



Hytronik HBHC25 PIR Standalone Motion Sensor with Bluetooth 5.0 SIG Mesh Owner's Manual

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HYTRONIK®

PIR Standalone Motion Sensor with 5.0 SIG Mesh

HBHC25

Low-bay

HBHC25/R

Reinforced Low-bay W

HBHC25/W

Wide range Low-bay

HBHC25/H

High-bay

HBHC25/RH

Reinforced High-bay



CB



CE



IP20 RED

emc



HBHC25



HBHC25/R



HBHC/W



HBHC25/H



HBHC25/RH
(3-pyro)

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App Features

	Quick setup mode & advanced setup mode
	Tri-level control
	Daylight harvest
	Circadian rhythm (Human centric lighting)
	Floorplan feature to simplify project planning



Web app/platform for dedicated project management

Koolmesh Pro iPad version for on-site conguration

Grouping luminaires via mesh network

Scenes

Detailed motion sensor settings

Dusk/Dawn photocell (Twilight function)

Push switch conguration

Schedule to run scenes based on time and date

Astro timer (sunrise and sunset)

Staircase function (primary & secondary)

Internet-of-Things (IoT) featured

Device rmware update over-the-air (OTA)

Device social relations check

Bulk commissioning (copy and paste settings)

Dynamic daylight harvest auto-adaptation

Power-on status (memory against power loss)

Ofine commissioning

Different permission levels via authority management

Network sharing via QR code or keycode

Remote control via gateway support HBGW01










Interoperability with Hytronik Bluetooth product portfolio

Compatible with EnOcean BLE switches



Continuous development in progress...

Hardware Features

        	80mA DALI broadcast output in 2 channels:- 50mA (Channel 1)- 30mA (Channel 2)
	Support to control DT8 LED drivers
	3 Push inputs for exible manual control
	Keep real time for up to 2 weeks against power failure
	IP20/IP54 Ceiling/Surface mount box available as accessory
	Two types of blind inserts / blanking plates
	User-friendly design for installation
	High bay version available (up to 15m in height)
	5-year warranty



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

Bluetooth 5.0 SIG mesh



for iOS



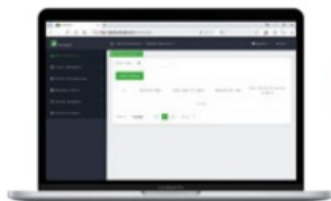
for Android

Smartphone app for both iOS & Android platform



for iPad

Koolmesh Pro app for iPad



Web



for Web

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

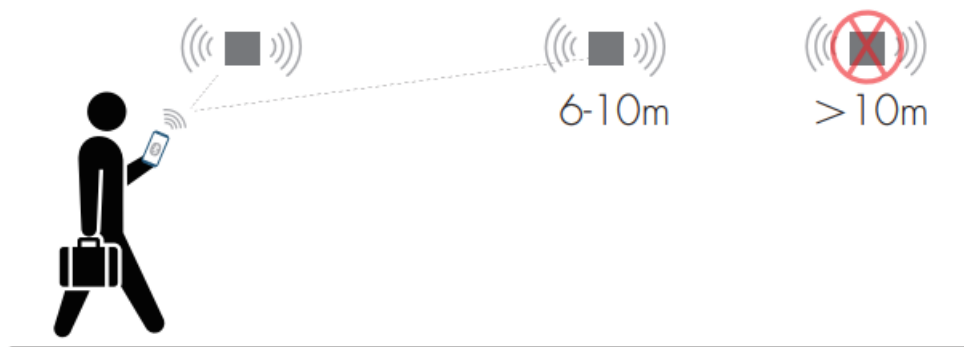
Technical Specifications

Bluetooth Transceiver	
Operation frequency	2.4 GHz – 2.483 GHz
Transmission power	4 dBm
Range (Typical indoor)	10~30m
Protocol	5.0 SIG Mesh
Sensor Data	
Sensor Model	PIR max* detection range
HBHC25	Installation Height : 6m Detection Range(Ø) :9m
HBHC25/R	Installation Height : 6m Detection Range(Ø) :10m
HBHC25/W	Installation Height : 6m Detection Range(Ø) :18m
HBHC25/H	Installation height 15m (forklift) 12m (person) Detection range (Ø) 24m
HBHC25/RH	Installation height 20m (forklift) 12m (person) Detection range (Ø) 40m
Detection angle	360
Input & Output Characteristics	
Stand-by power	<1W
Operating voltage	220~240VAC 50/60Hz
DALI Channel 1	50mA, Max. 25 devices
DALI Channel 2	30mA, Max. 15 devices
Safety & EMC	
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
Environment	
Operation temperature	Ta: -20 °C ~ +50 °C
IP rating	IP20

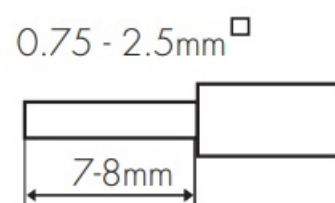
* For more details of detection range, please refer to “detection pattern” section.

