

PIR Standalone Motion Sensor with Bluetooth 5.0 SIG Mesh

625442 Czujnik PIR BT HYT ON/OFF HBIR28 IoT HBIR28
625411 Czujnik PIR BT HYT ON/OFF HBIR28/H IoT HBIR28/H
625466 Czujnik PIR BT HYT ON/OFF HBIR28/W IoT HBIR28/W



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Product Description

HBIR28 is a Bluetooth PIR standalone motion sensor, On/Off control with one relay channel output, which is NO (normally open contact). It is ideal for typical indoor applications such as office, classroom, healthcare and other commercial areas. 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!). Meanwhile, simple device setup and commissioning can be done via Lena Lighting Clue app.



HBIR28



HBIR28/H



HBIR28/W



App Features

- Quick setup mode & advanced setup mode
- Web app/platform for project deployment & data analysis
- KoolmeshPro app on iPad for on-site configuration
- Floorplan feature to simplify project planning
- One-key device replacement
- Device social relations check
- Staircase function (primary & secondary)
- Remote control via gateway support HBGW01
- Heat map
- Grouping luminaires via mesh network
- Scenes
- Dusk/Dawn photocell (Twilight function)
- 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 BLEswitches
- Internet-of-Things (IoT) featured
- Device firmware update over-the-air (OTA)
- Continuous development in progress...

Hardware Features

- Zero crossing detection to reduce in-rush current and maximise relay life
- 1 Pushinput for flexible manual control
- IP20/IP54 Ceiling/Surface mount box available as accessory
- Various PR lens and blind inserts options
- 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)

Smartphone app for both
iOS & Android platform

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	Bluetooth 5.0 SIG Mesh

Input & Output Characteristics	
Operating voltage	220~240VAC 50/60Hz
Load ratings	800VA (Capacitive) 800W (Resistive)
Stand-by power	< 1W
Warming-up	20s

Sensor Data	
Sensor Model	PIR detection
HBIR28	Installation Height : 6m Detection Range(Ø) : 9m
HBIR28/W	Installation Height : 6m Detection Range(Ø) : 18m
HBIR28/H	Installation height: 15m (forklift) 12m (person) Detection range (Ø): 24m
Detection angle	360°

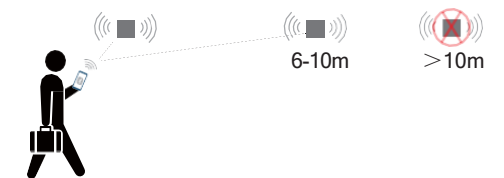
Safety & EMC	
EMC standard (EMC)	EN55015, EN61000-3-2/-3-3, EN61547
Safety standard (LVD)	EN60669-1, EN60669-2-1 AS/NZS60669-1/-2-1
RED	EN300328, EN301489-1/-17
Certification	CE, RED, RCM, UKCA

