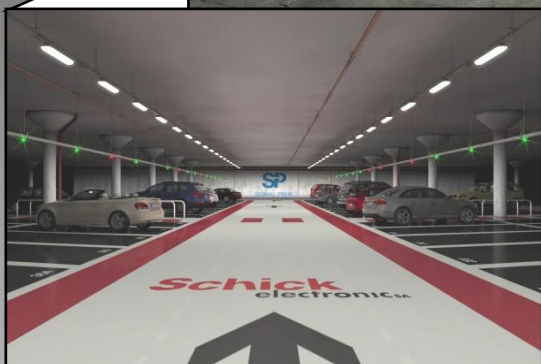


Schick
electronic_{SA}



SPACE DETECTOR

SP2-114

Presentation



SIGNAL-PARK

1 CONTENTS

2	ULTRASOUND DETECTION	4
2.1	PRINCIPLE	4
2.2	FOR A PERFECT WORKING ORDER	4
3	DETECTOR PLACEMENT	5
3.1	PLACEMENT SITUATION	6
3.2	ZONE OF DETECTION	6
3.3	CITY CAR ON PARKED POSITION	7
4	DETECTOR MOUNTING OPTIONS	8
5	CONFIGURATIONS	9
5.1	STANDARD	9
5.2	DETACHED SENSOR	9
5.3	DISPLACED LED	10
5.3.1	FLEX	10
5.3.2	FINGER	10
6	DETECTOR MOUNTING	11
6.1	CANALIS® BUSBAR SPECIFICATION	11
6.1.1	STANDARD RAIL	12
6.2	POSITIONING OPTIONS	13
6.2.1	DIRECT MOUNTING	13
6.2.2	HANGED	13
6.3	CABLE RUN	14
6.4	FLUSHED	15
6.5	FITTED	15
7	DISPLACED LEADS	16
7.1	THE FLEX	16
7.2	THE FINGER	17
8.1	STATES	18
8.2	COLORS OPTION	18
8.3	SINGLE/DOUBLE OPTION	18
9	ELECTRICAL CONNECTIONS	19
9.1	MAIN CONNECTION	19
9.2	DISPLACED LED	19
9.3	MASTER / SLAVE INTERCONNECTIONS	19
9.4	LOUD-SPEAKER	19
10	ACCESSOIRES	20
10.1	CONNECTION	20
10.2	FIXING PARTS	20
11	FEATURES	21
12	SHORT SPECIFICATIONS	21
12.1	GENERAL	21
12.2	ELECTRICAL	21
12.3	LED INDICATOR	22
12.3.1	LED CHARACTERISTICS	22



SIGNAL-PARK

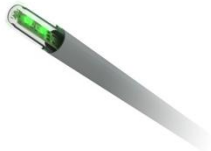
VEHICULE DETECTOR FIXED ON CANALIS© BUS BAR



