

MPS3211/05



MPS3221/05



MPS3231/05

MPS3211/05 OCC-DL IA DALI WH 6M A
MPS3221/05 OCC-DL IA DALI WH 12M A
MPS3231/05 OCC-DL IA DALI WH 16M A

Occupancy Sensor

Specification Sheet

The mains powered sensor is a standalone occupancy and daylight sensor. It is an Interact Ready sensor, which can be used to upgrade Interact ready luminaires to a smart connected-lighting system. The MPS32x1/05 sensors are DALI-2 certified, and side mounted on the luminaires. The DALI port supports up to 10 DALI drivers.

The three variants of MPS32x1/05 sensor are as follows:

- MPS3211/05 sensor - sensor mounting height from floor varies between 2.1 m to 6 m.
- MPS3221/05 sensor - sensor mounting height from floor varies between 4 m to 12 m.
- MPS3231/05 sensor - sensor mounting height from floor varies between 4 m to 16 m.

The 2.4 GHz Zigbee technology enables reliable and secure communication. Based on the occupancy detection and daylight variations, Zigbee technology triggers the lights to turn on or dim. The sensor is designed for waterproof applications and low to high-bay height applications.

Safety

Warning

- Avoid touching live parts.
- Do not use drivers with damaged housing and/or connectors.
- Do not use drivers with damaged wiring.
- Class 1 luminaires must be connected to protective earth.
- Switchable function to make the open load on the driver output is an abnormal condition, and it is not an intended application that will be allowed.

Safety warnings and installation instructions to be taken into account during design-in and manufacturing:

- Do not use damaged or defective contacts or housings.
- Do not use damaged products.
- Do not service the driver when the mains voltage is connected and this includes connecting or disconnecting the LED load.

Functionality

Features

- Motion sensor PIR for occupancy detection
- Adjustable sensitivity
- Minimum false trigger
- Light sensor Daylight Dependant Regulation (DDR)
- Infrared receiver module for IR remote control
- Zigbee and a Bluetooth Low Energy (BLE) transceiver

Benefits

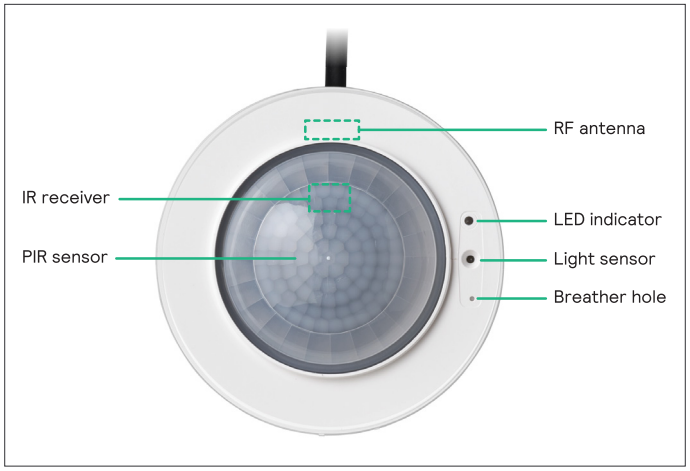
- Automatic light control based on occupancy detection and DDR
- Adjustable sensor parameters for personalized lighting behaviors
- Status indication through three built-in LEDs

Applications

The typical application areas are warehouses, parking garage, factories, loading docks, and manufacturing units.

