PHILIPS

Sensor bundles

Specification Sheet

SC1500
Multi Sensor Bundle

The SC1500 Multi Sensor Bundle consists of a comprehensive set of environment sensors to enable key office management applications.

In addition, the inclusion of a Bluetooth radio enables indoor navigation use cases. By the maintained electrical and mechanical compatibility with the existing SNS210 and SNS400, as used in Interact Pro Enterprise, it is possible to integrate the device in the existing luminaire portfolio. The use of the upgradable sensor slot enables upgrade scenarios without replacing the luminaires.
This device requires reinforced insulation to be implemented on the driver/supply side.

SC1500

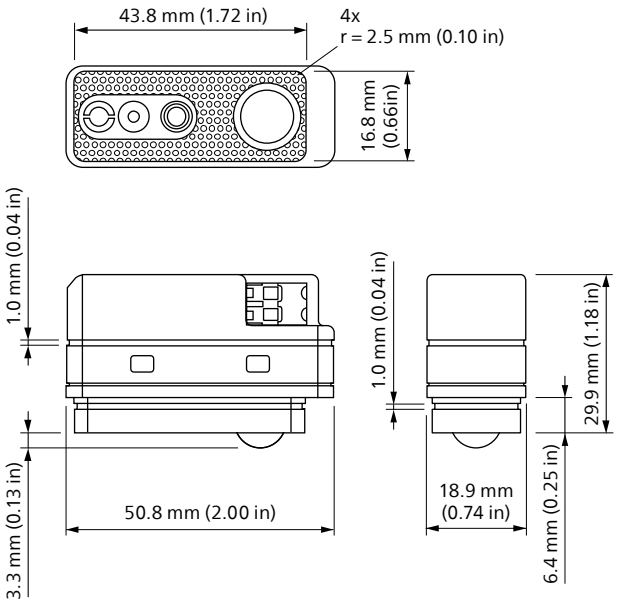
Sensors and functions

- Single pixel thermopile, radiant temperature
- Relative humidity sensor
- Daylight sensor
- Sound pressure sensor
- PIR occupancy sensor
- Bluetooth Low Energy beacon and radio
- Zigbee radio
- Power (yellow) and movement (red) indication
- IR receiver

Important

This device requires reinforced insulation to be implemented on the driver/supply side. This is generally guaranteed for SR-Drivers. However, for the SR-Bridge there is a risk that a wiring mistake on the DALI driver side results in only a single insulation barrier to mains.
SR-Bridge based applications can only be implemented when it is guaranteed that DALI wiring is correctly applied.

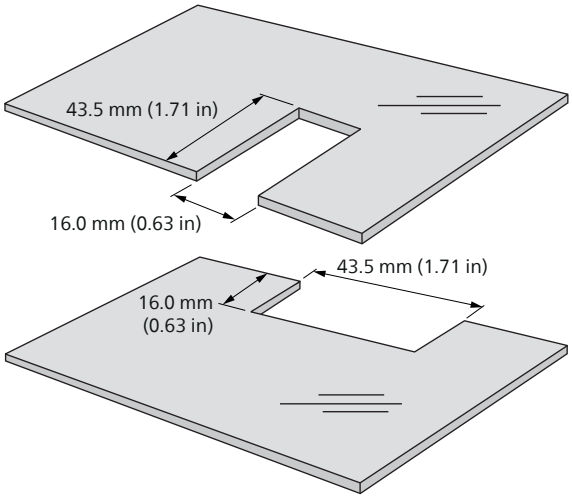
Dimensional drawing



Mounting dimensions

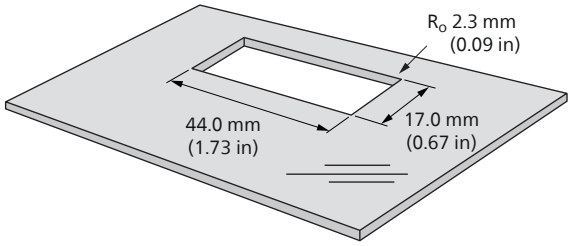
Mounting in U-shaped slot

In sheet metal, max. thickness 1.0 mm (0.04 in), tolerance +0.2/–0.0 mm (+0.08/–0.0 in).



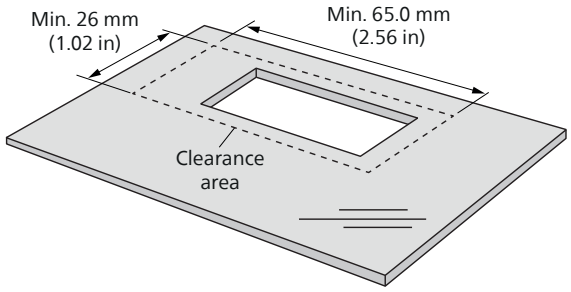
Mounting in cut-out

In metal sheet, thickness 0.7 to 1.2 mm (0.028 to 0.047 in), tolerance ±0.2 mm (±0.08 in).



