TRIDONIC

MSensor G3 SFI 30 PIR 16DP bDW ZB20

Casambi Ready wireless sensor





Product description

_ Can be integrated in Casambi systems (Casambi Ready)
_ Wireless controllable with an Android / iOS smart device
_ Forms automatically a wireless communication network with up to 250 nodes
_ Digital output to control IEC 62386 compatible drivers
_ Supplied via IEC 62386 compatible power supply
_ Integrated motion and light sensor
_ Zhaga Book 20 compatible with optional accessory
_ Additional mounting from the outside possible
_ Wireless firmware updates possible
_ Defined antenna position outside the luminaire body enables optimal radio distribution
_ Lifetime up to 50,000 h at tc = 60 °C
_ 5 years guarantee (conditions at https://www.tridonic.com/en/int/services/manufacturer-guarantee-conditions)
_ We will provide security updates for the next five years after the date of purchase of this product

Housing properties

_ Casing: polycarbonate, black or white
_ Type of protection up to IP65

Typical applications

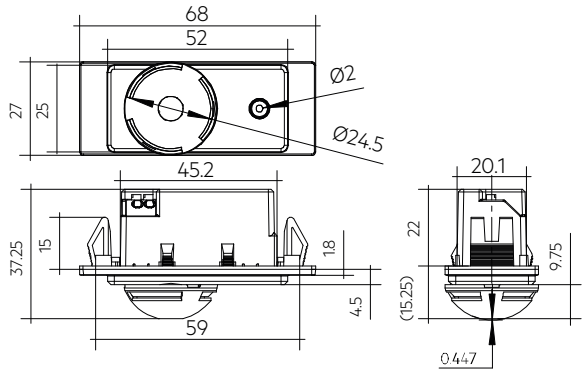
_ Indoor luminaire in-built

Website

http://www.tridonic.com/28006653

MSensor G3 SFI 30 PIR 16DP bDW ZB20

Casambi Ready wireless sensor



Ordering data

Type	Article number	Packaging, carton	Weight per pc.
MSensor G3 SFI 30 PIR 16DP bDW ZB20 BK	**28006653**	18 pc(s).	0.02 kg
MSensor G3 SFI 30 PIR 16DP bDW ZB20 WH	**28006654**	18 pc(s).	0.02 kg

Technical data

Sensor type	PIR sensor
Supply via	DALI cable
Supply voltage ①	9.5 – 22.5 V
Current draw	10 / 30 mA
Mounting height	10 – 16 m
Mounting hole	See mounting variants in data sheet
Type of installation	Zhaga Book 20
Max. cable length	2 m
Detection angle for PIR detection	62°
Detection angle for light measurement	24°
Detection range for light measurement	1 – 1,000 lx
Min. temperature difference between ambient temperature and detected object	± 4 °C
Radio transceiver operating frequencies	2.4 – 2.483 GHz
Max. output power radio transceiver (E.I. R.P.) ②	< + 20 dBm
Radio protocol	Bluetooth 4.0
Capable for mesh network	Up to 250 nodes
Interface	Digital interface according to IEC 62386
Ambient temperature ta	-20 … +50 °C
tc point	60 °C
Storage temperature ts	-25 … +60 °C
Humidity	20 … 90 %
Dimensions L x W x H	68 x 27 x 37.3 mm
Housing material body	PC polycarbonate
Housing material lens	HDPE
Type of protection	Up to IP65
Lifetime	up to 50,000 h
Guarantee (conditions at www.tridonic.com)	5 Year(s)

Approval marks

Standards

EN 61347-1, EN 61347-2-11, EN 55015, IEC 55015, EN 61547, IEC 61547, IEC 62479, IEC 62493, EN 300 328, EN 301 489-1, EN 301 489-17, IEC 62386-203, EN 18031-1

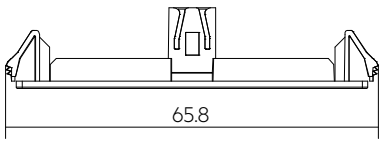
① Use only IEC 62386 compatible power supply.
② E.I.R.P.: Equivalent Isotropically Radiated Power.