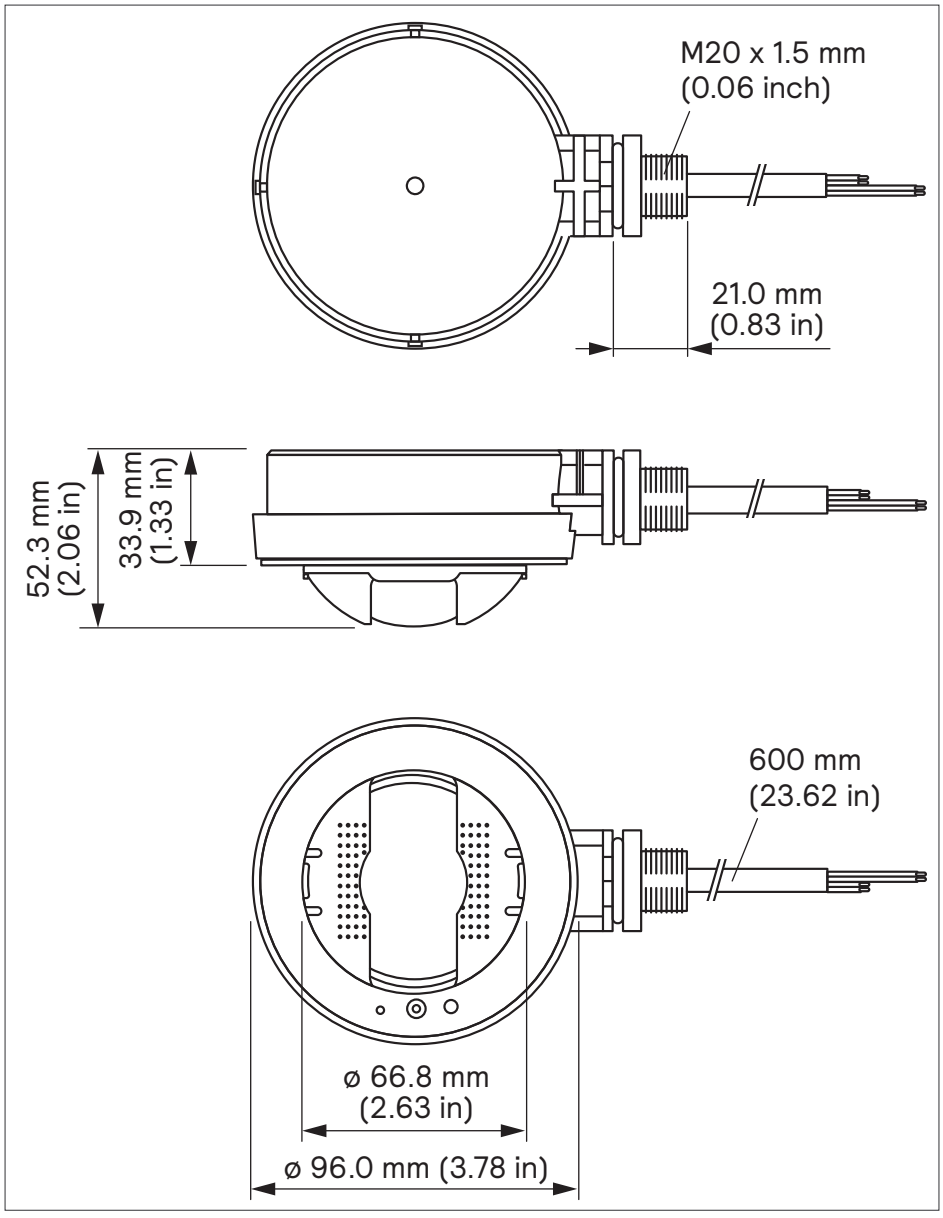
The sensor is side mounted on the luminaires, and works with Interact ready luminaires with DALI-2 drivers (also with additional DALI parts). The mounting height can range from 2.1 m to 16 m based on the MPS32x1 sensor variants.

