

MSensor G3 PIR 5DPI

DALI-2 multi-sensor

Product description

- Sensor developed to work with the latest DALI specification
- Monitoring of ambient light and occupancy 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 occupancy detection in one direction included
- Small dimensions allowing easy and inconspicuous integration in luminaries
- Wide range of accessories allowing extended application range
- 5 years guarantee (conditions at www.tridonic.com)

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.

List of approved application controller can be found on our WEB page „[Application controllers_MSensor_G3.pdf](#)“



Standards, page 5

Wiring diagrams and installation examples, page 6



MSensor G3 SFI 30 PIR 5DPI WH



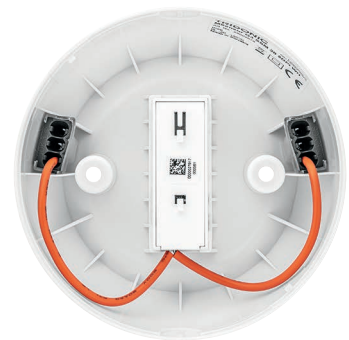
MSensor G3 SFI 30 PIR 5DPI BK



MSensor G3 SRC 30 PIR 5DPI WH



MSensor G3 SSM 30 5DPI WH



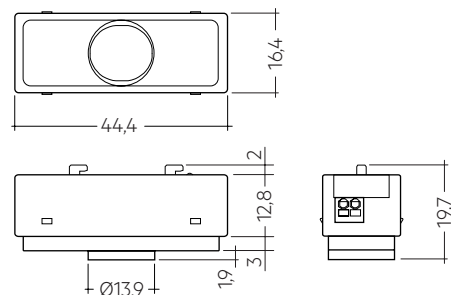


MSensor G3 PIR 5DPI

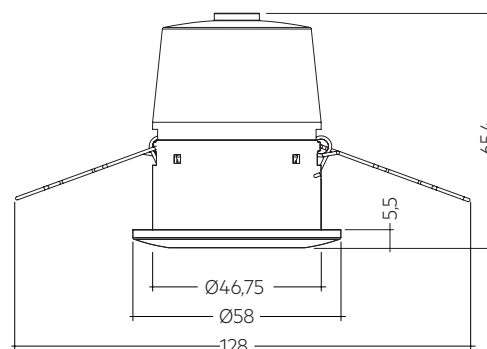
DALI-2 multi-sensor

Technical data

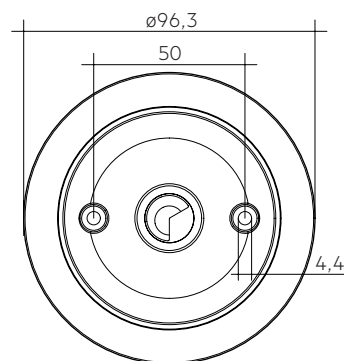
Supply via	DALI
Supply voltage ^①	9.5 – 22.5 V
Current consumption (no LED)	max. 8 mA
Current consumption (with LED)	max. 9 mA
Supported operating modes	0 or 128 (default)
Mounting height	5 m
Mounting hole diameter	14.1 mm
Detection angle for PIR detection	84°
Detection angle for light measurement	30° – 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
Guarantee (conditions at www.tridonic.com)	5 years



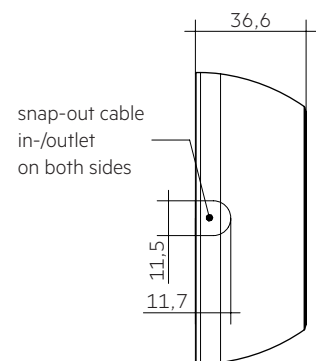
MSensor G3 SFI 30 PIR 5DPI WH + MSensor G3 SFI 30 PIR 5DPI BK