Placement Guide and Typical Range

Smart Phone to Device Range



Wire Preparation



Subject to change without notice.

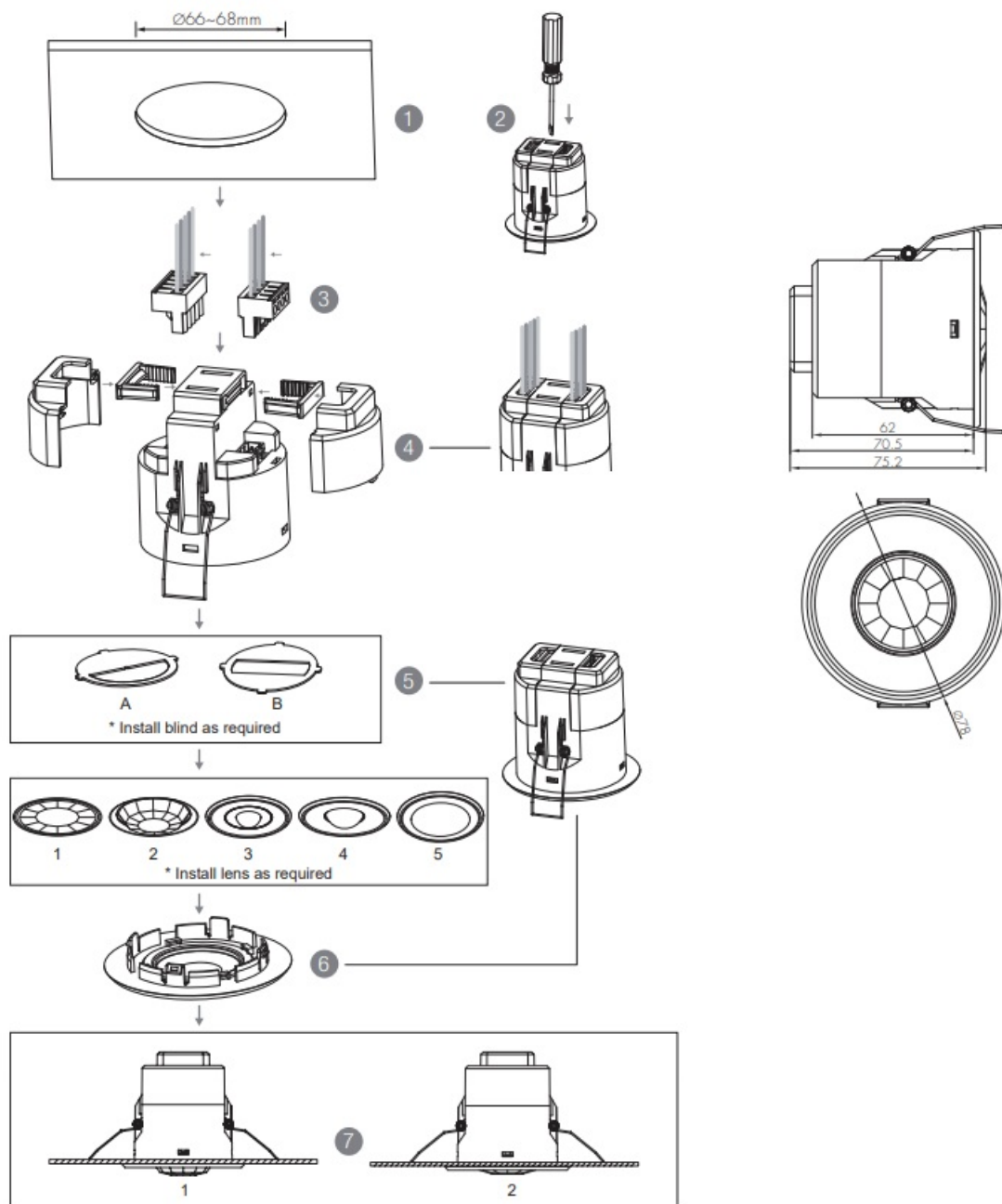
The smart device with the App installed will have a typical range of 10m, but varies from device to device. During commissioning, the installer will need to be in range of the devices when searching for devices to add to the network.

Once the devices have been added to the network via the App, the devices will start communicating within the wireless mesh.