Component layout

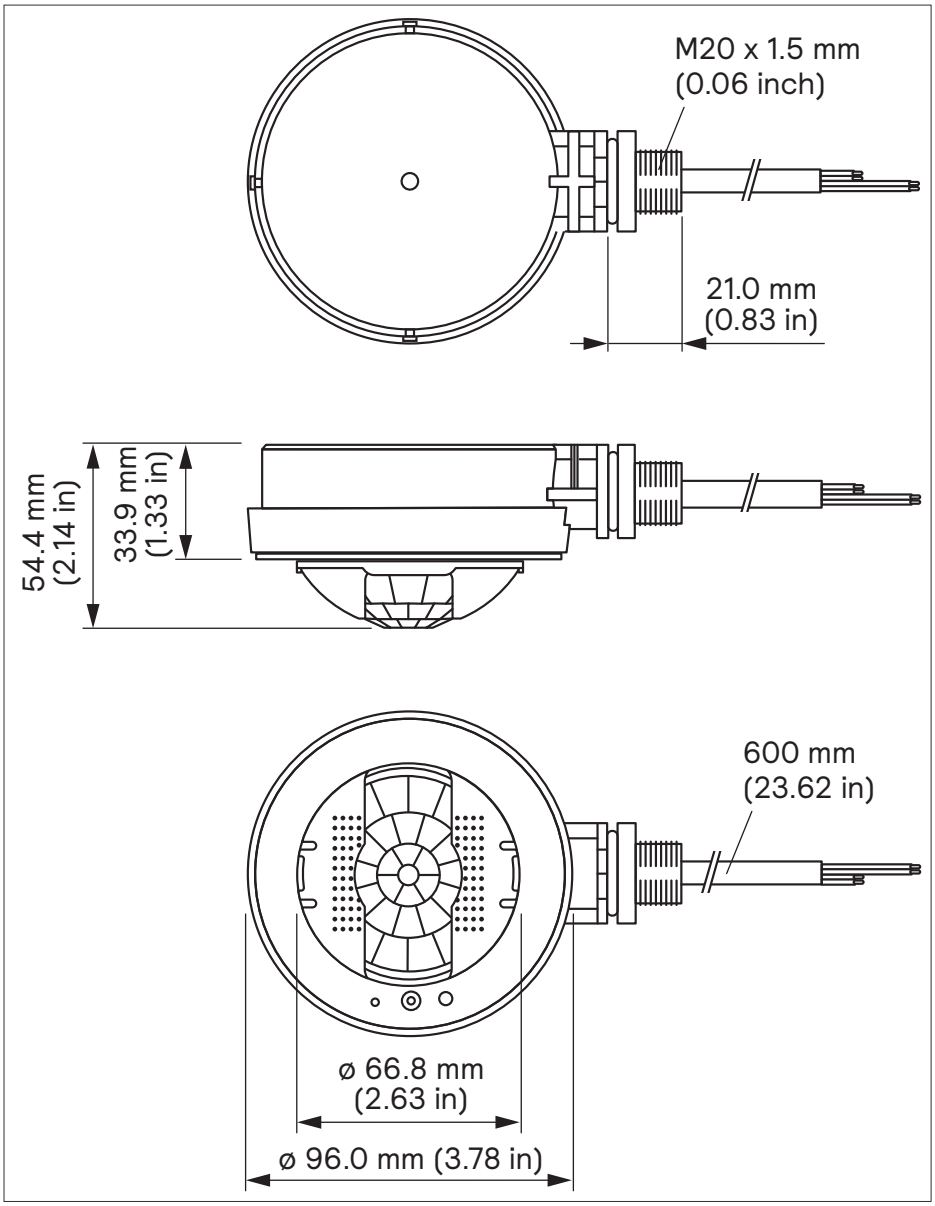


Dimensional drawing

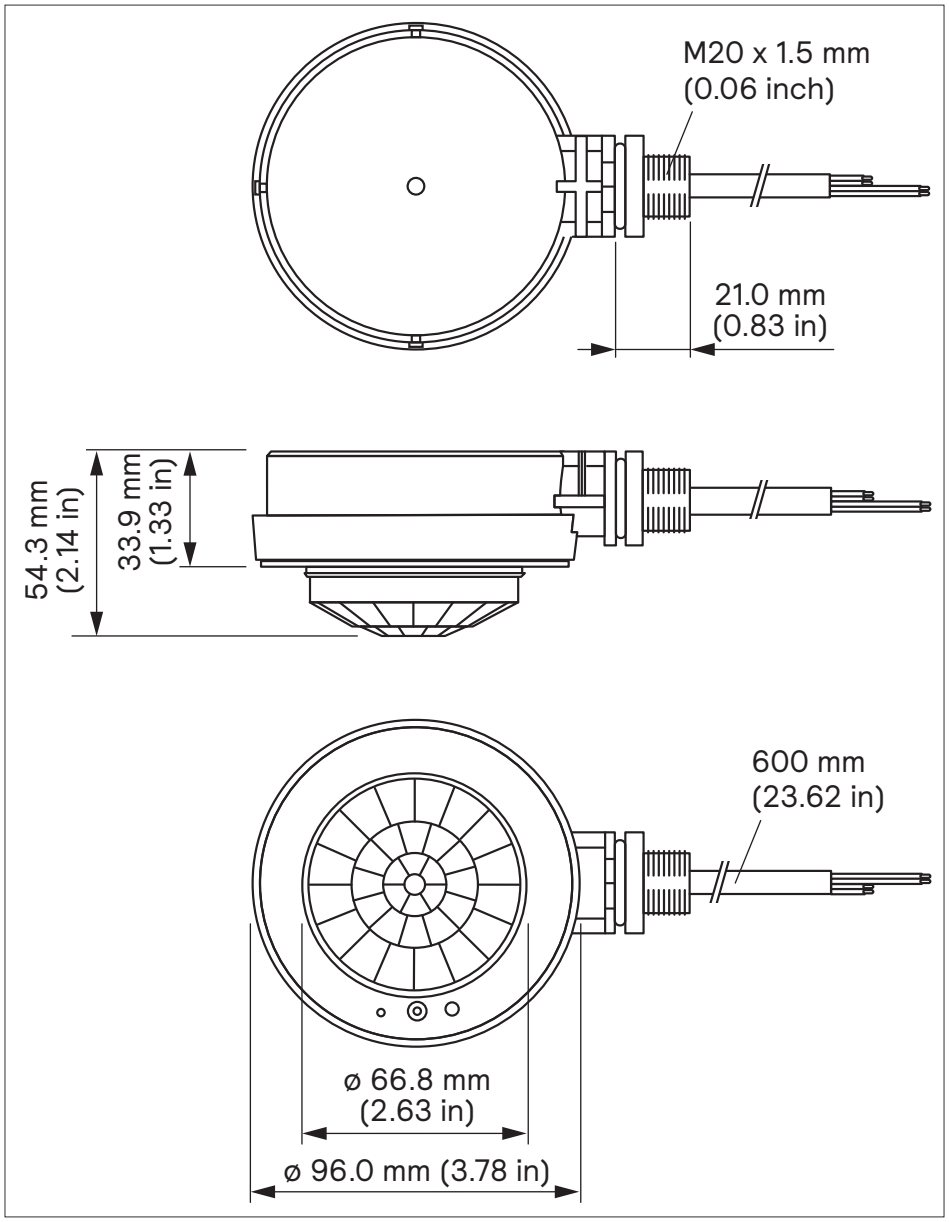
MPS3211/05



MPS3221/05

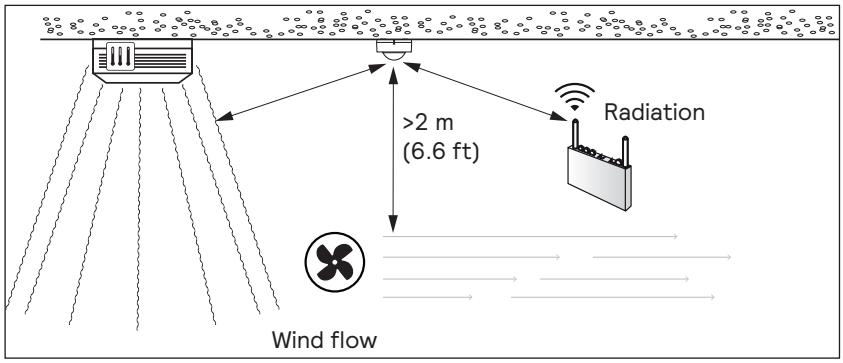

M20 x 1.5 mm
(0.06 inch)
21.0 mm
(0.83 in)
54.4 mm
(2.14 in)
33.9 mm
(1.33 in)
600 mm
(23.62 in)
ø 66.8 mm
(2.63 in)
ø 96.0 mm (3.78 in)

MPS3231/05


M20 x 1.5 mm
(0.06 inch)
21.0 mm
(0.83 in)
54.3 mm
(2.14 in)
33.9 mm
(1.33 in)
600 mm
(23.62 in)
ø 66.8 mm
(2.63 in)
ø 96.0 mm (3.78 in)

Mounting

MPS32x1 sensors need to be mounted at a distance of more than 2 m from the direction of wind flow, radiation, and heat waves.



Functional description

PIR occupancy sensing

MPS32x1/05 sensor detection range for major motion is tested at 21 +/- 3 °C (70 +/- 5 °F) according to the NEMA WD 7-2011 standard, and the detection range are as follows:

Sensor variant	Sensor mounting height	Maximum sensor detection diameter (D) (ratio of mounting height (H) and diameter (D)) H:D
MPS3211/05	2.1 m to 6 m	1:5
MPS3221/05	4 m to 12 m	1:2
MPS3231/05	4 m to 16 m	1:1.1

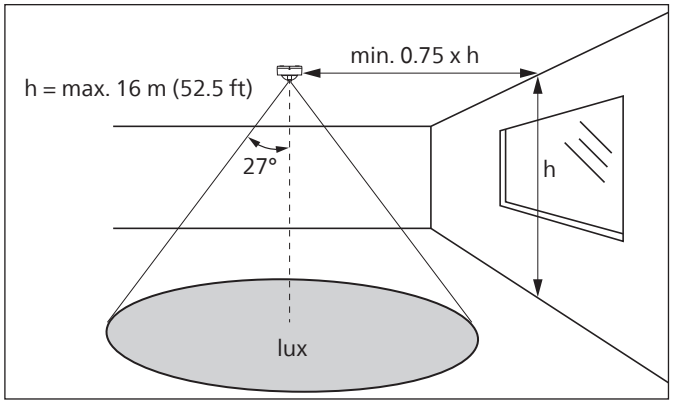
Example: For MPS3221/05 sensor, if the mounting height is 5 m, then the maximum sensor detection diameter for major motion is 10 m.

Note:
As PIR based sensing works on the difference between subject's temperature and ambient temperature, the occupancy detection could vary due to clothing and size of the subject. The sensor detection area will decrease when the difference in subject's temperature and ambient temperature is approximately 5 °C or less.

Daylight Dependant Regulation (DDR)

- High accuracy of ambient light measurement is approximately 1 to 1500 lux at sensor level.
- Closed loop DDR
- Fast response for DDR

