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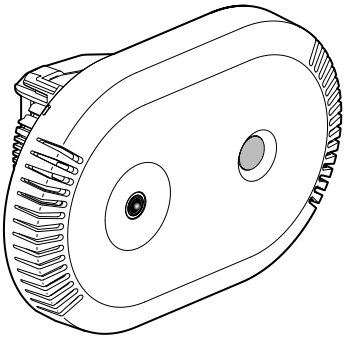
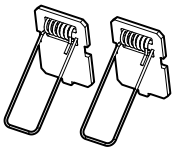
Light Up DALI multisensor advanced detector

Cat. No(s): 0 485 72





Access to the full Light Up documentation

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1. USE

The "DALI multisensor advanced detector" is a people-counting sensor dedicated to lighting control and building management applications.

In addition to the people-counting module for measuring the building use, it has an environmental sensor module.

It has the following features:

- **1 auxiliary input** for controlling lighting by means of a push-button connected to the phase.
- **1 thermal image sensor** and its lens in order to measure the number of people per zone and presence detection.
- **1 daylight sensor** measures natural and artificial light in order to control lighting according to the daylight setpoint.
- **1 temperature sensor** which can be used to measure the room temperature in degrees Celsius.
- **1 relative humidity sensor** which measures the current relative humidity in the room as a percentage.
- **1 sound level sensor** which measures the ambient noise level in dB SPL.
- **1 VOC sensor** which estimates the indoor air quality in the room. It measures the total volatile organic compounds in ppb, provides an air quality index such as the UBA index and estimates the CO2 level in ppm called "eCO2".
- **1 DALI output** for supplying the bus and controlling diffuse lighting.
- **1 relay output** mainly dedicated to powering DALI ECGs.
- **1 Bluetooth 5.0 node** for:

▪ commissioning the product - using the "Close Up" mobile app

- **1 Radio node at frequency 2.4 GHz** (16 channels) used for:

creating a radio network, for

▪ managing 1 connected power outlet and 1 wireless batteryless switch and can be used to

▪ add a motion sensor as a Secondary to extend the coverage.

Updating the product using the "Close Up" app available for IOS and Android.

2. TECHNICAL CHARACTERISTICS

- Power supply: 230 V~
- Frequency: 50-60 Hz
- Terminal capacity: 2 x 1.5 mm2 or 1 x 2.5 mm2
- Standby consumption: 2.7 W
- Flush-mounting diameter: 68 mm
- Weight of product only: 281 g
- Weight of packaged product: 347 g
- Impact resistance: IK04
- Penetration by solid and liquid matter: IP20
- Usage temperature: +5°C to +30°C
- Storage temperature: -20°C to +70°C
- Bluetooth 5.0: from BLE 4.2

■ 2.1 Thermal image sensor:

- 160° field of vision
- Coverage: 8 m x 8 m
- Installation height: 2.5 m (possible up to 4 m)
- Management of 1 to 6 zones of interest
- Management of 1 to 6 exclusion zones
- Counting up to 40 people
- Resolution: 1
- Availability of data once commissioned: up to 5 min

■ 2.2 Daylight sensor

Measures natural and artificial light in order to control lighting according to the daylight setpoint.

Range: 5 → 1275 lux

It is possible to disable daylight measurement with this setpoint value: 1275 lux.

Has the light regulation function. The value "0" can be used to save the ambient light level in the room as a daylight setpoint.

■ 2.3 Humidity sensor:

- Measures the relative humidity in the zone as a percentage
- Measurement range: 20% to 80%
- Drift: < 0.25%/year
- Accuracy: 5%
- Availability of data once commissioned: 1 hour
- Humidity offset: -20% to +20% (default: 0)

■ 2.4 Temperature sensor:

- Measures the ambient temperature in ° Celsius
- Measurement range: 0° to 50°C
- Resolution: 0.1°C
- Drift: < 0.02°C/year
- Availability of data once commissioned: 1 hour
- Temperature offset: -20°C to +20°C (default: 0)

2. TECHNICAL CHARACTERISTICS *(continued)*

■ **2.5 Acoustic sensor:**
• Measures the ambient noise in the zone in dB SPL
• Reactivates in any direction
• Measurement range: 35 - 120 dB SPL
• Resolution: 1 dB SPL
• Sound level offset: -20 to +20 dB SPL (default: 0)

