

PIR Standalone Motion Sensor with Bluetooth® 5.0 SIG Mesh

WSE0010_624193 Czujnik PIR BT HYT DALI HBIR29 IoT
WSE0020 Czujnik PIR BT HYT DALI HBIR29/R IoT
624704 Czujnik PIR BT HYT DALI HBIR29/W IoT
WSEL476 Czujnik PIR BT HB HYT DALI HBIR29/H IoT
625404 Czujnik PIR BT HYT DALI HBIR29 w puszcze IP67 IoT
625763 Czujnik PIR BT HYT DALI HBIR29/H w puszcze IP67 IoT
625336 Czujnik PIR BT HYT DALI HBIR29/W w puszcze IP67 IoT
625435 Czujnik PIR BT HYT DALI HBIR29 RAL9005 IoT



Product Description

HBIR29 series are Bluetooth PIR standalone motion sensors with one DALI channel output (80mA DALI power supply built in), which can control up to 40 LED drivers. 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.

App Features

- Quick setup mode & advanced setup mode
- Web app/platform for project deployment & data analysis
- Lena Lighting Clue 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

- 80mA DALI broadcast output
- Support to control DT8 LED drivers
- 2 Push inputs for flexible manual control
- 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 1.5m 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	5.0 SIG Mesh

Input & Output Characteristics	
Operating voltage	220~240VAC 50/60Hz
Stand-by power	< 1W
Switched power	Max. 40 devices, 80mA
Warming-up	20s

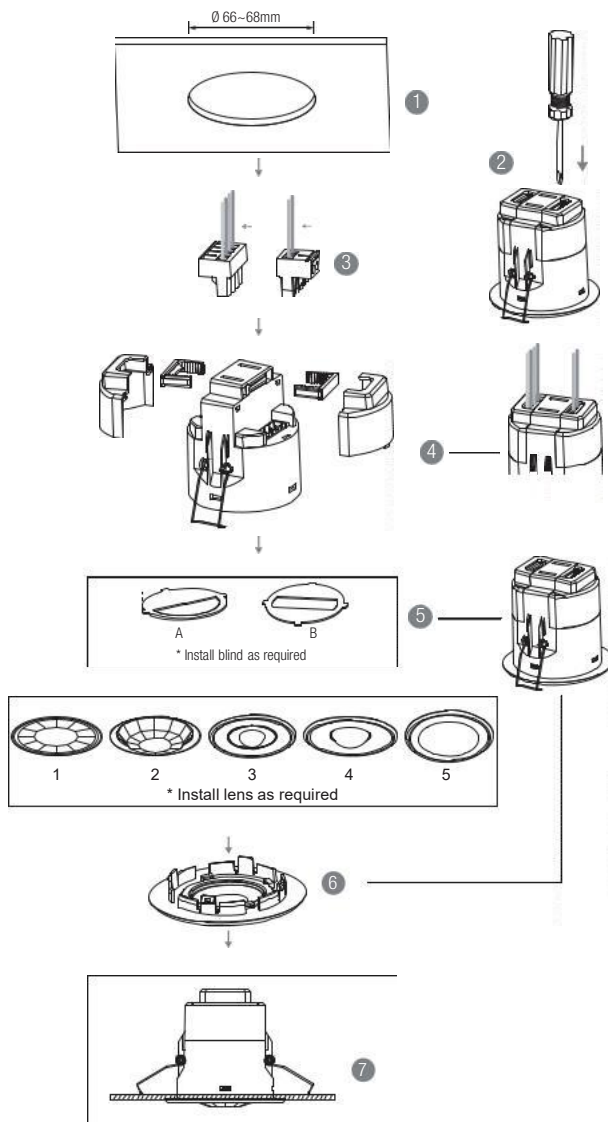
Sensor Data	
Sensor Model	PIR detection
HBIR29	Installation Height : 6m Detection Range(Ø) : 9m
HBIR29/R	Installation Height : 6m Detection Range(Ø) : 10m
HBIR29/W	Installation Height : 6m Detection Range(Ø) : 18m
HBIR29/H	Installation height: 1.5m (forklift) 12m (person) Detection range (Ø): 24m
Detection angle	360°

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

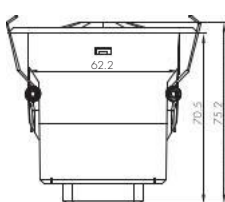
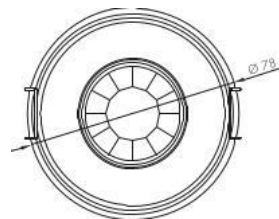
Environment	
Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP20

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

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.