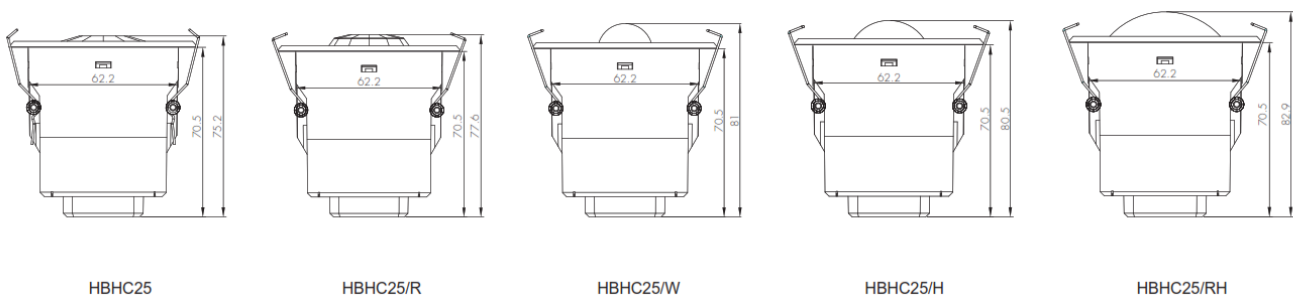
This means that once the network is complete, all devices are accessible from the smart device when in a 20m range of a single point.

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

Mechanical Structure & Dimensions



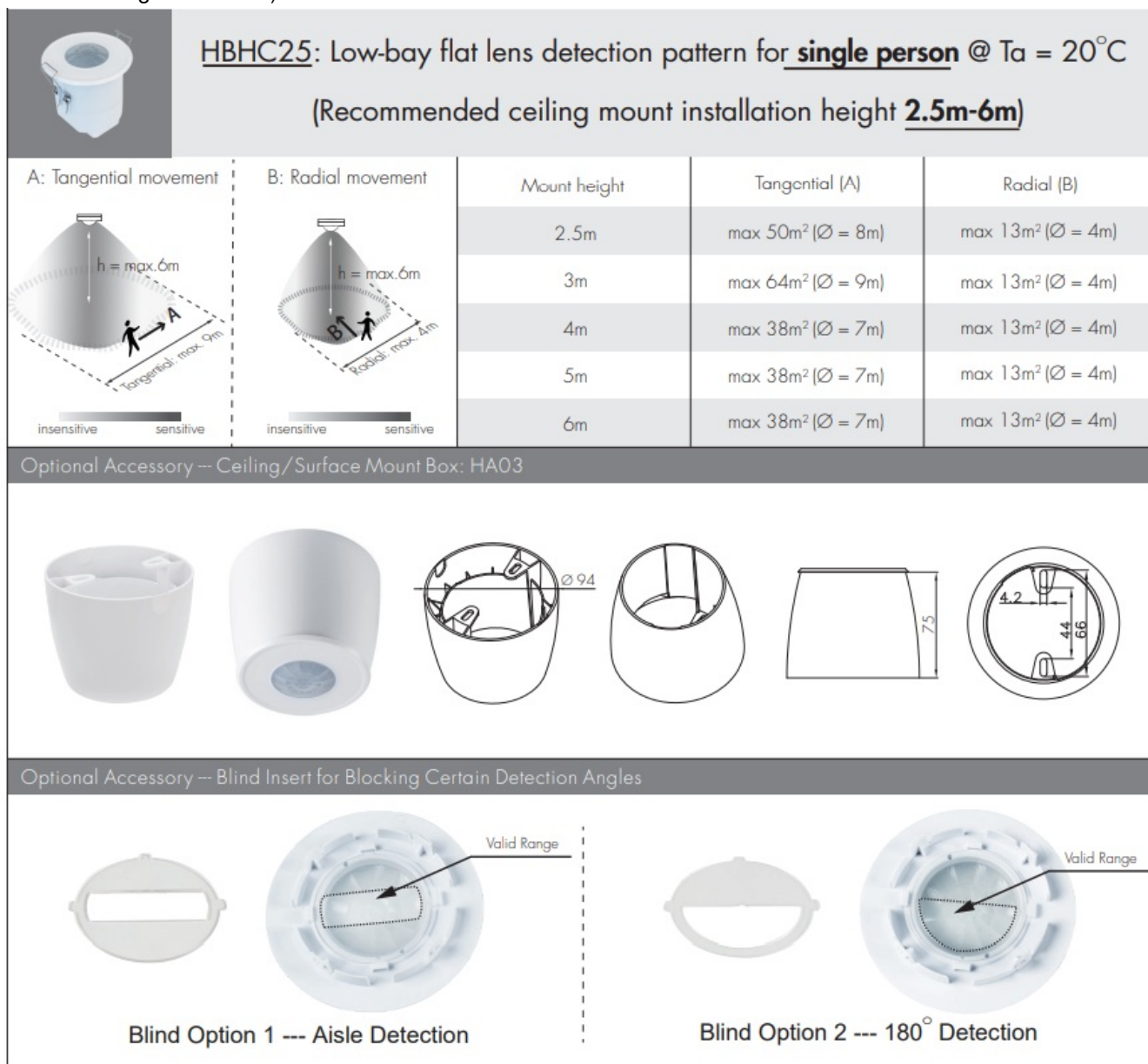
1. Ceiling (drill hole \varnothing 66~68mm)
2. Carefully prise off the cable clamps.
3. Make connections to the pluggable terminal blocks.
4. Insert plug connectors and secure using the provided cable clamps, then clip terminal covers to the base.
5. Fit detection blind (if required) and desired lens.
6. Clip fascia to body.
7. Bend back springs and insert into ceiling.