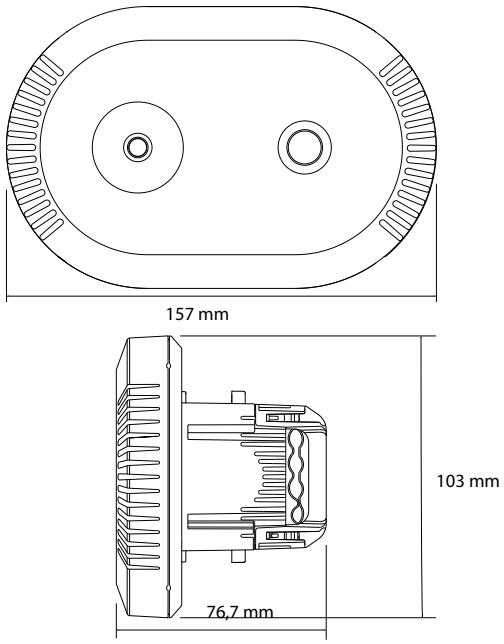
■ **2.6 VOC sensor:**
Estimates the indoor air quality in the room. It measures the total volatile organic compounds in ppb, provides an air quality index such as the UBA index and estimates the CO2 level in ppm called "eCO2".
• VOC: Measurement range: 0 to 10,000 ppb
Resolution: 1 ppb
Accuracy: +/- 25%
• IAQ level: Range: 1.0 to 5.0
Resolution: 0.1
Accuracy: +/- 10%
Availability of data once commissioned: 30 minutes

■ **2.7 Bluetooth 5.0**
Can be used to set up the product with a smartphone.
• The LED indicates: LED off ○ → Not twinned
Steady blue ● → Twinned
• Range: 10 m
• Compatible from 4.2 upwards

3. LOADS

Power supply: DALI
Voltage: 16 V
Guaranteed current: 100 mA
Maximum current: 130 mA

4. DIMENSIONS



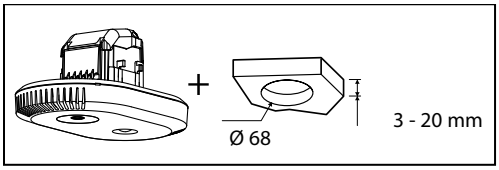
5. SIMPLIFIED EU DECLARATION OF CONFORMITY