MSensor G3 SRC 30 PIR 5DPI WH



MSensor G3 SSM 30 5DPI WH



Ordering data

Type [®]	Article number	Colour	Dimension L x W x H	Packaging, carton	Weight per pc.
MSensor G3 SFI 30 PIR 5DPI WH Luminaire installation	28002384	White	44.4 x 16.4 x 19.7 mm	40 pc(s).	0.010 kg
MSensor G3 SFI 30 PIR 5DPI BK Luminaire installation	28002385	Black	44.4 x 16.4 x 19.7 mm	40 pc(s).	0.010 kg
MSensor G3 SRC 30 PIR 5DPI WH Remote ceiling installation	28002386	White	58 x 58 x 65.4 mm	10 pc(s).	0.037 kg
MSensor G3 SSM 30 5DPI WH Ceiling surface installation (bundle)	28002878	White	96.3 x 96.3 x 36.6 mm	30 pc(s).	0.074 kg

[®] 28002878: bundle incl. 28002384 and 28001872.

^① U_{in} acc. IEC 62386-101.

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

ACCESSORIES

REMOTECONTROL IR6

Product description

- Optional infra-red remote control
- Switching on and off (On/Off button)
- Dimming (Up/Down button)
- Activation of automatic lighting control
- Setting the threshold control point (Set button)



Ordering data

Type	Article number	Dimensions L x W x H	Packaging carton	Weight per pc.
REMOTECONTROL IR6	28000647	86.5 x 40.5 x 7.2 mm	500 pc(s).	0.019 kg

ACCESSORIES

5DPI 14f Mounting Kit

Product description

- Mounting frame for attaching all 5DP 14f sensor directly to the luminaire housing
- Shutter for preventing occupancy detection in one direction
- Glow wire test with 750 °C according to EN 61347-1



Ordering data

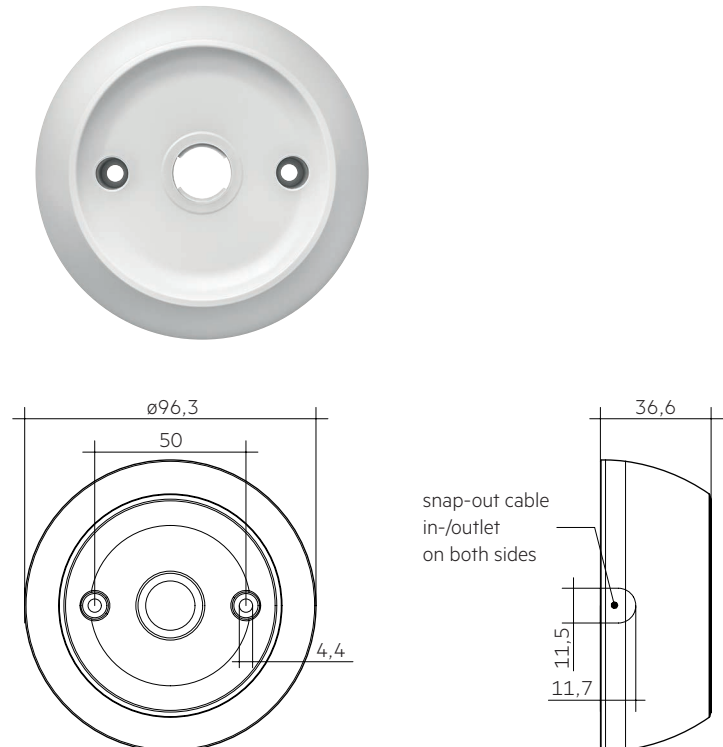
Type	Article number	Packaging carton	Weight per pc.
5DPI 14f mounting kit	28001558	100 pc(s).	0.004 kg
5DPI 14f mounting kit black	28001575	100 pc(s).	0.004 kg

ACCESSORIES

ACU Sensor Housing 14rs IP20

Product description

- Mounting frame for wired 5DP 14f sensors allowing direct mounting to the ceiling
- Available as configured bundle with sensor and as sensor-free version.
- Easy „click in“ installation of the sensor
- IP20
- Casing: plastic, white
- UV stabilized plastic
- DALI MSensor 5DPI 14 is powered via DALI circuit, basicDIM DGC Sensor 5DPI 14f powered via control unit
- Optional shutter for reduction of occupancy detection area allowing to decrease the occupancy detection area from 360° to 240°
- Mounting kit with screws and decorative plugs
- 0.5 mm wiring for the sensor
- Two 3 x 1.5 mm² clamps with cable management (2 entry points on opposite sides)
- Glow wire test with 750 °C according to EN 61347-1



Ordering data

Type	Article number	Packaging carton	Weight per pc.
ACU Sensor Housing 14rs IP20	28001872	57 pc(s).	0.054 kg

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
 EN 62386-351

1.1 DALI note



Sensor is only applicable for DALI-2 installations according to EN 62386-101 Ed.2.
 List of approved application controller can be found on our WEB page „[Application controllers_MSensor_G3.pdf](#)“

Following table shows the instances and which values they provide.