Detection Pattern & Optional Accessories

HBHC25 (Low-bay)

HBHC25: Low-bay flat lens detection pattern for single person @ Ta = 20 °C (Recommended ceiling mount installation height 2.5m-6m)

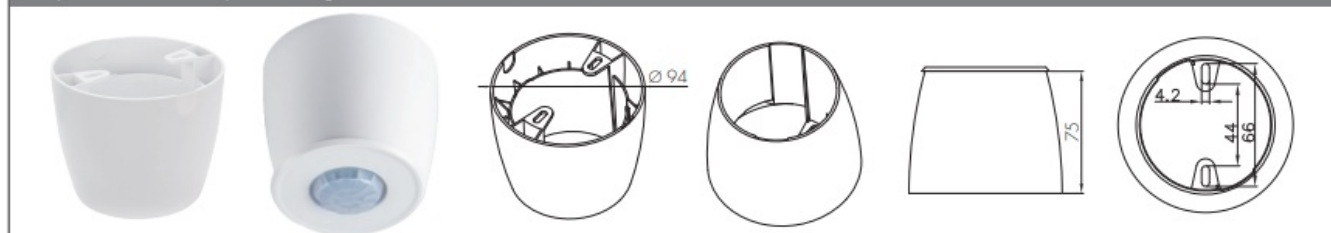


HBHC25/R (Reinforced Low-bay)

HBHC25/R: Low-bay convex lens detection pattern for single person @ Ta = 20 °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 ² (Ø = 10m)	max 20m ² (Ø = 5m)
		3m	max 79m ² (Ø = 10m)	max 20m ² (Ø = 5m)
		4m	max 64m ² (Ø = 9m)	max 20m ² (Ø = 5m)
		5m	max 50m ² (Ø = 8m)	max 20m ² (Ø = 5m)
		6m	max 50m ² (Ø = 8m)	max 20m ² (Ø = 5m)

Optional Accessory -- Ceiling/Surface Mount Box: HA03



Optional Accessory -- Blind Insert for Blocking Certain Detection Angles

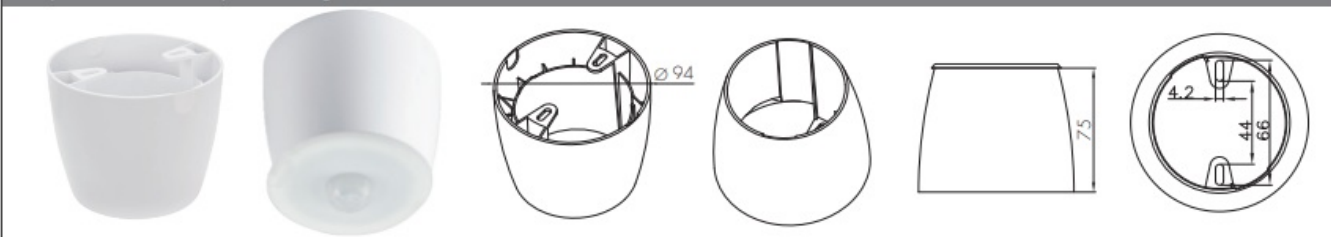


HBHC25/W (Wide range Low-bay)

HBHC25/W: Low-bay convex lens detection pattern for single person @ Ta = 20 °C (Recommended ceiling mount installation height 2.5m-6m)