HBIR29



HBIR29/R

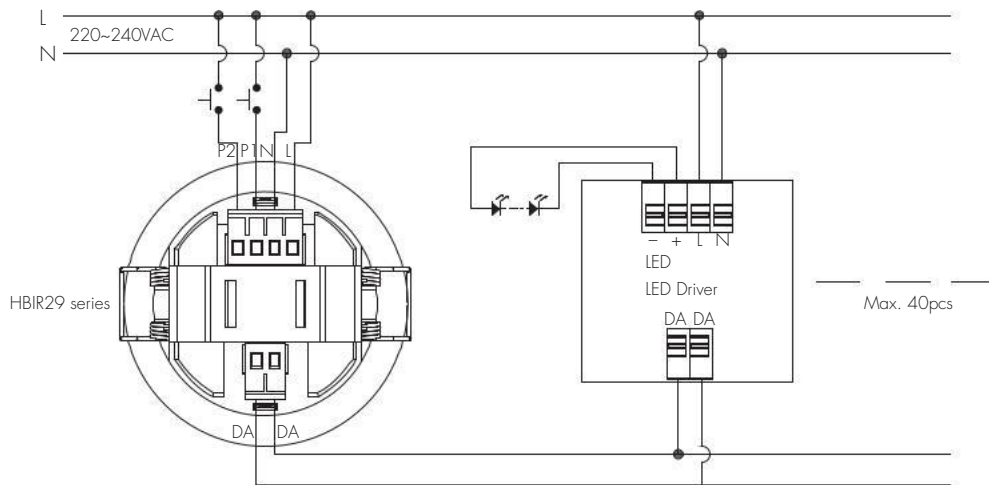


HBIR29/W

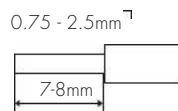


HBIR29/H

Wiring Diagram



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 1 mm² CSA (Ta = 50°C)
2. 300 metres (total) max. for 1.5 mm² CSA (Ta = 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.

1. HBIR29 (Low-bay)

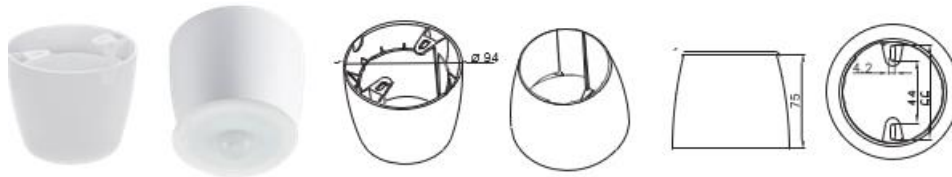


HBIR29: Low-bay flat lens detection pattern for **single person** @ $T_a = 20^{\circ}\text{C}$

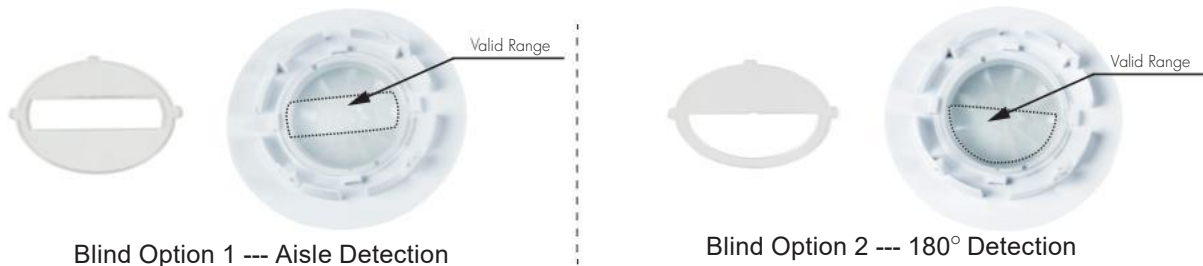
(Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 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



Sensor option in different color: 625435 Czujnik PIR BT HYT DALI HBIR29 RAL9005 IoT

2. HBIR29/R (Reinforced Low-bay)

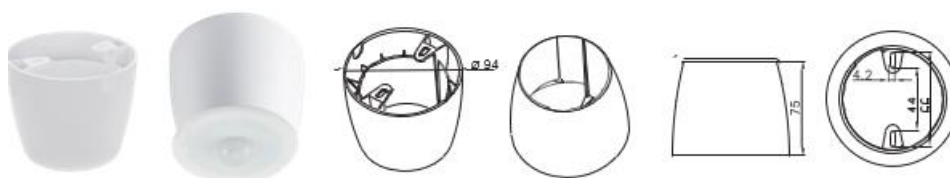


HBIR29/R: Low-bay convex lens detection pattern for **single person** @ Ta = 20°C