Environment	
Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP20/IP54

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

Placement Guide and Typical Range

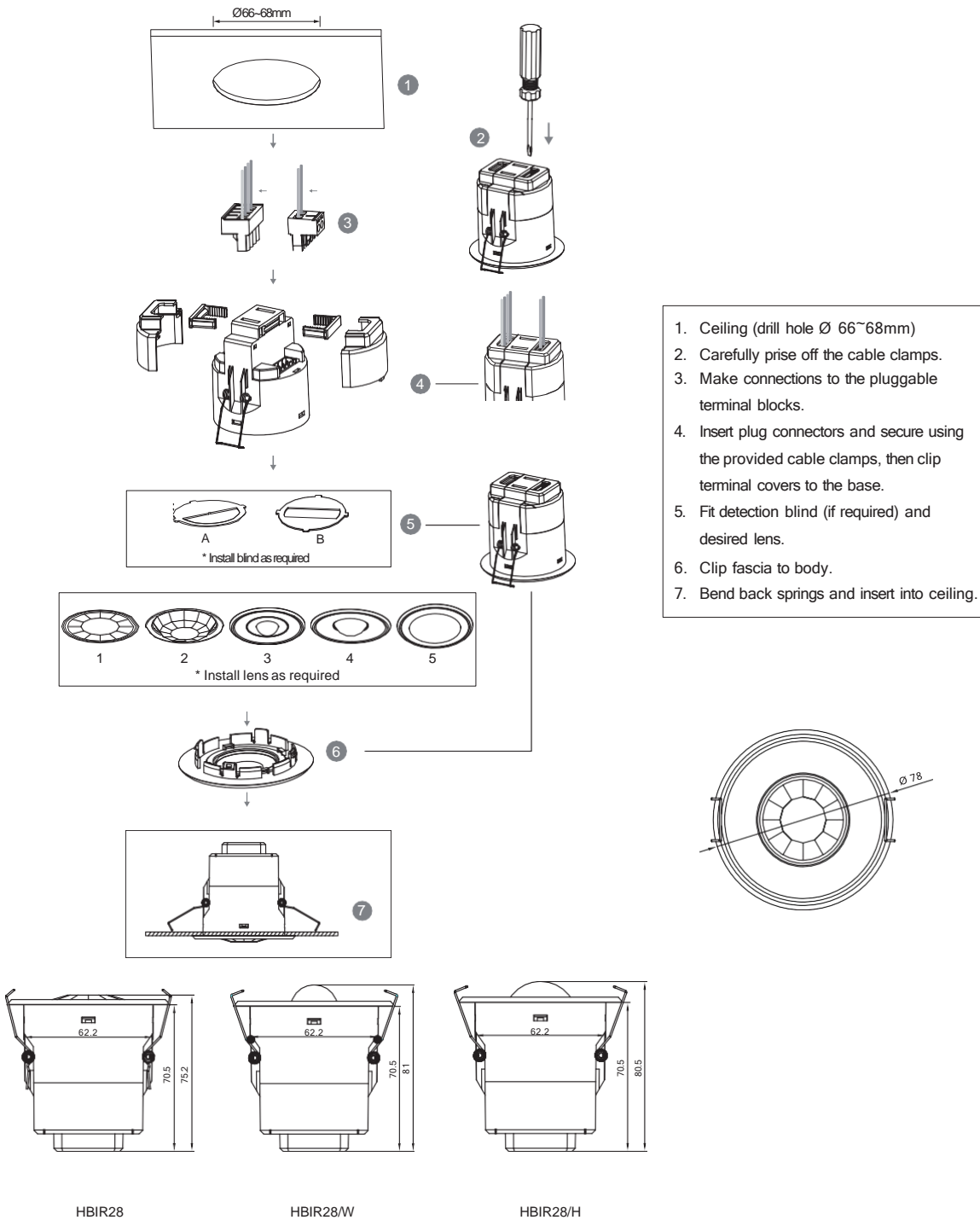
Smart Phone to Device Range



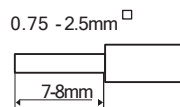
The smart device with the App installed will have a typical range of 10m, but varies from device to device. During commissioning, the installer will need to be in range of the devices when searching for devices to add to the network.

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.