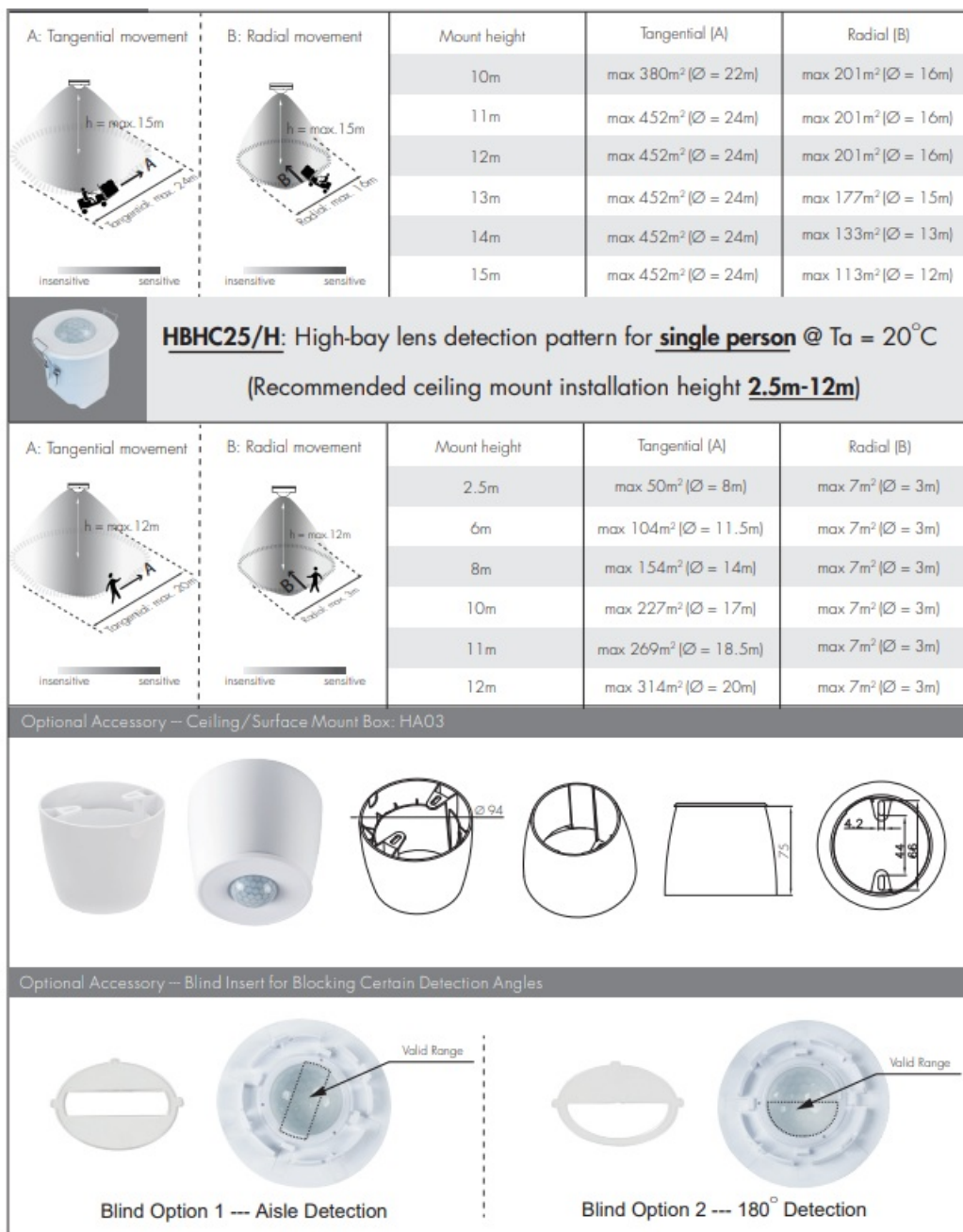
A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 254m ² (Ø = 18m)	max 28m ² (Ø = 6m)
		3m	max 254m ² (Ø = 18m)	max 28m ² (Ø = 6m)
		4m	max 154m ² (Ø = 14m)	max 28m ² (Ø = 6m)
		5m	max 113m ² (Ø = 12m)	max 28m ² (Ø = 6m)
		6m	max 79m ² (Ø = 10m)	max 13m ² (Ø = 4m)