(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 (∅ = 10m)	max 20m ² (∅ = 5m)
		3m	max 79m ² (∅ = 10m)	max 20m ² (∅ = 5m)
		4m	max 64m ² (∅ = 9m)	max 20m ² (∅ = 5m)
		5m	max 50m ² (∅ = 8m)	max 20m ² (∅ = 5m)
		6m	max 50m ² (∅ = 8m)	max 20m ² (∅ = 5m)

Optional Accessory – Ceiling/Surface Mount Box: HA03



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



3. HBIR29/W (Wide range Low-bay)

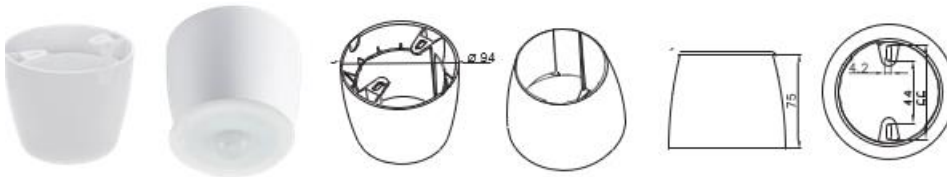


HBIR29/W: Low-bay convex lens detection pattern for **single person** @ $T_a = 20^{\circ}\text{C}$

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

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		2.5m	max 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



4. HBIR29/H (High-bay)

HBIR29/H: High-bay lens detection pattern for forklift @ Ta = 20°C

(Recommended ceiling mount installation height **10m-15m**)

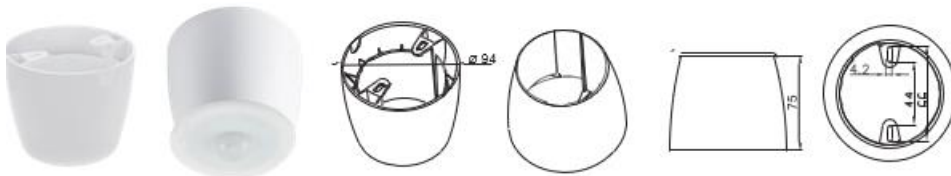
A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		10m	max 380m ² (Ø = 22m)	max 201m ² (Ø = 16m)
		11m	max 452m ² (Ø = 24m)	max 201m ² (Ø = 16m)
		12m	max 452m ² (Ø = 24m)	max 201m ² (Ø = 16m)
		13m	max 452m ² (Ø = 24m)	max 177m ² (Ø = 15m)
		14m	max 452m ² (Ø = 24m)	max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

HBIR29/H: High-bay lens detection pattern for single person @ Ta = 20°C

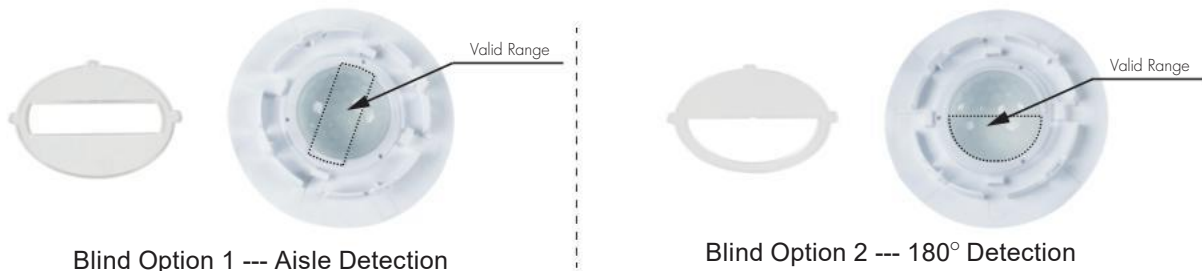
(Recommended ceiling mount installation height **2.5m-12m**)

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)