VEHICULE DETECTOR FIXED ON AN CABLE RUN

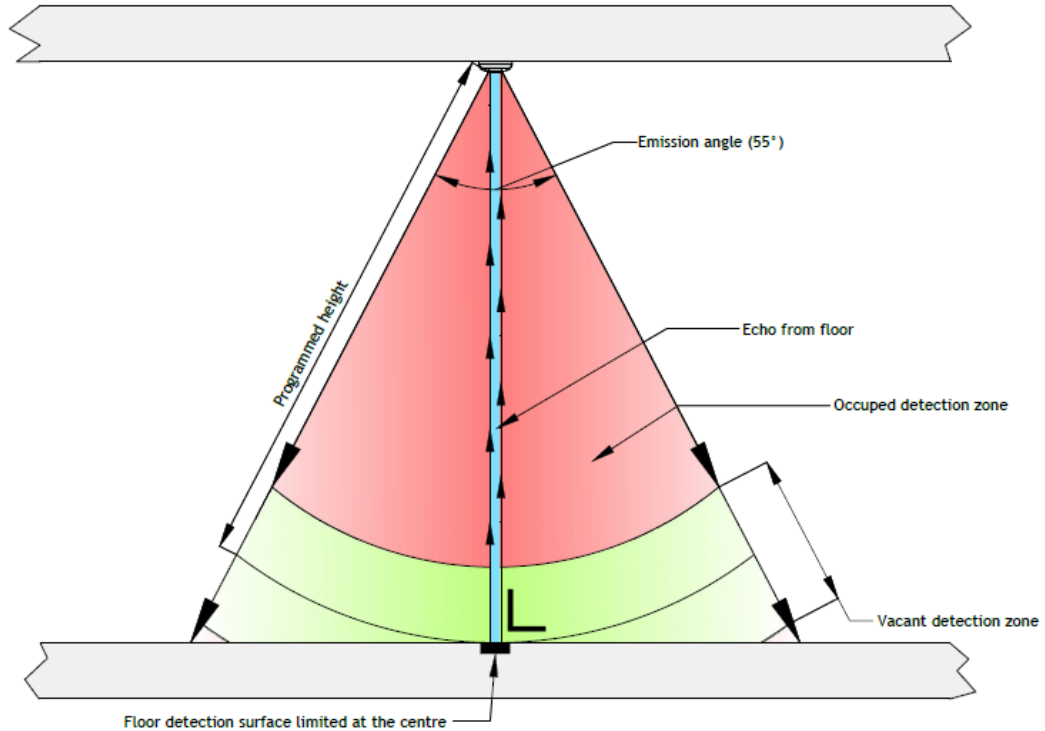


DISPLACED LEDS SYSTEM



2 ULTRASOUND DETECTION

2.1 PRINCIPLE

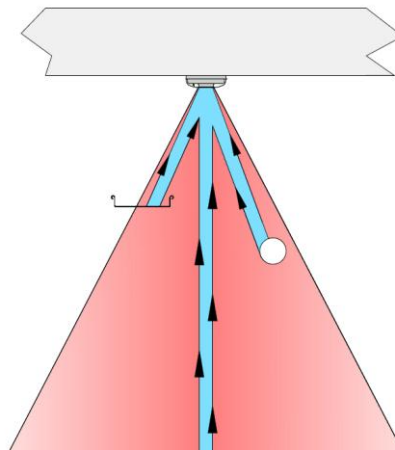


2.2 FOR A PERFECT WORKING ORDER

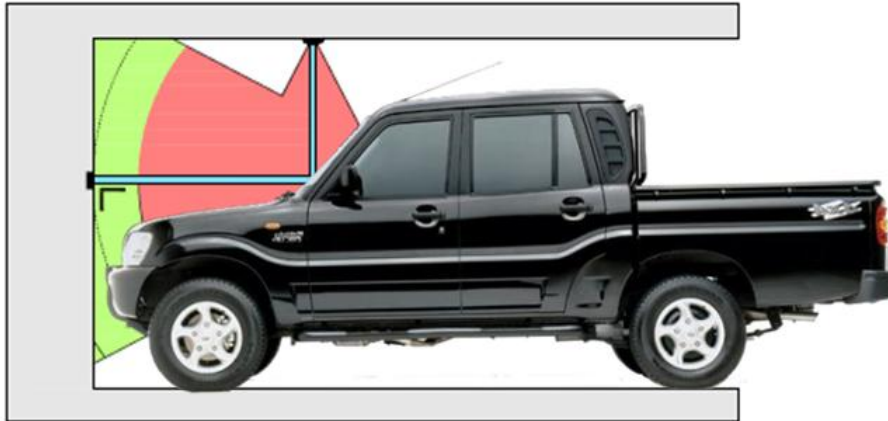
In several scenarios, the detector can report the wrong state.

Both main scenarios are:

1. When the cone of broadcast is blocked by a cable run or a water main positioned in the red zone. In this case the detector is occupied instead of vacant.