Optional Accessory -- Ceiling/Surface Mount Box: HA03



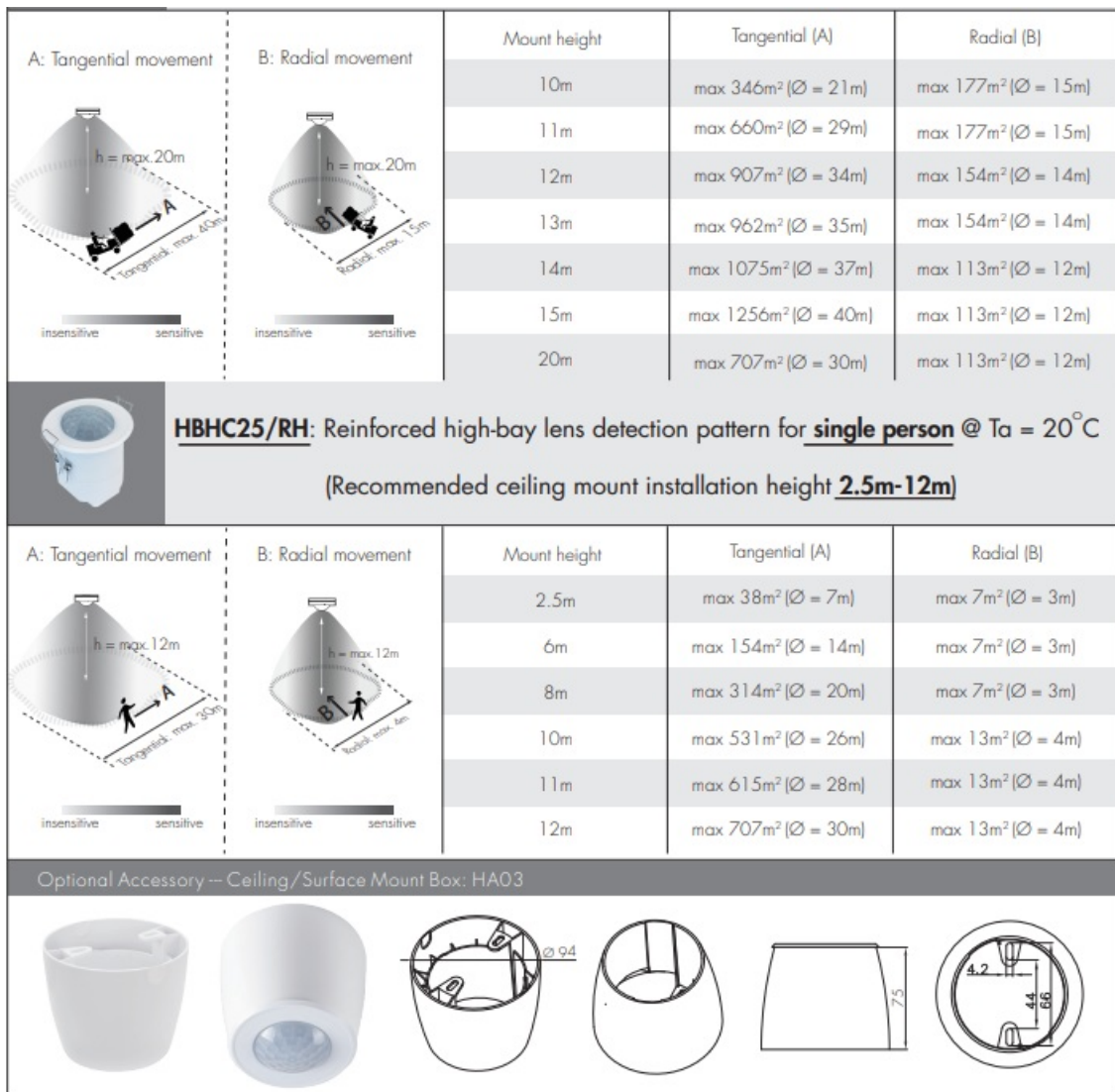
HBHC25/H (High-bay)

HBHC25/H: High-bay lens detection pattern for forklift @ Ta = 20 °C (Recommended ceiling mount installation height 10m-15m)



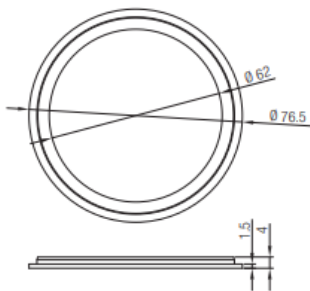
HBHC25/RH (Reinforced High-bay with 3-Pyro)

HBHC25/RH: Reinforced high-bay lens detection pattern for forklift @ Ta = 20 °C (Recommended ceiling mount installation height 10m-20m)

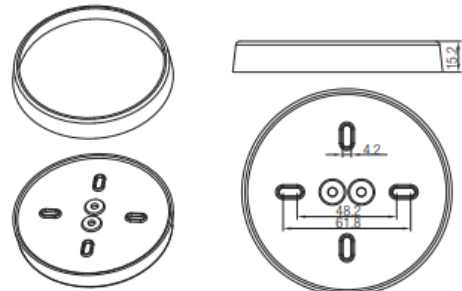


Big and small silicon gasket used to make IP54 degree protection when HBHC25 series device mounted into HA03 housing for ceiling mount

