

Lighting Controls and Connectivity

DALI sensors

LMS DALI2 PIR CLS SENSOR-R & S

Multi-sensor

Product description

- Sensor developed to work with the latest DALI specification
- Monitoring of ambient light and motion detection
- Remote control interface allowing infrared remote control interaction
- Individual adjustment of the parameters with configuration software
- Power supply via DALI line
- Shutter for preventing movement detection in one direction included
- Small dimensions allowing easy and inconspicuous integration in luminaries
- Wide range of accessories allowing extended application range
- 5-year guarantee

Housing properties

- Casing: PC polycarbonate, white or black
- Type of protection IP20

Note

- Tridonic MSensor G3 family sensors are developed according to DALI Standard EN 62386-101 Ed.2, also known as DALI-2. To be able to use the sensor in such installation, an application controller is necessary.



Fig. 1



Fig. 2

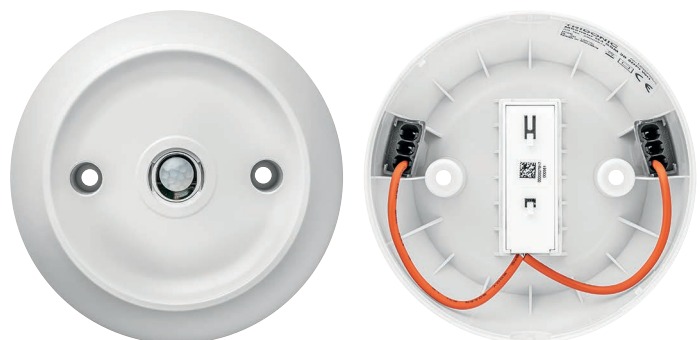


Fig. 3



Technical data

Supply via	DALI
Supply voltage ^①	9.5 – 22.5 V
Current consumption (no LED)	max. 8 mA
Current consumption (with LED)	max. 9 mA
Mounting height	5 m
Mounting hole diameter	14.1 mm
Detection angle for PIR detection	84°
Detection angle for light measurement	30° – 60°
Detection range for light measurement ^②	0.5 – 2,000 lx
Min. temperature difference between ambient temperature and detected object	± 4 °C
Ambient temperature t_a	-20 ... +50 °C
t_c	60 °C
Storage temperature	-25 ... +60 °C
Type of protection	IP20

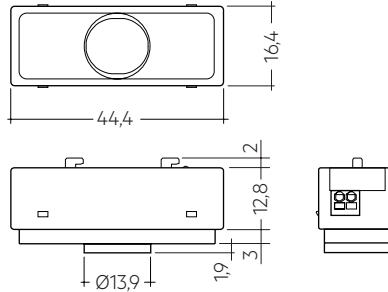


Fig. 1

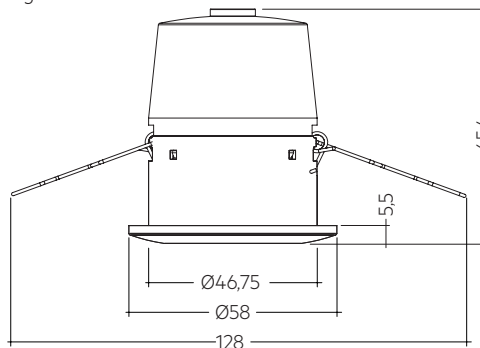


Fig. 2

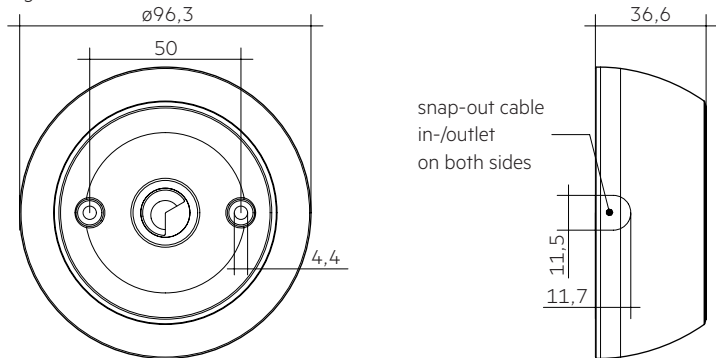


Fig. 3

Ordering data

Type [®]	Article number	Figure	Colour	Dimension L x W x H	Packaging, carton	Weight per pc.
LMS DALI2 PIR CLS SENSOR-R Remote ceiling installation	B07004002	2	White	58 x 58 x 65.4 mm	10 pc(s).	0.037 kg
LMS DALI2 PIR CLS SENSOR-S Ceiling surface installation (bundle)	B07004001	3	White	96.3 x 96.3 x 36.6 mm	20 pc(s).	0.074 kg

① Uin acc. IEC 62386-101.

