precise in lux measurements. Please only use daylight harvesting feature if user conducted eld tests and accepts the the tolerance level.)
- Scene control, Task tuning (0-100%)
- Compact form factor
- Works with DALI LED drivers
- Autonomous sensor-based control
- OTA firmware upgrade
- Continuous dimming
- Individual/group addressing
- Decentralized control (no single point of failure)
- User-friendly design for installation
- High bay version available (up to 15m in height)
- 5-years warranty

Technical Specifications

Bluetooth Transceiver	
Operation frequency	2.4 GHz – 2.483 GHz
Transmission power	4 dBm
Range (Typical indoor)	10~30m
Protocol	Bluetooth® Mesh

	HBIR29/SV
	HBIR29/SV/R
	HBIR29/SV/H
	HBIR29/SV/RH (3-pyro)

EnOcean
Self-powered IoT

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

Download on the APP Store

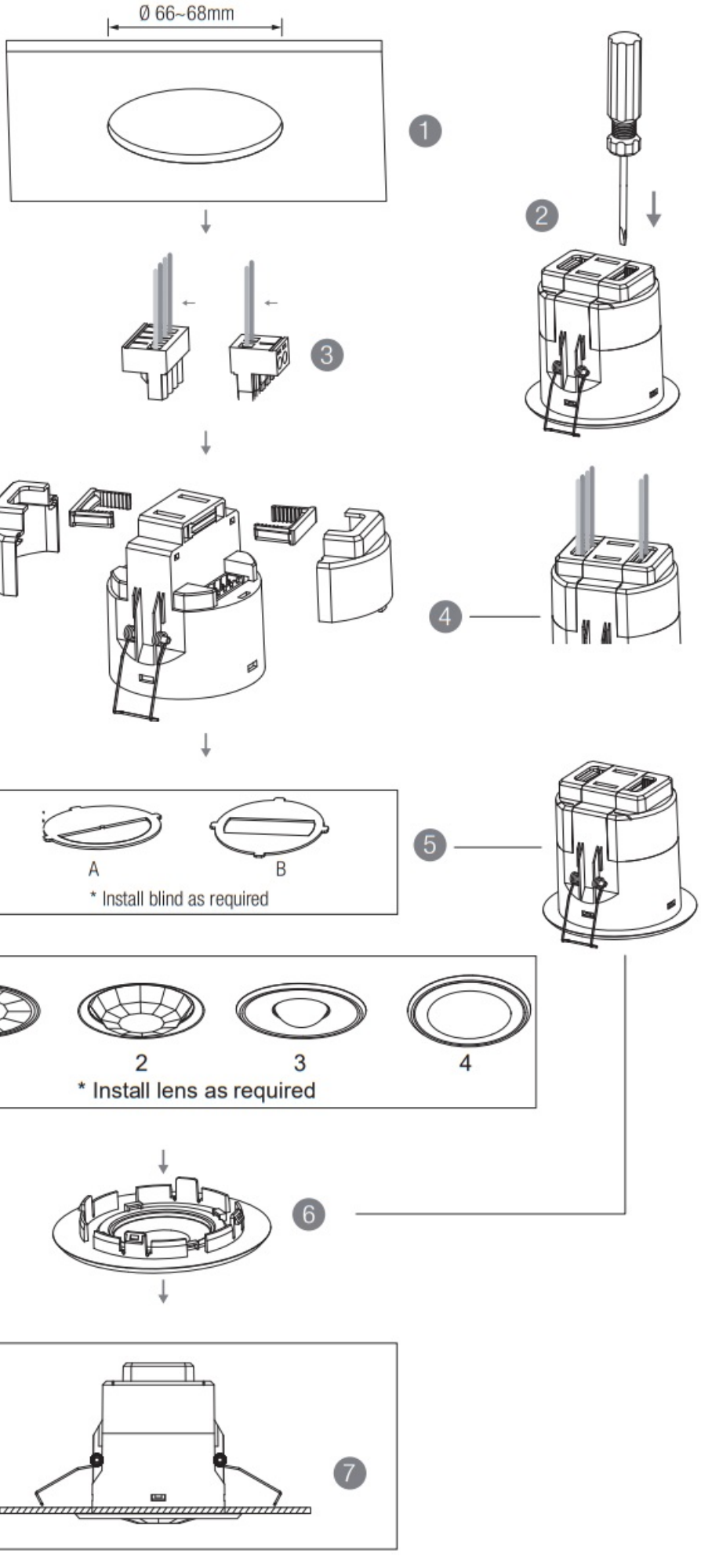
The access to Silvair apps mobile app: Silvair on the App Store web app: platform.silvair.com

Input & Output Characteristics	
Operating voltage	220~240VAC 50/60Hz
Max input current	10mA
Stand-by power	<0.65W (Empty load)
Switched power	Max. 40 devices, 80mA
Warming-up	5s
Tc max	60° C
Lux range	1-1,000lux Tolerance +/– 20%

Sensor Data	
Sensor Model	PIR detection
HBIR29/SV	Installation Height : 6m Detection Range(Ø) :9m
HBIR29/SV/R	Installation Height : 6m Detection Range(Ø) :10m
HBIR29/SV/H	Installation height 15m (forklift) 12m (person) Detection range (Ø) 24m
HBIR29/SV/RH	Installation height 20m (forklift) 12m (person) Detection range (Ø) 40m
Detection angle	360°
Standard compliance	EN300328, EN301489-1, EN301489-17, EN62479, EN55015, EN61547, EN60669-1, EN60669-2-1, EN62493