Mechanical Structure & Dimensions

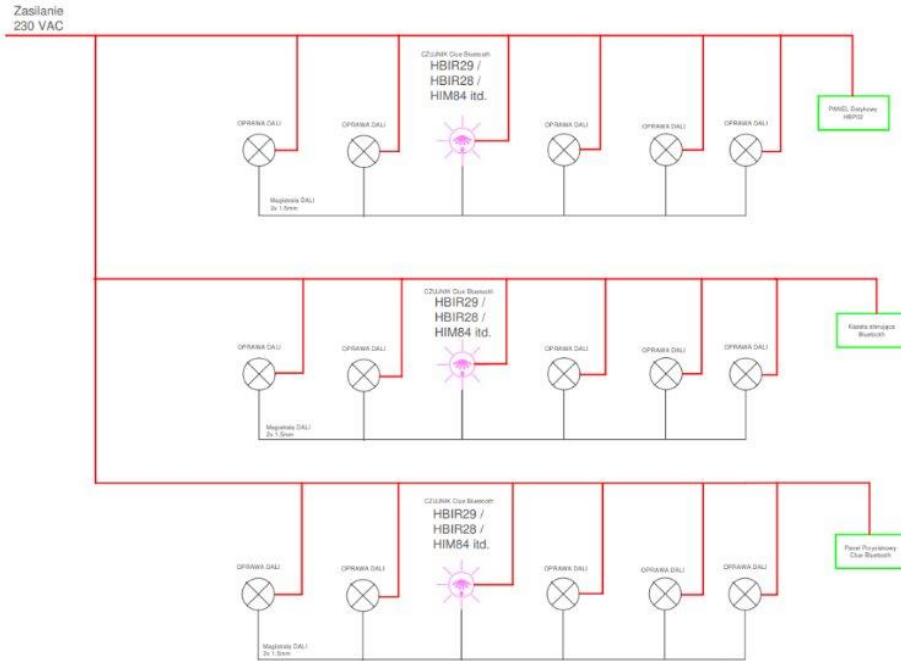


Wire Preparation



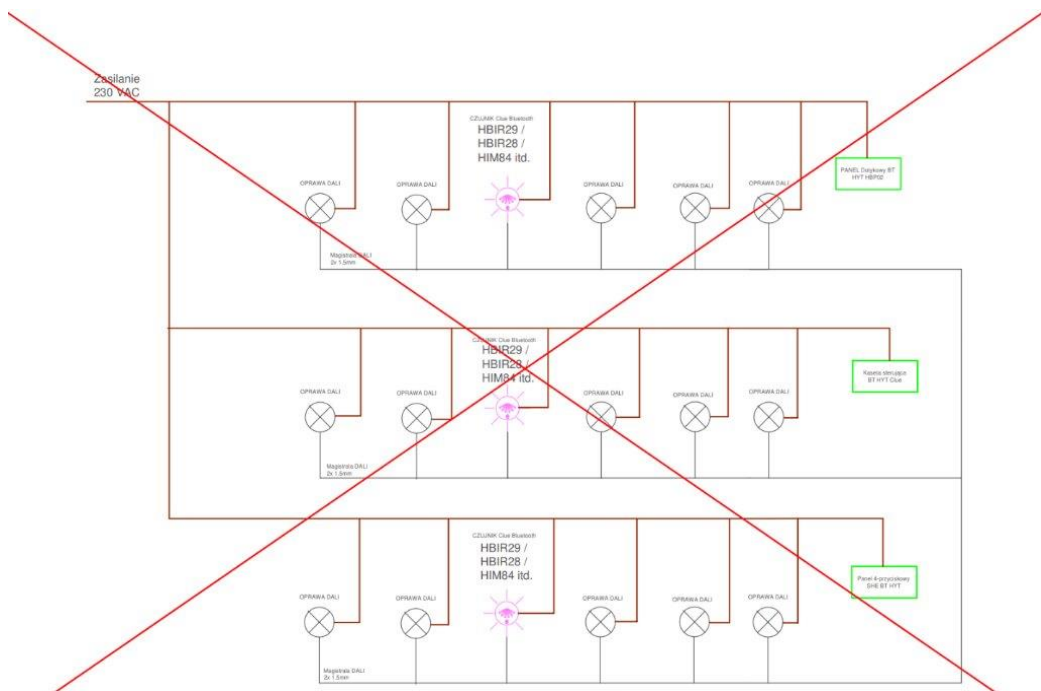
Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor.

Wiring – connecting two or more sensors



HBIR sensors are powered by a 3x2.5 mm² cable and connected to the DALI bus to lamps within a given zone as shown in the diagram.

REMARK! Do not connect 2 or more sensors together via the DALI bus – this can lead to incorrect operation or even damage to the sensor.



