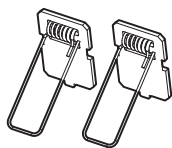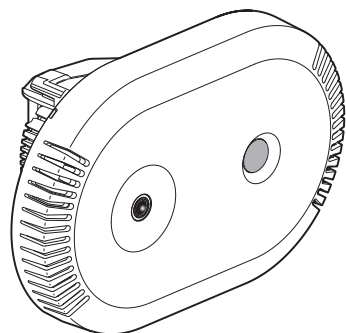# Light Up 3-zone DALI multisensor advanced detector

Cat. No(s): 0 485 74

Access to the full LIGHT UP documentation

CONTENTS — PAGE

1. USE

The "**3-zone 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 tVOC sensor** which estimates the indoor air quality in the room. It measures the total volatile compounds in ppb, provides an air quality index such as the UBA index and estimates the CO_2 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.

- **1.1 Bluetooth 5.0 node for:**
   - commissioning the product - using the "CLOSE UP" mobile app.

- **1.2 Radio 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 slave to extend the coverage.

Updating the product using the "CLOSE UP" app available for IOS and Android.

1. USE (CONTINUED)

■ 1.3 Management of 3 lighting zones

3-zone LIGHT UP DALI detectors can control 3 lighting zones:
- "window" group dimming
- "corridor" group dimming
- "panel" group ON/OFF

A wireless batteryless switch only controls the ON/OFF output in the "Panel" section.
A wired push-button controls the two other zones: ON/OFF and dimming.

2. TECHNICAL CHARACTERISTICS

- Power supply: 230 V~
- Frequency: 50/60 Hz
- Terminal capacity: 2 x 1.5 mm^2 or 1 x 2.5 mm^2
- 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. TECHNICAL CHARACTERISTICS (continued)

■ **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
• Re-activates in all directions
• 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
compounds in ppb, provides an air quality index such as the UBA index
and estimates the CO_2 level in ppm called "eCO_2".
• VOC: Measurement range: 0 to 10,000 ppb
        Resolution: 1 ppb
        Accuracy: +/- 25%
• AQI 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
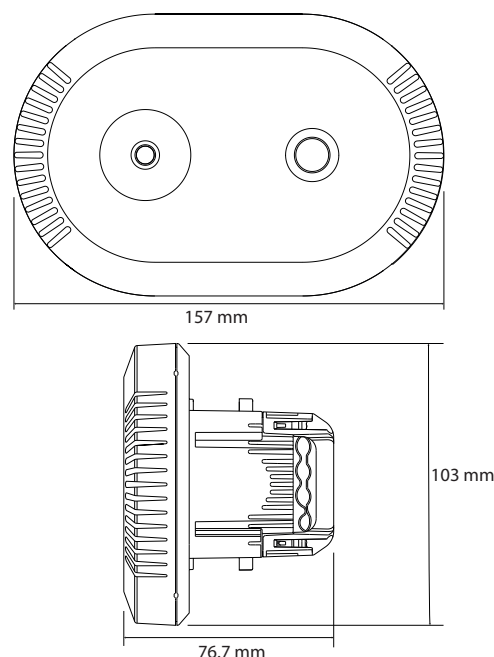• Range: → 10 m
• Compatible from 4.2 upwards

3. LOADS

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

4. DIMENSIONS

157 mm

103 mm

76.7 mm

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 74** 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

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6. DESCRIPTION
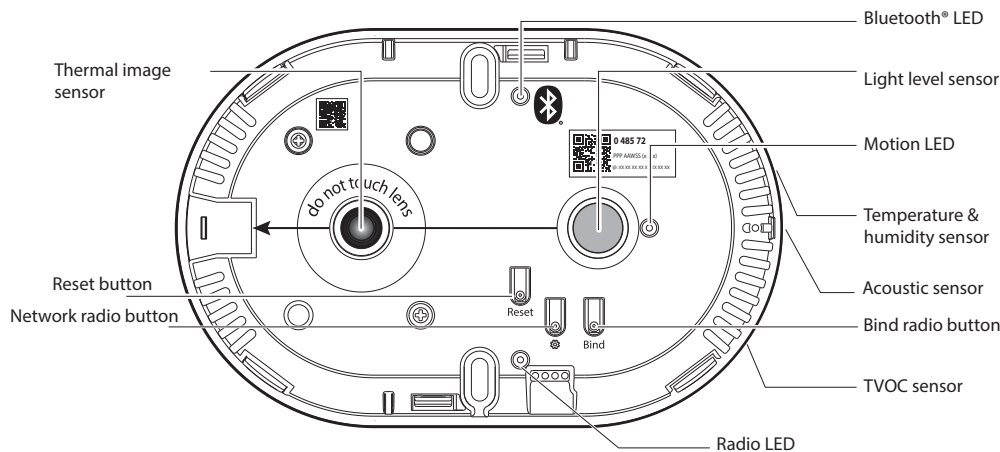
Reset button:
This button is used to return to factory settings.