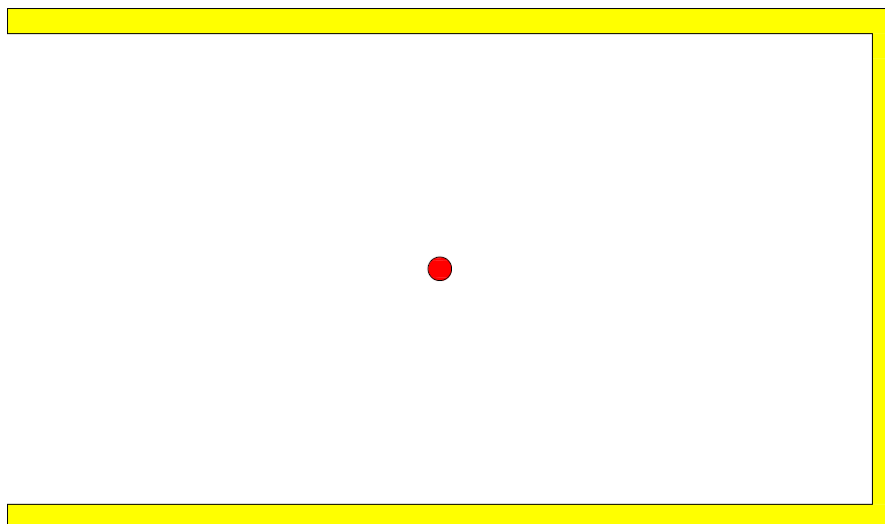


2. when the distance of reflection is the same that when the space is vacant.
In this case the detector is vacant instead of occupied.



3 DETECTOR PLACEMENT

To optimize the feature of the detector, it is important to place it in the center of the space.



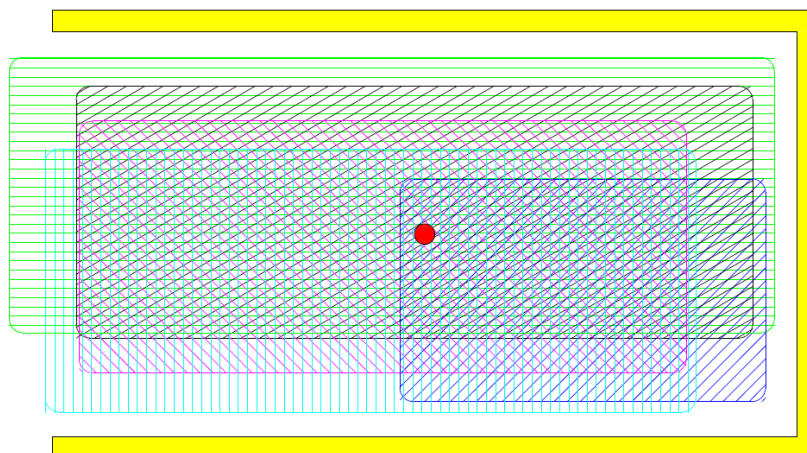
3.1 PLACEMENT SITUATION

On this over view, we show the five most popular car's shape on situation.



3.2 ZONE OF DETECTION

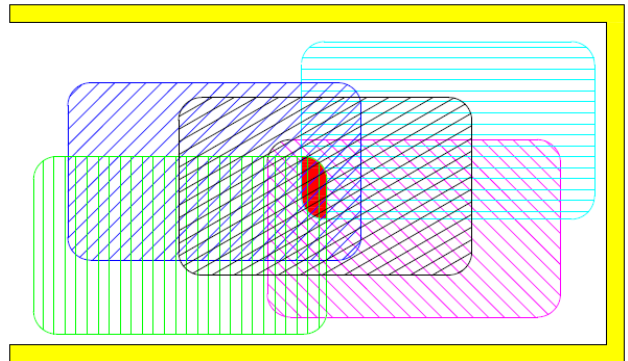
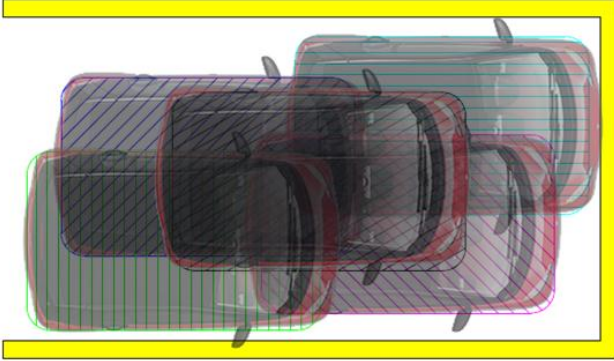
You easily can see that with central placement all type of car can be detected, even a small city car.