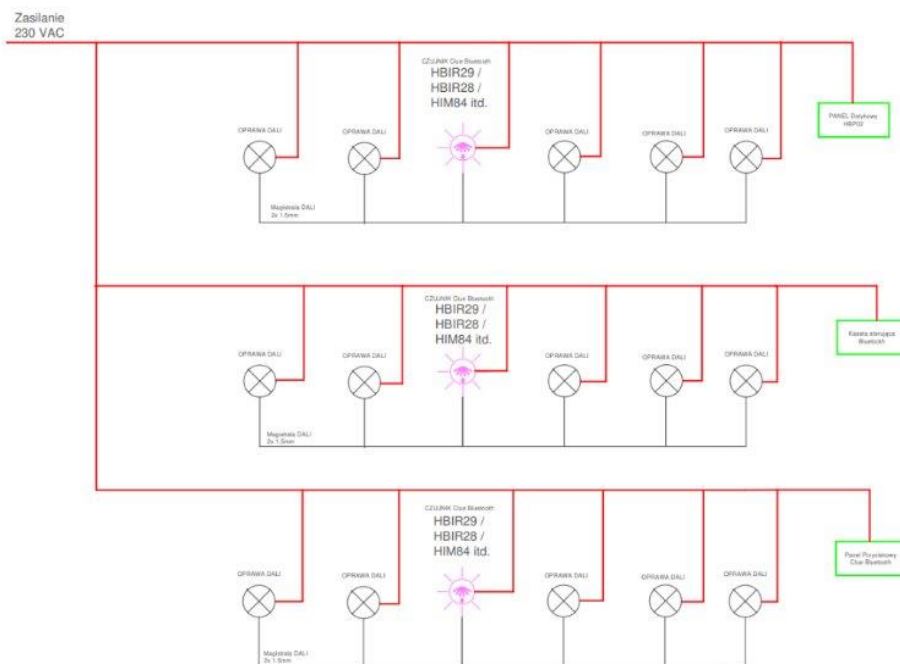
Optional Accessory – Ceiling/Surface Mount Box: HA03