Bluetooth® LED (blue):
Indicates that a device is paired with a mobile device (smartphone, etc).
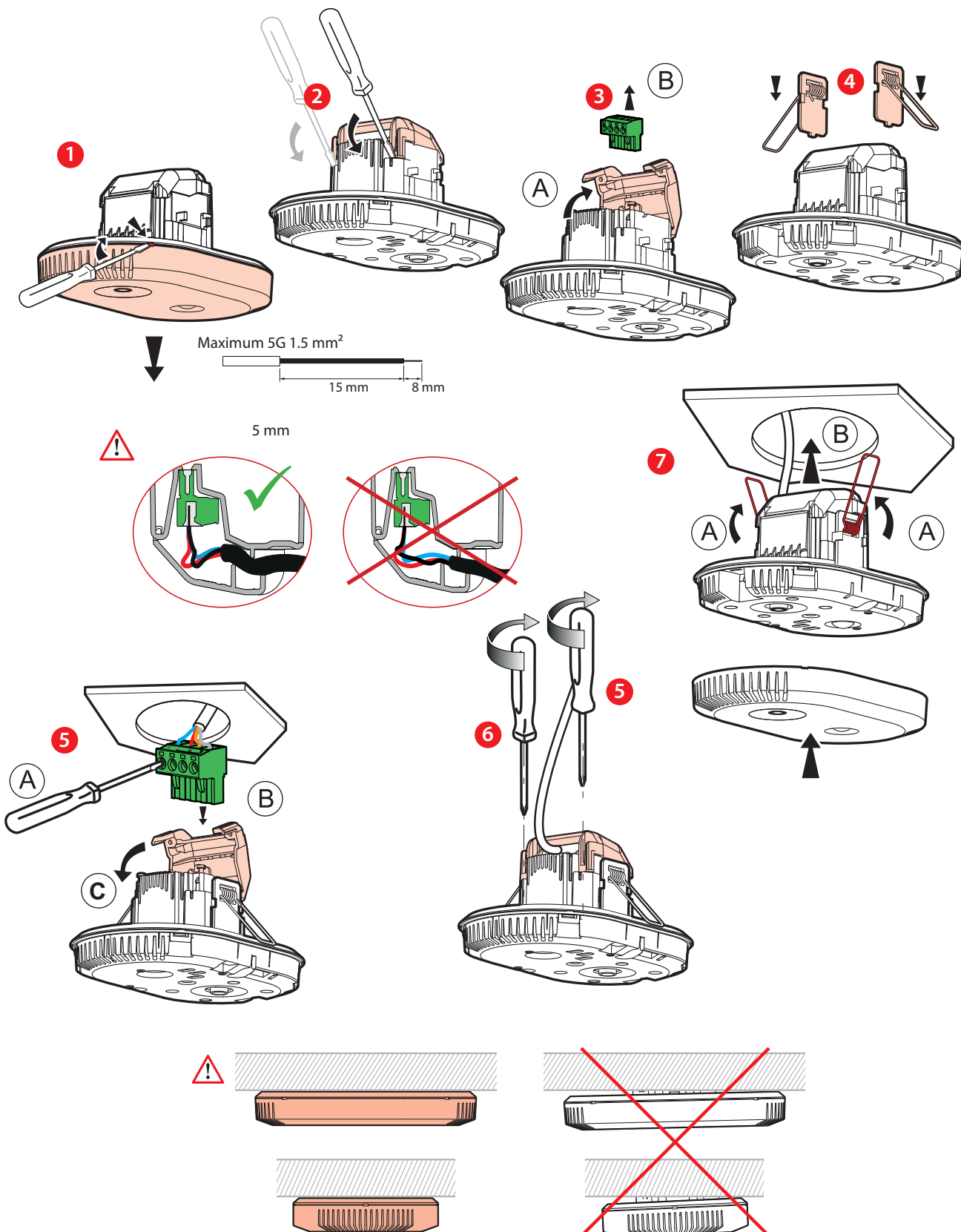
Motion LED (green):
Green LED dedicated to heating and motion.

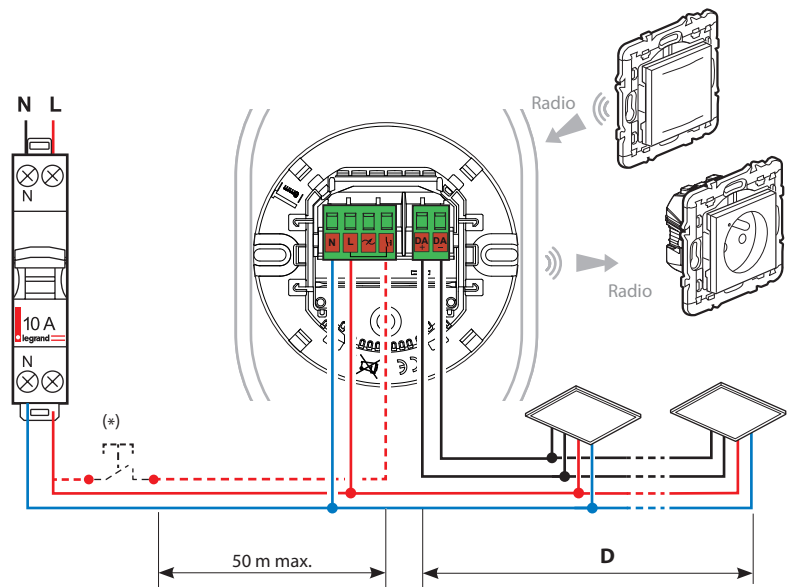|		
• Network radio button	< 0.5 s Join network/Opening and closing the network > 5 s Radio reset	
• Bind button	< 0.5 s Network creation/Initiator binding > 5 s Target Binding	
• Reset button	< 0.5 s Reboot > 5 s Return to factory settings	
• Radio LED	Radio operation failed Product reset *(flashing red)*	◉
	Open radio network *((steady magenta)*	•
	Network join procedure in progress *(blinking magenta)*	✳
	Binding procedure in progress *(blinking blue)*	✳
	Update *(blinking cyan)*	✳
	Product anomaly *(steady white)*	○
	Start-up *(steady yellow)*	•
• Presence LED	80 s at product start-up 1 s at each detection *(steady green)*	•
• Bluetooth® LED	Product paired with a smartphone *(steady blue)*	•

7. MOUNTING

Ø 68   3 - 20 mm

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

Maximum 5G 1.5 mm²

15 mm   8 mm

5 mm

Technical data sheet: S000124562EN-3   Updated: 26/11/2024   Created: 24/01/2024

legrand

8. WIRING

DALI bus

D	
≤ 100 m	0.5 mm^2
≤ 150 m	0.75 mm^2
≤ 300 m	1.5 mm^2

50 m max.