Daylight field-of-view



Motion detection area

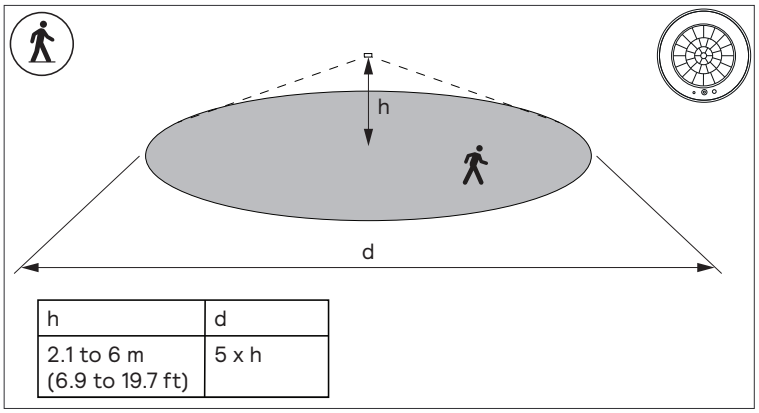
The motion detection area of a sensor depends on the sensor mounting height from the floor. By default, the shield is fitted on the sensor lens to achieve motion detection area of a sensor in a rectangular view and a sticker which is available inside the sensor package box is used to achieve motion detection area of a sensor in a hemisphere view.

Remove the shield or sticker from top of the sensor lens to achieve complete motion detection area of a sensor.

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Motion detection area without lens shield

Remove the shield from the top of the lens to achieve a complete motion detection area of a sensor.

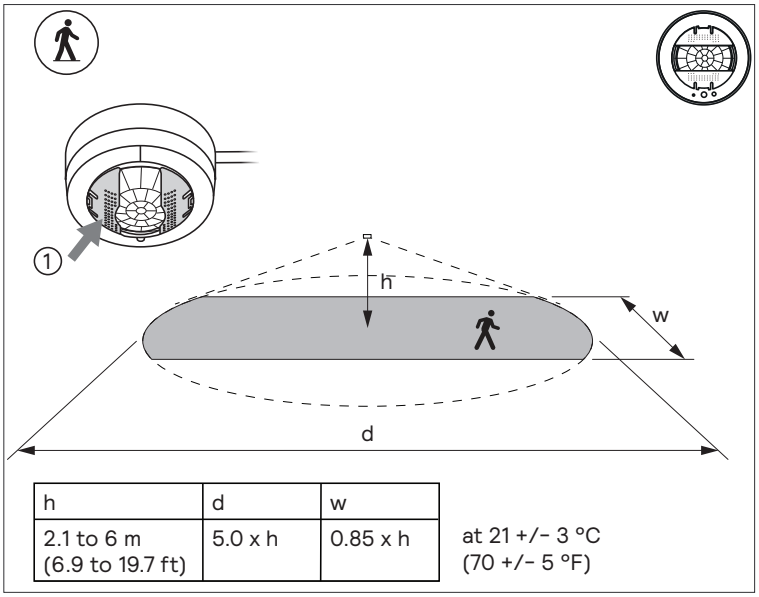


h	d
2.1 to 6 m (6.9 to 19.7 ft)	5 x h

Motion detection area with lens shield

Shielding option: Rectangle detection area

Install the shield (1) on the sensor to get a rectangle detection area as shown in the below figure.

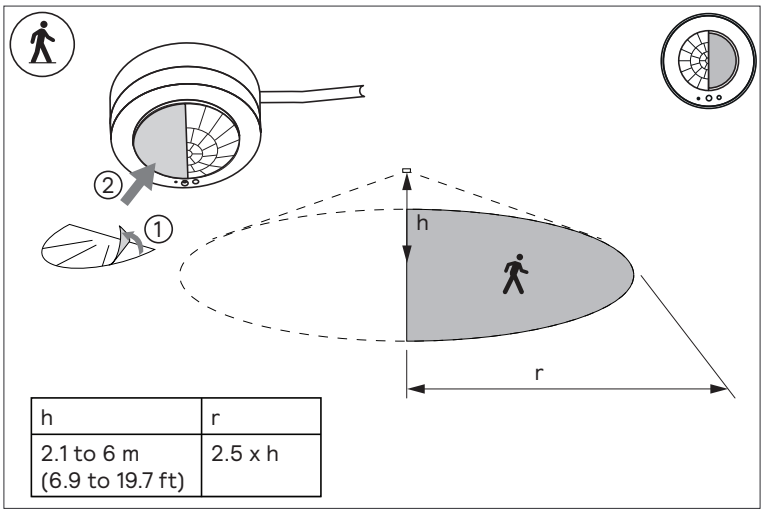


h	d	w
2.1 to 6 m (6.9 to 19.7 ft)	5.0 x h	0.85 x h

at 21 +/- 3 °C (70 +/- 5 °F)

Shielding option: Hemisphere detection area

Remove the shield and add a sticker (1) on the sensor (2) to get a hemisphere detection area as shown in the below figure.