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











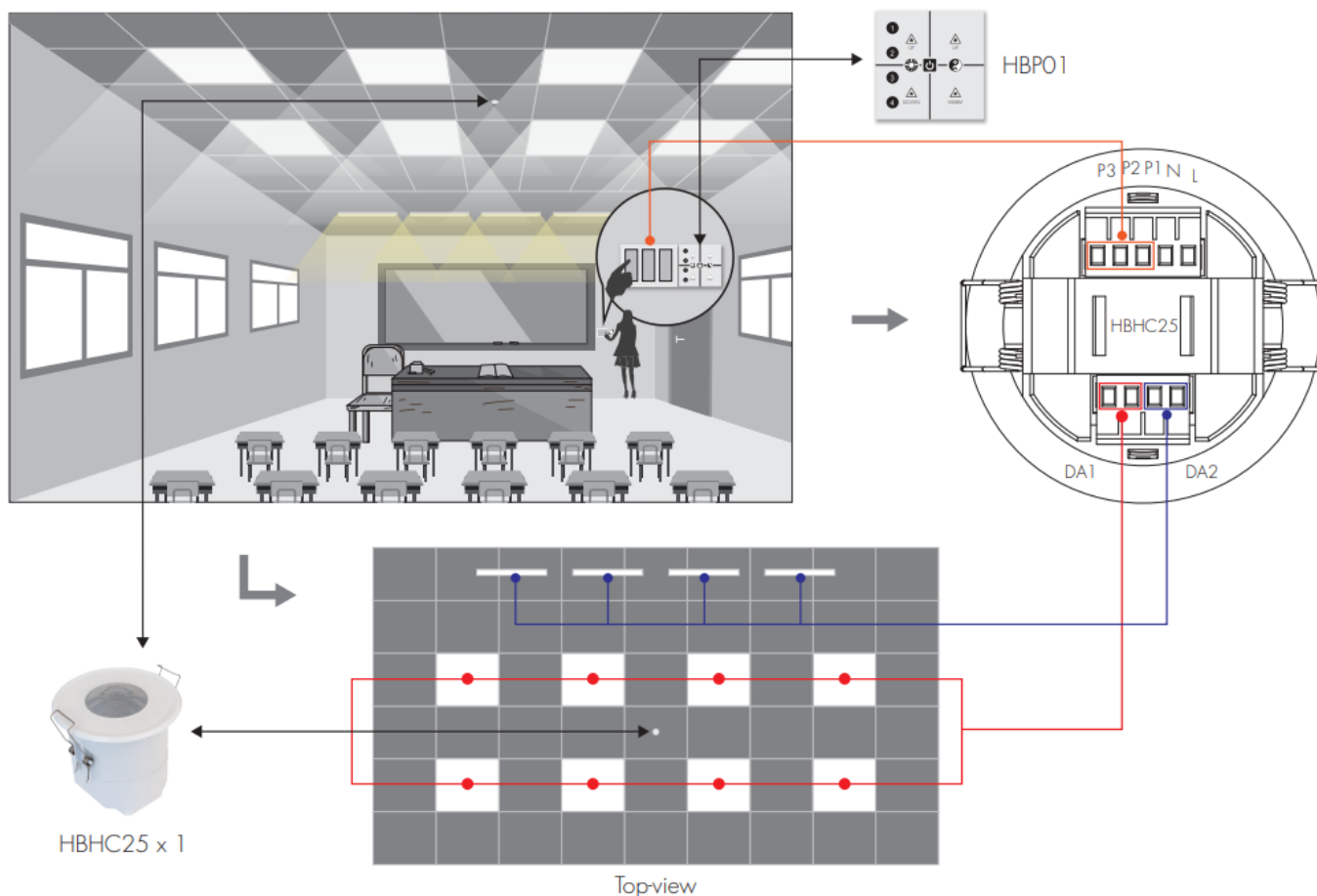
Big silicon water-proof gasket dimension(size:mm)



