TRIDONIC

falcoSENSE

Vision based sensor

Product description

_ What is falcoSENSE? falcoSENSE is a cutting-edge occupancy analytics sensor designed to seamlessly integrate into lighting systems via WiFi or basicDIM Wireless (bDW) connectivity.
_ falcoSENSE can be installed stand-alone or easily integrated into 230 V lighting tracks.
_ It leverages computer vision processing to deliver precise, real-time data on space utilisation while maintaining privacy and security standards.
_ What does falcoSENSE do? Real-time analytics: Monitors area occupancy, people counting, line crossing, and dwell time.
_ Multi-application use: Ideal for offices, libraries, retail spaces, hospitality, and hybrid workspaces.
_ GDPR-compliant privacy: Processes data locally with blurred streams for commissioning and never saves biometric data.
_ PSTI compliance: fully compliant with the latest PSTI regulations.
_ Why choose falcoSENSE? falcoSENSE empowers businesses to transition into intelligent, data-driven environments with privacy-safe, scalable, and future-proof solutions.
_ Flexible connectivity: Supports WiFi and bDW for lighting mesh integration.
_ Ease of use: Quick installation, remote commissioning, and intuitive area analytics configuration.
_ Enhanced value for lighting systems: Adds functionality to existing lighting infrastructure, increasing project value perception.
_ Cost-effective and accurate: Delivers very high accuracy, unlocking new possibilities for space management.
_ Configurable alerts: Triggers actions based on defined occupancy thresholds.
_ 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: black or white
_ Type of protection IP20

Benefits

_ Data-Driven Decisions: Gain actionable insights for optimising cleaning, staffing, and energy use.
_ Retrofittable Design: Easily upgrade existing lighting installations.
_ Scalable Solutions: Supports multiple use cases from a single sensor.
_ Sustainability: Enables smarter, energy-efficient building management.

Typical applications

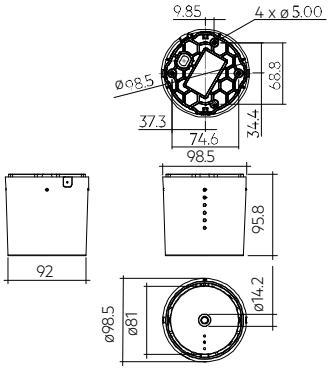
_ Typical Applications Offices: Flexible desk utilisation and occupancy tracking.
_ Retail: Customer engagement and store optimisation.
_ Libraries: Capacity monitoring and service enhancement.
_ Hospitality: Accurate shift planning and customer flow insights.
_ Presence detection on pedestrian crossings and pavements.
_ Event Management: Attendance monitoring and audience engagement analysis.

Website

http://www.tridonic.com/28005817

falcoSENSE

Vision based sensor



Ordering data

Type	Article number	Colour	Dimensions Ø x H	Packaging, carton	Weight per pc.
falcoSENSE SSM 40 CMOS 6 C IP WH	**28005817**	White	ø 98.5 x 95.8 mm	10 pc(s).	0.331 kg
falcoSENSE SSM 40 CMOS 6 C IP bDW WH	**28005818**	White	ø 98.5 x 95.8 mm	10 pc(s).	0.331 kg
falcoSENSE SSM 40 CMOS 6 C IP BK	**28005930**	Black	ø 98.5 x 95.8 mm	10 pc(s).	0.331 kg
falcoSENSE SSM 40 CMOS 6 C IP bDW BK	**28005931**	Black	ø 98.5 x 95.8 mm	10 pc(s).	0.331 kg

Technical data

Sensor type	Edge based vision system based on artificial intelligence
Rated supply voltage	220 – 240 V
Mains frequency	50 Hz
Typ. power consumption	4.5 W
Max. power consumption	7 W
In-rush current	40 A
Starting time	< 90 s
Mounting height	2.5 – 6 m
Type of installation	stationary equipment (fixed and permanently connected)
Field of view	up to 100 m²
Radio transceiver operating frequencies	2.4 / 5 GHz
Max. output power radio transceiver (E.I.R.P.) WiFi ①	< + 16 dBm
Max. output power radio transceiver (E.I.R.P.) Bluetooth mesh ①	< + 4 dBm
Radio protocol	WiFi 802.11 a/b/g/n/ac, Bluetooth mesh
Ambient temperature ta	-25 … +50 °C
Storage temperature ts	-25 … +60 °C
Humidity	0 … 90 %
Dimensions Ø x H	ø 98.5 x 95.8 mm
Type of protection	IP20
Housing material	PC + ABS
Housing material lens	Glass
Housing colour	Black, white
Housing colour lens	Crystal clear
Guarantee (conditions at www.tridonic.com)	5 Year(s)