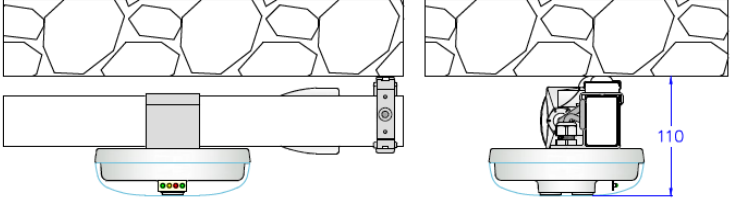
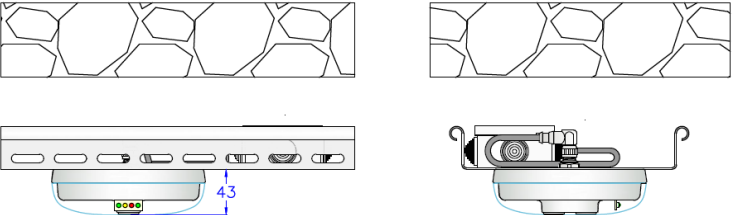
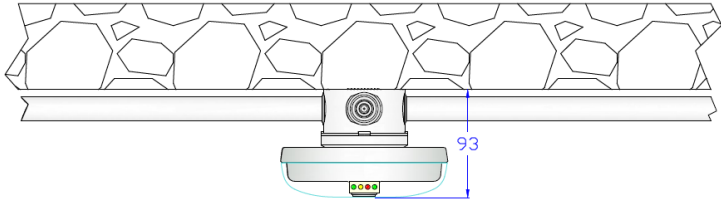
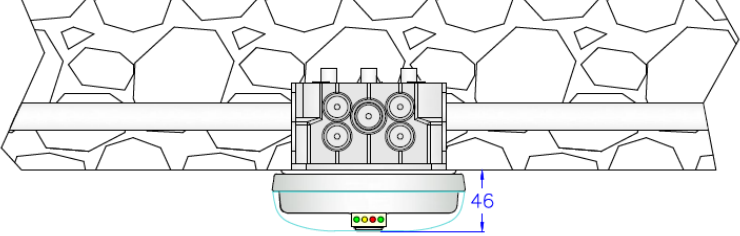
3.3 CITY CAR ON PARKED POSITION

The smart is the smallest car. If the detector has been fixed at the middle of the space the system can detect the car in any parked position.



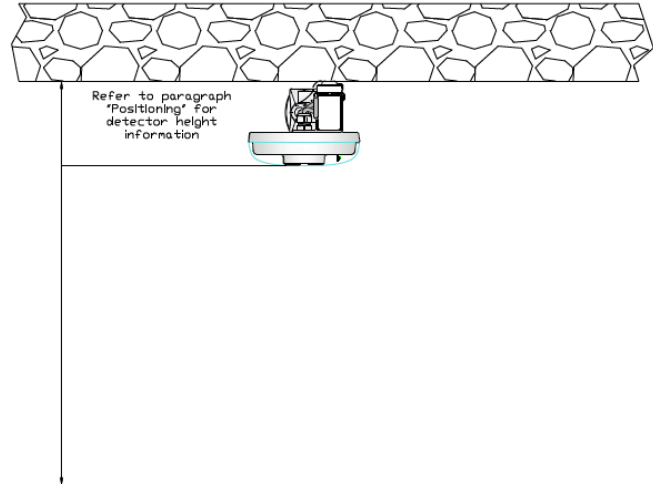
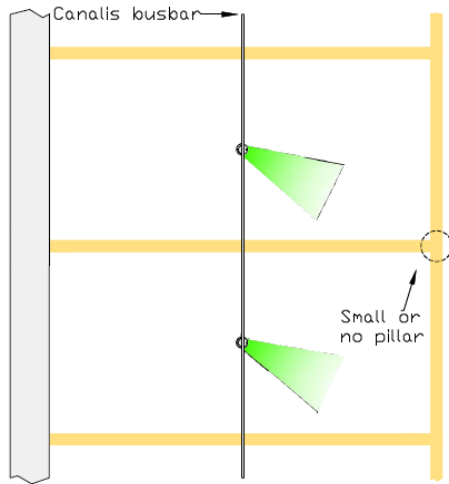
4 DETECTOR MOUNTING OPTIONS

There are several supports to fix the detector SP2-114.