Optional Accessory -- Blind Insert for Blocking Certain Detection Angles

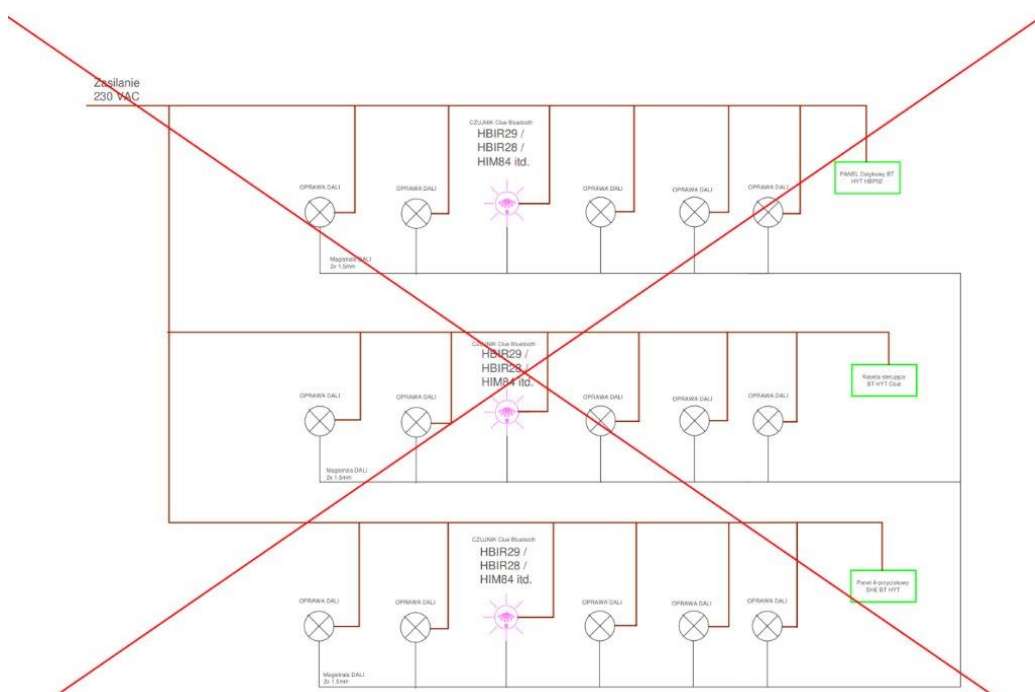


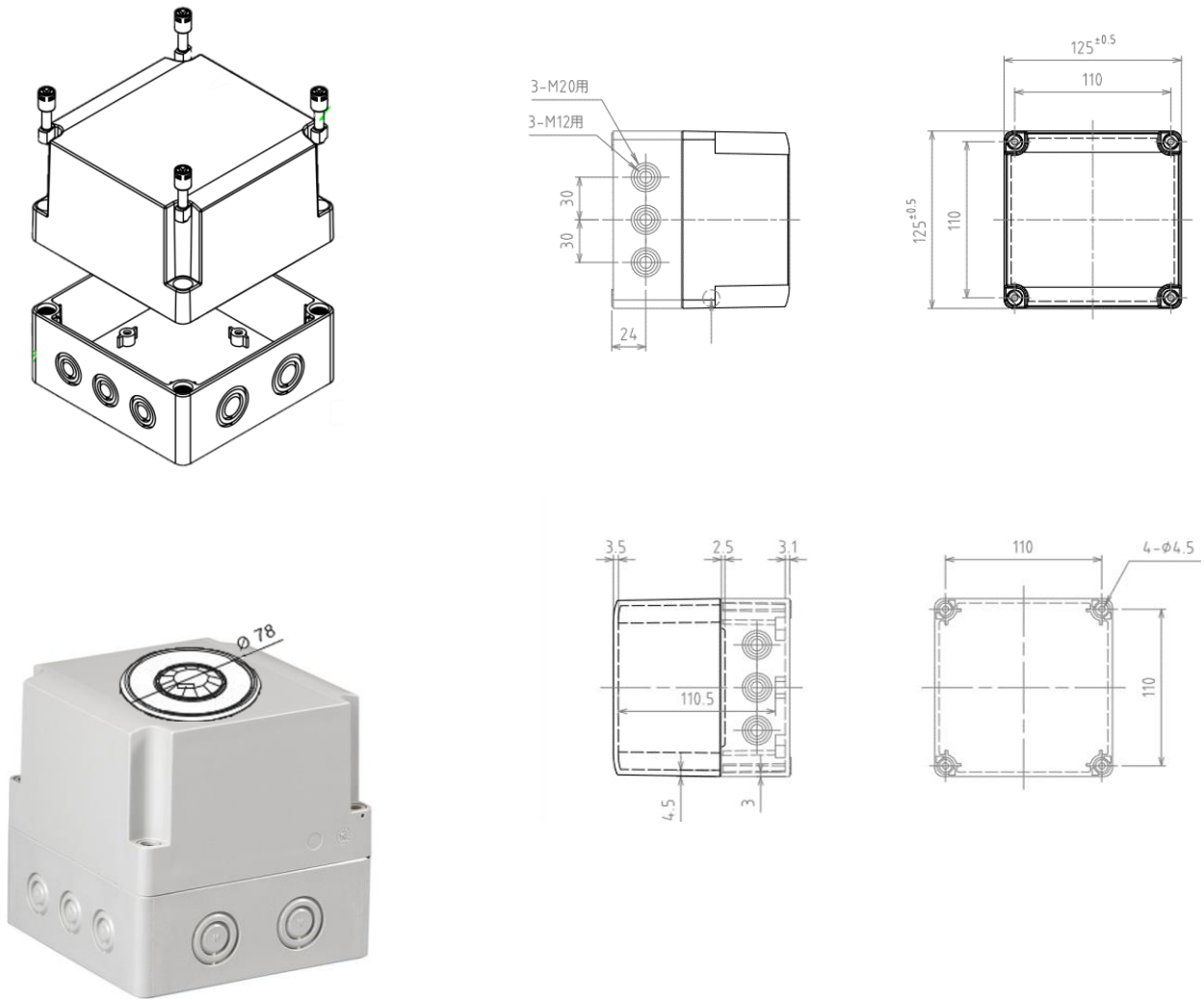
Wiring – connecting two or more sensors



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.

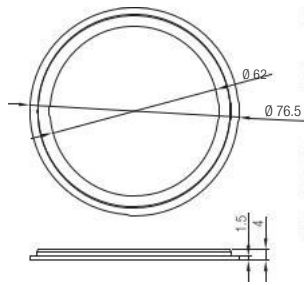
REMARK! Do not connect 2 or more sensors together via the DALI bus – this can lead to incorrect operation or even damage to the sensor.



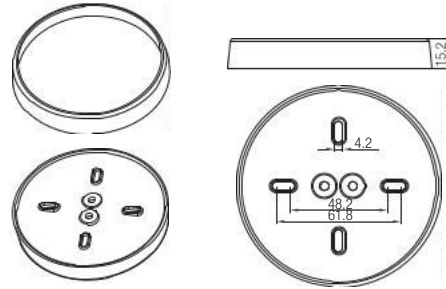


Manufacturer's code	Dimensions			Internal dimensions			Can color	Weight [g]
	S	W	G	s	w	g		
SPCM13 1313G	125	125	125	114.5	110.5	90	RAL7035	401

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



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



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 Lena Lighting Clue 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