• f (Frequency): 2.4 to 2.483 GHz

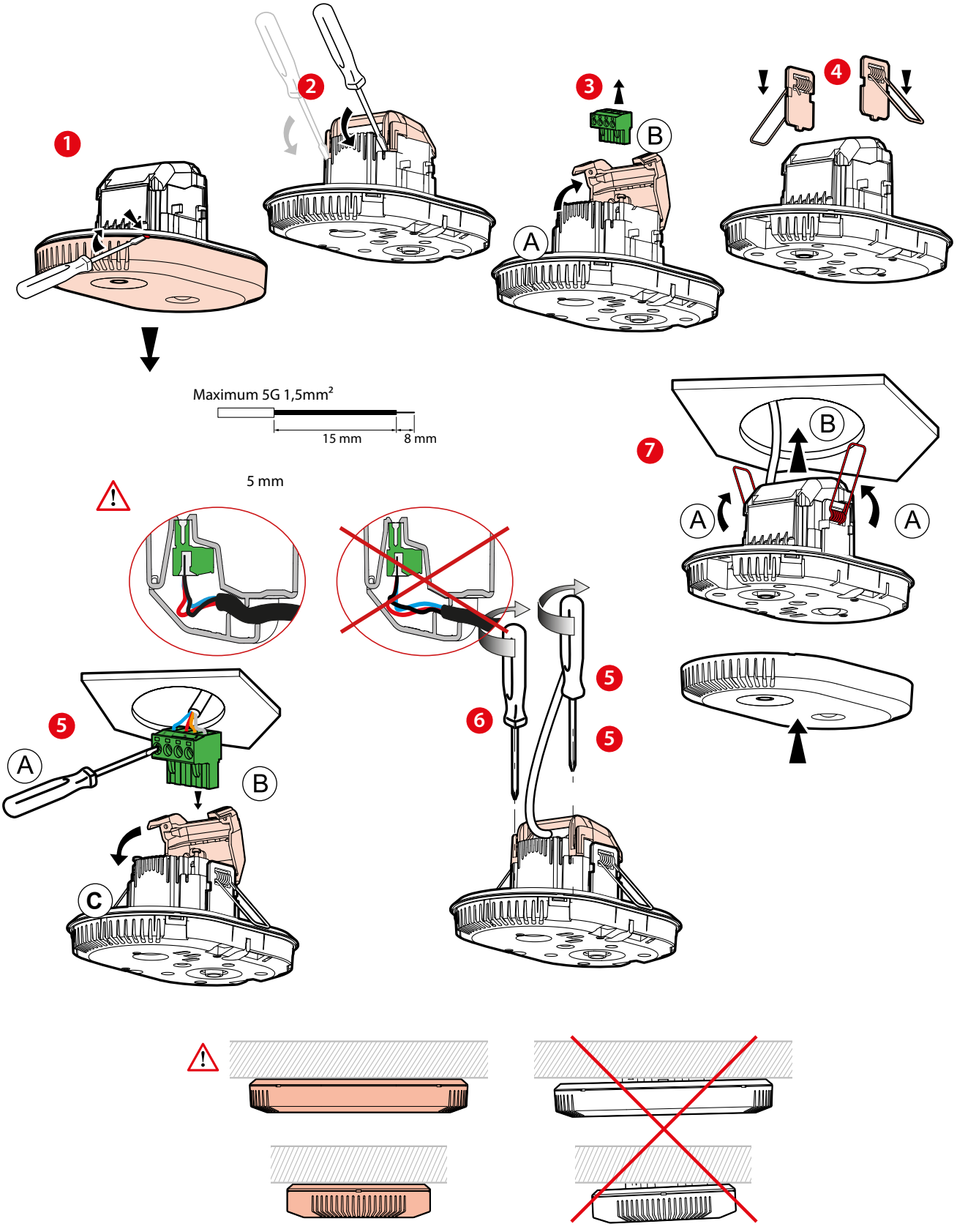
• P (Power): < 100 mW

LEGRAND declares that the radio-electric equipment type Cat. No. **0 485 72** complies with directive 2014/53/EU. The full text of the EU declaration of conformity is available on the following website: **www.legrand.com/ecatalogue**

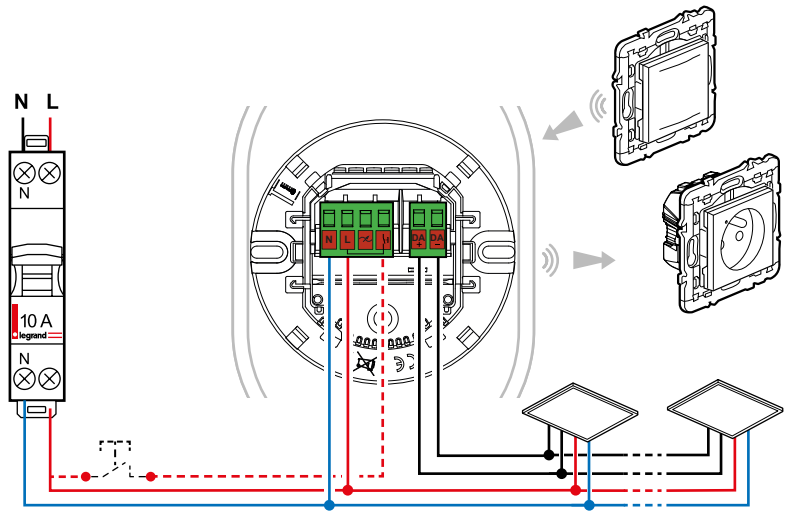
6. MOUNTING



- Mounting and wiring must be done with the power off. Please follow the ***Safety Instructions*** exactly.



7. WIRING



Bus DALI

D	
≤ 100 m	0.5 mm²
≤ 150 m	0.75 mm²
≤ 300 m	1.5 mm²

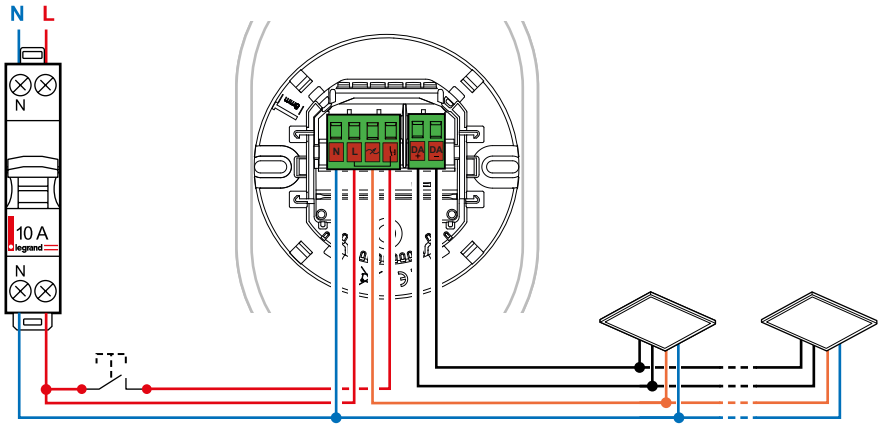
(*) This product can be controlled by:
- A wireless batteryless switch (ON/OFF without dimming)
Or
- A wired push-button (ON/OFF with dimming)
And it can control a connected power outlet (wirelessly).

Note :

The maximum distance between the switch and the auxiliary input is 50 m.