Approval marks

CE UKCA RoHS

Standards

EN 300 328, EN 301 489-1, EN 301 489-17, EN 55032, EN 55035, EN 61000-3-2, EN 61000-3-3, EN 60695-2-13, EN 62311, EN 62368-1

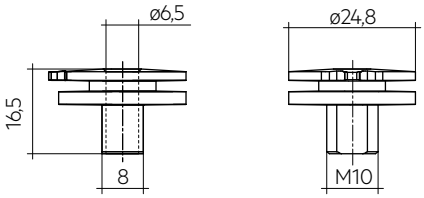
① E.I.R.P.: Equivalent Isotropically Radiated Power.

ACU ALU NIPPLE M10x1

Accessory

Product description
_ Optional threaded sleeve for luminaire mounting
_ Suitable for S-9009/D-M10 threaded nut
_ Additional mounting equipment, e.g. M13x1 available at AAG Stucchi (http://www.aagstucchi.it/en/)

Website
http://www.tridonic.com/28002398



Ordering data

Type	Article number	Packaging, bag	Weight per pc.
ACU ALU NIPPLE M10x1	**28002398**	100 pc(s).	0.007 kg

1. Standards

EN 300 328
EN 301 489-1
EN 301 489-17
EN 55032
EN 55035
EN 61000-3-2
EN 61000-3-3
EN 60695-2-13
EN 62311
EN 62368-1

1.2 Glow wire test

according to EN 60695-2-13 passed with 850 °C.