DALI instances	
Instance number	Explanation
0	Occupancy sensor DALI Part 303
1	Light sensor DALI Part 304
2 – 19 ^①	Push button DALI Part 301

^① Sensors produced before 25.07.23 do provide 13 instances and do not support Tridonic IR6+ remote control.

1.2 D4i note

D4i luminaire-mounted control devices (part 351) = Type B

1.3 Glow wire test

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

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, occupancy 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:

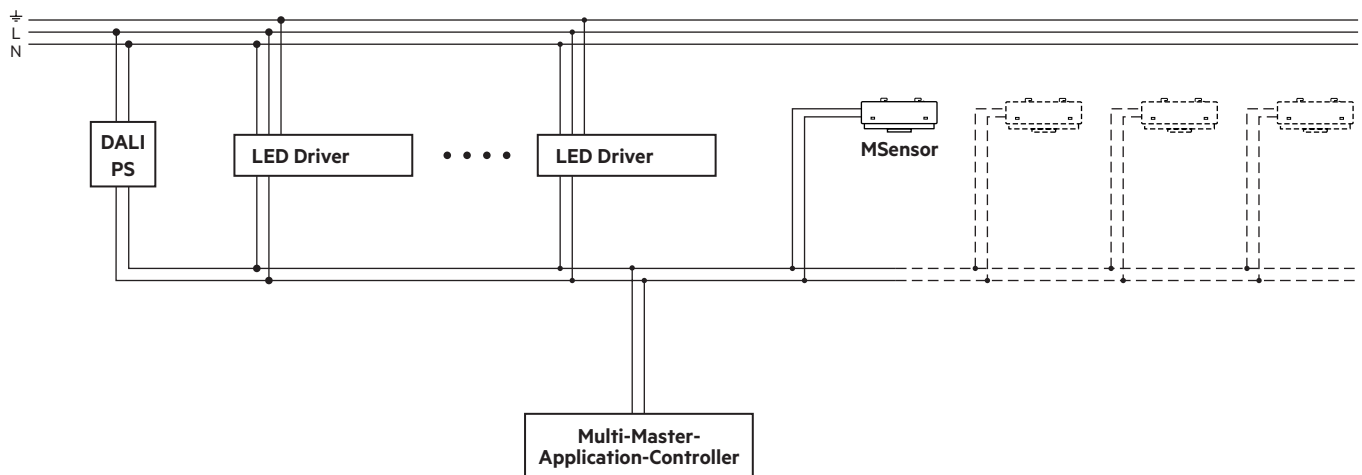
Low height buildings such as

- 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 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 occupancy detection.
- Avoid direct illumination of the light source on the sensor including housing.

3.1 Wiring

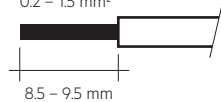


3.2 Wiring type and cross section for rc version

For wiring use stranded wire or solid wire from 0.2 to 1.5 mm².

wire preparation:

0.2 – 1.5 mm²

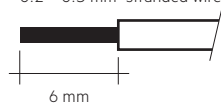


3.3 Wiring type and cross section for f version

For wiring use stranded wire from 0.2 to 0.5 mm² or solid wire from 0.14 to 0.5 mm².