D

(∗) 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**.
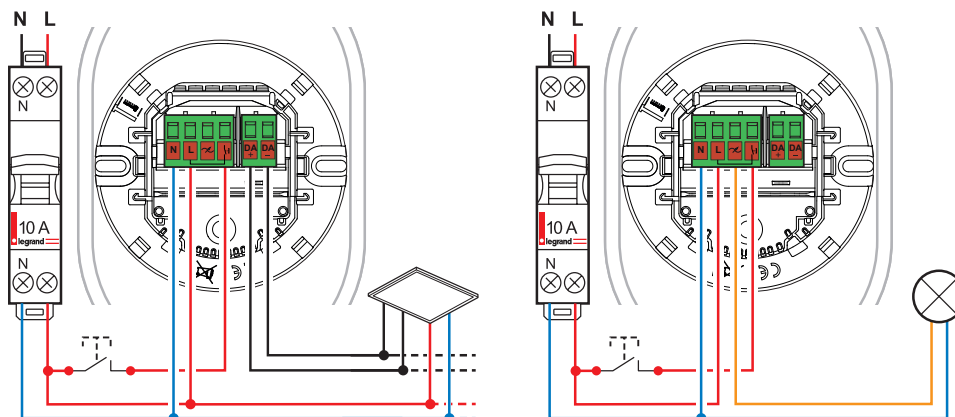
"Dimmable" load type
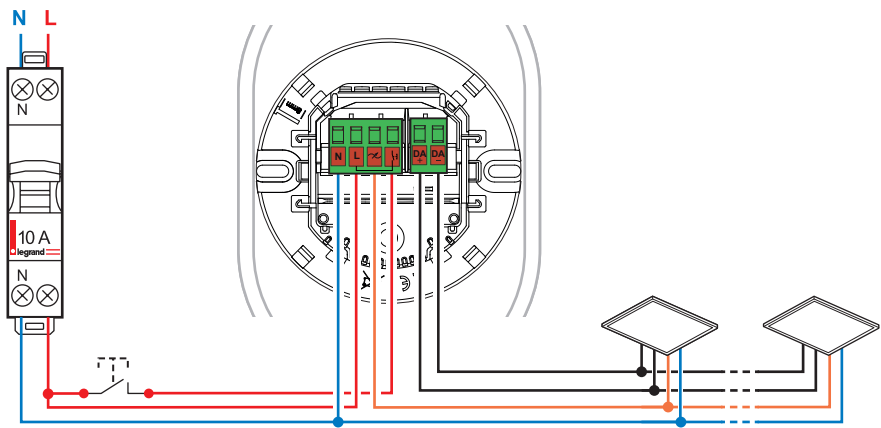
• The relay is dedicated to powering the ECG to reduce energy consumption, the ECG switch-off is delayed by 5 minutes.

8. WIRING (continued)

"Non Dimmable" load type

⚠ Detector 0 485 74 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"**.

#Master/Slave

By default the product is configured as *Master*.

To change it to *Slave*, refer to the description in the *LIGHT UP Technical Guide*.