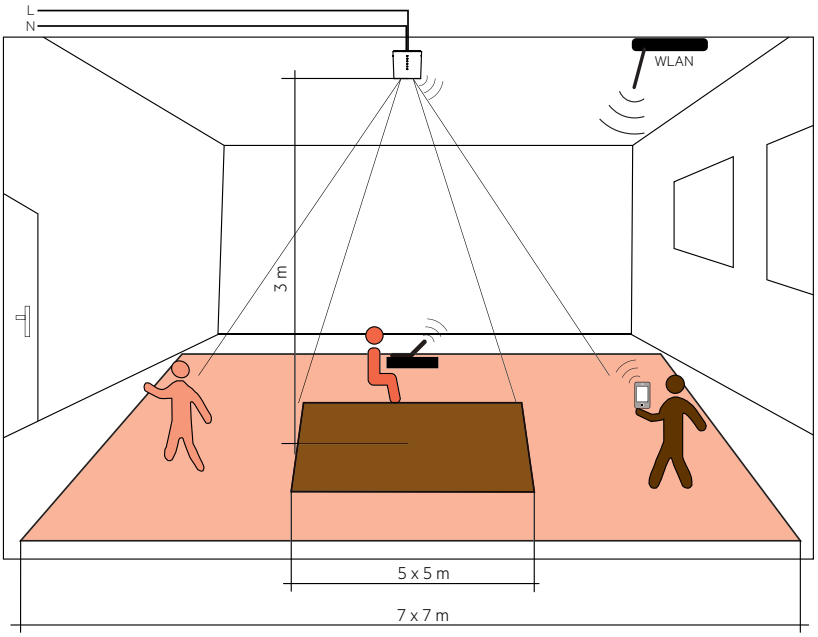
2. Common

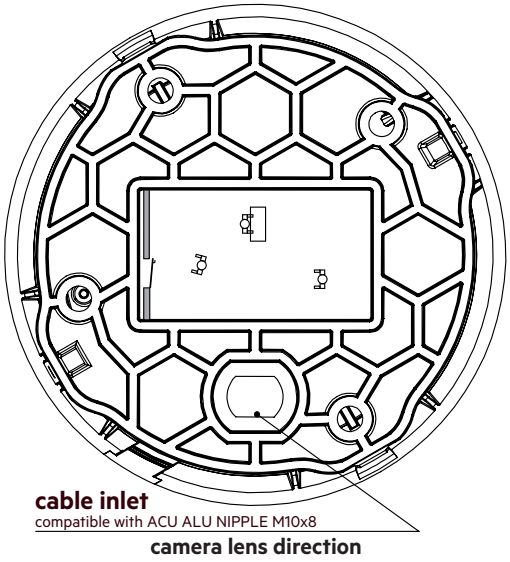
This sensor is mounted on the ceiling and monitors the room below.
The sensor offers a user interface for commissioning and and supports following platforms for Meta-data integration:
Casambi
Azure IoT
MQTT rebroadcast

3. Installation

- For the electrical connection of the unit, the supply voltage must be disconnected in the building's electrical system.
- An all-pole mains switch has to be incorporated in the electrical installation of the building.
- If installed at another height then specified the sensor is very likely to operate not as intended (e.g. false detection, no detection, etc.).
- Make sure the sensor is mounted correctly.
- Proper detection might be impacted by obstacles blocking the direct line of sight between camera and detection zone.
- Avoid direct illumination of any light source to the sensor including housing.
- For proper operation of the sensor, it needs be ensured, that the illuminance level, within the whole detection area at all times, is at least 100 lux. Measured directly below the sensor on the surface / ground.
- Fewer but larger detection zones result in better detection accuracy.

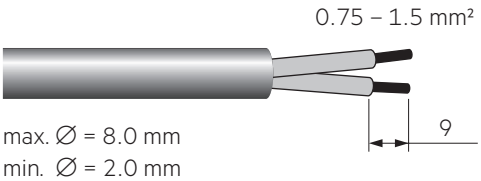
3.1 Wiring





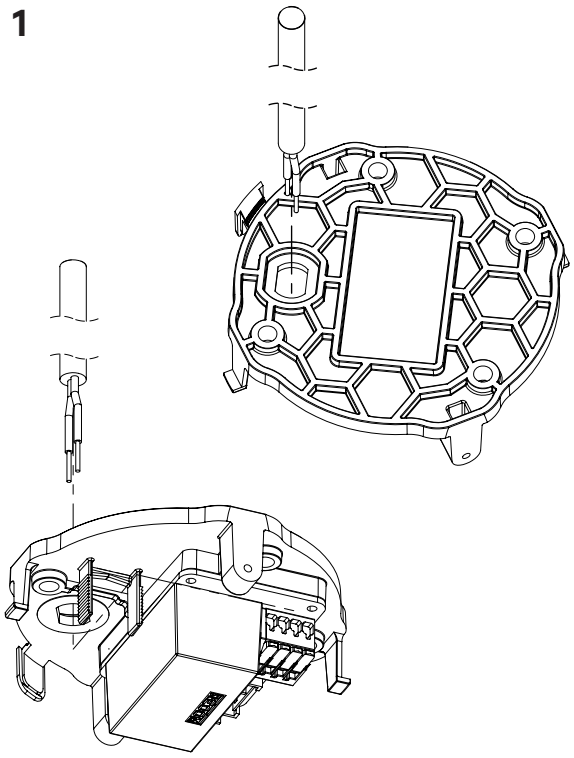
3.2 Wiring type and cross section

For wiring use stranded wire with ferrules or solid wire.
In order to achieve a well-functioning strain relief, the diameter of the cable sheath must remain within the stated dimensions.