For pairing with this product, you need a wireless batteryless switch and/or a connected power outlet.
Please refer to the description of procedures in the **Light Up Technical Guide.**

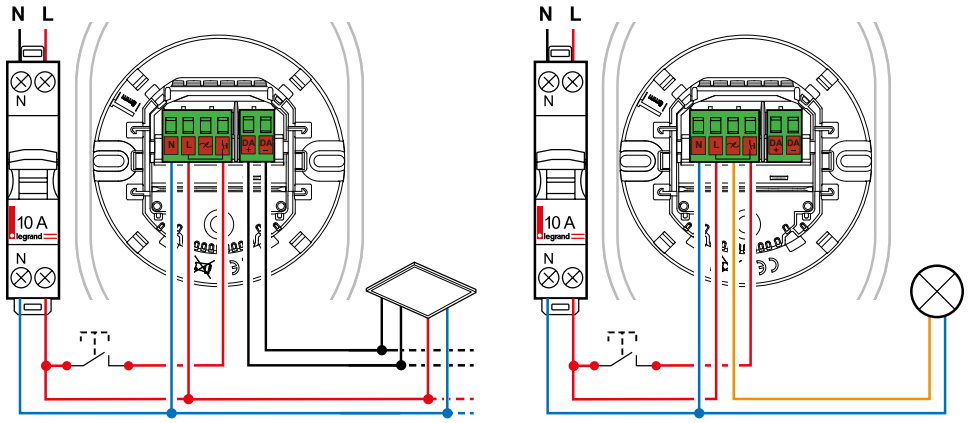
“Dimmable” load type



- The relay is dedicated to powering the ECG to reduce energy consumption, the ECG switch-off is delayed by 5 minutes.

7. WIRING *(continued)*

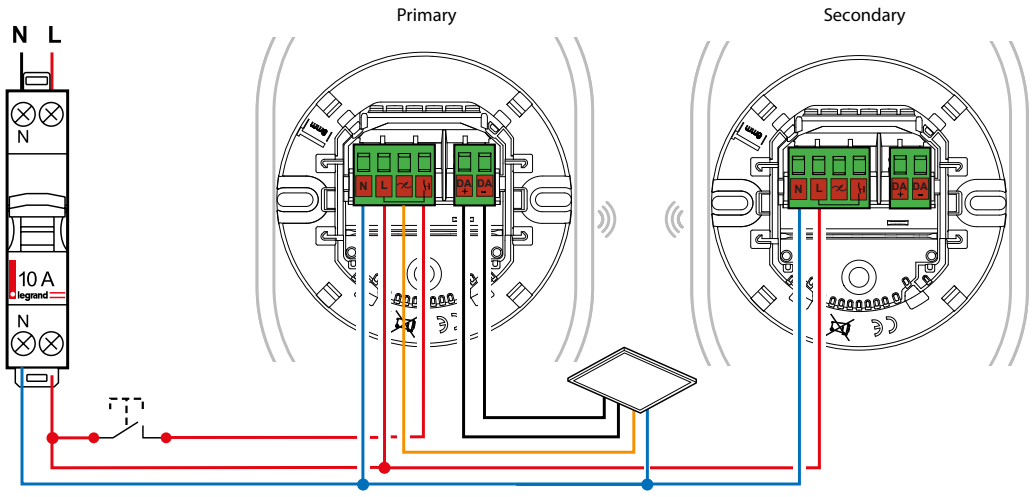
"Non Dimmable" load type



⚠ Detector 0 485 72 is configured to control dimmable DALI ECGs; it can be paired with DALI actuators (ON/OFF). To do this, use the **"Legrand Close Up"** app on your smartphone to change the type of load used, in this case **"Non Dimmable"**.

Primary/Secondary

By default the product is configured as **Primary**.
To change it to **Secondary**, refer to the description in the ***Light Up Technical Guide.***
The Primary can be paired with a maximum of 5 detectors configured as secondaries.

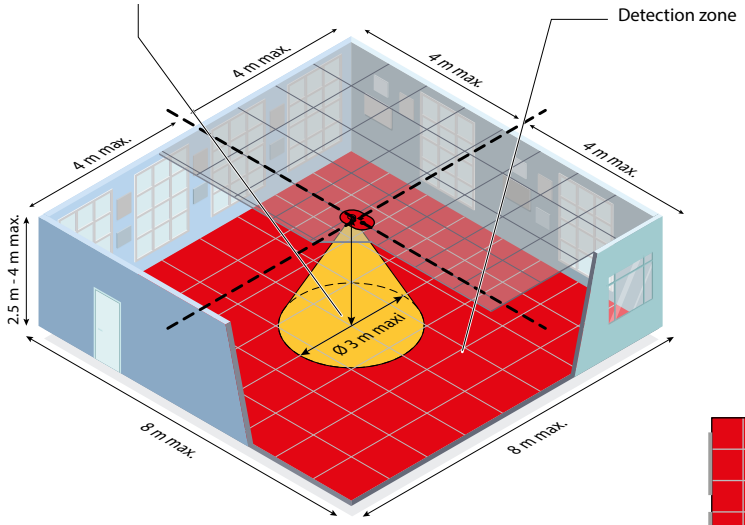


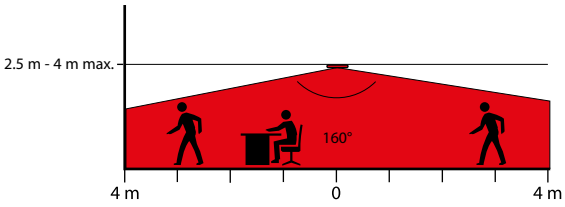
⚠ The detector provides the DALI BUS power supply. Do not connect 2 sensors to the same DALI BUS.