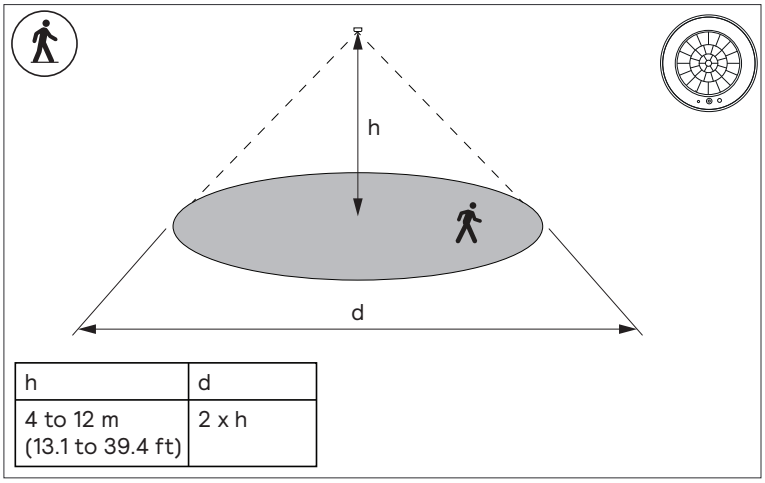


h	r
2.1 to 6 m (6.9 to 19.7 ft)	2.5 x h

MPS3221/05

Motion detection area without lens shield

Remove the shield from the top of the lens to achieve a complete motion detection area of a sensor.

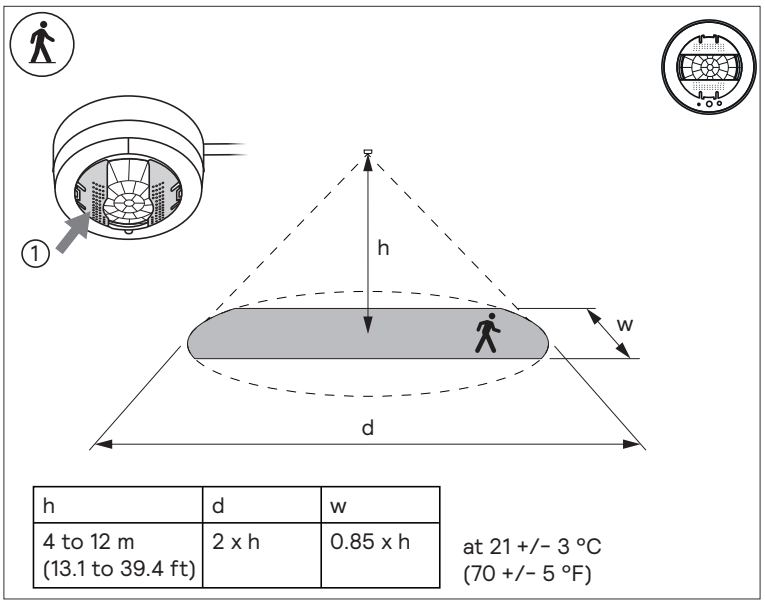


h	d
4 to 12 m (13.1 to 39.4 ft)	2 x h

Motion detection area with lens shield

Shielding option: Rectangle detection area

Install the shield (1) on the sensor to get a rectangle detection area as shown in the below figure.

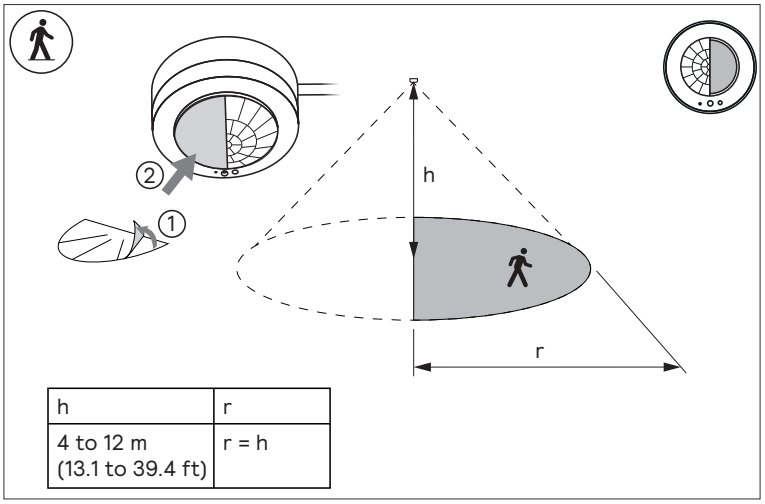


h	d	w
4 to 12 m (13.1 to 39.4 ft)	2 x h	0.85 x h

at 21 +/- 3 °C (70 +/- 5 °F)