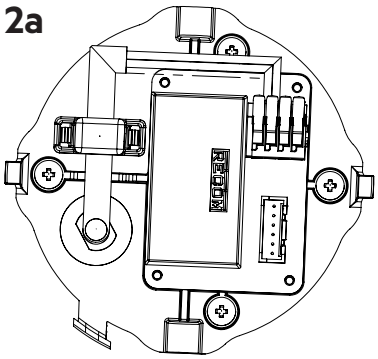
max. ∅ = 8.0 mm
min. ∅ = 2.0 mm

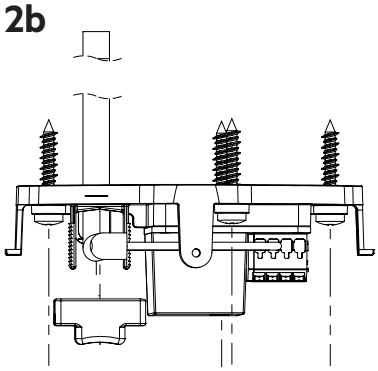
3.3 Mounting instructions

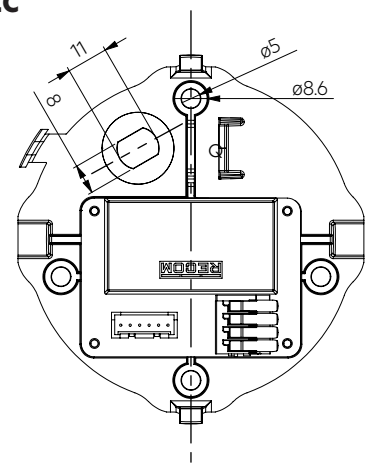


1

Insert the cable through the opening in the base plate or use the side entry.







2a

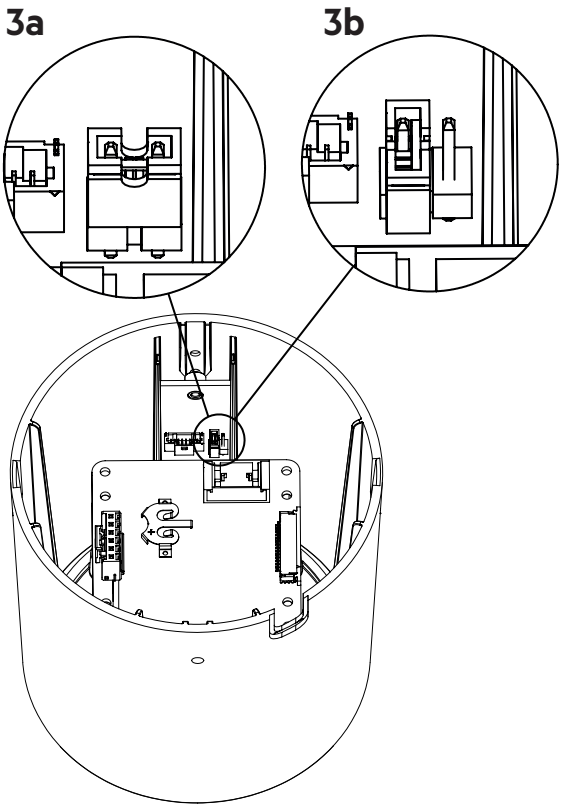
Thread the cable as shown and insert the wires into the L and N terminals.

2b

Fit the strain relief by pressing the cable firmly together. Ensure that it engages firmly.

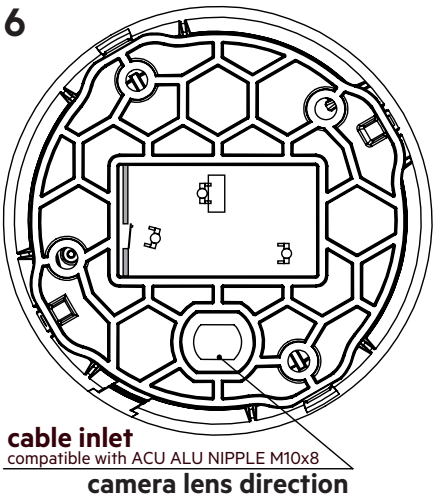
2c

Mounting screws and anchors are not included.
Use screws and anchors suitable for the subsurface material on which the sensor is mounted.
Use flat head screws with a maximum screw diameter of 5 mm and a maximum head diameter of 8.6 mm.