② The measured value at the sensor head corresponds to approx. 3 to 6,300 lux on the surface measured.

1. Standards

EN/IEC 61347-2-11:2001
EN 55015:2013
EN 61000-3-2:2014 Part 3-2
EN 61000-3-3:2013 Part 3-3
EN 61547:2009
EN 62386-101 Ed.2
EN 62386-103 Ed.1
EN 62386-301
EN 62386-303
EN 62386-304

2. Common

MSensor G3 SFI 30 PIR 5DPI WH/BK is one of the new generation of Tridonic sensors.
With this Sensor, the customer gets a small sized sensor for low height applications and a protection against environmental influence up to IP20.

This sensor provides measurement of ambient light, motion detection via PIR sensor and IR remote control input as well as a LED output for signalisation.
MSensor G3 SFI 30 PIR 5DPI WH/BK is created for following main applications:

- Low height buildings such as
- Corridors, passages und Garages
- Office buildings

3. Installation

- The MSensor must not be connected to the mains. It is supplied directly via the DALI power supply.
- DALI is not SELV.
The installation instructions for mains voltage therefore apply.
- Please ensure that the detection range of the sensor lies in the lighting area of the controlled luminaires.
- Please ensure that the detection ranges of the sensors do not overlap.
This may have influence to the lighting control.
- When installed at a height other than the recommended installation height, the presence sensor might show different characteristics.
When mounted at a higher level, its sensitivity is reduced.
If mounted at a lower level, its range is reduced.
- Heaters, fans, printers and copiers located in the detection zone may cause incorrect presence detection.
- Avoid direct illumination of the light source on the sensor including housing.

1.1 DALI note

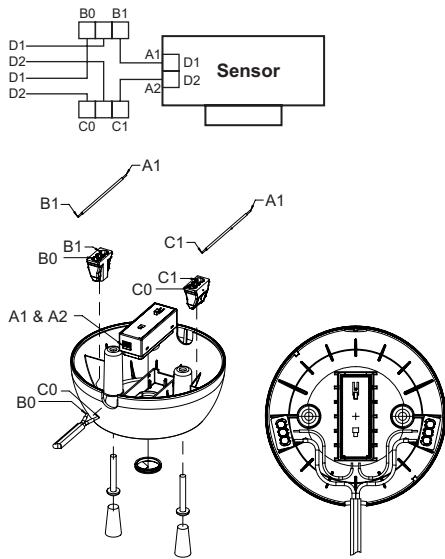


Tridonic MSensor G3 family sensors are developed according to DALI Standard EN 62386-101 Ed.2, also known as DALI-2.
To be able to use the sensor in such installation, an application controller is necessary.

1.2 Glow wire test

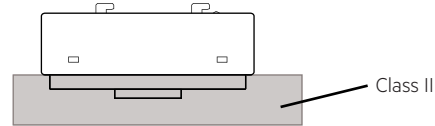
according to EN 61347-2-11 passed for temperatures up to 850°C.

3.8 Wiring and mounting ACU Sensor Housing 14rs IP20



3.9 Mounting in class II luminaire

The Sensor provides basic insulation as required by IEC 62386-101 and defined in IEC 61347-1. If the sensor is built in to a class II luminaire which has to provide double or reinforced insulation it has to be considered that the Sensor is not a class II device. Still the Sensor can be used for such projects as the front of the sensor is tested to fulfill the class II requirements for double or reinforced insulation.