1. HBIR28 (Low-bay)

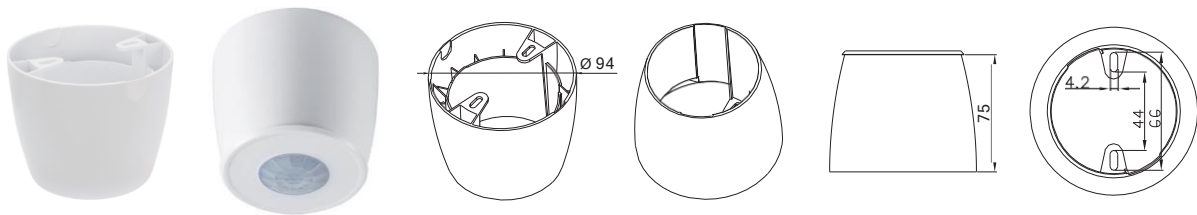


HBIR28: Low-bay flat lens detection pattern for single person @ Ta = 20°C

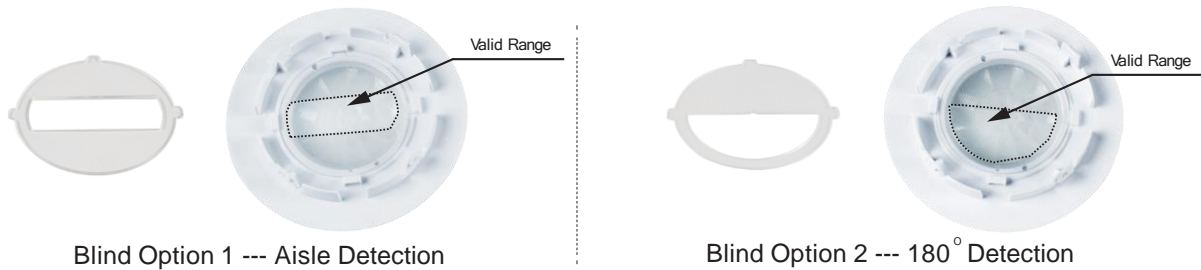
(Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 50m ² (Ø = 8m)	max 13m ² (Ø = 4m)
		3m	max 64m ² (Ø = 9m)	max 13m ² (Ø = 4m)
		4m	max 38m ² (Ø = 7m)	max 13m ² (Ø = 4m)
		5m	max 38m ² (Ø = 7m)	max 13m ² (Ø = 4m)
		6m	max 38m ² (Ø = 7m)	max 13m ² (Ø = 4m)

Optional Accessory – Ceiling/Surface Mount Box: HA03



Optional Accessory – Blind Insert for Blocking Certain Detection Angles



4. HBIR28/H (High-bay)



HBIR28/H: High-bay lens detection pattern for **forklift** @ Ta = 20°C (Recommended ceiling mount installation height **10m-15m**)

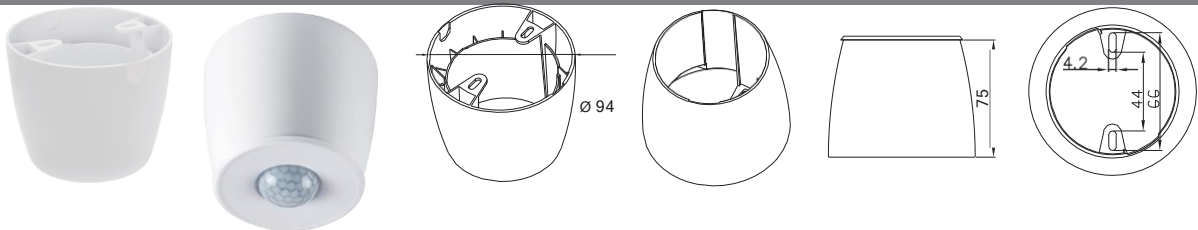
A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		10m	max 380m ² (Ø = 22m)	max 201m ² (Ø = 16m)
		11m	max 452m ² (Ø = 24m)	max 201m ² (Ø = 16m)
		12m	max 452m ² (Ø = 24m)	max 201m ² (Ø = 16m)
		13m	max 452m ² (Ø = 24m)	max 177m ² (Ø = 15m)
		14m	max 452m ² (Ø = 24m)	max 133m ² (Ø = 13m)
		15m	max 452m ² (Ø = 24m)	max 113m ² (Ø = 12m)



