

MSensor G3 PIR 4DPI WDA WH

DALI-2 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
- Wide range of accessories covering most applications and offering the best possible ease of use
- Small dimensions allowing easy and inconspicuous integration in luminaries
- 5 years guarantee



Housing properties

- Casing: polycarbonate, white
- Type of protection up to IP54

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 6

Wiring diagrams and installation examples, page 7

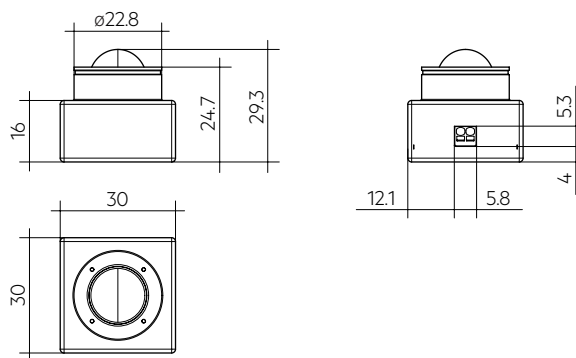


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DALI-2 multi-sensor

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
Starting time ^②	≤ 30 s
Mounting height	2 – 4 m
Mounting hole diameter	23 mm
Cover size of luminaire	0.75 – 4.00 mm
Detection range for light measurement ^③	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
Housing material body	PC polycarbonate
Housing material lens	PE polyethylene
Housing colour body	White (similar to RAL 9010)
Housing colour lens	White
Type of installation	Fitted in luminaires
Type of protection ^④	Up to IP54



Ordering data

Type	Article number	Dimensions L x W x H	Packaging carton	Weight per pc.
MSensor G3 SFI 30 PIR 4DPI WDA WH	28003808	30 x 30 x 29.3 mm	10 pc(s).	0.013 kg

^① Uin acc. IEC 62386-101.

^② Starting time is the time until the PIR element of the sensor is ready and delivers correct values.

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

^④ Depending on the installation type up to IP54 for more details see chapter 3.7.

ACCESSORIES

Sensor mounting kit ACU 030 IP66 WH

Product description

- Mounting ring allowing to mount the sensor into a luminaire in easy and visual attractive way
- Including three different gaskets 3, 5 and 8 mm
- For more details see chapter 3.5 (mounting ring) and 3.6 (gasket)
- Mounting ring passed glow wire test with 750 °C according to EN 61347-1
- In combination with the MSensor G3 SFI 30 PIR 4DPI WDA WH, a maximum of IP54 is possible



Ordering data

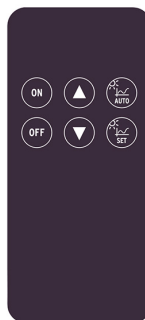
Type	Article number	Packaging carton	Weight per pc.
Sensor mounting kit ACU 030 IP66 WH	28002459	20 pc(s).	0.006 kg

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)
- IR range up to 20 m



Ordering data

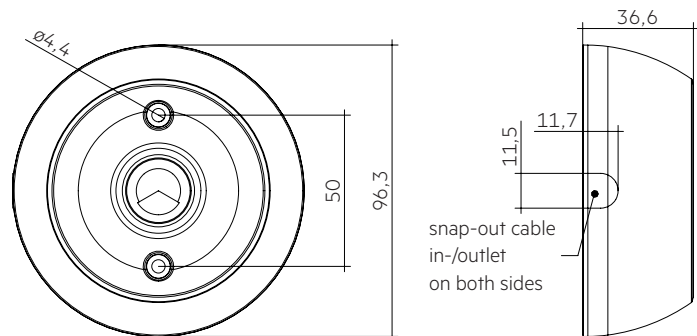
Type	Article number	Dimensions L x W x H	Packaging carton	Weight per pc.
REMOTECONTROL IR6	28000647	86.5 x 40.5 x 7.2 mm	500 pc(s).	0.019 kg



Sensor housing ACU 031 IP20 WH

Product description

- Mounting frame for wired MSensor G3 SFI 30 PIR 10DPI WH 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: polycarbonate, white
- UV stabilized plastic
- MSensor G3 SFI 30 PIR 10DPI WH is powered via DALI circuit
- 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 oppsite sides)
- Casing passed glow wire test with 850 °C according to EN 61347-1