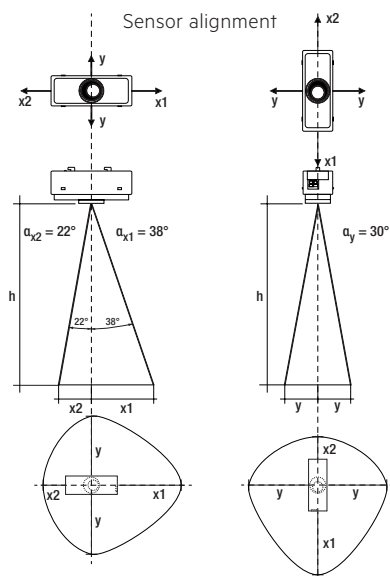
4. Light level recognition area

The measurement range is between 0.5 and 2000 lx. Measured at the sensor head.

! To be able to measure values < 5 lx in an accurate way it is needed to change integration time of light sensor to 800 ms. Integration time of light sensor is set to 100 ms by default. For values > 5 lx there is no difference in between these measurements.

The following operating modes can be set for lighting control via the mobile App configuration software:

Active	Constant light control is active.
Inactive	Constant light control is deactivated. The lighting is switched on an adjustable light value.



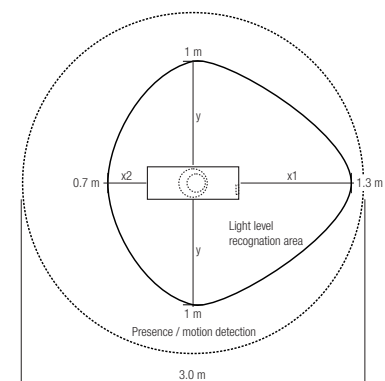
h *	x1	x2	y	d
1.7 m	1.3 m	0.7 m	1.0 m	3.0 m
2.0 m	1.6 m	0.8 m	1.2 m	3.6 m
2.3 m	1.8 m	0.9 m	1.3 m	4.1 m
2.5 m	2.0 m	1.0 m	1.4 m	4.5 m
2.7 m	2.1 m	1.1 m	1.6 m	4.9 m
3.0 m	2.3 m	1.2 m	1.7 m	5.4 m
3.5 m	2.7 m	1.4 m	2.0 m	6.3 m
4.0 m	3.1 m	1.6 m	2.3 m	7.2 m

* The recommended maximum room height for office applications is 3 m and for corridor applications for example 4 m. Up to 2 m mounting height presence is detected and over 2 m motion is detected.

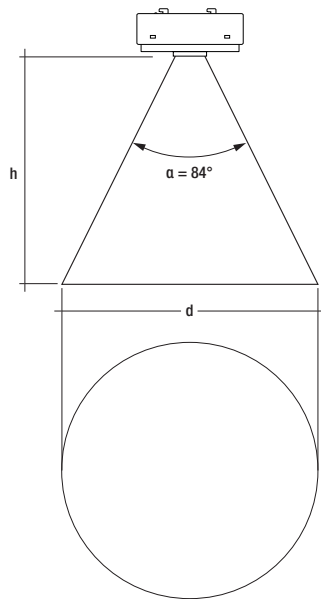
Calculation of the diameter (light area):
 $x1 = \tan(\alpha_{x1}) \times h$
 $x2 = \tan(\alpha_{x2}) \times h$
 $y = \tan(\alpha_y) \times h$

Calculation of the diameter (motion area):
 $d = 2 \times \tan(0.5 \times \alpha) \times h$

Example for light and motion detection area at height of 1.7 m:



4.1 Presence / motion detection



4.2 Motion detection

For motion detection PIR technology is used. PIR Lens is made to detect moving people in working areas such as warehouses, storage buildings and similar working areas with the following performance criteria:

- Ceiling height from up to 5 m
- Movement of human body:
 - up to 2 m mounting height: detection of slight motion.
 - above 2 m mounting height: no slight motion (no sitting person) detection.
- Movement ≥ 1.0 m/s for mounting heights up to 5 m

4.3 Status LED's

There is a LED built in to indicate different status information to the user. This LED is controlled from the sensor itself.



To not have any influence from LED to the light measurement, LED is disabled while light sensor is measuring by default.

5. Miscellaneous

5.1 Disposal of equipment



Return old devices in accordance with the WEEE directive to suitable recycling facilities.

5.2 Additional information

Additional technical information at www.tridonic.com → Technical Data

Guarantee conditions at www.tridonic.com → Services

Life-time declarations are informative and represent no warranty claim. No warranty if device was opened.