<p>CANALIS® Refer to the chapter 6.1</p>	
<p>CABLE RUN Refer to the chapter 6.3</p>	
<p>FLUSHED Refer to the chapter 6.4</p>	
<p>FITTED Refer to the chapter 6.5</p>	

5 CONFIGURATIONS

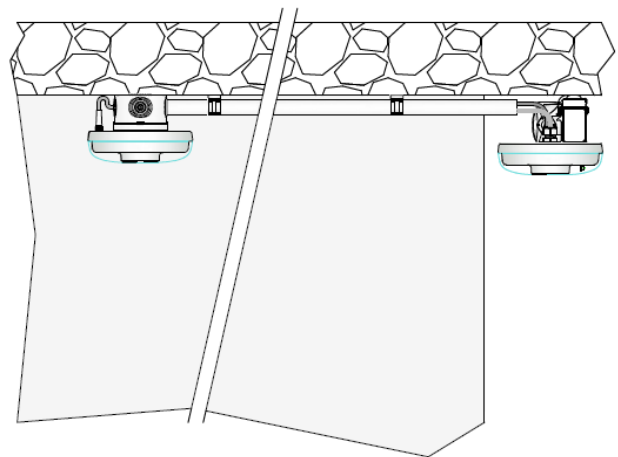
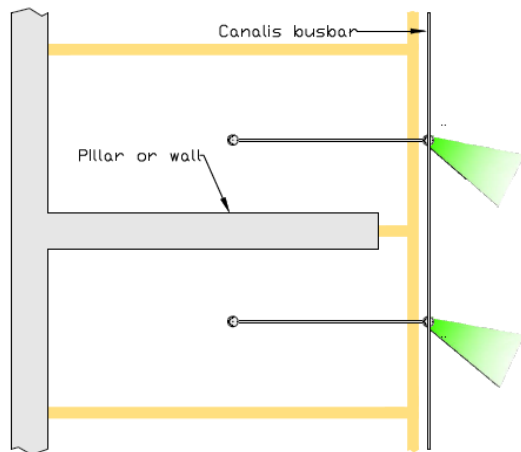
5.1 STANDARD



Conditions:

- No (or small) visual obstructing elements
- No longitudinal mounting obstructions

5.2 DETACHED SENSOR



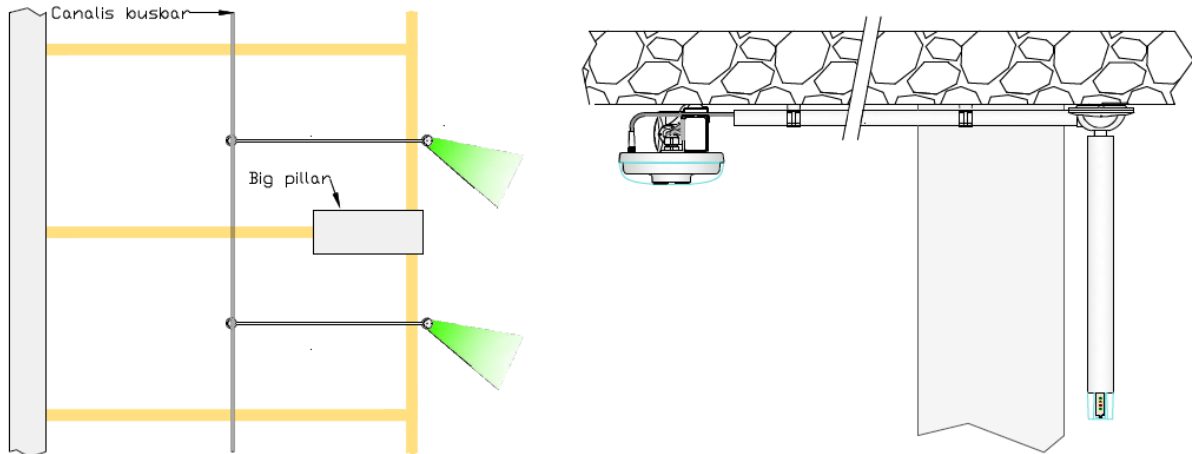
Conditions :