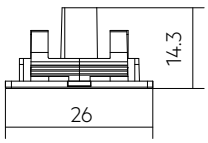
ACU BLIND COVER 60x22mm

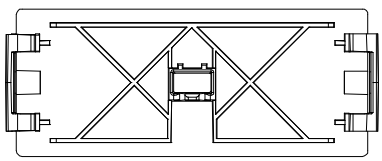
Accessory











Interfaces

_ Plastic mounting accessories in white and black color: BLIND COVER 60 x 22 mm and MOUNTING ADAPTER 60 x 22 mm
_ Fit to 60 x 22 mm Zhaga Book 20 cut out
_ The BLIND COVER has a holder for luminaire plug connector LEX-LP according to Zhaga Book 20 standard
_ MOUNTING ADAPTER 60 x 22 mm establish possibility to install a shutter for preventing occupancy detection

Housing properties

_ Casing: polycarbonate, black or white
_ Type of protection IP20

Benefits

_ Used for sensor integration to any lighting fixture which comply with Zhaga Book 20 standard
_ Simple retrofitting thanks to the option of mounting the sensor in the luminaire from the outside
_ No tools required for installation
_ Possibility to remove BLIND COVER 60 x 22 mm and MOUNTING ADAPTER 60 x 22 mm without opening of the lighting fixture

Website

http://www.tridonic.com/28005056

Ordering data

Type	Article number	Packaging, bag	Packaging, carton	Weight per pc.
ACU BLIND COVER 040 60x22 WH	**28005056**	10 pc(s).	100 pc(s).	0.004 kg
ACU BLIND COVER 040 60x22 BK	**28005057**	10 pc(s).	100 pc(s).	0.004 kg

ACU 034 Z20 LEX-MR 150mm

Accessory





Product description
_ LEX-MR is optional accessory suporting the Zhaga 20 standard
_ Responding luminaire plug LEX-LP available from Amphenol Benelux to be specified by lighting OEM's depending on specific fixture design:
_ FLM-S23-00, FLM-S23-W0
_ P-FLM-S21-00, P-FLM-S21-W0
_ Further information:
https://www.zhagastandard.org/products.html, product (zhagastandard.org) and supplier information:
https://www.amphenol-cs.com/product-series/zhaga-book-20-compliant-flm.html

Interfaces
_ Supplies Zhaga Book 20

Website
http://www.tridonic.com/28004616

Ordering data

Type	Article number	Packaging, bag	Packaging, carton	Weight per pc.
ACU 034 Z20 LEX-MR 150mm	**28004616**	100 pc(s).	2,000 pc(s).	0.002 kg

1. Standards

EN 55015
EN 61347-1
EN 61347-2-11
EN 61547
EN 62311
EN 62493
EN 300 328
EN 301 489-1
EN 301 489-17
EN 61347-1
EN 61347-2-11
RoHS Directive 2011/65/EU
EN 55015
EN 61547
IEC 62479
IEC 62493
EN 300 328
EN 301 489-1
EN 301 489-17
IEC 62386-101
IEC 62386-103
UK 2023
UK 2022
EN 18031-1:2024
EN 18031-2:2024
Zhaga Book 20

1.1 Glow wire test

according to EN 61347-1 with increased temperature of 850 °C passed.

2. Common

2.1 Description

The DALI MSensor G3 SFI 30 PIR 16DP bDW ZB20 is one of the new generation of Tridonic Bluetooth sensors.
With this Sensor, the customer gets a small sized wireless sensor for high height applications and a protection against environmental influence up to IP20.

This sensor provides measurement of ambient light, occupancy detection via PIR sensor.
DALI MSensor G3 SFI 30 PIR 16DP bDW ZB20 is an ultra-compact and rectangular highbay sensor which is perfect fit to trunking and linear fixtures.

The sensor is powered by a IEC 62386 compatible power supply.

The sensor can be connected to one or more DALI drivers, also in combination with a DALI XC G3.
The built-in sensors make it easy to integrate daylight control and motion detection.

All basicDIM Wireless devices can be controlled with the Tridonic app “4remote BT“. The app can be downloaded free of charge from the Apple App Store and Google Play Store.