Mounting with a clip for upgradable sensor slot

The SC1500 can be mounted in a surface mounted bracket or in an SA0200/05 mounting clip for the upgradable sensor slot. See Accessories for details.

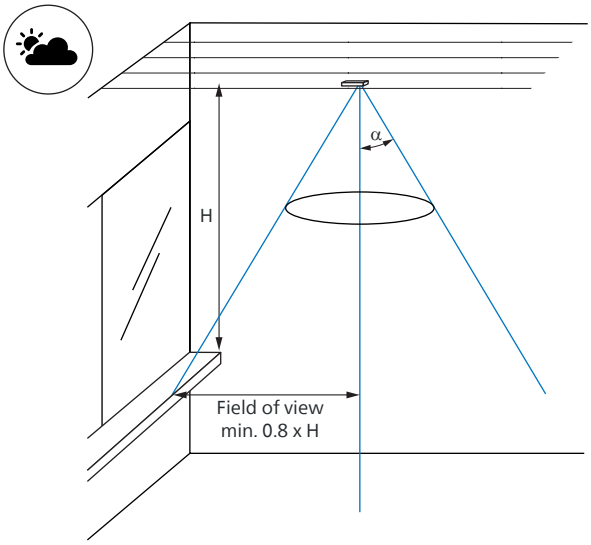


Daylight sensing

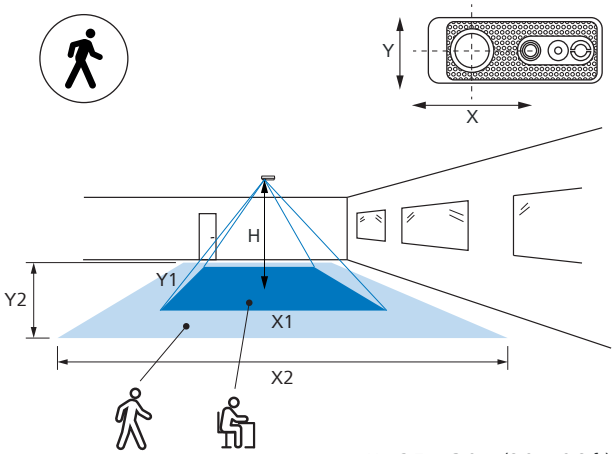
The light sensor measures the total amount of light in a circular field of the thermopile detection area. The following aspects must be observed during installation:

- Minimum distance from the window ≥ 0.6 m (≥ 23.6 ft).
- Prevent light reflections from outside entering the sensor (for example sunlight reflection on a car) as this leads to incorrect light regulation.

As a guideline the formula 0.8 x H can be used to calculate the minimum distance between the window and sensor whereby H is the height from the windowsill to the ceiling. Angle α is the radial viewing angle which is typically 37°.



PIR occupancy sensing



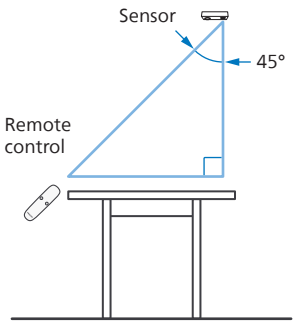
H = 2.7 to 3.0 m (8.9 to 9.8 ft)
T_{amb} = 20 to 23 °C

The detection area is sensed by a single pixel thermopile. By software processing the information is processed to radiant temperature at surface level.

	Minor movement		Major movement	
H	**X1**	**Y1**	**X2**	**Y2**
3.0 m (9.8 ft)	3.6 m (11.8 ft)	2.7 m (8.9 ft)	5.4 m (17.7 ft)	3.6 m (11.8 ft)

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.

IR receiver



Specifications

Physical data

Dimensions	50.8 x 18.9 x 29.9 mm (2.0 x 0.74 x 1.18 in)
Dimensions of the installation hole	44.0 x 17.0 mm (1.73 x 0.67 in)
Dimension of the cavity (L x W x H)	50.8 x 18.9 x 22.0 mm (2.0 x 0.74 x 0.87 in)
Installation height Typical installation height	2.5 to 3.0 m (8.2 to 9.8 ft) 2.7 to 3.0 m (8.9 to 9.8 ft)
Net weight	0.018 kg
Color	White (RAL 9003)
Maximum number of drivers	4
Connector	Lite-Trap SMT Wire-to-Board connector
Solid wire range	0.2 to 0.8 mm^2 (AWG-24 to AWG-18)
Stranded wire range	0.45 to 0.7 mm^2 (AWG-22 to AWG-20)
Lifetime at T_{amb} = 70 °C	10 year