Shielding option: Hemisphere detection area

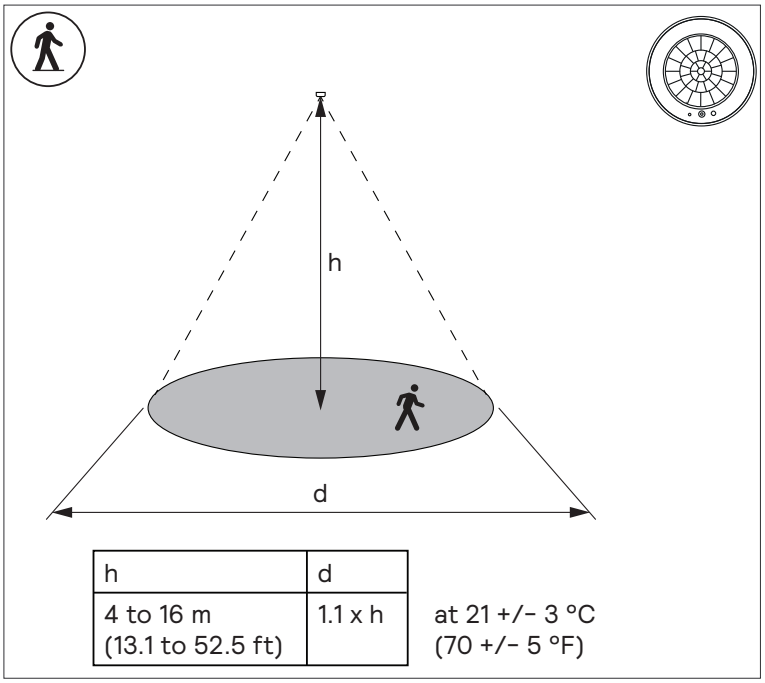
Remove the shield and add a sticker (1) on the sensor (2) to get a hemisphere detection area as shown in the below figure.



h	r
4 to 12 m (13.1 to 39.4 ft)	r = h

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Motion detection area without sticker on lens



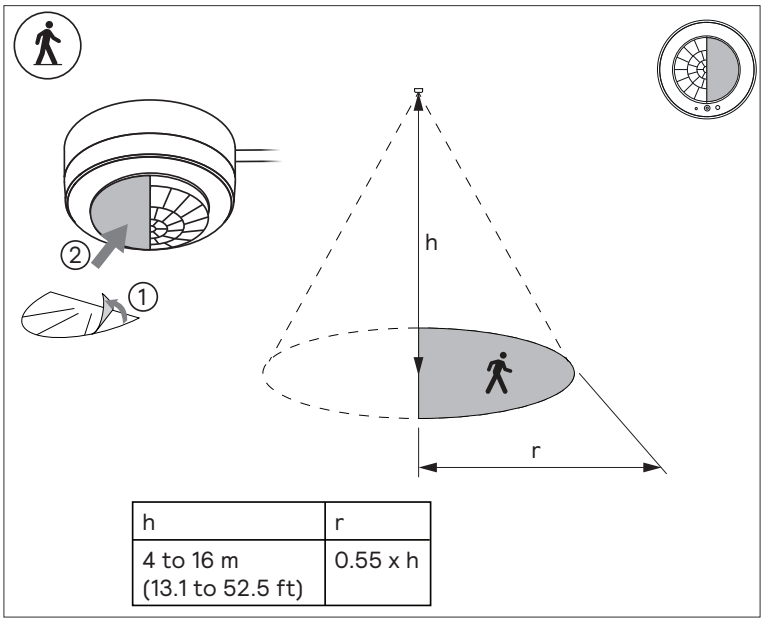
h	d
4 to 16 m (13.1 to 52.5 ft)	1.1 x h

at 21 +/- 3 °C (70 +/- 5 °F)

Motion detection area with sticker on lens

Shielding option: Hemisphere detection area

Add a sticker (1) on the sensor (2) to get a hemisphere detection area as shown in the below figure.



h	r
4 to 16 m (13.1 to 52.5 ft)	0.55 x h

LED indicator

MPS32x1/05 sensors have a RGB LED indicator built-in underneath the PIR lens, which gives a clear visibility of the sensor functions.

LED pattern	
Sensor is powered ON and stabilizing	Yellow LED is ON for 30 seconds.
Sensor detects occupancy	Red LED is ON
Sensor detects vacancy	Yellow LED is ON
If the mobile app or gateway sends BLINK command to the sensor for identification	Green LED toggles at a rate of 10 Hz frequency for 4 seconds.
In the mobile app, • Tap Delete button to remove a sensor • Tap Reset button to factory reset a sensor	Green LED toggles at a rate of 10 Hz frequency for 10 seconds. Then, Green LED stops blinking and Yellow LED starts blinking.
In the remote control, • Select Add button to localize a fixture • Select 0 (zero) button to reset a fixture	Green LED toggles at a rate of 10 Hz frequency for 10 seconds. Then, Green LED stops blinking and Yellow LED starts blinking.