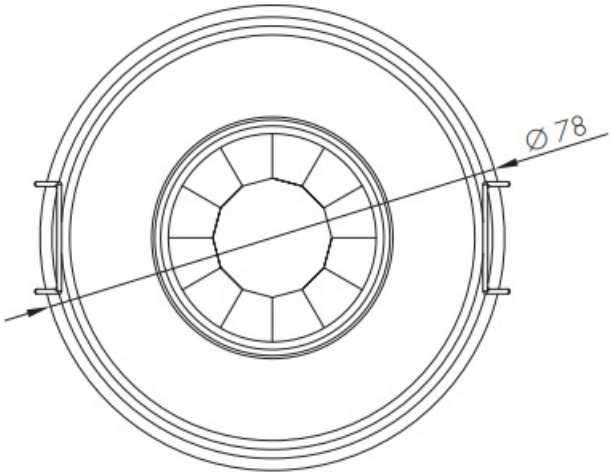
* For more details of detection range, please refer to “detection pattern” section.

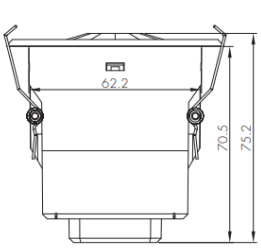
Mechanical Structure & Dimensions


Ø 66~68mm
1
2
3
4
5
A
B
* Install blind as required
1
2
3
4
* Install lens as required
6
7

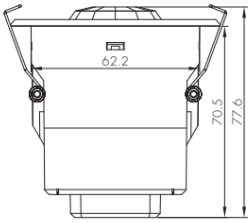
Environment	
Operation temperature	Ta: –20°C ~ +50°C
Operation humidity (RH%)	10%~90% (Non-condensing)
Storage temperature (°C)	–40 °C~+70 °C
Storage humidity (RH%)	10%~90% (Non-condensing)
IP rating	IP20

1. Ceiling (drill hole Ø 66~68mm)
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.

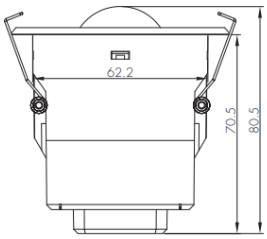




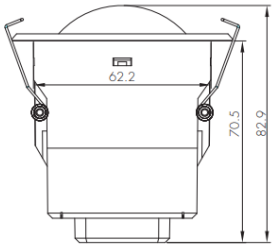
HBIR29/SV



HBIR29/SV/R

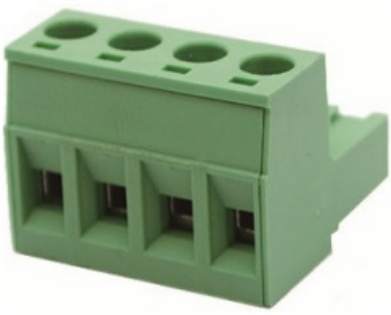


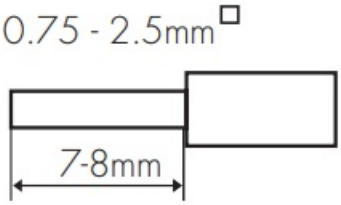
HBIR29/SV/H



HBIR29/SV/RH

Wire Preparation

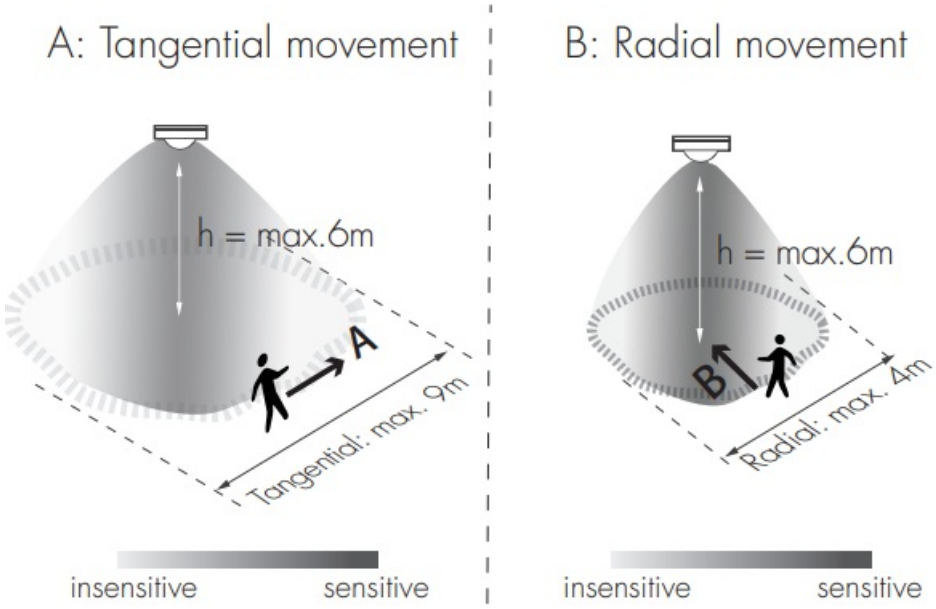




Pluggable screw terminal. It is recommended to make connections to the terminal before tting to the sensor.