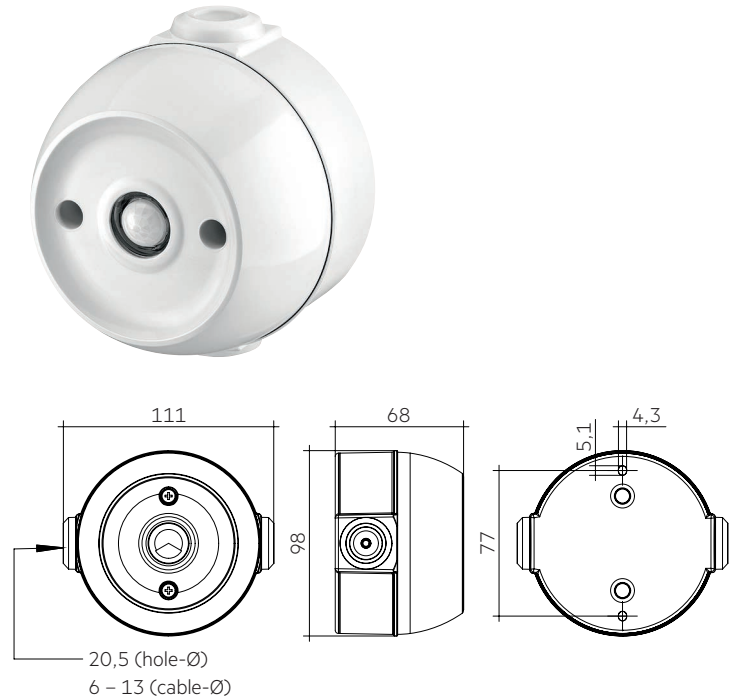
Ordering data

Type	Article number	Packaging carton	Weight per pc.
Sensor housing ACU 031 IP20 WH	28001874	57 pc(s).	0.054 kg

Sensor housing ACU 032 IP66 WH

Product description

- Mounting frame for wired MSensor G3 SFI 30 PIR 10DPI WH 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
- Housing provides IP 66, but in combination with the MSensor G3 SFI 30 PIR 4DPI WDA WH a maximum of IP54 is possible
- Casing: PC polycarbonate, white
- UV stabilized plastic
- MSensor G3 SFI 30 PIR 10DPI WH is powered via DALI circuit
- Mounting kit with screws and decorative plugs
- Including gasket for ideal IP protection
- Casing passed glow wire test with 850 °C according to EN 61347-1



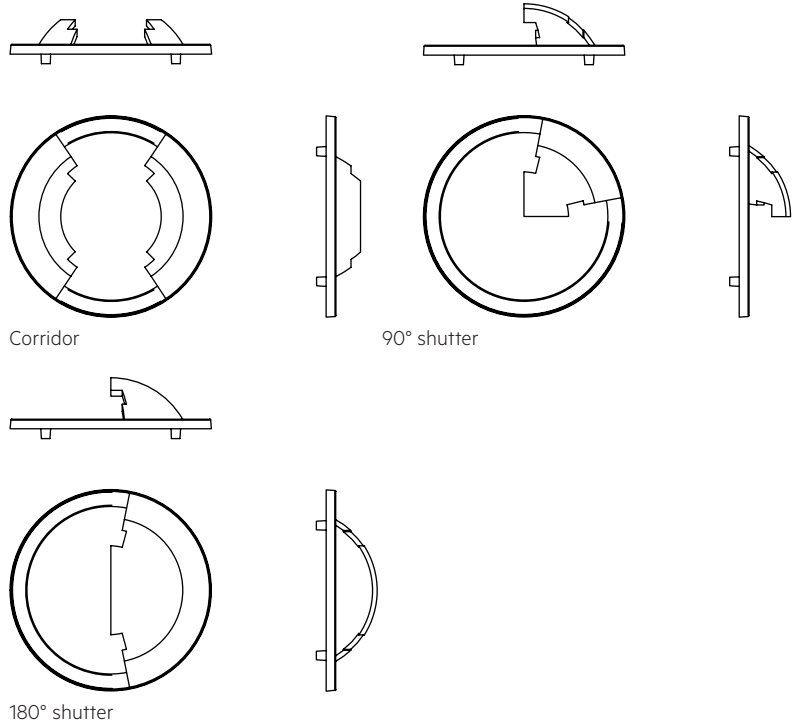
Ordering data

Type	Article number	Packaging carton	Weight per pc.
Sensor housing ACU 032 IP66 WH	28001873	26 pc(s).	0.105 kg

Shading Set 4DPI WDA

Product description

- Shading set consisting of 3 different types of lenses: Corridor, 90° and 180° shutter
- Shutters mountable directly to the front of the sensor in 4 different positions 0°, 90°, 180° and 270° angle relative to the sensor device
- No disturbance of light measurement or IR receiver signals
- Material transparent Lexan 923 with polished surface finish
- Shutters made for one time use, once installed removal may damage the shutter and sensor lens!