2.2 Operation

The MSensor G3 SFI 30 PIR 16DP bDW ZB20 is fully compatible with networks which support up to 250 nodes (Evolution networks).
If the sensor is used with different types of basicDIM Wireless devices in an Evolution network, their compatibility has to be checked before.

Multiple devices automatically form a mesh network that can be controlled from any point. These networks communicate wirelessly directly with the smartphone or tablet. Therefore, an external gateway or wireless LAN network is not needed.

basicDIM Wireless devices have an integrated 2.4 GHz antenna.
For optimum RF-performance, a special attention will have to be given when the device is integrated into a luminaire.
See chapter 3.1 Placement for further instructions.

basicDIM Wireless devices can be used very flexible for different use cases. The operating modes (profiles) can be changed in the 4remote BT app.

3. Installation

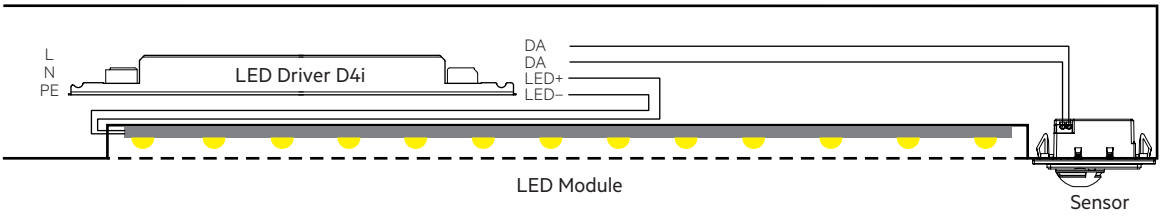
It is supplied directly via the bus.

- The digital interface is not SELV.
  The installation instructions for mains voltage therefore apply.
- For a correct DALI MSensor G3 SFI 30 PIR 16DP bDW ZB20 operation use the device only within the ta window.
- Ensure correct assembly and locking of the DALI MSensor G3 SFI 30 PIR 16DP bDW ZB20.
- Other RF signals may cause disturbances to the DALI MSensor G3 SFI 30 PIR 16DP bDW ZB20 communication.
- Avoid direct illumination of light source on sensor housing.
- 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.

System overview:

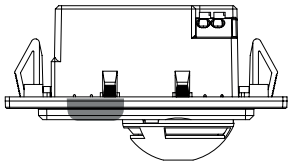
The DALI MSensor G3 SFI 30 PIR 16DP bDW ZB20 draws its operating power directly from the bus. Ensure the supply of the external bus with a IEC 62386 compatible power supply.
The following illustration visualizes the wiring of the components inside the luminaire.

Maximum allowed wire-length for the bus is 2 m.



3.1 Placement

basicDIM Wireless devices have an integrated antenna for easy integration.
In order to maximize the range in every direction some design guidelines should be taken into consideration when mounting the device.
The optimal position of the antenna is determined by the design of the unit.
Nevertheless, the underside of the sensor must not be covered by metal.