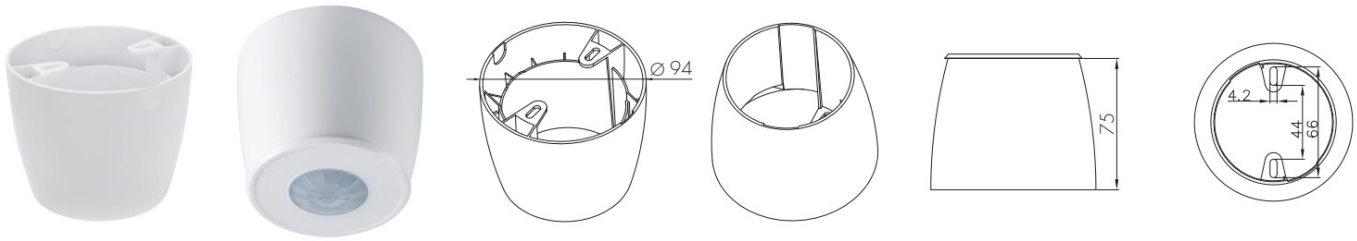
Detection Pattern & Optional Accessories

1. HBIR29/SV (Low-bay)
 HBIR29/SV: Low-bay at lens detection pattern for single person @ Ta = 20°C (Recommended ceiling mount installation height 2.5m-6m)

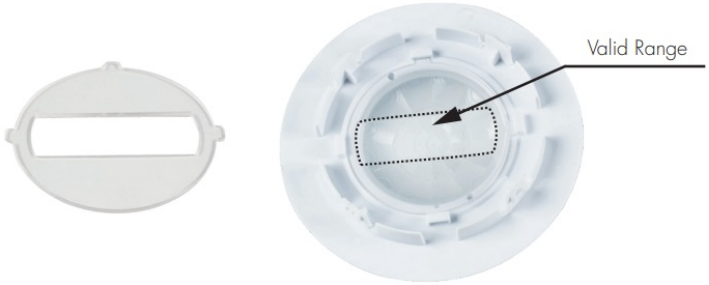


Mount height	Tangential (A)	Radial (B)
2.5m	max 50m2 (Ø = 8m)	max 13m2 (Ø = 4m)
3m	max 64m2 (Ø = 9m)	max 13m2 (Ø = 4m)
4m	max 38m2 (Ø = 7m)	max 13m2 (Ø = 4m)
5m	max 38m2 (Ø = 7m)	max 13m2 (Ø = 4m)
6m	max 38m2 (Ø = 7m)	max 13m2 (Ø = 4m)

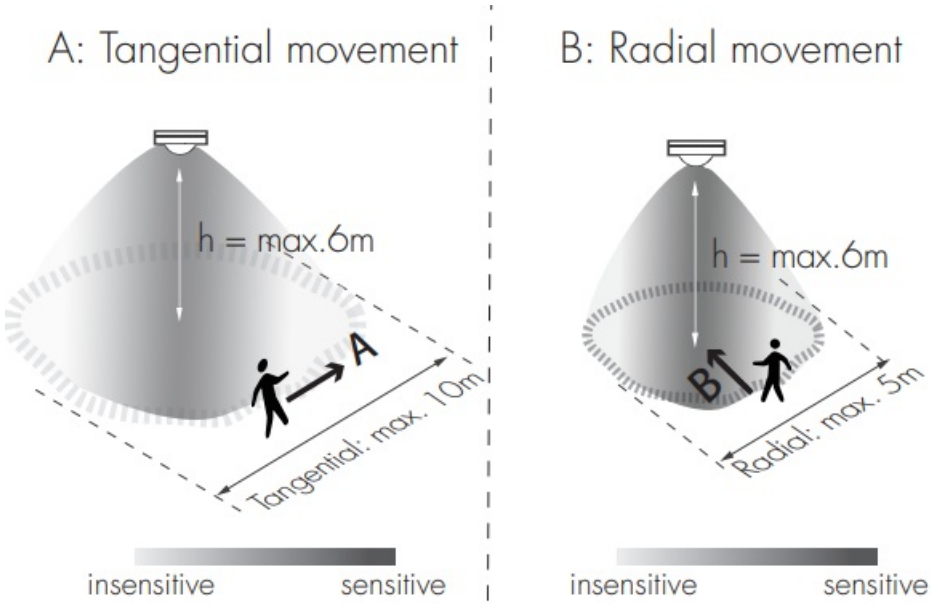
Optional Accessory — Ceiling/Surface Mount Box: HA03



Optional Accessory — Blind Insert for Blocking Certain Detection Angles

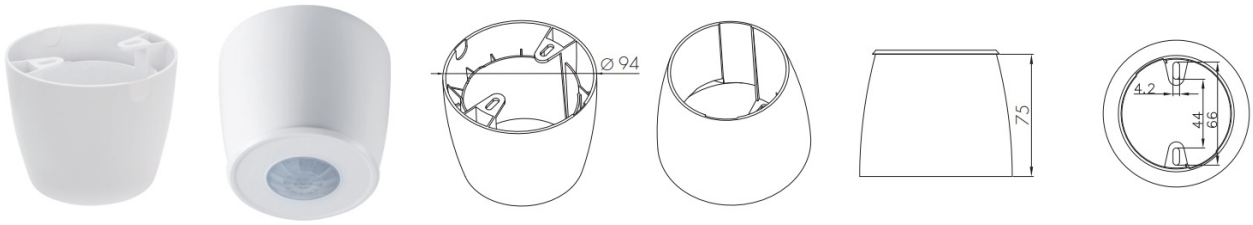
	Blind Option 1 — Aisle Detection
	Blind Option 2 — 180° Detection

2. HBIR29/SV/R (Reinforced Low-bay)
 HBIR29/SV/R: Low-bay convex lens detection pattern for single person @ Ta = 20°C (Recommended ceiling mount installation height 2.5m-6m)