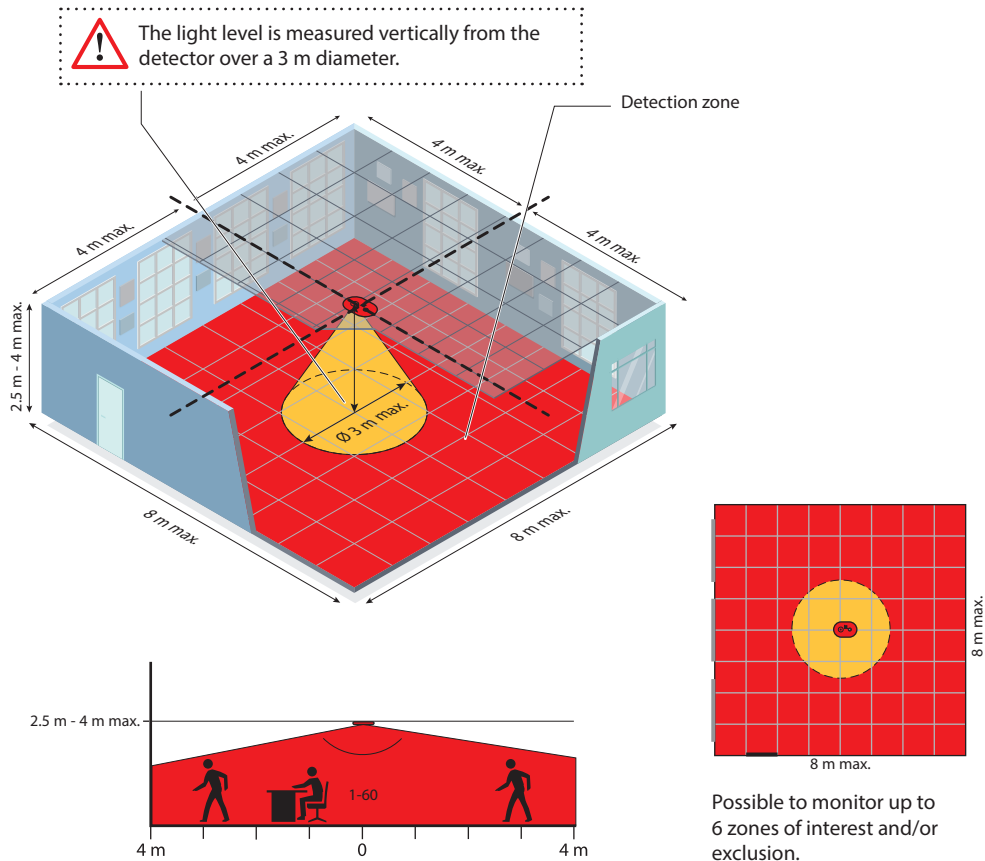The Master can be paired with a maximum of 5 detectors configured as Slave.
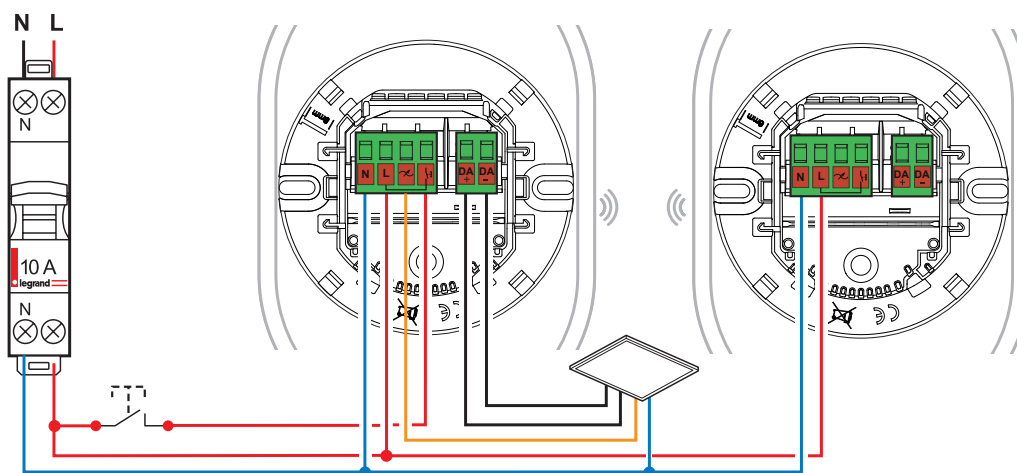
⚠ The detector provides the DALI BUS power supply.
Do not connect 2 detectors to the same DALI BUS.

The slave can extend the detection zone. *No loads should be paired with it*.

If being used in *Master/Slave* mode, the wired push-button should only be connected to the *Master* detector.

9. DETECTION ZONE

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

Detection zone

4 m max.
4 m max.
4 m max.
4 m max.
2.5 m - 4 m max.
Ø 3 m max.
8 m max.
8 m max.

8 m max.
8 m max.

2.5 m - 4 m max.
1-60
4 m   0   4 m

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

10. 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.
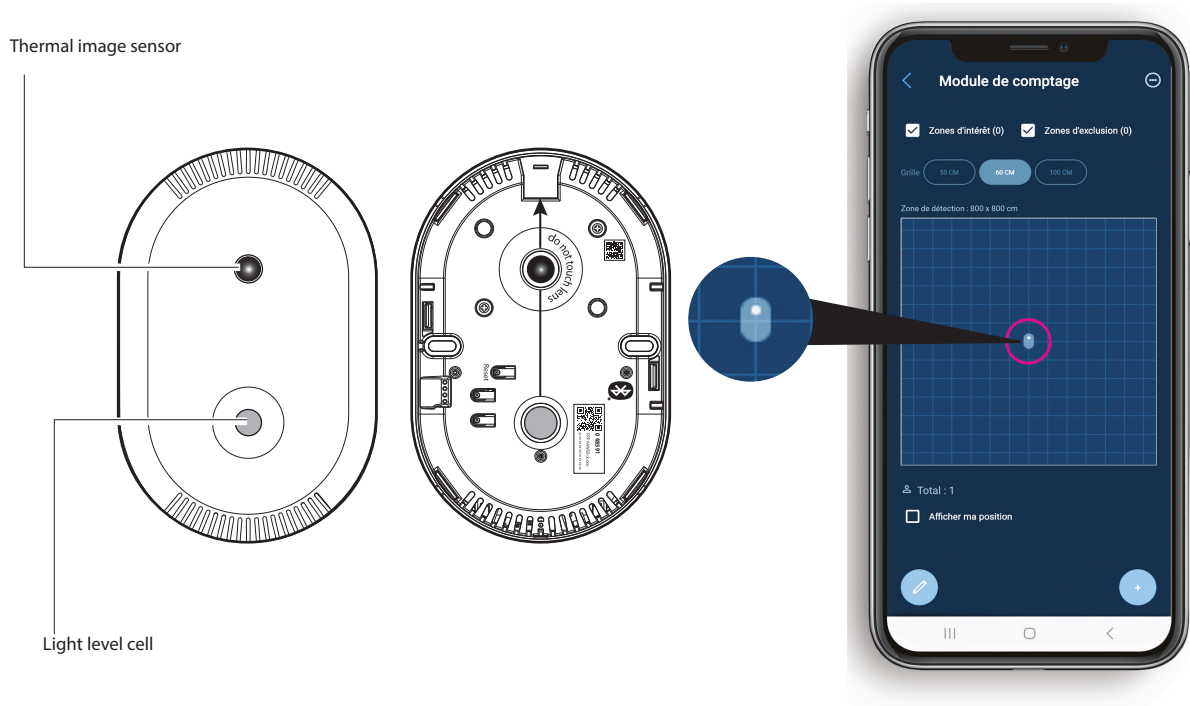
No direct air flow on the product.