Environmental data

Operating temperature	0 to 55 °C (32 to 131 F)
Storage temperature	–25 to +85 °C (–13 to +185 °F)
Operating humidity	10 to 90%
Storage humidity	10 to 95%

Electrical data

Supply voltage range	12.0 to 22.5 V
Max current consumption from the bus	46 mA
Max RMS current consumption from the bus	25 mA
Max DALI bus supply current	250 mA
Typical power consumption at U_{in} = 16.0 V	180 mW

Sensing specifications

Thermopile sensor

Field of view	90°

Temperature

Temperature range	5 to 55 °C
Typical accuracy	±1.0 °C, applicable within specified FoV and temperature range (infrared temperature measurement) [a]

Daylight sensor

Type	Photosensor
Detection range	0 to 1 500 lx
Accuracy	±10%, CCT = 4 000 K
	±20%, CCT = 2 700 to 6 500 K

Relative humidity

Type	Dedicated RH sensor with built-in temperature compensation
Relative humidity range	10 to 90%
Typical accuracy	±10%, at work plane level

Sound pressure sensor

Type	MEMS microphone
Reported metrics	LAeq, peak levels, sound activity metrics
Range	30 to 100 dBA
Accuracy (35 to 85 dBa)	±5 dB

Note

For privacy reasons, the device is not capable of streaming audio samples.

a The usage of a thermopile allows to maintain an accurate temperature measurement, even under environmental conditions when the sensor itself is heated or cooled.

PIR occupancy sensor

Rectangular detection area

Major movement	3.6 x 5.4 m (11.8 x 17.7 ft) at 3 m (9.84 ft) mounting height
Minor movement	2.7 x 3.6 m (8.9 x 11.8 ft) at 3 m (9.84 ft) mounting height

Wireless specifications

Bluetooth radio

Type	Bluetooth 4.0
Range	10 m (33 ft)

Zigbee radio

Type	Zigbee PRO
Maximum mesh network gap	10 m (33 ft)

External commissioning

IR receiver

Carrier operating frequency	36 kHz
Supported systems	RC5, RC6
Angle of view	45°

Compliance

IEC pollution degree	2
IP rating	IP20
Flammability rating	V-0
Insulation requirements	SELV Class 2 required on input
Approbations	CE, UKCA, ENEC, cULus, FCC, IC, RoHS and REACH compliant

Standards

Lamp controlgear	IEC 61347-2-11
Automatic electrical controls	UL 60730
Fire and smoke test	UL 2043
Conducted/radiated emission	EN55032: 2015
RF electromagnetic field	EN 61000-4-4: 2006 + A1:2008 + A2:2010
Electrostatic discharge	EN 61000-4-2: 2009
Electromagnetic compatibility and radio spectrum	EN 300328 V2.1.1 (2016-11)
Conducted/radiated emission	FCC CFR47 Part 15B (2018)
Radio frequency devices	FCC CFR47 Part 15C (2018)
Compliance of radio apparatus	RSS-GEN Issue 5 (2019)
Radio standards	RSS-247 Issue 2 (2017)

Accessories

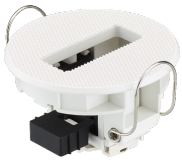
Mounting bezel

Order name	Color	Order number
SA0100/05 Mnt Bez SC1xxx/SC2xxx 44x17	White (RAL9003)	9137 136 20003

Mounting clip for upgradable sensor slot

Order name	Color	Order number
SA0200/05 F Mnt Clip SC1xxx/SC2xxx 60x22	White (RAL9003)	9137 136 20203
SA0200/15 F Mnt Clip SC1xxx/SC2xxx 60x22	Black (RAL9004)	9137 010 47703

Recommended for easy field upgrades.



Recessed mounting plate

Order name	Color	Order number
SA0500/05 Ind. Rec SC1xxx/SC2xxx Mnt	White (RAL9003)	9137 136 20603
SA0500/05 Ind. Rec SC1xxx/SC2xxx Mnt	White (RAL9003)	9137 136 20613

Surface mount box

Order name	Color	Order number
SA0600/05 Ind. Surf Mnt SCxxxx/SNSxxx	White (RAL9003)	9137 136 20803
SA0600/05 Ind. Surf Mnt SCxxxx/SNSxxx	White (RAL9003)	9137 136 20813

Ordering data

Order name	Color	Order number
SC1500/05	White (RAL9003)	9137 136 19703
SC1500/15	Black (RAL9004)	9137 010 47403