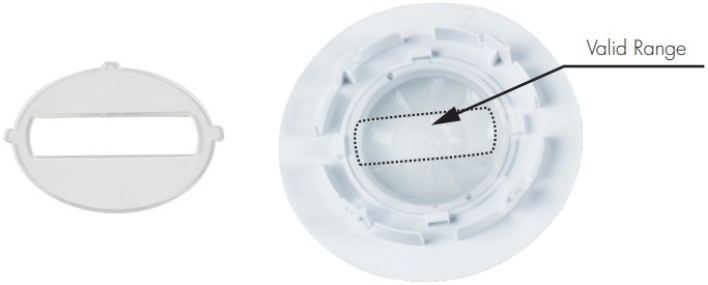


Mount height	Tangential (A)	Radial (B)
2.5m	max 79m2 (Ø = 10m)	max 20m2 (Ø = 5m)
3m	max 79m2 (Ø = 10m)	max 20m2 (Ø = 5m)
4m	max 64m2 (Ø = 9m)	max 20m2 (Ø = 5m)
5m	max 50m2 (Ø = 8m)	max 20m2 (Ø = 5m)
6m	max 50m2 (Ø = 8m)	max 20m2 (Ø = 5m)

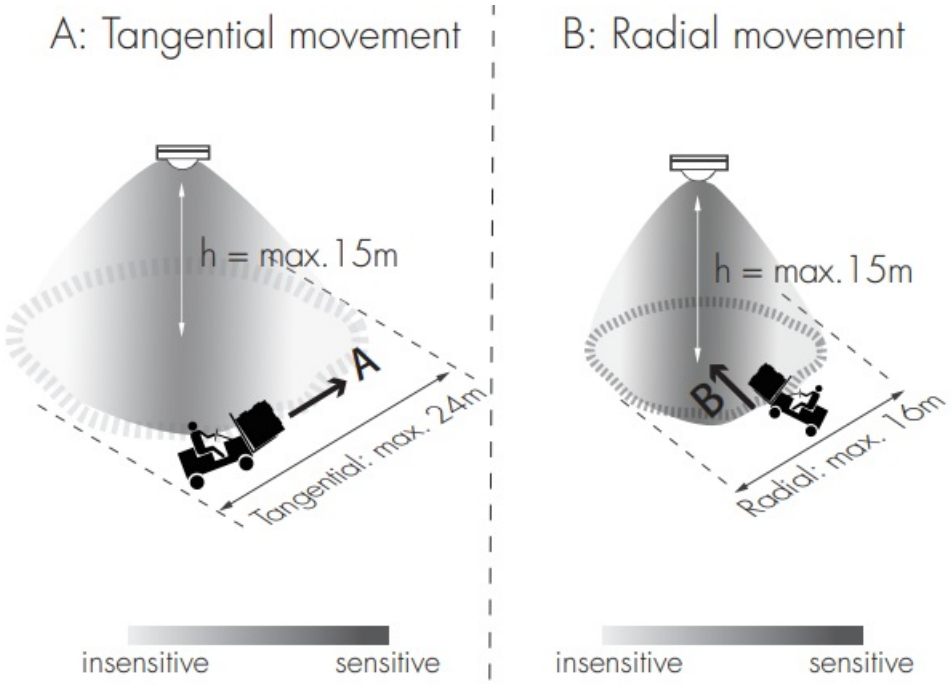
Optional Accessory — Ceiling/Surface Mount Box: HA03



Optional Accessory — Blind Insert for Blocking Certain Detection Angles

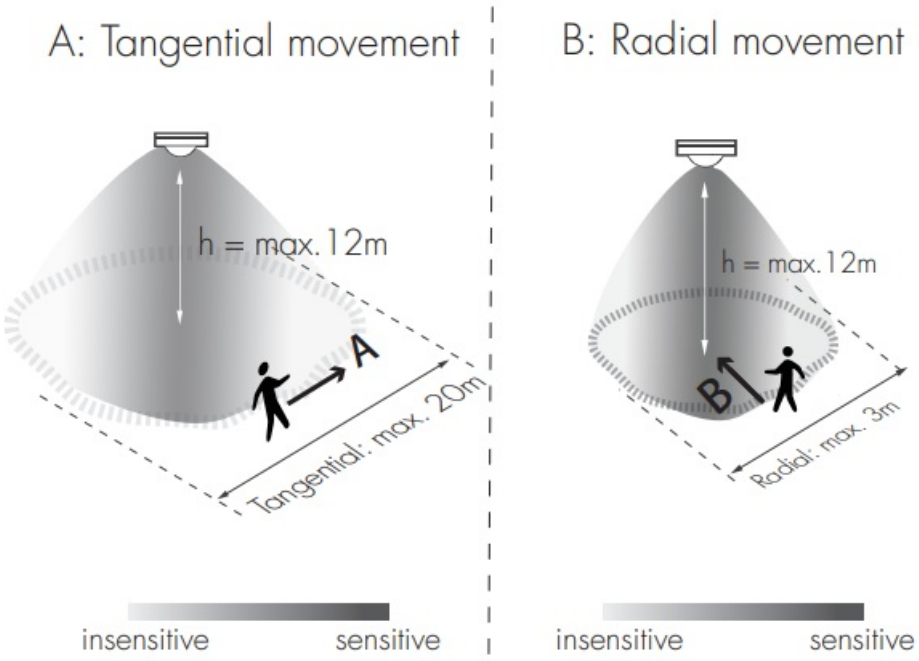
	Blind Option 1 — Aisle De tection
	Blind Option 2 — 180° De tection