0.14 – 0.5 mm² solid or

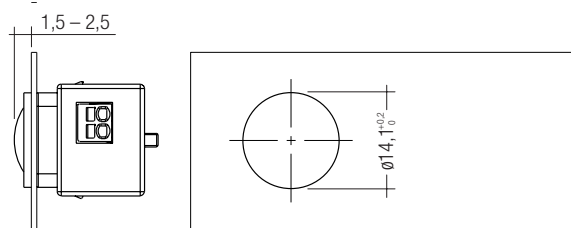
0.2 – 0.5 mm² stranded wire



3.4 Mounting variants luminaire installation sensor:

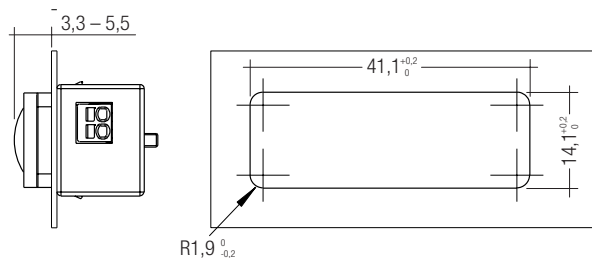
Variant 1:

Size of the sheet: 0.8 – 1.8 mm



Variant 2:

Size of the sheet: 0.8 – 3.0 mm

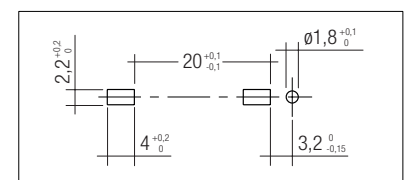
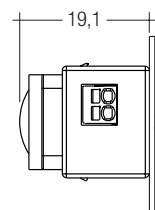


Variant 3:

Size of the sheet: 0.6 – 0.8 mm



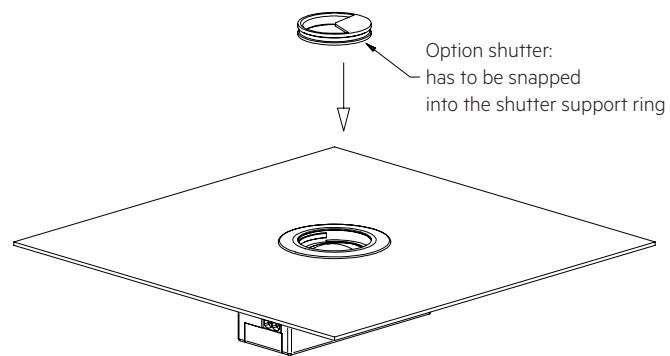
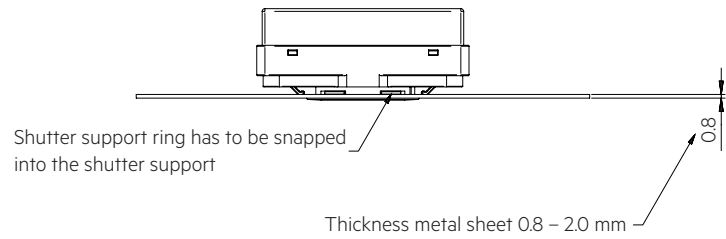
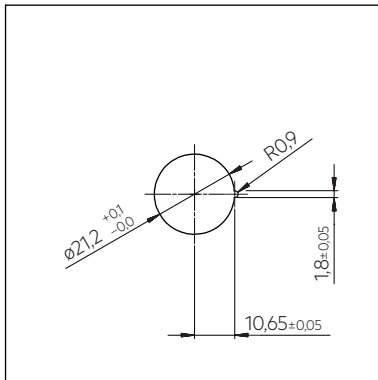
Mounting on a touchable metal sheet on the rear side in protection class II luminaires is not permitted in variant 3. In order to allow this type of mounting, the sheet must be additionally insulated in a protection class II application or connected to a protective earth in a protection class I application.