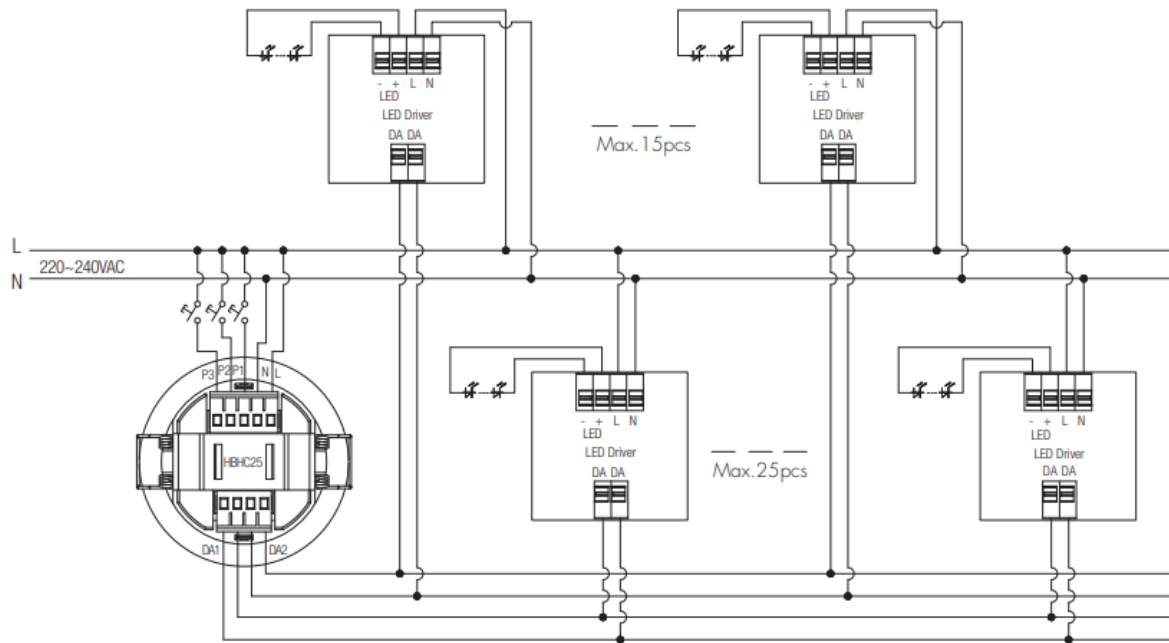
Typical Application for Classroom (Human Centric Lighting)

Different from other complex system, Hytronik offer a simple yet decentralized one-stop solution to achieve Human Centric lighting. It cuts at least 50% to 60% in costs as compared to traditional complex wiring system. This solution is based on Bluetooth together with an intuitive and portable app; it does not require complicated PC tools to set up and configure. What's more, our Bluetooth solution is futureproof with OTA upgrade capability. With services of tailor making Bluetooth solution including app, products, server and cloud, this solution brings flexibility and versatility to adapt to each customer's requirements at affordable prices.

	What you need	What you get
	HBHC25 x 1	<ul style="list-style-type: none"> • Bluetooth enabled and controllable via app • Human Centric Function • 2 DALI channels for whiteboard/electronic • PIR motion sensing display area and student area independently • Daylight Harvest
	Push switches x 3	<ul style="list-style-type: none"> • Manual control: brightness adjustment, colour tuning, recall scenes etc.
	HHC2045 x 8 for LED panels HH C2050L x 4 for linear LED lights	<ul style="list-style-type: none"> • Tunable white LED driver (Can also be any other DALI DT8 drivers)
	HBP02 x 1 (Optional)	<ul style="list-style-type: none"> • Bluetooth touch panel • Switchable between each scene • Can recall up to 6 scenes • Brightness adjustment, colour tuning
	QCB01 x 2 with cables and plugs (Optional)	<ul style="list-style-type: none"> • Labour cost saved significantly • Simplify wiring on site via plug 'n' play • Hassle-free maintenance after installation
	HBGWO1 gateway x 1 (Optional)	<ul style="list-style-type: none"> • Remote control access • Data collection and analysis
	Free app	<ul style="list-style-type: none"> • Futureproof via OTA • Off-line commissioning
	Cloud & server	<ul style="list-style-type: none"> • Settings data backup • Accounts security



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

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
- 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
- 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

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

Subject to change without notice.

Documents / Resources

	<p>Hytronik HBHC25 PIR Standalone Motion Sensor with Bluetooth 5.0 SIG Mesh [pdf] Owner's Manual</p> <p>HBHC25, HBHC25-R, HBHC25-H, HBHC25-RH, HBHC25 R, HBHC25 W, HBHC25 H, HBHC25 RH, HBHC25 PIR Standalone Motion Sensor with Bluetooth 5.0 SIG Mesh, PIR Standalone Motion Sensor with Bluetooth 5.0 SIG Mesh, HBHC25 PIR Standalone Motion Sensor, PIR Standalone Motion Sensor, Standalone Motion Sensor, Motion Sensor, Sensor</p>
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References

- [Catalogue_Hytronik](#)
- iot.koolmesh.com

Manuals+