3. HBIR29/SV/H (High-bay)
HBIR29/SV/H: High-bay lens detection pattern for forklift @ Ta = 20°C (Recommended ceiling mount installation height 10m-15m)



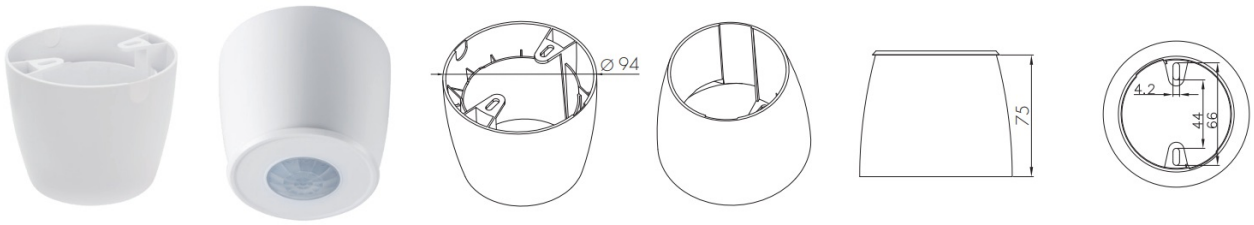
Mount height	Tangential (A)	Radial (B)
10m	max 380m2 (Ø = 22m)	max 201m2 (Ø = 16m)
11m	max 452m2 (Ø = 24m)	max 201m2 (Ø = 16m)
12m	max 452m2 (Ø = 24m)	max 201m2 (Ø = 16m)
13m	max 452m2 (Ø = 24m)	max 177m2 (Ø = 15m)
14m	max 452m2 (Ø = 24m)	max 133m2 (Ø = 13m)
15m	max 452m2 (Ø = 24m)	max 113m2 (Ø = 12m)

HBIR29/SV/H: High-bay lens detection pattern for single person @ Ta = 20°C (Recommended ceiling mount installation height 2.5m-12m)

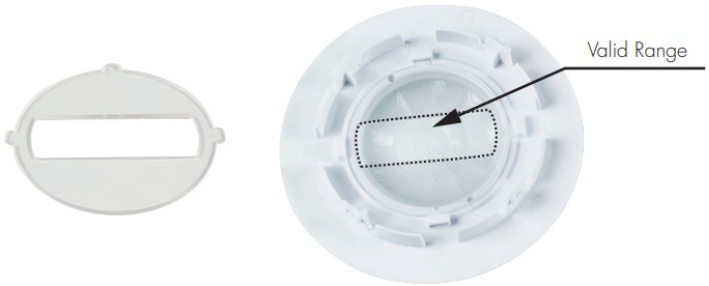


Mount height	Tangential (A)	Radial (B)
2.5m	max 50m2 (Ø = 8m)	max 7m2 (Ø = 3m)
6m	max 104m2 (Ø = 11.5m)	max 7m2 (Ø = 3m)
8m	max 154m2 (Ø = 14m)	max 7m2 (Ø = 3m)
10m	max 227m2 (Ø = 17m)	max 7m2 (Ø = 3m)
11m	max 269m2 (Ø = 18.5m)	max 7m2 (Ø = 3m)
12m	max 314m2 (Ø = 20m)	max 7m2 (Ø = 3m)

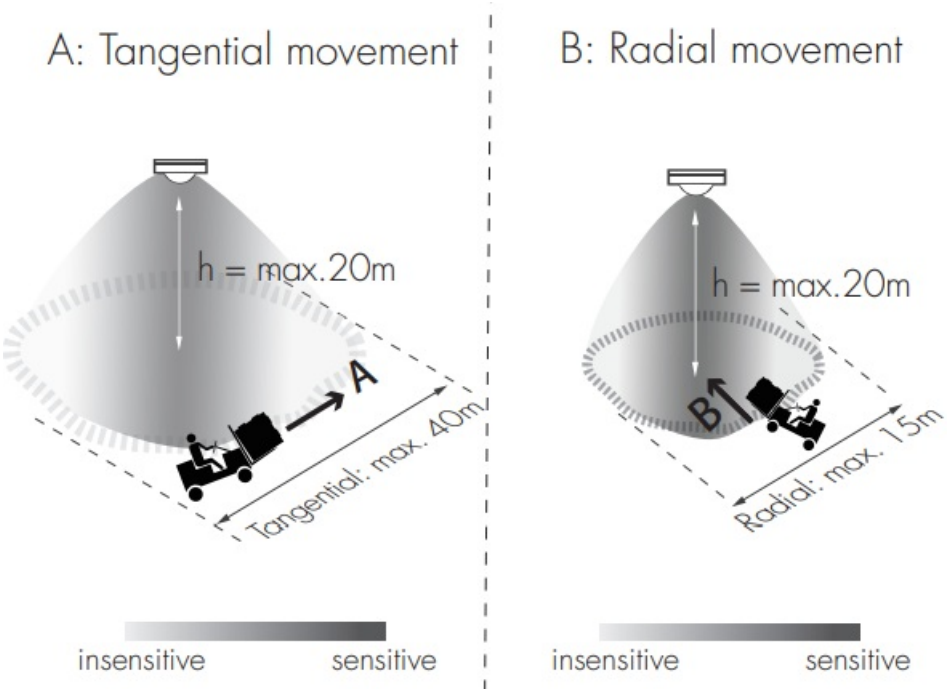
Optional Accessory — Ceiling/Surface Mount Box: HA03