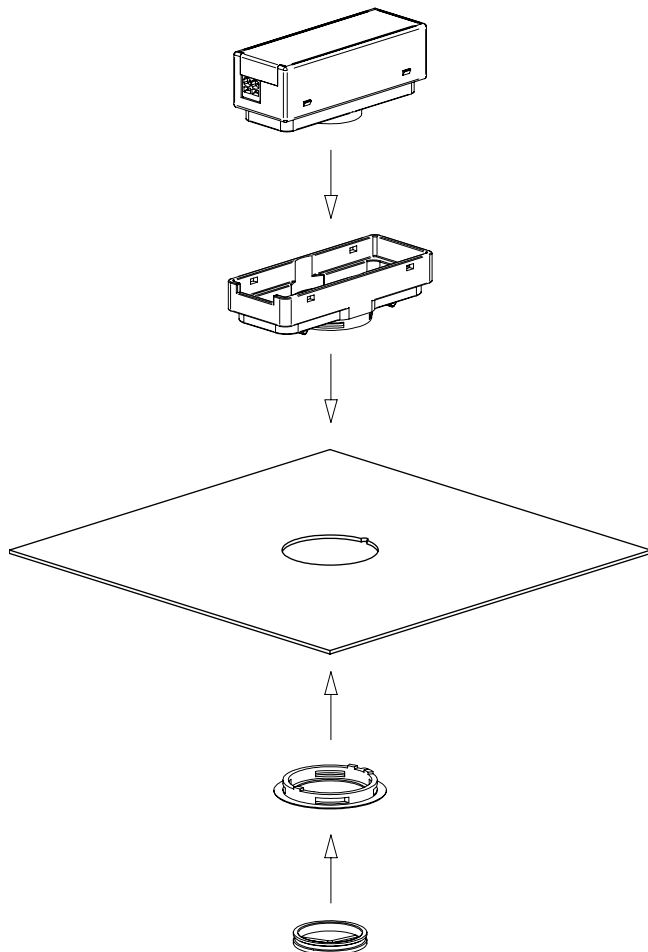
3.5 Mounting in luminaire housing with Mounting Kit:

Size of the sheet: 0.8 – 2.0 mm

Dimension drawing for needed mounting opening

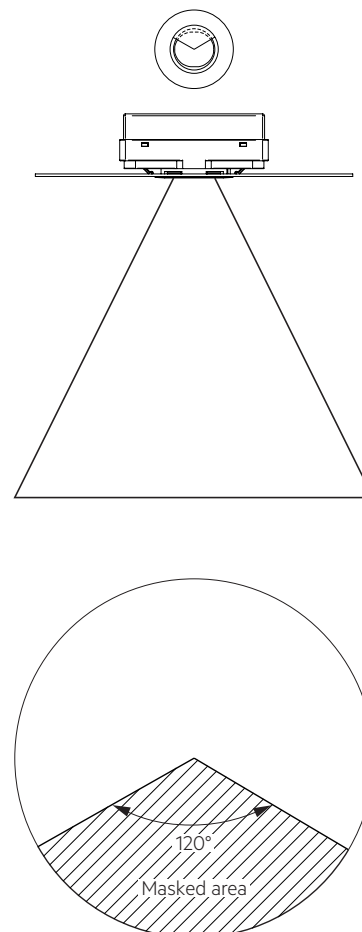


3.6 Mounting Kit mounting

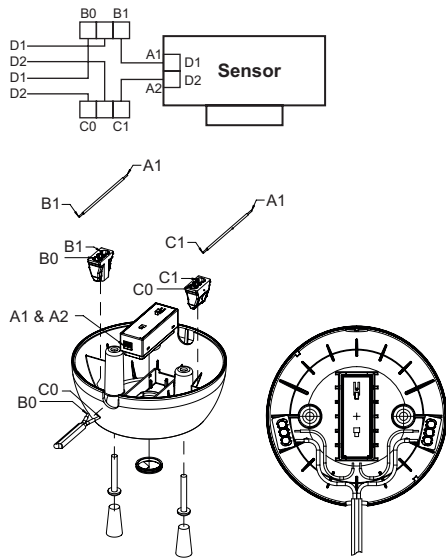


3.7 Mounting Kit Shutter

Area which is masked by the shutter.



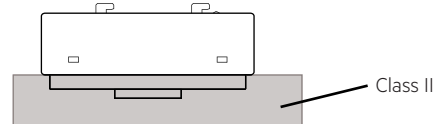
3.8 Wiring and mounting ACU Sensor Housing 14rs IP20



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

4.1 Light value format

The default operating mode is 128.

In this mode the user is able to choose from fixed point and floating point values for the light measurement. The default setting are floating point values.