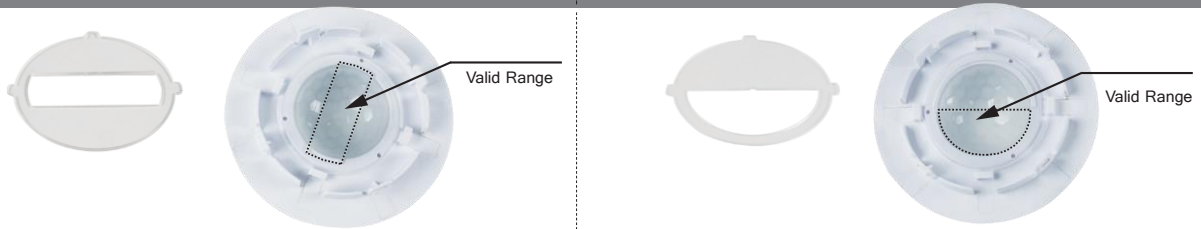
HBIR28/H: High-bay lens detection pattern for **single person** @ Ta = 20°C (Recommended ceiling mount installation height **2.5m-12m**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 50m ² (Ø = 8m)	max 7m ² (Ø = 3m)
		6m	max 104m ² (Ø = 11.5m)	max 7m ² (Ø = 3m)
		8m	max 154m ² (Ø = 14m)	max 7m ² (Ø = 3m)
		10m	max 227m ² (Ø = 17m)	max 7m ² (Ø = 3m)
		11m	max 269m ² (Ø = 18.5m)	max 7m ² (Ø = 3m)
		12m	max 314m ² (Ø = 20m)	max 7m ² (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

3. HBIR28/W (Wide range Low-bay)

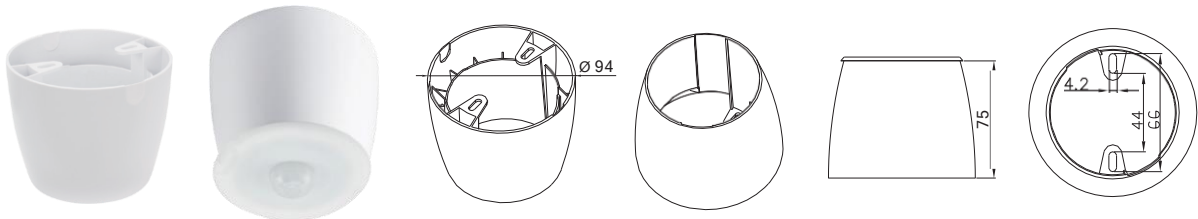


HBIR28/W: Low-bay convex lens detection pattern for **single person** @ Ta = 20°C

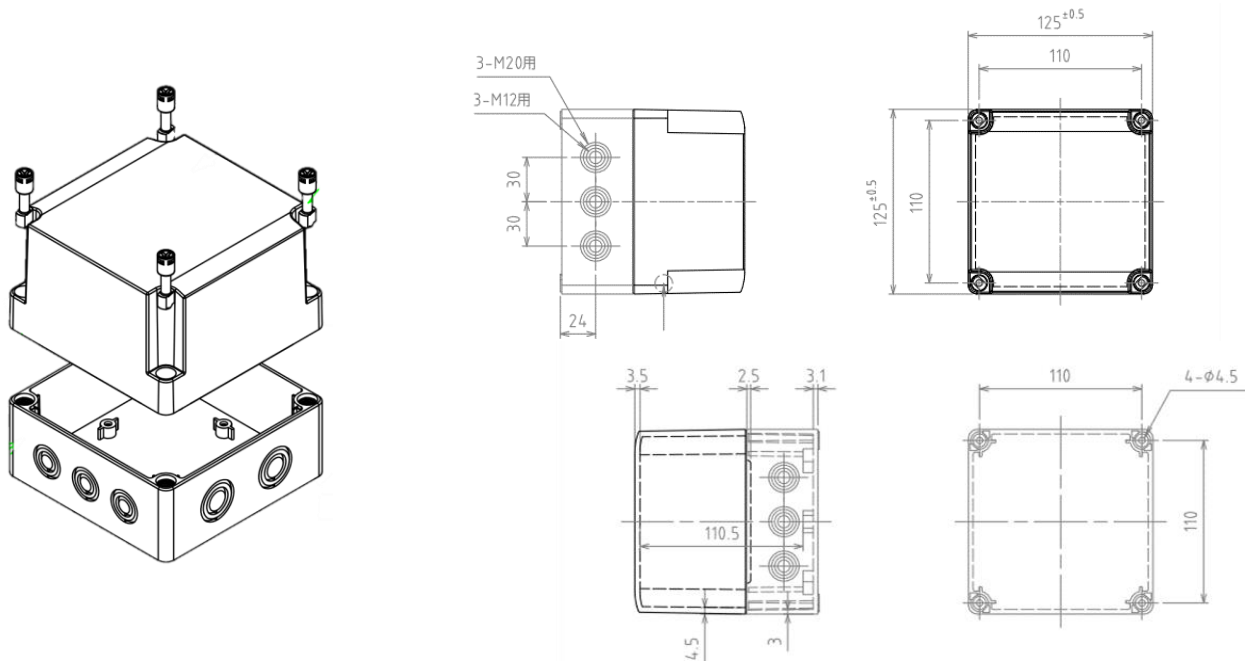
(Recommended ceiling mount installation height **2.5m-6m**)