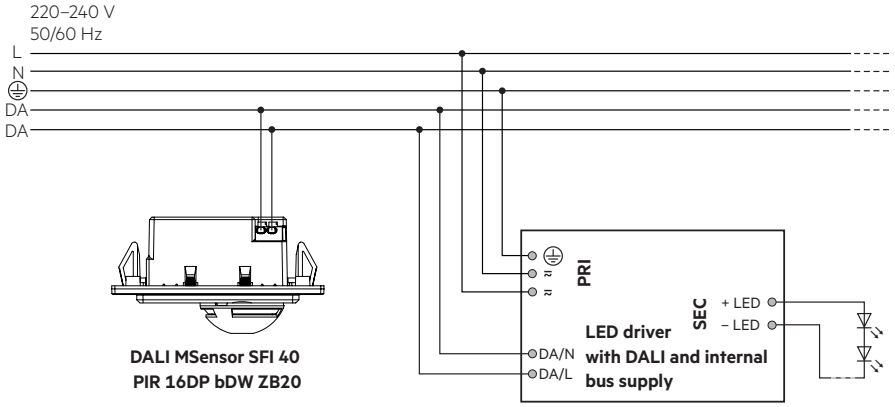


■ Antenna location

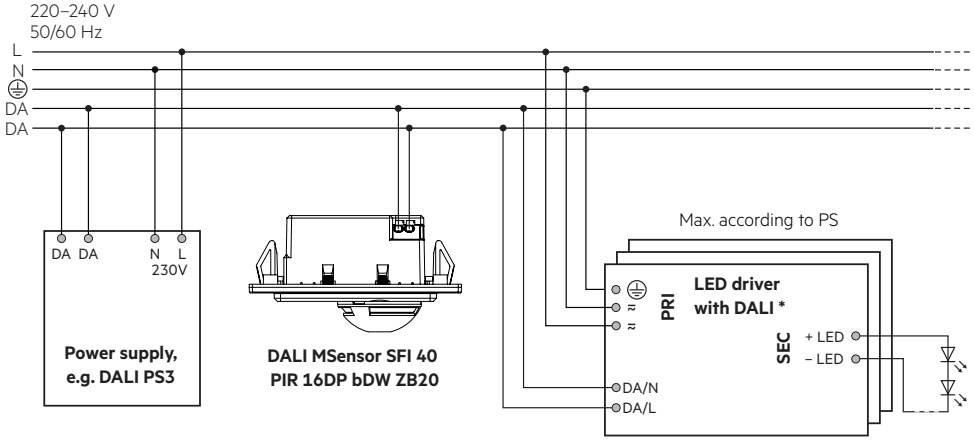
The range of the communication signal is depending on the environment e.g. luminaire, construction of the building, furnitures or humans and needs to be tested and approved in the installation.

To ensure a good radio connection, do not cover the basicDIM Wireless sensor completely with metal!

3.2 Wiring diagram with an internal bus supply



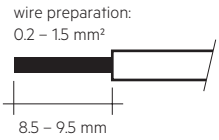
Wiring diagram with an external bus supply



* Max. 4 single / group addresses (A0 … A3 / G0 … G3) controllable, depending on the device profile of the basicDIM Wireless sensor.
The rest of the connected drivers can be controlled via broadcast – depending on the device profile.

3.3 Wiring type and cross section

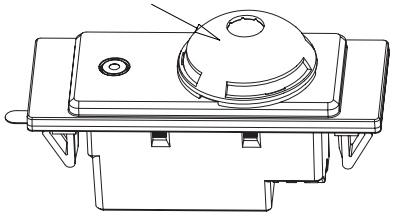
Mains supply wires
For wiring use stranded wire with ferrules or solid wire from 0.2 – 1.5 mm².
For perfect function of the push-wire terminals (WAGO 250) the strip length should be 8.5 – 9.5 mm.
Use one wire for each terminal connector only.



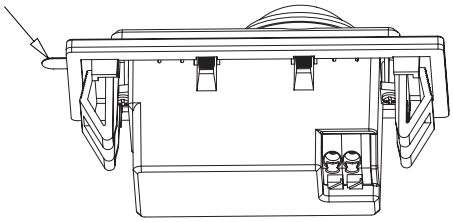
3.4 Mounting

Mounting Version acc. to Zhaga Book 20, 60x22 mm

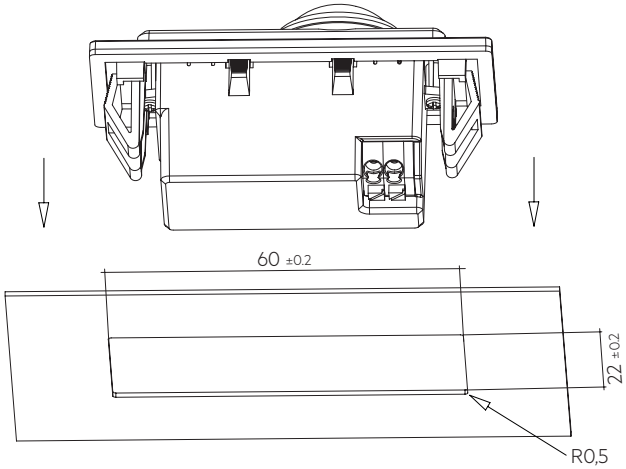
Remove the shutter to adjust coverage of the sensing area.
It can be freely cut as needed or completely removed.