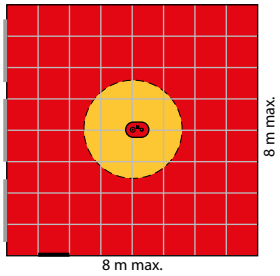
The Secondary can extend the detection zone. ***No loads should be paired with it.***
If being used in **Primary/Secondary** mode, the wired push-button should only be connected to the **Primary** sensor.

8. DETECTION ZONE

The light level is measured vertically from the detector over a 3 m diameter.





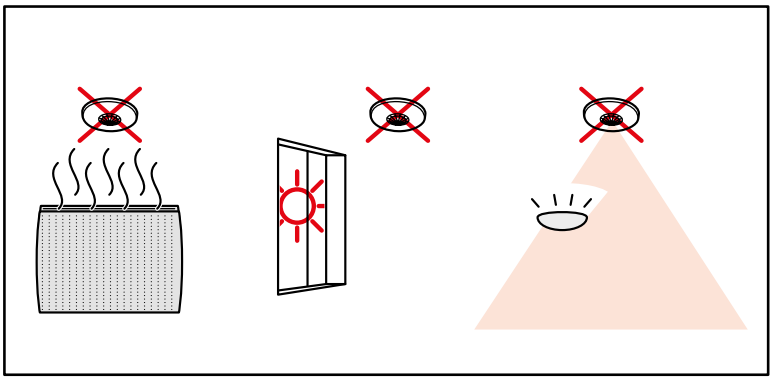


Possible to monitor up to 6 zones of interest and/or exclusion.

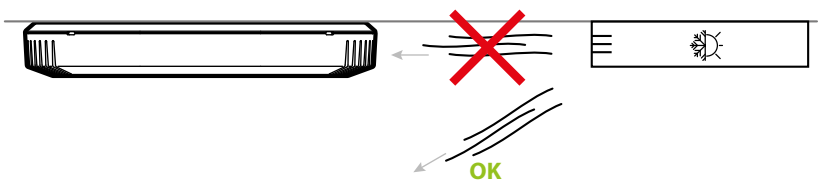
9. INSTALLATION

Maximum installation at a height of 4 m.

Check that the device's field of vision is not obstructed by objects or devices placed at height, which might conceal one or more people.



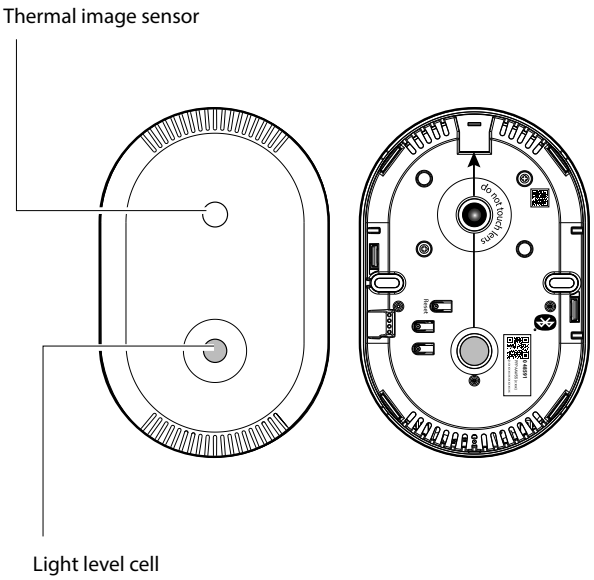
No direct air flow on the product.



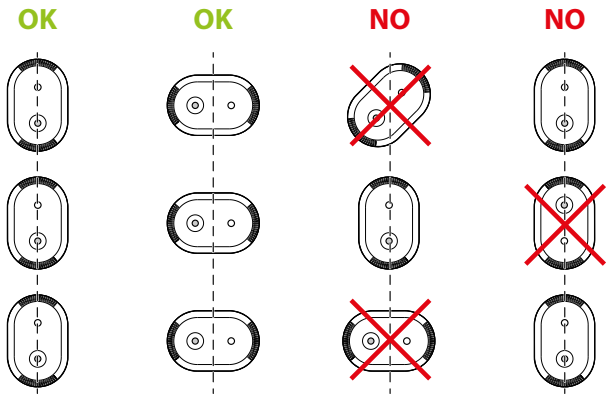
10. FIRST POWER-UP

First use:

The product is ready to use after 5 minutes of operation.
The product self-calibrates within 20 minutes. To calibrate it immediately, launch calibration from Close Up, making sure that nobody is in the zone covered by the product.



In large surface areas which require the installation of several devices, it is advisable to put them in a row and all facing in the same direction.