In addition to operation mode 128 also operating mode 0 is implemented.

In operating mode 0 the fixed point values are supported for the light measurement values.

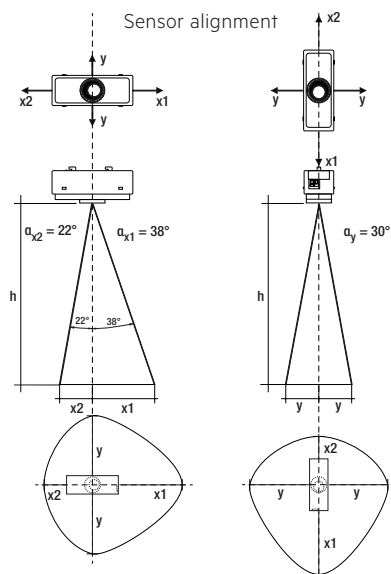
Resolution for fixed point and floating point = 1/64 Lux

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.



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. Detection of slight movements up to 2 m mounting height and bigger movements from 2 m.

Calculation of the diameter (light area):

$$x1 = \tan(\alpha_{x1}) \times h$$

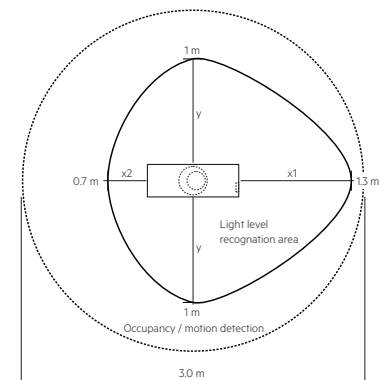
$$x2 = \tan(\alpha_{x2}) \times h$$

$$y = \tan(\alpha_y) \times h$$

Calculation of the diameter (occupancy area):

$$d = 2 \times \tan(0.5 \times \alpha) \times h$$

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



4.2 Status LED's

There is a LED built in to indicate different status information to the user.

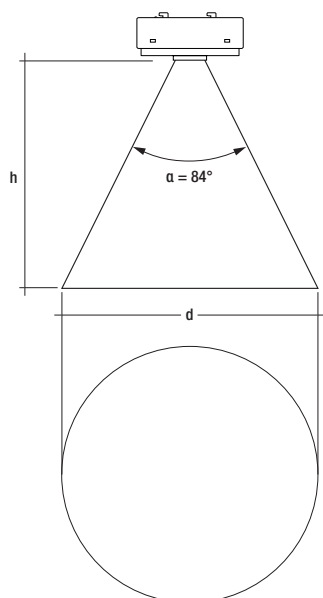
Event	Blinking sequence	LED Color
DALI command „identify device“	500 ms on / 500 ms off for 10 s	Red
Motion detection ^①	Default deactivated but can be activated by the application controller. If active, 1,000 ms on every time Motion is detected.	Red
IR-Signal received ^①	Double blinking (150 ms on / 150 ms off) on every received IR-command.	Red

Light measurement priority

① By default, these blinking patterns are interrupted by the light measurement, because the light measurement has a higher priority.

This behavior can be changed via the application controller, i.e. it can be configured that the blinking patterns are carried out, regardless of an ongoing light measurement. Consequently, the accuracy of the light measurement will become worse, because the brightness of the LED distorts the measurement.

5. Occupancy / motion detection



5.1 Occupancy detection

For occupancy 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: detection of bigger movements.
- Movement ≥ 1.0 m/s for mounting heights up to 5 m

6. Configuration

Optimized for the operation in conjunction with the Tridonic application controller sceneCOM S.

For commissioning and configuration the App „sCS commissioning“ (sceneCOM S) is provided by Tridonic. App can be installed on iOS and Android devices. Compatible with Android 6.0 / iOS 10 or later, devices with a min. screen size of 20 cm diagonal and a min. resolution of 1024 x 768 pixels.

Android:

iOS:



7. Miscellaneous

7.1 Disposal of equipment



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

7.2 Additional information

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

Guarantee conditions at www.tridonic.com → Services

Lifetime declarations are informative and represent no warranty claim.
No warranty if device was opened.