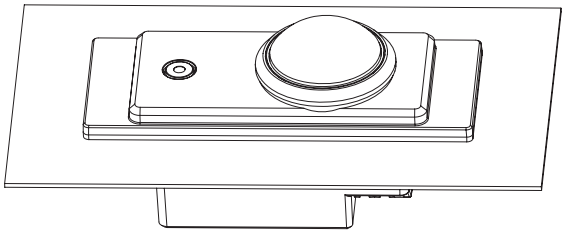
Peel off the sticker on the sealing ring to achieve complete IP protection.



Push sensor into the luminaire cutout (size: 60x22mm) for correct installation.
Size of the sheet: 0.4-1.5mm



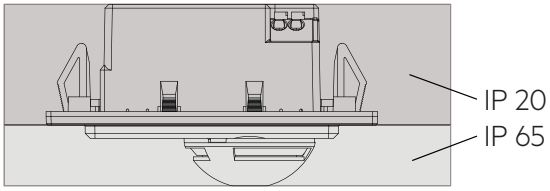
For complete installation, press the sealing ring around the sensor.



For IP65 protection, the white cover of the sticker (3M) has to be removed from the sticky housing boarder.

3.5 Ingress protection

This device contains IP-protection to use it also in applications with the need of protection against dust and water ingress. IP65 protection applies to the front of the sensor whereas the back of the sensor is IP20 rated.



4. Sensor function

4.1 Motion detection

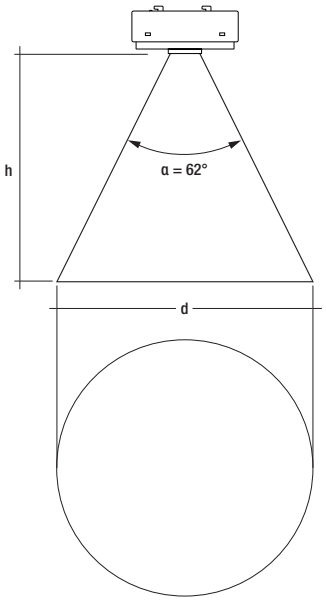
For occupancy detection PIR technology is used. The PIR Lens is made to detect moving people in areas such as office, open space or corridors with the following performance criteria:

- Mounting height from 10 up to 16 m
- Movement of human body

4.2 Occupancy / motion 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 16 m
- Movement of human body
- Movement ≥1.0 m/s for mounting heights up to 5 m



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

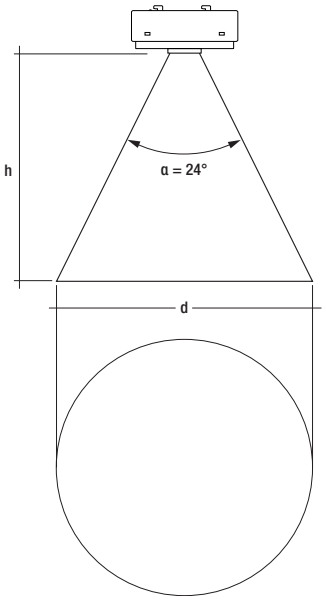
The reaction time of the system can be extended by factors such as the amount of data on the bus, the number of connected devices or the voltage drop on the DALI Line.

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

h = height	d = Detection range (diameter)
10.0 m	12.0 m
12.0 m	14.4 m
14.0 m	16.8 m
16.0 m	19.0 m

4.3 Light measurement

The measurement range is between 1 and 1000 lx.
Measured at the sensor head.



h *	d
10 m	4.3 m
12 m	5.1 m
14 m	6.0 m
16 m	6.9 m

4.4 Status LED‘s

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

Event	LED Color
Turning on the power supply	Red

5. Configuration

All basicDIM Wireless devices can be controlled with the Tridonic app “4remote BT“. The app can be downloaded free of charge from the Apple App Store and Google Play Store.

6. Miscellaneous

6.1 Disposal of equipment

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

6.2 Additional information

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Tridonic GmbH & Co. KG is a subsidiary of Zumtobel Group AG.

Wireless Reference Plattform (WRP) is Tridonic‘s own wireless architecture which is build in this product.

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

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