Optional Accessory — Blind Insert for Blocking Certain Detection Angles

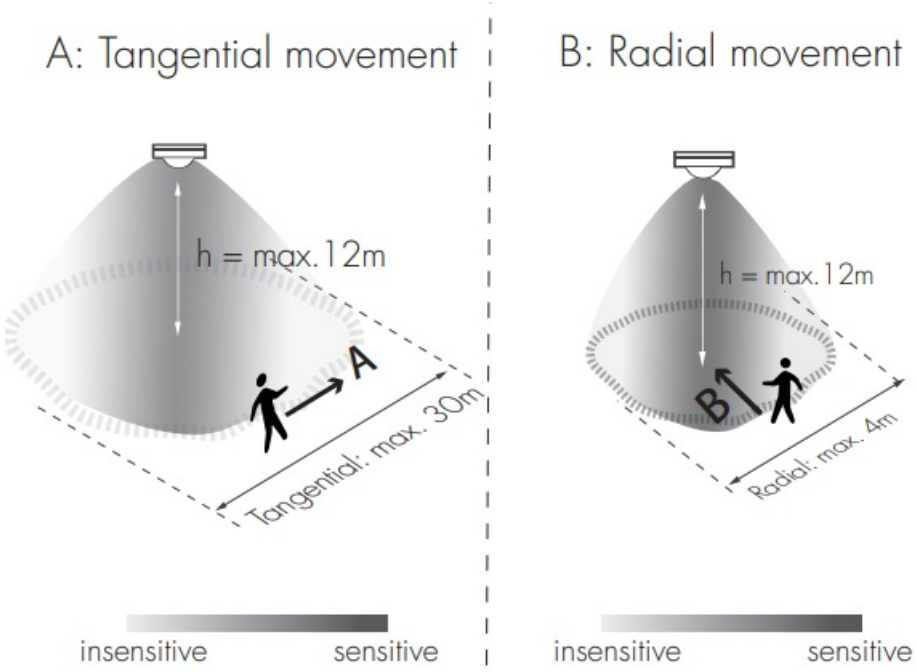
	Blind Option 1 — Aisle Detection
	Blind Option 2 — 180° Detection

4. HBIR29/SV/RH (Reinforced High-bay with 3-Pyro)
 HBIR29/SV/RH: Reinforced high-bay lens detection pattern for forklift @ Ta = 20°C (Recommended ceiling mount installation height 10m-20m)



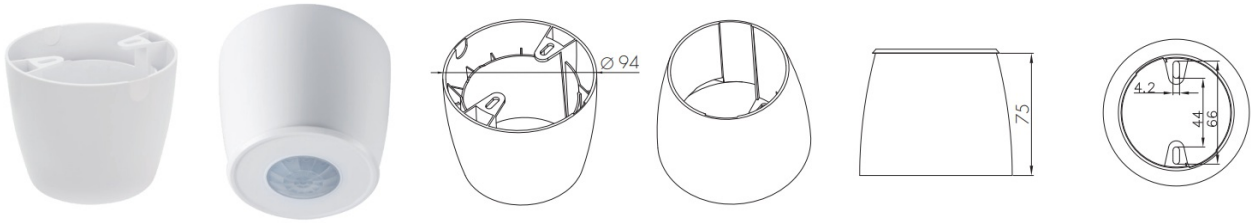
Mount height	Tangential (A)	Radial (B)
10m	max 346m2 (Ø = 21m)	max 177m2 (Ø = 15m)
11m	max 660m2 (Ø = 29m)	max 177m2 (Ø = 15m)
12m	max 907m2 (Ø = 34m)	max 154m2 (Ø = 14m)
13m	max 962m2 (Ø = 35m)	max 154m2 (Ø = 14m)
14m	max 1075m2 (Ø = 37m)	max 113m2 (Ø = 12m)
15m	max 1256m2 (Ø = 40m)	max 113m2 (Ø = 12m)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

HBIR29/SV/RH: Reinforced high-bay lens detection pattern for single person @ Ta = 20°C (Recommended ceiling mount installation height 2.5m-12m)