Ordering data

Type	Article number	Packaging carton	Weight per pc.
ACU SHADING SET 034 4DPI WDA	28003867	20 pc(s).	0.001 kg

1. Standards

EN 61347-2-11:2001 + A1:2017
 IEC 61347-2-11:2001, AMD1:2017
 EN IEC 55015:2019 + A11:2020
 CISPR15
 EN 61547:2009
 EN 62386-101 Ed.2
 EN 62386-103 Ed.1
 EN 62386-301
 EN 62386-303
 EN 62386-304

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 – 13	Push button DALI Part 301

1.2 Glow wire test

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

2. Common

MSensor G3 SFI 30 PIR 4DPI WDA WH 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 IP54.

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 4DPI WDA WH is created for following main applications:

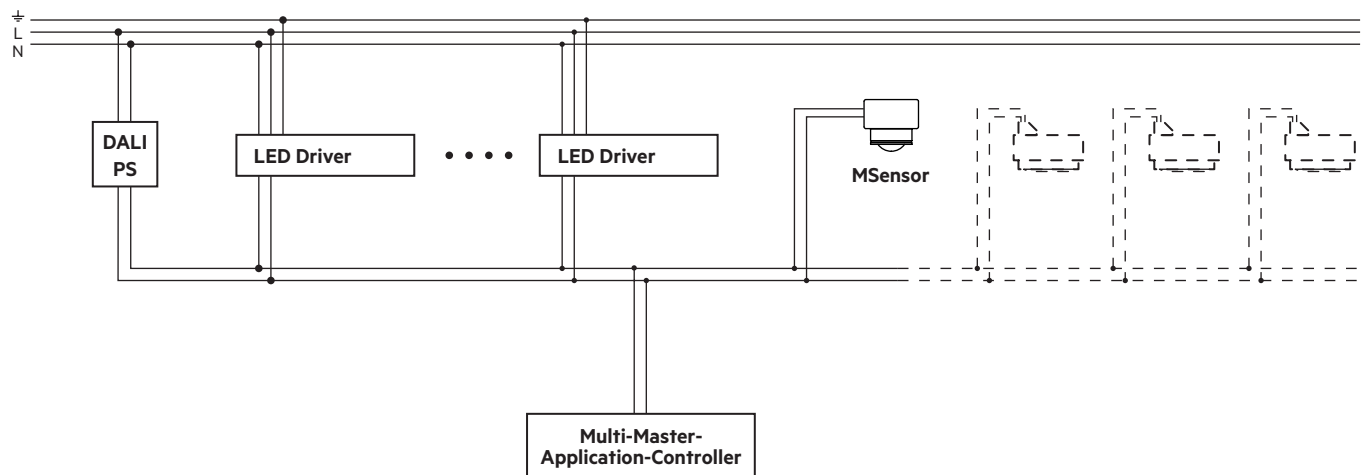
Low height buildings such as

- Office applications
- Factory buildings
- Storage buildings and warehouses
- Corridors, passages and Garages

3. Installation

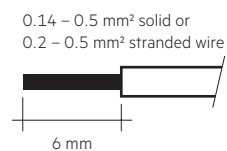
- The MSensor must not be connected to the mains. It is supplied directly via the DALI power supply.
- DALI is not SELV.
The installation instructions for mains voltage therefore apply.
- Please ensure that the detection range of the sensor lies in the lighting area of the controlled luminaires.
- Please 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.
- If shutters are used it is important to keep in mind that shutters are made for one time use, once installed removal may damage the shutter and sensor lens!
- Do not use aggressive detergents to clean the e.g. sensor lens. Always make sure that the used detergent does not harm the sensor materials.