11. LEGRAND CLOSE UP APP

The detector functions are controlled by a number of parameters which can be changed or programmed with the **Legrand Close Up** app.

Legrand Close Up can be used to view and change all the detector parameters.

Exchanges between the detector and the phone are via Bluetooth®.

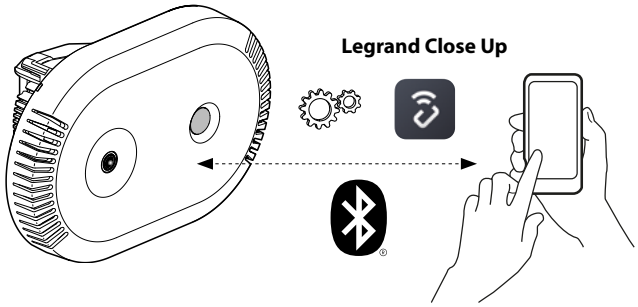
Note:

Refer to the **Light Up technical guide** to find the description of procedures for setting up Light Up products.

Available to download from:

Download on the App Store or GET IT ON Google Play

Direct access



12. SETTINGS WITH CLOSE UP

12.1 Different product states

Warm-up: Initial state after switch-on, the lights are on, the presence sensor is in the preheating phase for 80 seconds.
The presence LED is lit.

Initial: The product is ready to control lighting based on its parameters and its sensor measurements.

Test: Enabled by the installer or the expert, this state is used to check the presence sensor and its cover.
The settings are overridden except for PIR sensitivity, every time presence is detected the light comes on for 5 s.
This test is available for 10 minutes if specifically requested.

12. SETTINGS WITH CLOSE UP *(continued)*

12.2 Detection settings

See chart on page 9.

Time delay: Length of time the load remains on after detection.

Sensitivity: Detection range setting.

Detection LED:
Comes on for 80 s when the product is commissioned. Comes on for 1 s to indicate movement detection.

Daylight setpoint
Value at which the load switches on if the light level is less than the setting and goes off if it is above this setpoint.

Regulation:
Automatic switch-off of the load 10 minutes after the daylight setpoint is exceeded. If the level of light is below the daylight setpoint, the load is activated automatically after 20 seconds.

Standby level:
Warns of switch-off by lowering the daylight setpoint before switch-off.

Standby delay:
Used to adjust the switch-off warning duration.

Daylight level:
Light level value measured by the product.

Auto on/Auto off mode:
The lighting switches on automatically:
• On detection of presence if the natural light level is insufficient.

The lighting switches off automatically:
• When no presence is detected and at the end of the set time delay.
Or if the natural light level is sufficient (regulation enabled).

Any new detection triggers an automatic switch-on if there is insufficient light.

Walkthrough mode:
• If no presence is detected in the 3 minutes following initial detection, the product will switch off the load after 3 minutes.
• If another presence is detected in the 3 minutes following initial detection, the device will switch off the load at the end of the set time delay.

Manual on/Auto off mode:
The lighting is switched on via a manual control, but switches off automatically:
• When no presence is detected and at the end of the set time delay.

After switch-off, if another movement is detected within a 30-second period, the lighting switches on automatically.

Temperature:
The product measures the current temperature level in the room by means of a dedicated sensor. The value is expressed in degrees Celsius. This value is used as an "indicator".

Humidity:
The product measures the relative humidity level in the room by means of a dedicated sensor calibrated by the manufacturer. The value is expressed as a %. This value is used as an "indicator".

Current relative humidity (%)
→ direct reading
+ relative humidity offset

12. SETTINGS WITH CLOSE UP *(continued)*

Noise sensor:
The product measures the sound level in the room by means of a dedicated sensor. The value is expressed in dB SPL. This value is used as an "indicator".

Maximum sound level (dB SPL)
→ maximum direct reading between 2 requests
+ sound level offset

Average sound level (dB SPL)
→ direct reading
+ sound level offset for 1 min

Air sensors:
The product measures the total volatile organic compounds in the room by means of a dedicated sensor. The value is expressed in PPB. This value is used as an "indicator".

Current VOC level (PPB) → direct reading

• **Measuring the IAQ**
The product provides the IAQ level according to the UBA index measured in the room based on the VOCT measurement. This value is used as an "indicator".

Current IAQ index (UBA) → direct reading

• **Estimated CO_2 measurement**
The product estimates the CO_2 level based on the VOCT measurement. The value is expressed in PPM. This value is used as an "indicator".

eCO_2 (ppm) → direct reading

Restart:
Function allowing automatic switch-on of the product after a period of 30 seconds following the load being switched off.
After switch-off, any new detection within a 30-second period triggers an automatic switch-on.
After more than 30 seconds the device must be switched on manually.

Regulation speed:

Used to extend or reduce the load reaction time based on the light level measurement and user setpoint.
Offsets can be used to adjust the values measured by the product.

Temperature offset: -20°C to +20°C (by default: 0).