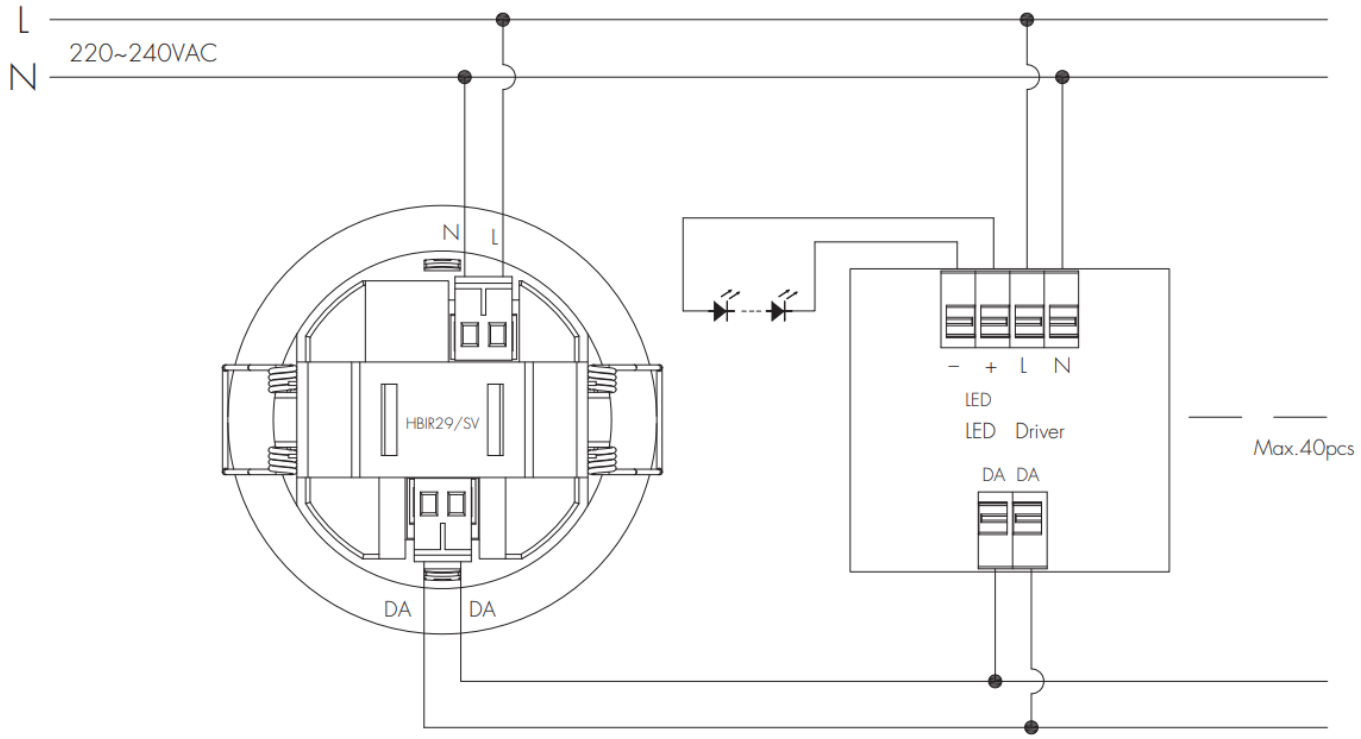


Mount height	Tangential (A)	Radial (B)
2.5m	max 38m2 (Ø = 7m)	max 7m2 (Ø = 3m)
6m	max 154m2 (Ø = 14m)	max 7m2 (Ø = 3m)
8m	max 314m2 (Ø = 20m)	max 7m2 (Ø = 3m)
10m	max 531m2 (Ø = 26m)	max 13m2 (Ø = 4m)
11m	max 615m2 (Ø = 28m)	max 13m2 (Ø = 4m)
12m	max 707m2 (Ø = 30m)	max 13m2 (Ø = 4m)

Optional Accessory — Ceiling/Surface Mount Box: HA03



Wiring Diagram

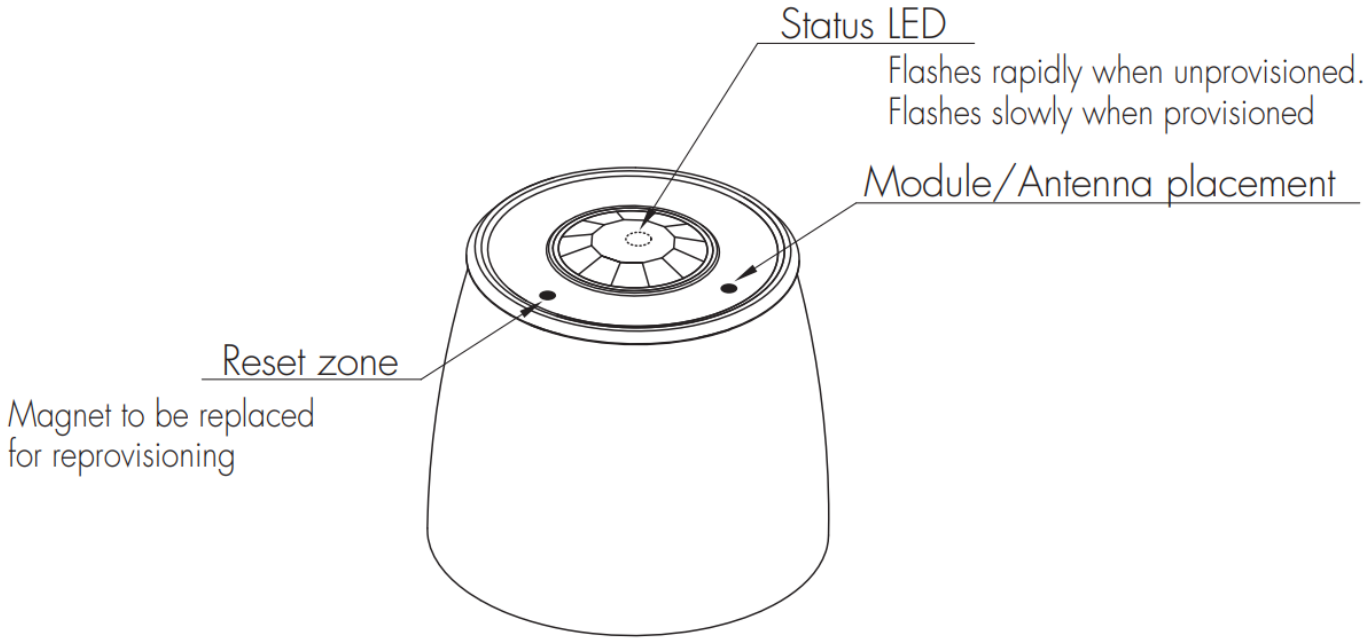


Mesh Factory Reset

The device HBIR29/SV can be reset by placing a strong magnet (e.g. N38 neodymium magnet, d=10mm*h=4mm) near the sensor lens for 5 seconds. Once the factory reset is done successfully, the luminaire ashes and then permanent on, then the device is being able to be re-commissioned by SILVAIR app.