3.1 Wiring



3.2 Wiring type and cross section

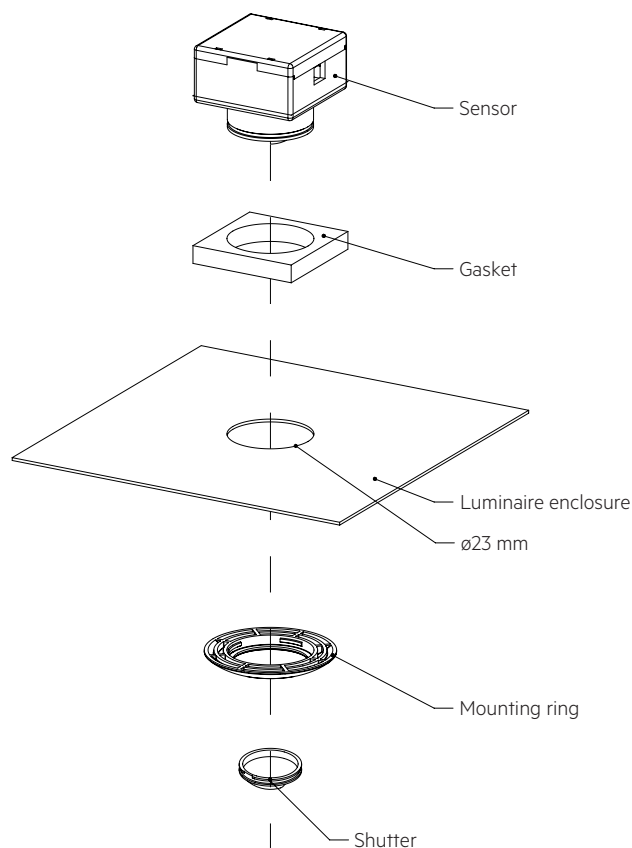
The wiring can be solid wire or stranded wire with a cross-section for solid wire of 0.14 mm² to 0.5 mm² and a cross-section for stranded wire of 0.2 mm² to 0.5 mm².



3.3 Mounting variants luminaire installation sensor:

3.3.1 Installation in luminaire

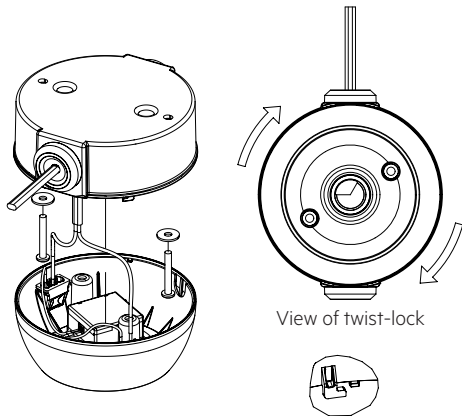
To ensure the right IP protection please read chapter 3.6 Gasket.



3.3.2 Installation in Sensor housing ACU 032 IP66 WH

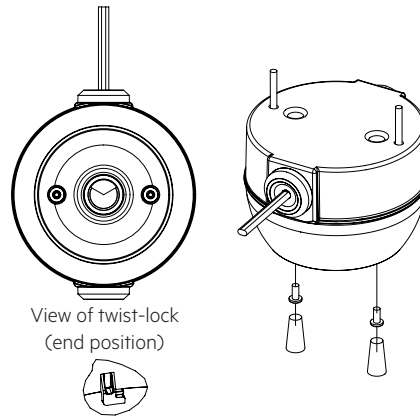
To ensure the right IP protection please read chapter 3.6 Gasket.

Step 1: Cover placed on base plate



Mount base plate. Feed cable (cable diameter: 6 – 13 mm) of the lateral grommets into the installation terminals.