Relative humidity offset: -20% to +20% (by default: 0).

Sound pollution offset: -20 to +20 dB SPL (by default: 0).

Return to factory settings

• **Action**:

Press the reset button for 10 s, or press the app button
The LED flashes red for 5 s at 2 Hz.

• **Results**:

The parameters are set to default values.
Links between products and the network table are deleted.
The passwords are reset to their factory value.

12. SETTINGS WITH CLOSE UP *(continued)*

TITLE	SETTING	VALUES	DEFAULT VALUE	CONDITIONS
CONFIGURATION				
Time delay	Minutes	0 to 59	15	
	Seconds	15 to 59	0	
Detection	PIR sensitivity	Low / Medium / High / Very high	High	
	Detection Led	Enabled / Disabled	Enabled	
	Occupancy status	*Read only*		
	Retriggering	Enabled / Disabled	Disabled	Only if mode is set to Manual ON / Auto OFF
Luminosity	Daylight setpoint	5 to 1275	300	
	Provision of light	0 to 1275	0	
	Luminosity regulation	Enabled / Disabled	Enabled	
	Standby level	1 to 100	10	
	Standby delay	No standby 5 sec. 10 sec. 20 sec. 30 sec. 1 min. 5 min. 10 min. 15 min. 20 min. 30 min. 60 min. No limit	Disabled	
	Daylight factor	1 to 255	35	
	Daylight level	*Read only*		
	Natural daylight factor	1 to 255	10	
	Current provision of light	*Read only*		
	Lighting output type	Dimming / Non dimming	Dimming	
	Regulation speed	5 minutes at least 10 minutes at least 15 minutes at least 20 minutes at least 25 minutes at least	10 minutes at least	
Functions	Mode	Auto ON / OFF Walkthrough mode Manual ON / Auto OFF	Walkthrough mode	
	Primary / Secondary	Primary Secondary	Primary	
Temperature	Current temperature	*Read only*		
	Temperature offset	from -20 to +20	0	
Humidity	Current humidity	*Read only*		
	Relative humidity offset	from -20 to +20	0	
Noise sensor	Max noise	*Read only*		
	Current noise level average	*Read only*		
	Noise level offset	from -20 to +20	0	
Air sensors	VOCT	*Read only*		
	Air quality	*Read only*		
	CO2 equivalent	*Read only*		
VERSIONS				
Product version		*Read only*		
Zigbee IEEE		*Read only*		
Software - radio module		*Read only*		
Software - lighting module		*Read only*		
Software - counting function		*Read only*		
Hardware - counting function		*Read only*		
Parameters - counting function		*Read only*		
Status - counting function		*Read only*		
RADIO NETWORK				
PAN ID		*Read only*		
Channel		*Read only*		
Coordinator		*Read only*		
SENSOR STATUS				
Sensor status		*See details (access to a new screen)*		

Advanced settings

12. SETTINGS WITH CLOSE UP *(continued)*

■ 12.3 Access to tools

Commands	**Reboot** Allows the product to be rebooted in the event of faulty operation.
	Factory reset By pressing the button on the app or by holding down the Reset button for 5 seconds. The radio LED flashes red, then the device restarts. Results: The settings are reset to their default values. The radio settings (connection, network table) are cleared. The device reverts to an non-secure state.
	Dissociate from the project The product is returned in a non-secured state. It can be linked to a new project.
	Join radio network When the button on the app is pressed, the device attempts to connect to an open wireless network. The radio LED flashes magenta during the operation (max. 180 s). If successful, the LED turns solid magenta. Otherwise, it turns solid red. During the operation, other radio commands are unavailable. You can stop the procedure by pressing this button again (the LED turns solid red).
	Leave radio network If the device is the network coordinator (see parameter chart) the network is terminated. All devices are removed from the network. If the device is not the coordinator, it withdraws from the network.
	Open radio network Opens the radio network for 180 seconds (the radio LED turns a steady magenta). During this time, you can add devices to the network. If the device does not belong to a network, it creates its own network.
	Close radio network Closes the radio network (the radio LED goes out). It is therefore no longer possible to add devices to the network.
	Initial state* This command puts the unit into warm-up mode, which can help the installer check several key points (daylight setpoint, detection, automation).
	End of time delay* Clears the current time limit.
	Walk test* Useful for testing the detector's range of coverage. This mode allows you to override all settings except for PIR sensitivity for 10 minutes. Each detection turns on the presence indicator light (if the relevant setting is enabled) and activates the lighting for 5 seconds. After these 5 seconds, if no presence is detected, the lighting switches off; otherwise, the 5-second timer is reset.

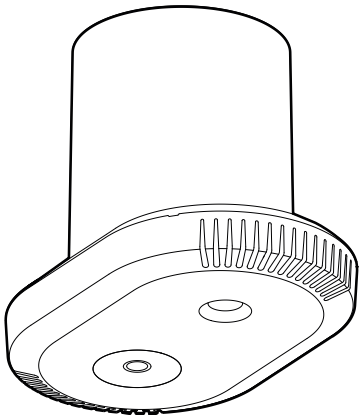
* Command dedicated to checking the product's performance, mainly used by the installer or expert.