OK
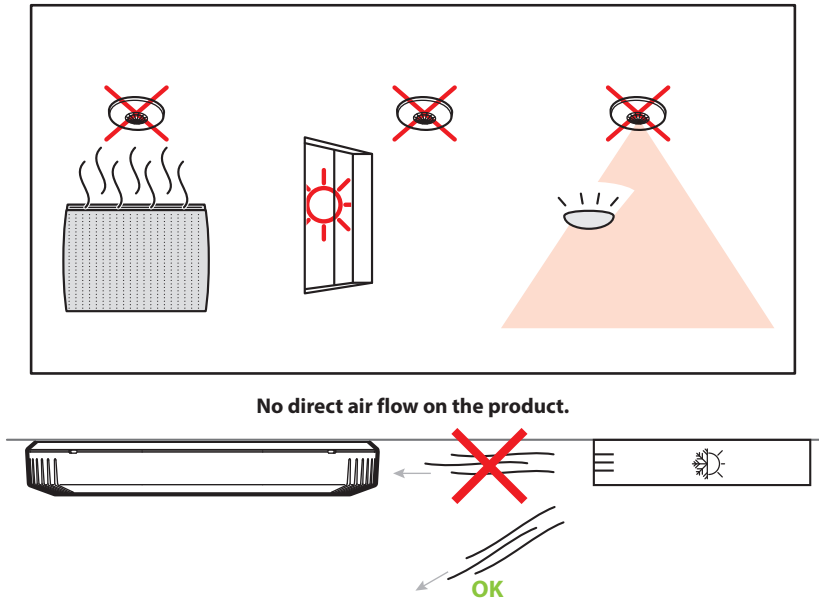
11. FIRST SWITCH-ON

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.

Thermal image sensor

Light level cell

11. FIRST SWITCH-ON (continued)

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.

OK OK NO NO
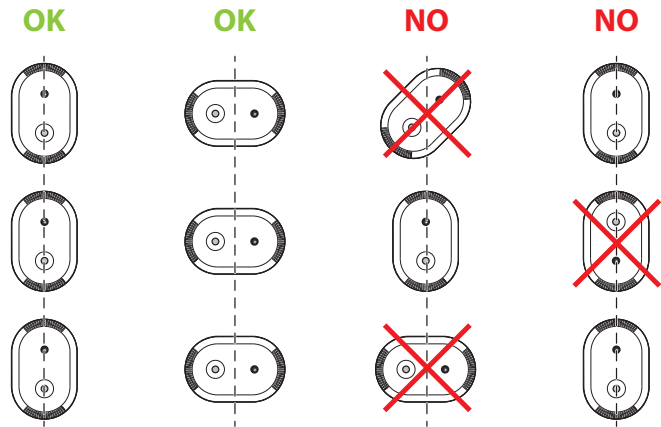
12. SETTINGS - DEFAULT SETUP

Sensor settings		Default value	Modifiable parameters
Timeout	Minutes	15'	0 to 59 min.
	Seconds	0"	15 to 59 s.
Detection	Detection LED	Enabled	Disabled, Enabled
	Lighting output type	Dimmable	Dimmable/Non Dimmable
	Daylight setpoint	300 lux	5 to 1275 lux
	Light level regulation	Enabled	Disabled, Enabled
	Fade level	10	10 to 100
Light level	Standby time	Off	Disabled
			5 sec.
			10 sec.
			20 sec.
			30 sec.
			1 min.
			5 min.
			10 min.
			15 min.
			20 min.
			30 min.
			60 min.
			No limit
	Light level	Read-only parameter	
	Light level offset	25%	0 to 100%
	Lighting output type	Dimmable	Dimmable/Non Dimmable
Function	Mode	Walkthrough	Auto ON/OFF
			Walkthrough
			Manual ON/Auto Off

Sensor settings		Default value
Other	Temperature	Current temperature
	Humidity	Current humidity
	Noise sensor	Maximum noise
		Average current noise
	Air sensors	TVOC
		Air quality

(Read-only parameters)

Sensor settings		Default value	Modifiable parameters
Advanced mode	Detection	Restart (*)	Enabled	Disabled, Enabled
	Light level	Regulation speed	At least 10 minutes	At least 5 minutes
				At least 10 minutes
				At least 15 minutes
				At least 20 minutes
				At least 25 minutes
	Temperature	Temperature offset	0	
	Humidity	Relative humidity offset	0	
	Noise sensor	Noise pollution offset	0	
	Air sensor	CO₂ equivalent (ppm)		
	Versions	Product version	Read-only parameters	
		Zigbee IEEE		

(*) Parameter only accessible if **Mode ⟶ Manual ON/Auto OFF**

Parameters can be viewed and/or modified from the **CLOSE UP** app. The procedures for using the app can be viewed in the **LIGHT UP Technical Guide**.