Step 2: Cover locked

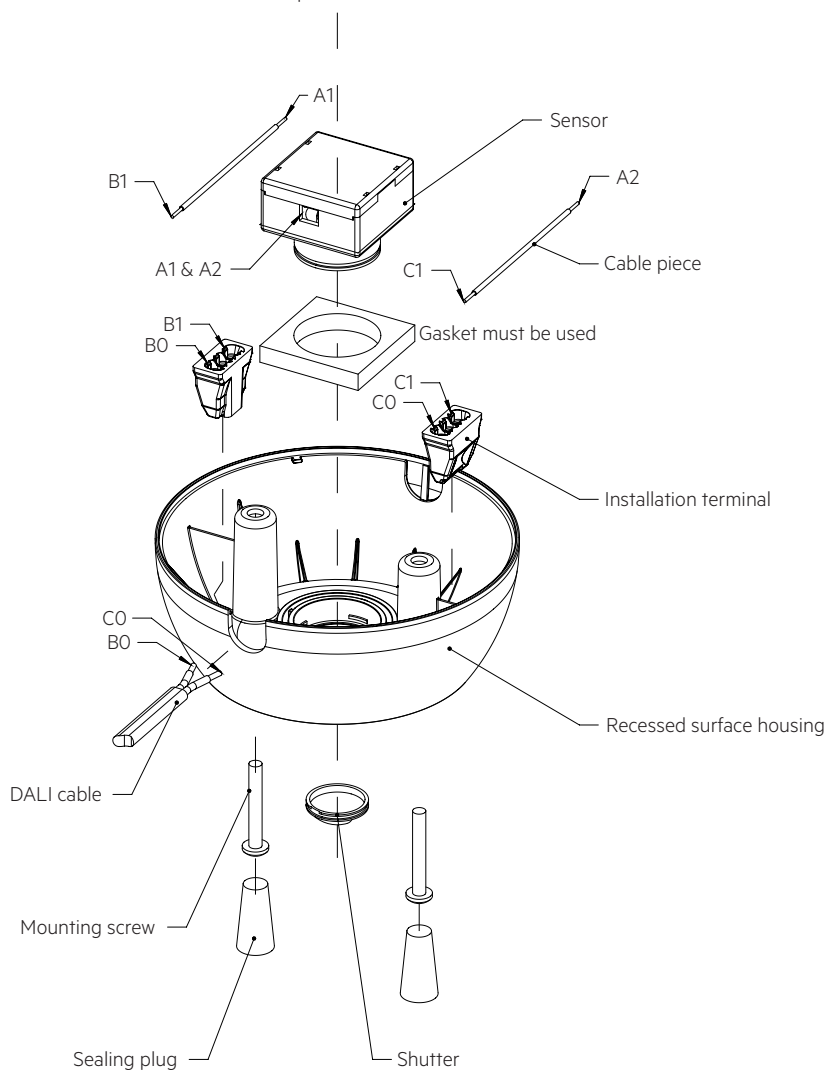


After the cover is loosely mounted on the base plate, insert and tighten the 2 screws.
In the last step insert in the sealing plugs.

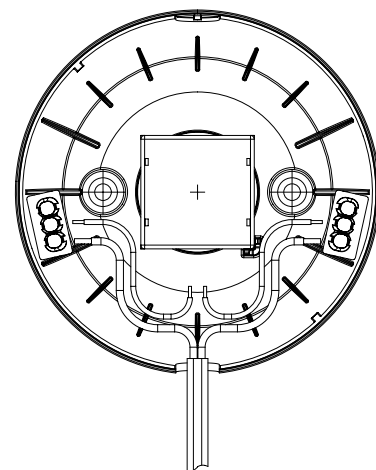
3.3.3 Installation in Sensor housing ACU 031 IP20 WH

To ensure the right IP protection please read chapter 3.6 Gasket.

Exploded view



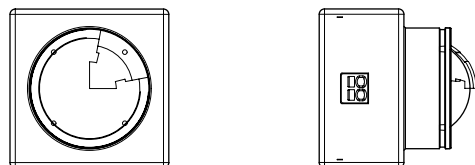
Top view



3.4 Detection area covers

Included in each ACU SHADING SET 034 4DPI WDA there are 3 detection area covers included.

Type of material: Lexan 923
Colour: transparent
Surface finish: polished

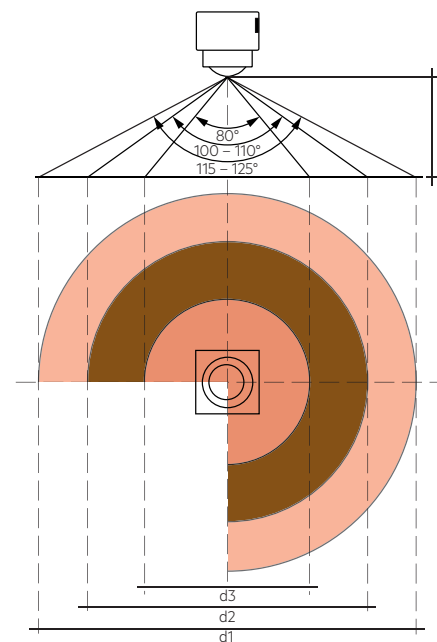
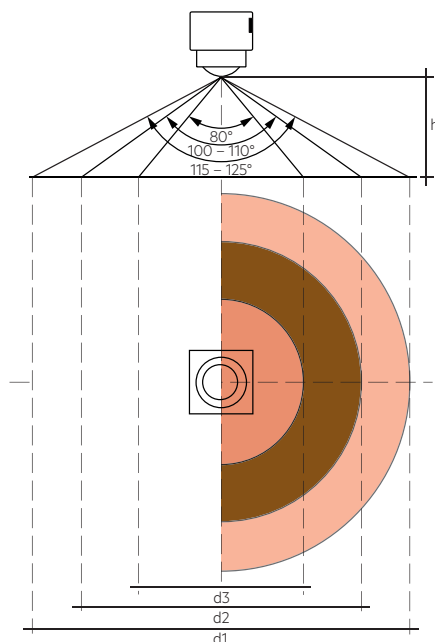
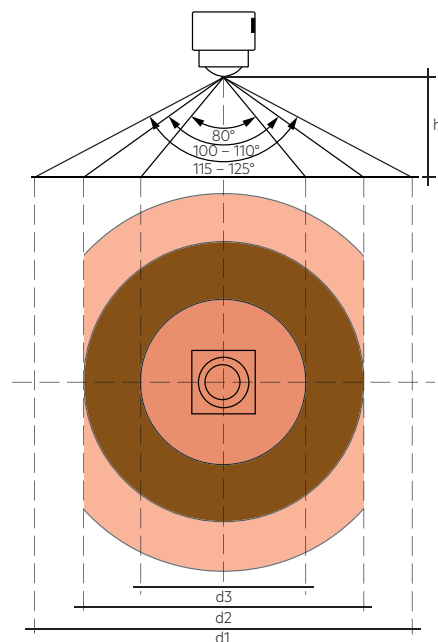
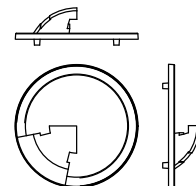
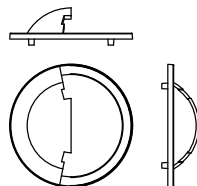
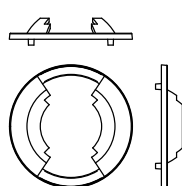