12. SETTINGS WITH CLOSE UP *(continued)*

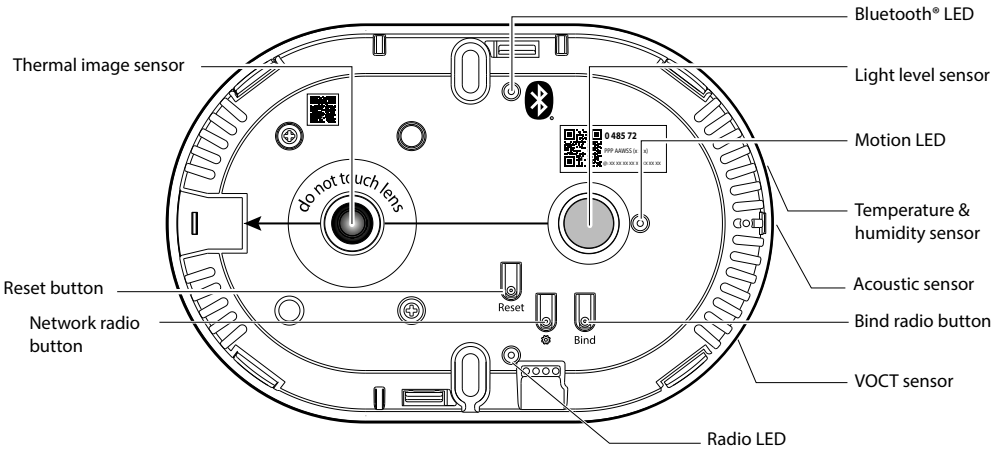
Modules	**Manage Legrand wireless devices** Allows you to add or remove switches and/or sockets.
	Sensor calibration Allows you to set two reference values (lux): lights on/shutters closed and lights off/shutters open. After pressing this button, follow the described procedure.
	Primary / Secondary installation The primary detector controls the load(s). The secondary detector extends the detection range but does not directly control any loads. By default, the detector is set to primary mode.
	Counting function configuration This allows configuration of the detector height and the counting module's operating mode, as well as the creation of up to 6 zones of interest and 6 exclusion zones.

13. SURFACE-MOUNTING ACCESSORY

Surface-mounted installation using accessory Cat. No. **0 485 80**. Follow the instructions supplied with the accessory.



14. DESCRIPTION OF BUTTONS AND LEDS



Network radio button	< 0.5 s Join network/Opening and closing the network > 5 s Radio reset	
Bind button	< 0.5 s Network creation/Initiator binding > 5 s Target Binding	
Reset button	< 0.5 s Reboot > 5 s Return to factory settings	
Radio LED	Failure of network creation, joining a network or binding. Product reset *(flashing red)*	Flashing red
	The product is in a radio network, the network is open.	Steady magenta
	After the **Network** button is pressed: attempt to join a radio network. It changes to steady magenta if the operation was successful. If not, the LED flashes red 5 times.	Blinking magenta
	Binding procedure in progress	Blinking blue
	Updating	Blinking cyan
	Product anomaly, reboots 15 s after the anomaly	Steady white
	Product start-up	Steady yellow
Presence LED	In pre-heating state (commissioning) the LED stays on for 80 s. Each time movement is detected, the LED comes on for 1 s.	Steady green
Bluetooth® LED	Is on when the product is paired with a smartphone.	Steady blue

15. STANDARDS

Installation standards: NFC 15-100
Product standards: EN 50428

LVD "Low Voltage Directives":
• Directive ⟶ 2014/35/EU
• Standard ⟶ NF EN IEC 60669-2-1:2022

EMC "Electromagnetic compatibility":
• Directive ⟶ 2014/53/EU
• Standard ⟶ NF EN IEC 60669-2-1:2022
ETSI EN 301489-1
ETSI EN 301489-17

RED (radio equipment):
• Directive ⟶ 2014/53/EU
• Standard ⟶ ETSI300 328 v2.2.2:2020
IEC62311:2020

RoHS (Restriction of Hazardous Substances):
• Directive ⟶ 2011/65/EU
2015/863/EU

EC directives:
• European Directive 2002/96/EC:
WEEE (Waste Electrical and Electronic Equipment)
• EC Directive 2002/95/EC:
RoHS (Restriction of Hazardous Substances)

16. CARE

Keep the lens clean.

Clean the surface with a cloth.

Do not use acetone, tar-removing cleaning agents or trichloroethylene.

Resistant to the following products: - Hexane (EN 60669-1)
- Methylated spirit
- Soapy water
- Diluted ammonia
- Bleach diluted to 10%
- Window cleaning products

Caution:
Always test before using other special cleaning products.