■ 12.1 ⏱ Time delay:
Length of time the load is on after detection.

■ 12.2 Sensitivity:
Detection range setting.

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

■ 12.4 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.

■ 12.5 Regulation:
Automatic switch-off of the load 15 minutes (default value) after the daylight setpoint is exceeded. If the level of light is below the daylight setpoint, the load is activated automatically after 20 seconds.

■ 12.6 Fade level
Warns of switch-off by lowering the daylight setpoint before switch-off.

■ 12.7 Standby time
Used to adjust the switch-off warning duration.

■ 12.8 Light level
Light level value measured by the product.

■ 12.9 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.

■ 12.10 Walkthrough mode:
• If no presence is detected in the 3 minutes following initial detection, the product will cut 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.

■ 12.11 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.

■ 12.12 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.

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

■ 12.14 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

12. SETTINGS - DEFAULT SETUP (continued)

■ 12.15 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

■ 12.16 Air quality sensor
The product measures the total volatile 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

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

Current AQI index (UBA) → direct reading

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

eCO_2 (ppm) → direct reading

■ 12.17 Regulation speed:
Used to extend or reduce the load reaction time based on the light level measurement and user setpoint.

■ 12.18 Setting the offsets:
Offsets can be used to adjust the values measured by the product.

Temperature offset: -20 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).

■ 12.19 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.

13. USING "CLOSE UP"

The product can be configured using the 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 the detector parameters.

Exchanges between the detector and the smartphone are via Bluetooth®

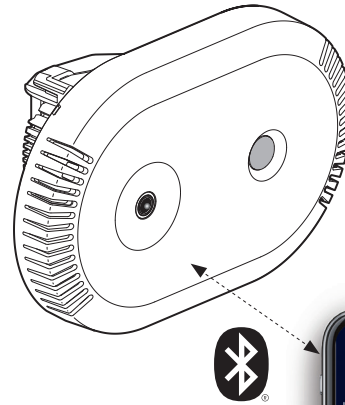**Legrand CLOSE UP** can be downloaded from:

Download on the App Store   or   **GET IT ON Google Play**

Direct access

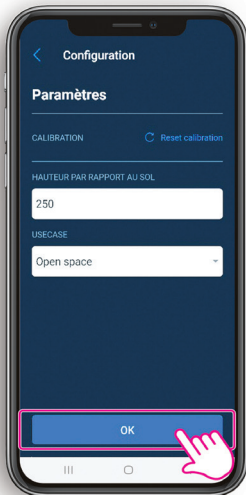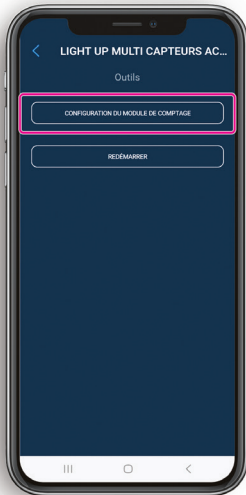## 13. USING "CLOSE UP" (continued)

The first time you use CLOSE UP you will be asked to create a **Legrand** account and initialise a project (site).

Follow the on-screen instructions and/or refer to the **LIGHT UP Technical Guide**.

---

13. USING "CLOSE UP" (continued)

■ 13.1 Access to tools
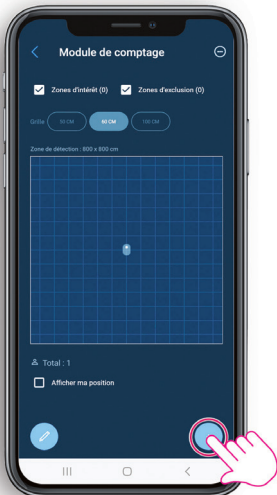

■ 13.2 Counter module configuration

List of **USE CASES** which can be selected:

- **DemoMode**: demonstration mode, the reaction times are very fast.
- **OpenSpace** : open space where people are positioned at workstations. Default value.
- **Meeting room**: situation where people are close to one another and don't move much.
- **Walkways**: hall, space where people are very mobile (or don't stop at all).
- **Average office**: Office smaller than 40 m², very few people who are not very mobile.

■ 13.3 Counter modules - creation of zones by movement

- Click **+** to add a zone.

IMPORTANT

Before creating a counting zone (exclusion or interest) make sure there is nobody in the zone monitored by the product.

- Once you are in the right position, click **OK**.

IMPORTANT

Make sure the screen orientation is correct for the way the product is installed.

Technical data sheet: S000124562EN-3

Updated: 26/11/2024

Created: 24/01/2024

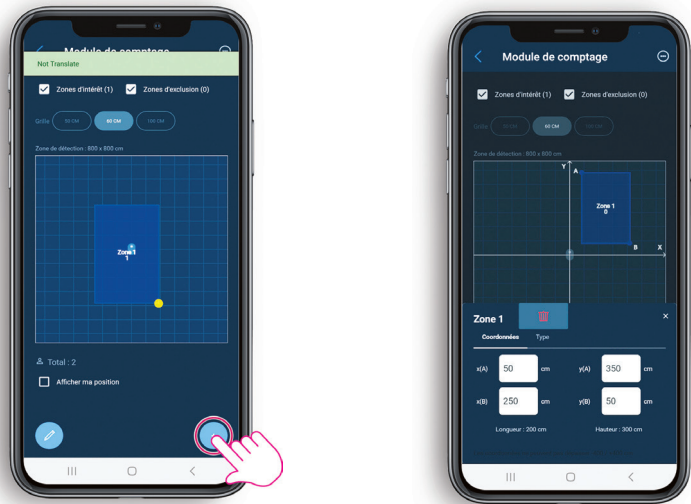**L1 legrand**

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13. USING "CLOSE UP" (continued)

■ **13.4 Counter modules - creation of zones by movement**

- Select the **Zone by movement** option.