Attach the detection area cover to the sensor by inserting it into the corresponding groove at the front of the sensor.

Shutters made for one time use, once installed removal may damage the shutter and sensor lens!

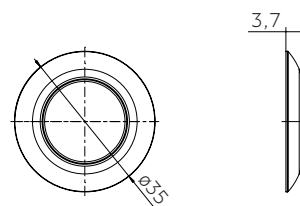
If you install a damaged shutter to the sensor the risk is high that the shutter falls off!

Area which is masked by the shutter:



3.5 Mounting ring

Included in each Sensor mounting kit ACU 030 IP66 WH there is a mounting ring. This Ring allows to mount the sensor into a luminaire in an easy and visual attractive way.



3.6 Gasket

To fulfill ingress protection three different gaskets are included in the 10DPI Mounting Kit.

The gaskets are necessary to ensure ingress protection as well as proper mounting of the sensor in luminaire.

Sensor can be inserted into luminaires with a cover size from 0.75 up to 4.0 mm.

To cover different sizes of material, three gaskets with different sizes are included.

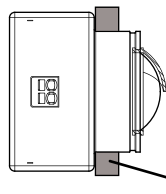
Available size of sealing: 3 / 5 / 8 mm

According to the size of luminaire cover in certain application, one of the gaskets must be used and mounted between the front of the sensor and the luminaire housing.

It is not allowed to use a combination of e.g. two gaskets, because this will not provide the right amount of sealing and you may run in to a risk to not reach the IP54 requirements.



Use maximum possible size for your application to ensure a proper fit and protection.



Gasket (size 3, 5 or 8 mm)

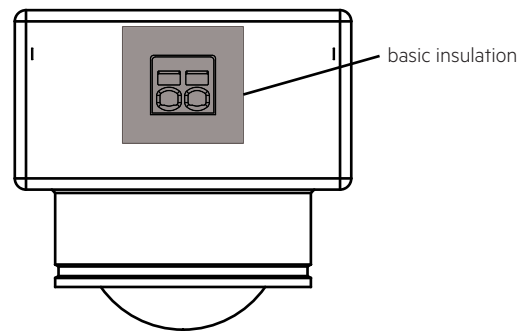
Distance between Sensor and luminare	Final size of gasket after assembly	Use gasket
2.0 – 2.4 mm	2.0 – 2.4 mm	3 mm
2.5 – 4.0 mm	2.5 – 4.0 mm	5 mm
4.0 – 5.9 mm	4.0 – 5.9 mm	8 mm

3.8 Mounting in class II luminaire

The Sensor provides basic insulation as required by IEC 62386-101 and defined in IEC 61347-1.