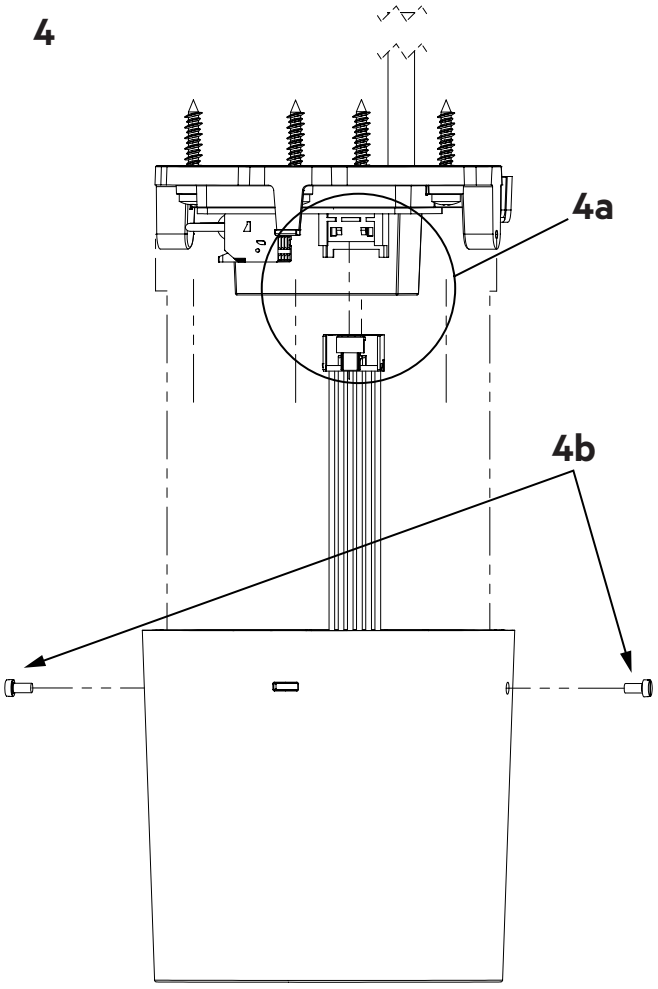
3

In factory setting 3a, the jumper is set and the status LEDs are activated. In position 3b or when the jumper is removed, the status LEDs are deactivated.



6

Camera lens direction and visualized picture in UI.

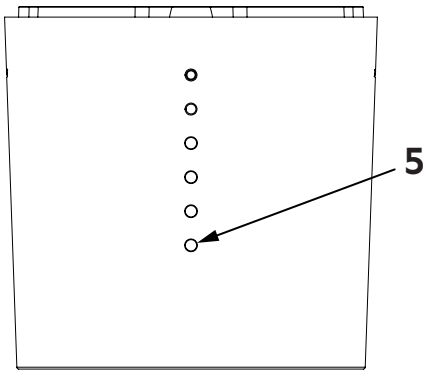


4a

Connect the sensor's flat ribbon cable to the base plate.

4b

Attach the sensor housing to the base plate until it snaps into place. Screw the housing parts together with the supplied screws. Maximum tightening torque: 0.2 Nm.



5

Press the reboot button for 1 s, the sensor restarts.

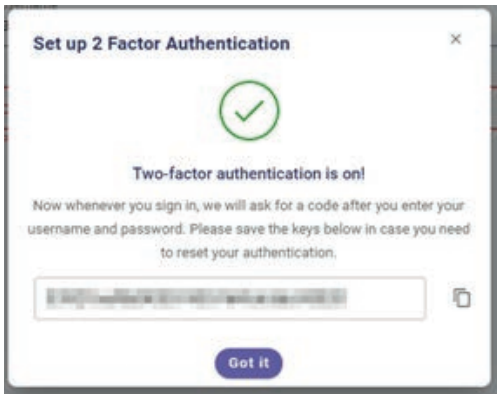
3.4 Initial setup

Please follow the following steps for setting up the sensor

1. Mount the sensor on the ceiling
2. Make sure that the mains voltage is connected
3. Create a wireless hotspot with the following login
   SSID: tridonic
   Password: tridonic
4. It is recommended that this network has access to the internet to be able to sync the internal clock. An accurate internal clock is necessary for setting up the 2 factor authentication (2FA).
   For this it is necessary that the NTP protocol is not blocked by the firewall.
5. The Sensor will now connect to this hotspot
6. To find out the IP address of the sensor there are different options depending on which device was used to create the Hotspot.
   a. Hotspot from a Router: Check the router´s page
   b. Hotspot from a Windows Laptop:
      Check the connected devices in the Mobile hotspot settings
   c. Android, iOS phone:
      Install an IP Address scan program
   d. Use IP Address scan software on the Windows PC