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

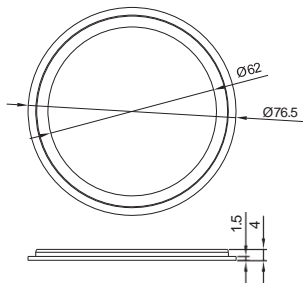


Optional Equipment – Ceiling/Surface Mount Box: TAKACHI IP67 (625787, 625794)

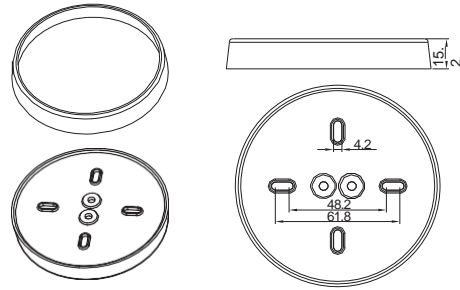


Manufacturer's code	Dimensions			Internal dimensions			Can color	Weight [g]
	S	W	G	s	w	g		
SPCM13 1313G	125	125	125	114.5	110.5	90	RAL7035	401

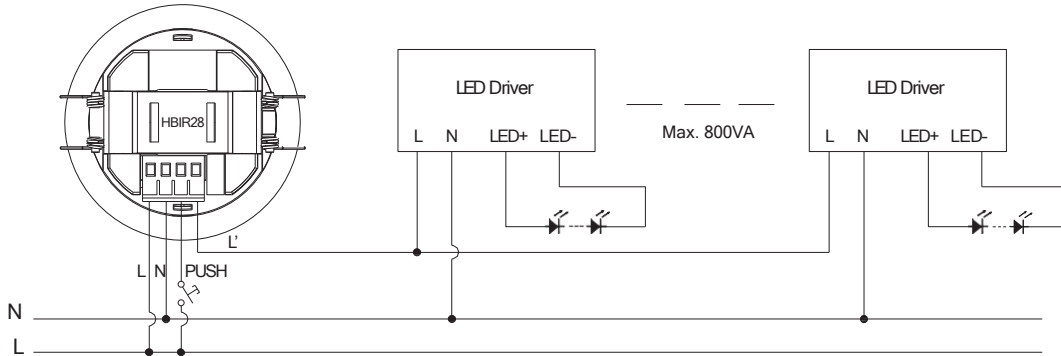
Small silicon water-proof gasket dimension(size:mm)



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



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 Pushswitch 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 - Recall a scene - Turn on only - Quit manual mode - Turn off only - Do nothing
	Double push	- Turn on only - Quit manual mode - Turn off only - Do nothing - Recall a scene
	Long press (≥1 second)	- Dimming - Colour tuning - Do nothing
Sensor-link	/	- 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) - Start Self test (Annually) - Stop Self test - Invalid
	Long press (≥1 second)	- Start Self test (Monthly) - Start Self test (Annually) - Stop Self test - Invalid
Fire Alarm (VFC signal only)	Refer to Lena Lighting Clue 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.

For more information, please contact iot@lenalighting.pl