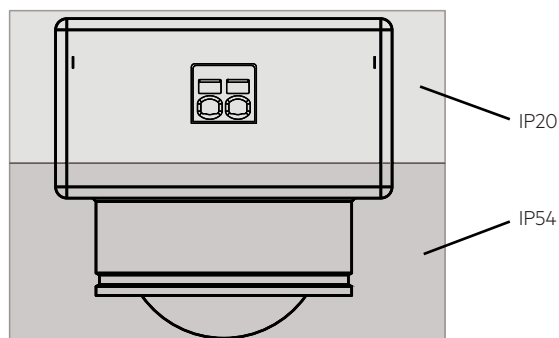
If the sensor is built in to a class II luminaire which has to provide double or reinforced insulation it has to be considered that the Sensor is not a class II device. Still the Sensor can be used for such projects as the most part of the sensor is tested to fulfil the class II requirements for double or reinforced insulation. Basic insulation is illustrated in the graphic below and covers an area 2,5 mm around the terminal.

The rest of the sensor fulfils class II requirements.



3.7 Ingress protection

This device contains IP-protection to use it also in applications with the need of protection against dust and water ingress. IP54 protection applies to the front of the sensor whereas the back of the sensor is IP20 rated.



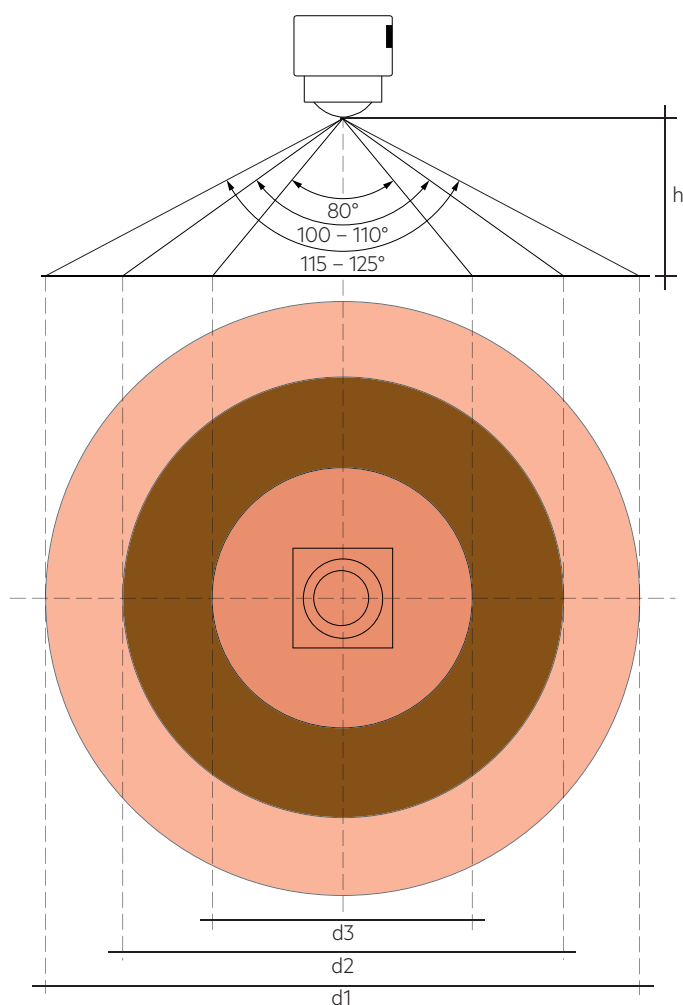
4. Sensor function

4.1 Motion detection

For motion detection PIR technology is used. The PIR Lens is made to detect moving people in areas such as office, open space or corridors with the following performance criteria:

- Ceiling height from 2 up to 4 m
- Movement of human body
- Center area with increased sensitivity to detect small movements with speed ≥ 0.5 m/s for mounting heights up to 3 m (80° full angle)
- Movement speed ≥ 1.0 m/s for mounting heights up to 4 m

4.2 Detection area



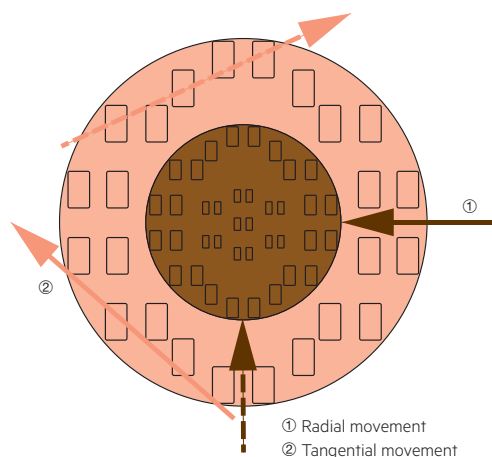
Reaction time of the sensor (time between motion detected and event information send to DALI Bus) is ≤ 25 ms.