7. Connect to the sensor using a browser
   Type in the address bar the IP address: e.g.: “https://xxx.xxx.xxx.xxx”
   xxx= the IP address of your sensor given by the Hotspot or Router.
8. At first login the following credentials must be used
   User: admin
   PW: 123456
9. The system will ask for a password change. Please enter a new password.
   a. At least 12 characters long
   b. At least one upper case character
   c. At least one digit
   d. AT least one special character (!,@,#,$,^,&,*,+,=)
10. Setup 2FA using common 2FA apps on your phone
    a. Install and run a 2FA app on your phone (eg.: Google authenticator or Microsoft authenticator)
    b. Scan the shown QR-Code with the authenticator app

    c. Type the code shown in the app into the field “Security Code” and press Verify
    d. Copy and save the shown reset key somewhere save!
    This is needed in case the 2FA needs to be reset.



11. Login with the new password and 2FA key.
12. The dashboard will be shown.
13. Navigate to the “configuration” tab and to the “Settings” section
14. Klick in “Networks” on “+ ADD NETWORK”
15. Enter Network SSID and password of the intended wireless network
    Select network priority. The lower the number the higher the priority.
16. After selecting submit, the sensor will immediately disconnect the current network and try to login to the new network. If it fails, it will connect again to the “tridonic” network.
17. Connect to the new network and search again for the IP-Address.
    Use the same process as described above in point 5.
18. Login to the sensor as described above in point 11.

4. Sensor function

This Sensor provides the following functionalities:

Area inspection
People presence in a predefined area marked in the commissioning stage.

Line crossing:
In/Out people counting from a specified location.

4.1 Area Inspection

Commission a set of distinct or overlapping areas, where the area inspection module can be activated.

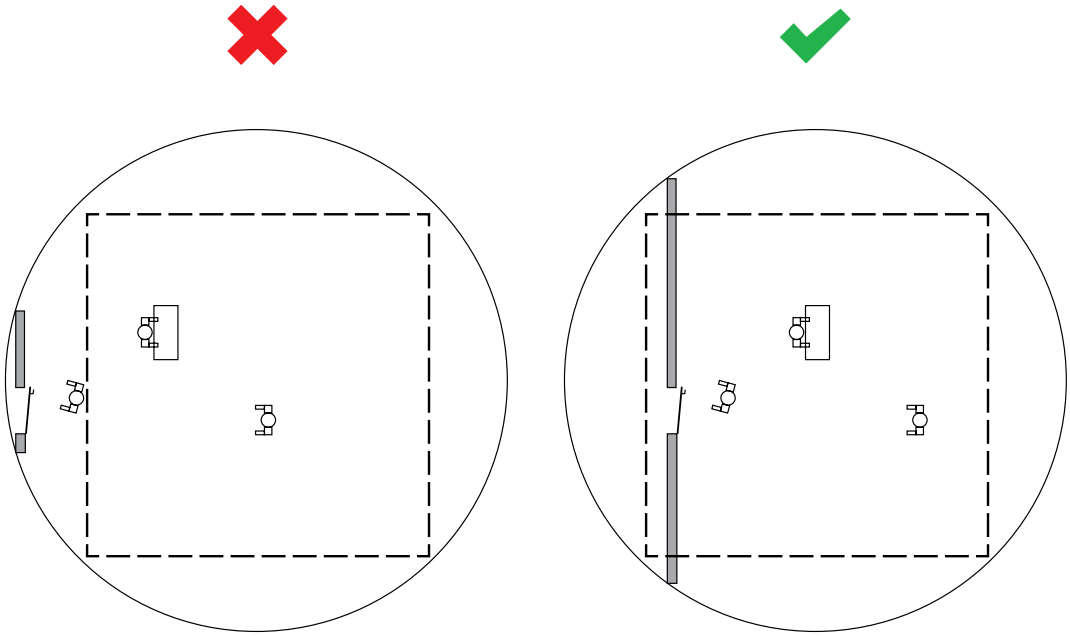
4.2 In/out People counting (line crossing)

Top-down view required.
That means that the camera should be placed above the point that the line is drawn.
The operational range for people counting is slightly smaller than that of the area inspection as also depicted in the detection area table.