To Reprovision

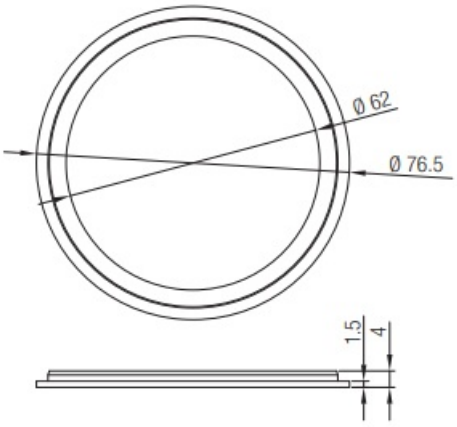
Place a strong magnet on the site of the Reset/Hall effect sensor (see diagram 4 below). To trigger the reset the magnet must be held in position for 5 seconds.



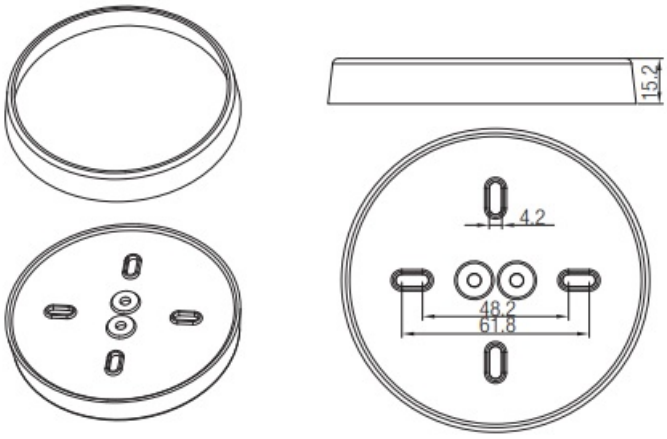
Note: When change the lens part of HBIR29/SV, please kindly make sure that the lens fits the right location, where the “Reset dot” and “BLE dot”matches with the physical location on the PCB.

Status LED blinking Sequence		
HBIR29/SV Unprovisioned	30ms ON	300ms OFF
HBIR29/SV Provisioned	15ms ON	2,000ms OFF
Factory reset	500ms ON	1,000ms OFF
Factory reset (initial burst)	100ms ON	1,000ms OFF
MESH package received	30ms ON	50ms OFF
Attention (from network)	500ms ON	500ms OFF

Big and small silicon gasket used to make IP54 degree protection when HBIR29/SV series device mounted into HA03 housing for ceiling mount
Small silicon water-proof gasket dimension(size:mm)



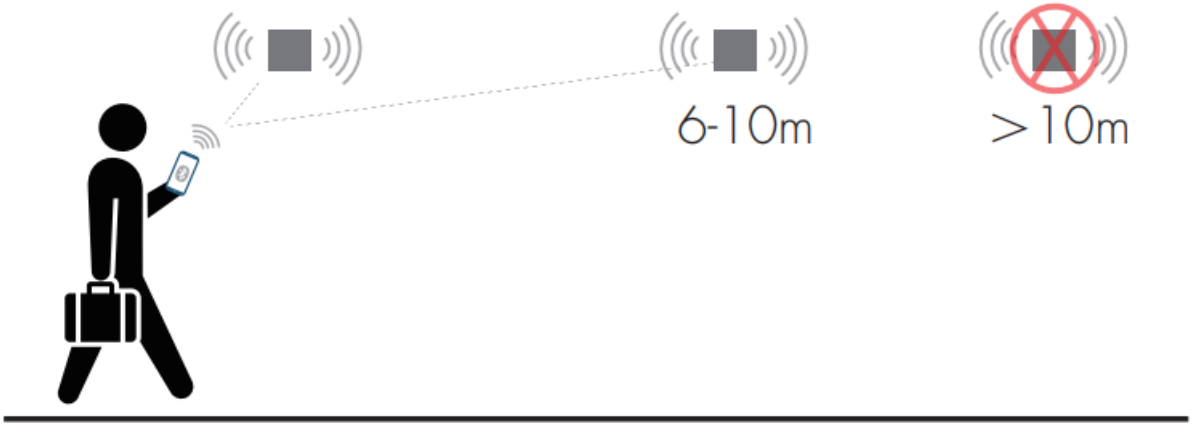
Big silicon water-proof gasket dimension(size:mm)



Supported Bluetooth Mesh Models

Bluetooth mesh models servers	
Mesh model generic default transition time server	Mesh model sensor server
Mesh model generic level server	Mesh model sensor setup server
Mesh model generic onoff server	
Mesh model generic power on off server	
Mesh model generic power on off setup server	
Mesh model light LC server	
Mesh model light LC setup server	
Mesh model light lightness server	
Mesh model light lightness setup server	

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.

Additional Information / Documents

1. 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
2. Data sheet is subject to change without notice. Please always refer to the most recent release on **www.hytronik.com/products/bluetooth** technology ->Partnership
3. Regarding Hytronik standard guarantee policy, please refer to **www.hytronik.com/download** ->knowledge ->Hytronik Standard Guarantee Policy

Documents / Resources

	HYTRONIK HBIR29 PIR Standalone Motion Sensor with Mesh [pdf] Owner's Manual HBIR29-SV, HBIR29-SV-R, HBIR29-SV-H, HBIR29-SV-RH, HBIR29, HBIR29 PIR Standalone Motion Sensor with Mesh, PIR Standalone Motion Sensor with Mesh, Standalone Motion Sensor with Mesh, Motion Sensor with Mesh, Sensor with Mesh

References

- Silvair Commissioning
- Catalogue_Hytronik