The reaction time of the system can be extended by factors such as the amount of data on the bus, the number of connected devices or the control device used (Application Controller).

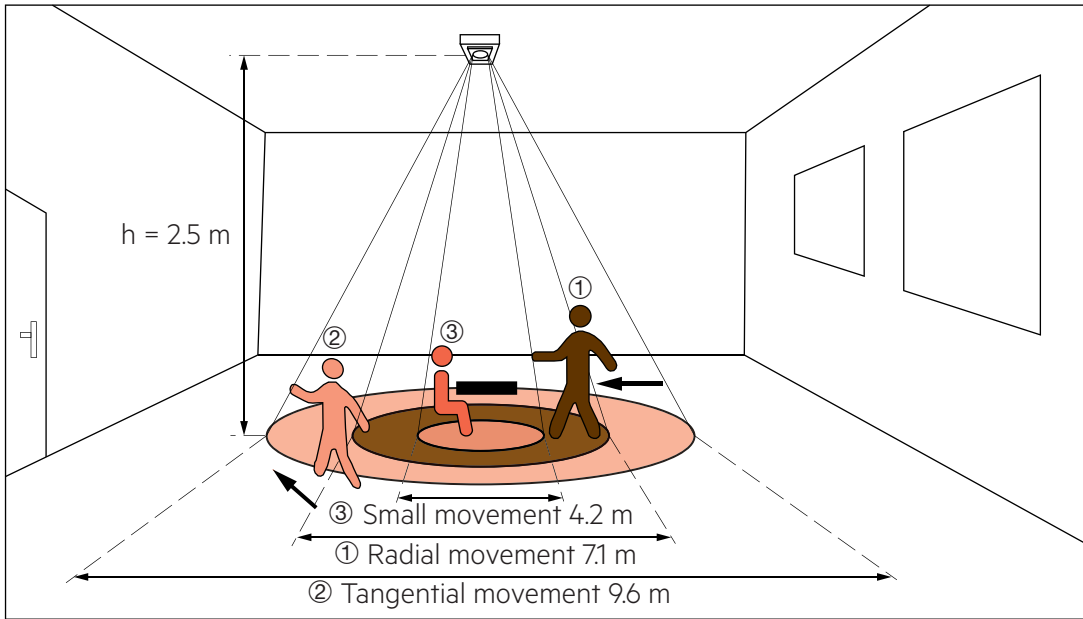
The point at which the light responds must therefore not be equated with the outer detection range.

h = Height	d1 = Tangential movements		d2 = Radial movements		d3 = Small movements	
	Full angle	Diameter	Full angle	Diameter	Full angle	Diameter
2.0 m	125°	7.7 m	110°	5.7 m	80°	3.4 m
2.5 m	125°	9.6 m	110°	7.1 m	80°	4.2 m
3.0 m	125°	11.5 m	110°	8.6 m	80°	5.0 m
3.5 m	125°	13.4 m	110°	10.0 m	–	–
4.0 m	115°	12.6 m	100°	9.5 m	–	–

Schematic illustration of radial / tangential movements:



Detection example at 2.5 m mounting height:



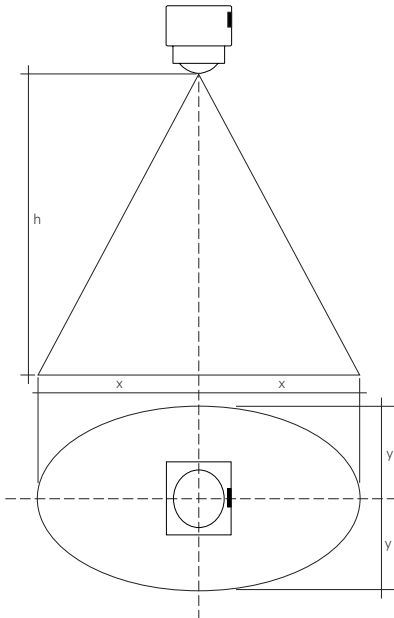
4.3 Light measurement

The light measurement has a cone-shaped detection area with a half angle of approximately 75° in x-direction and 40° in y-direction.

Pay attention on the position of the sensor!

The detection area is asymmetrical and the position of the sensor makes a difference which area reflection is used for the light measurement.

The terminal of the sensor is visualized in the graphic and can be used for orientation of the direction.



h	dx	dy
2 m	3.0 m	1.5 m
3 m	4.6 m	2.2 m
4 m	6.1 m	2.9 m

4.4 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.

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.

5. 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:



6. Miscellaneous

6.1 Disposal of equipment



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

6.2 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.