- Choose the zone type: **interest** or **exclusion**.

- Move around in the room and confirm the starting angle for the zone being created by clicking **Starting angle**.

- Move around and confirm the end angle for the zone being created by clicking **End angle**.
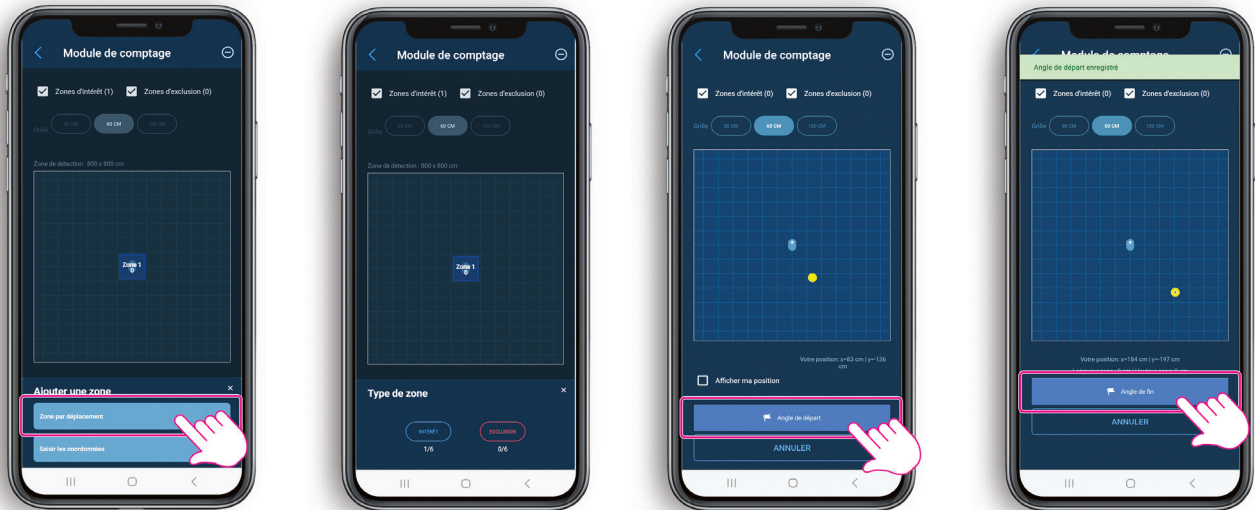
- The zone has been created.
- Repeat the operation for every zone of interest and exclusion by clicking **+**.

- You can change the zone coordinates and surface area.

NOTE

Creating zones: 6 zones of interest maximum/6 exclusion zones maximum.
Only zones of interest are counted. When creating zones, you need to stand 80 cm away from obstacles (tables, offices, etc) to place the coordinates of the starting and end angles.

Using exclusion zones:
Designed for filtering movement zones.
Avoid having overlapping zones between 2 sensors.
Exclude devices with rapid temperature variations.

IMPORTANT

Zones must not overlap.

TIP

You should have:
6 zones of interest maximum
and
6 exclusion zones maximum

13. USING "CLOSE UP" (continued)

■ **13.5 Counter modules - creation of a manual zone by entering coordinates**

- Choose **Enter coordinates**.

- Choose the zone type: **interest** or **exclusion**.

- The zone is displayed in the middle of the screen.

- Next, fill in the desired coordinates for point A and B.
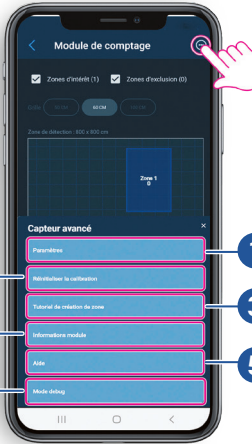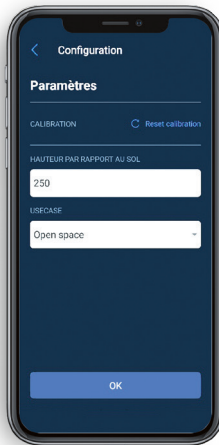- Click ✓ to confirm.
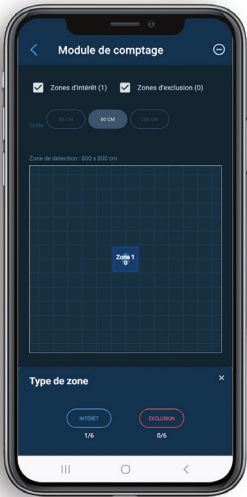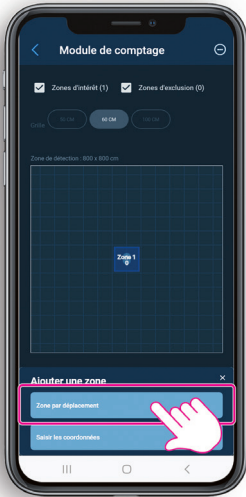
- The zone has now been created.
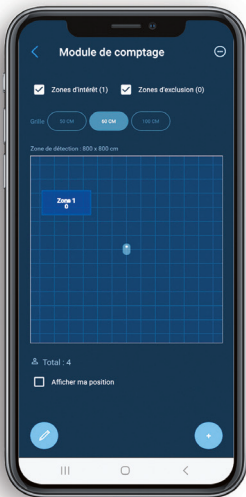
13. USING "CLOSE UP" (continued)

■ **13.6 Advanced sensor settings**

- Click on the 3 little dots to bring up the **Advanced sensor** options.