Technical specifications

Physical data	
Dimensions	• MPS3211/05: Φ 96 x 52.3 mm • MPS3221/05: Φ 96 x 54.4 mm • MPS3231/05: Φ 96 x 54.3 mm
Installation height	• MPS3211/05: 2.1 m to 6 m • MPS3221/05: 4 m to 12 m • MPS3231/05: 4 m to 16 m
Net weight	• MPS3211/05: 0.214 kg • MPS3221/05: 0.206 kg • MPS3231/05: 0.213 kg
Color	White

Environmental data	
Operating temperature	-40 °C to +65 °C
Storage temperature	-40 °C to +85 °C
Operating relative humidity	20 to 85/85%, non-condensing
Storage relative humidity	10 to 95%, non-condensing
Protection rating	• IP66 • IK08 (without lens)

Cable	
Type	H05RN-F 60245IEC57(YZW)
Color	Black
Strip length	8.5 ±1 mm
Wire type	Tin stripped 0.75 mm^2
Wire isolation	Insulation: EI4(IE4) + (EPR) Jacket: EM2(SE4) + (CPE)
Length	0.6 m

Electrical data	
Rated AC input voltage	220 V_{ac} to 240 V_{ac}
Rated DC input voltage	186 V_{dc} to 250 V_{dc}
Input current (max)	10 mA
Input power (max)	1.3 W (10 DALI drivers on bus)
Surge protection	• 2 kV (line to neutral) • 4 kV (line/neutral to earth)
Maximum distance [1] BLE for commissioning	15 m line of sight
Maximum distance [1] Zigbee MPS32x1 to MPS32x1	50 m line of sight, package error rate (PER) < 1%

DALI port	
Guaranteed current	20 mA DALI port supports 10 DALI drivers.
Maximum current	30 mA
Mains protection	DALI port will not be damaged if Mains are wrongly connected to it.
Surge protection	DA+ to DA- : 500 V (1.2/50us, per IEC 61000-4-5)
DALI certification	DALI-2
Compatible DALI drivers	DALI-2 certified drivers with DiiA DALI part 251, 252, and 253
Insulation between mains and DALI port	Reinforced [2]
External DALI PS	Maximum current on bus is 250 mA

[1] The RF-distance at luminaire level is different. It depends on design-in and results of TRP-loss tests.
[2] If DALI drive or external DALI PS connected to bus is basic insulation, then the DALI bus will also be basic only.

Compliances	
Approbations	CE, CB, UKCA, ENEC, WEEE, DALI-2, RCM

Compatible standards/technologies	
Zigbee	MPS32x1/05 sensors are compatible with the Zigbee standard IEEE 802.15.4. The firmware updates can be sent over the air. It provides a reliable and secure wireless communication.
Bluetooth	MPS32x1/05 sensors are compatible with the BLE protocol 4.2 (5.1 compliant) standard.
IR receiver	The working range of an IR receiver is within the taper area with an angle of 20°. The Philips IRT9015 IR remote control is used to identify luminaires during commissioning.

Order code

Product name	MOQ	Order code	Region of sale
MPS3211/05 OCC-DL IA DALI WH 6M A	1	9137 010 71803	EU, South LATAM, APAC, and METAP.
MPS3221/05 OCC-DL IA DALI WH 12M A	1	9137 010 71603	
MPS3231/05 OCC-DL IA DALI WH 16M A	1	9137 010 71703	

Specific Data Notice

This Specific Data Notice applies to the sensors as specified in this product specification/data sheet (the "Sensor") that is part of or works with a Professional System offered by Signify for use in the European Union and supplements and/or corrects the Generic Data Notice For Professional Systems and Services that can be found at: https://www.signify.com/global/legal/digital-terms/data-notices (the "Generic Data Notice") by providing additional and/or more specific details specific to this Sensor.

Terms starting with a capital in this Specific Data Notice, will have the meaning as attributed thereto in the Generic Data Notice, unless explicitly defined otherwise in this document.

When used in a professional lighting system of Signify in combination with an Interact Wireless Gateway with either the Interact Building Manager or Interact Pro software services the Sensor is capable of generating the Data as specified below [1] :

- Operational Data: energy consumption, failures (of light points and driver), burning hours (read from the driver as per DALI-2 protocol)
- Sensor Data: occupancy state for the last minute as per Zigbee wireless communication protocol

The Product Data generated in this combination is communicated via the gateway to the Interact cloud where these are stored. Product Data is neither stored on the Sensor itself nor on the gateway. Product Data cannot be accessed directly from the Sensor [2] Product Data that is Readily Available Data can be accessed as indicated in the software specification sheet of respectively Interact Building Manager and Interact Pro.

This Specific Data Notice may be changed by Signify from time to time. The current version of this notice will apply and can be obtained at request via the point of contact as indicated in paragraph 7 of the Generic Data Notice.

[1] The type and volume and format of Product Data that is actually generated depends on the product and/or software configuration and subscription to the relevant software service.

[2] In typical use the connected product is commissioned in which state the on-device generated data cannot be directly accessed to safeguard security.

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