4.3 Installation position guide

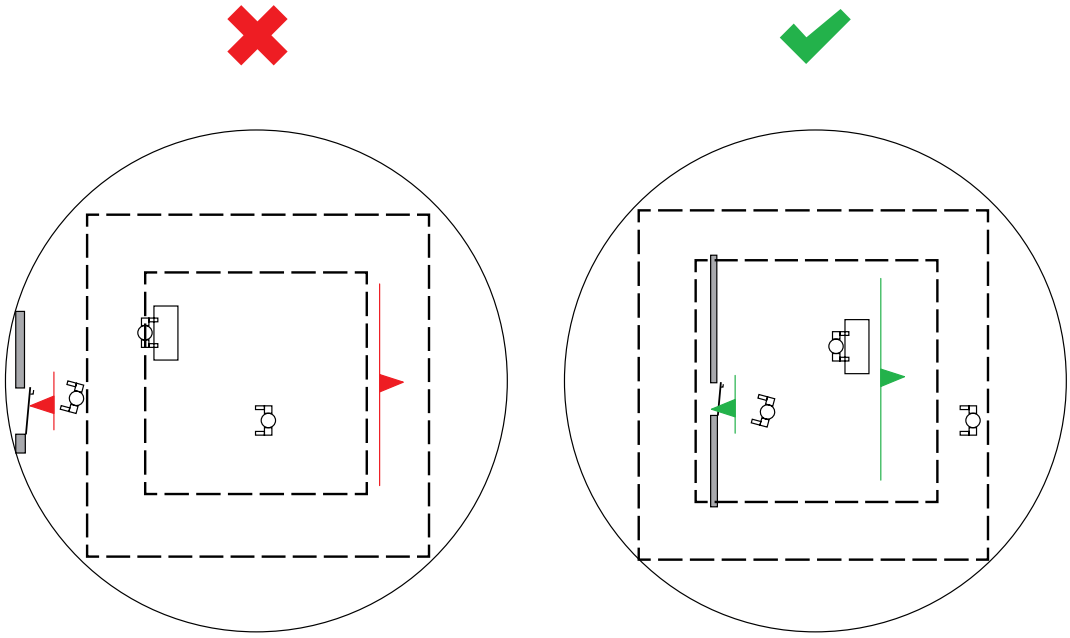
4.3.1 Installation position guide people presence

To achieve high accuracy, only operate the area within the dashed area, this area can also be seen in the sensor UI, if you operate areas outside the area, the accuracy will be lower. The ideal area for detecting the presence of people is also mentioned in the Detection area chapter.



4.3.2 Installation position guide Line counting

To achieve high accuracy, only operate the inner dashed area, this area is not visible in the sensor UI, if you operate lines outside the area, the accuracy is lower. The ideal range for line counting is also mentioned in the Detection area chapter.



4.4 Detection area

Installation height	People presence width x height	Line counting width x height
2.5 m	5 x 5 m	3 x 3 m
3.0 m	7 x 7 m	5 x 5 m
3.5 m	8.5 x 8.5 m	6.5 x 6.5 m
4.0 m	10 x 10 m	8 x 8 m
4.5 m	10 x 10 m	8 x 8 m
5.0 m	10 x 10 m	8 x 8 m
6.0 m	10 x 10 m	8 x 8 m

4.5 Status LED

After powering on the device, the following indicators extist.
Red LED:
- permanently on as soon it is connected to power supply.

Green LED:
If the device is not connected to WiFi
- blinking, 5 seconds ON – 5 seconds OFF

If the device is connected to WiFi:
- blinking, 2 seconds ON – 2 seconds OFF

Add / remove WiFi Network:
- flashes every 0.1 second for 30 seconds

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

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