1 Set up the room configuration.
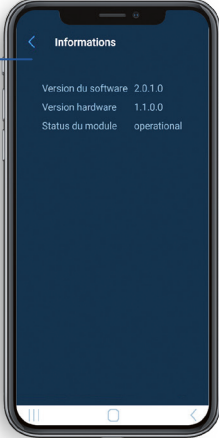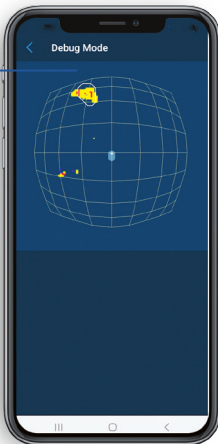
3 Zone creation tutorial

1

2

3

4

5

6

5 Help

2 To **calibrate** the detector, **leave the room** and click **Start calibration**.

- Calibration is complete.
- You can return to the detection zone.

**4** Information about the module

6 Debug mode

IMPORTANT

Leave the room.

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13. USING "CLOSE UP" (continued)

■ 13.7 Calibration

The product is ready to use after 5 minutes of operation.
The product will self-calibrate within 20 minutes (adapting to its environment).
To calibrate it immediately, launch calibration from Close Up.

- Click on the 3 little dots to bring up the **Advanced sensor** options.
- Click **Reset calibration**.

- To **calibrate** the detector, **leave the room** and click **Start calibration**.

- Calibration is complete.
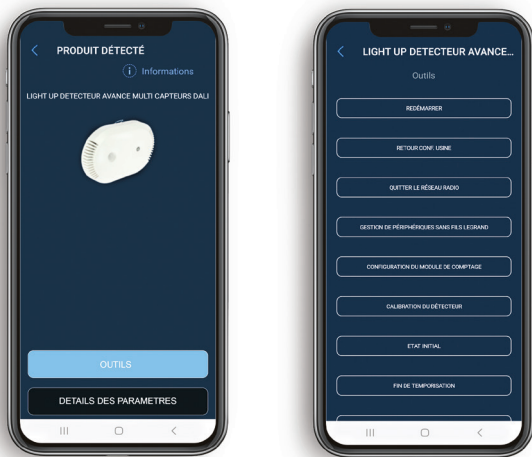- You can return to the detection zone.
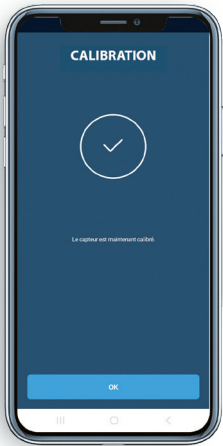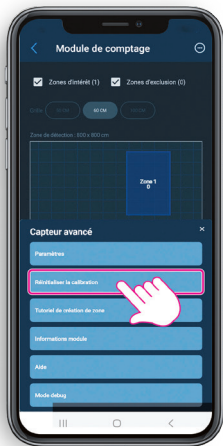
IMPORTANT
Leave the room.

NOTE

During calibration, hot spots which correspond to the electrical equipment (screens, lighting, heaters, etc) are automatically treated as the image background and not counted as a person.

The first time of use, calibration will be fully effective after 24 hrs.

14. TOOLS

Reboot: Used to reboot the product in the event of a fault.

Return to factory settings: By pressing the app button or pressing the Reset button for 5 s.
The radio LED flashes red for 5 s at 2 Hz.
Results: The parameters are set to default values. The radio part (link, network table) is cleared. The passwords are reset to their factory value.

Exit the network: Remove the product from the Radio network

Manage wireless peripherals: Used to add or delete wireless batteryless switches and/or connected power outlets.

Calibrate light level detector: Used to determine 2 reference values (lux), light on/shutters closed and light off/shutters open.
After pressing this button, follow the described procedure.

Test mode: Switch dedicated to checking the product behaviour, mainly used by the installer or expert.
• **Return to initial state:** This switch is used to put the product in heating mode, which can help the installer check several key points (daylight setpoint, detection, automation device).
• **End of time delay:** Clears the current delay.
• **Walk test:** Useful for testing the motion sensor's field of vision. This mode is used to override the settings except for PIR sensitivity for 10 minutes. Each detection lights up the motion LED (if the dedicated parameter is enabled) and switches on the lighting for 5 seconds. After these 5 seconds, if no movement is detected, the light goes out, otherwise the 5-second delay is refreshed.

Master/Slave: The Master controls the load(s). The slave is used to extend the detection zone; it does not control the load directly. By default the detector is set to Master mode.

15. STANDARDS

Installation standards: NFC 15-100

Product standards: EN 50428

LVD "Low Voltage Directives":
• Directive ➝ 2014/35/EU
• Standard ➝ NF EN IEC 62368-1:2020

EMC "Electromagnetic compatibility":
• Directive ➝ 2014/53/EU
• Standard ➝ EN55035:2017
EN55032:2015
IEC61000-3-2:2019
EN61000-3-3:2014
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.

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17. SURFACE MOUNTING

Surface mounting with accessory **Cat. No. 0 485 80**, follow the instructions in the manual supplied with the accessory.