- Visual obstructing elements
- Longitudinal mounting obstructions

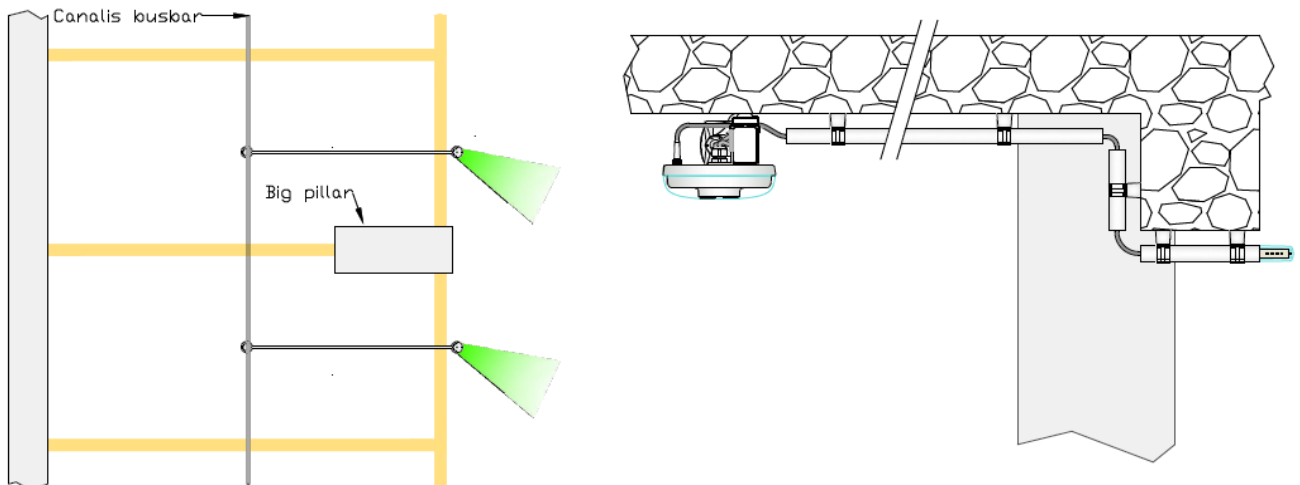
5.3 DISPLACED LED

Refer to the chapter 7

5.3.1 FLEX



5.3.2 FINGER



Conditions :

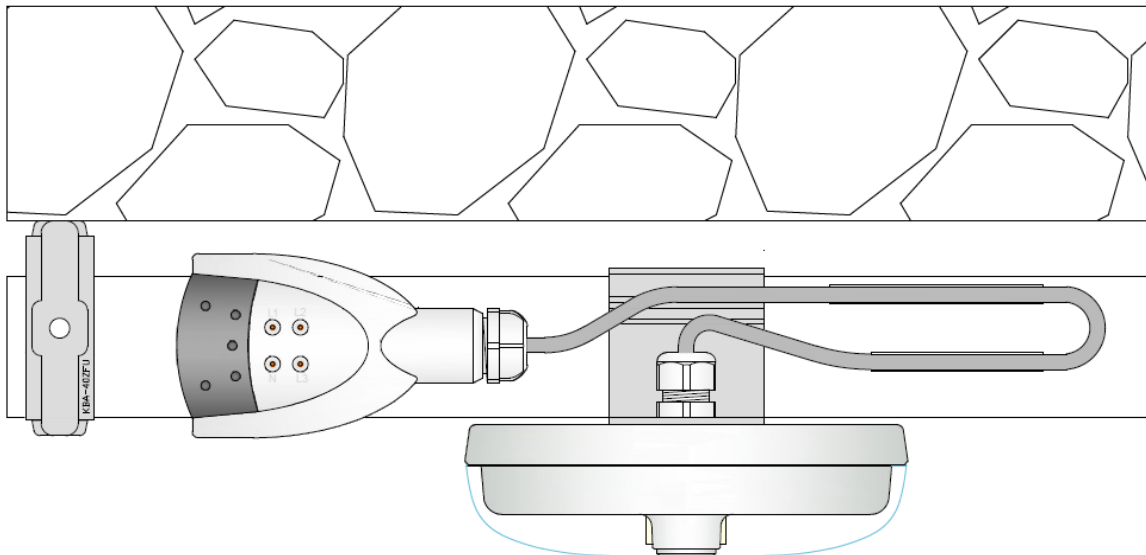
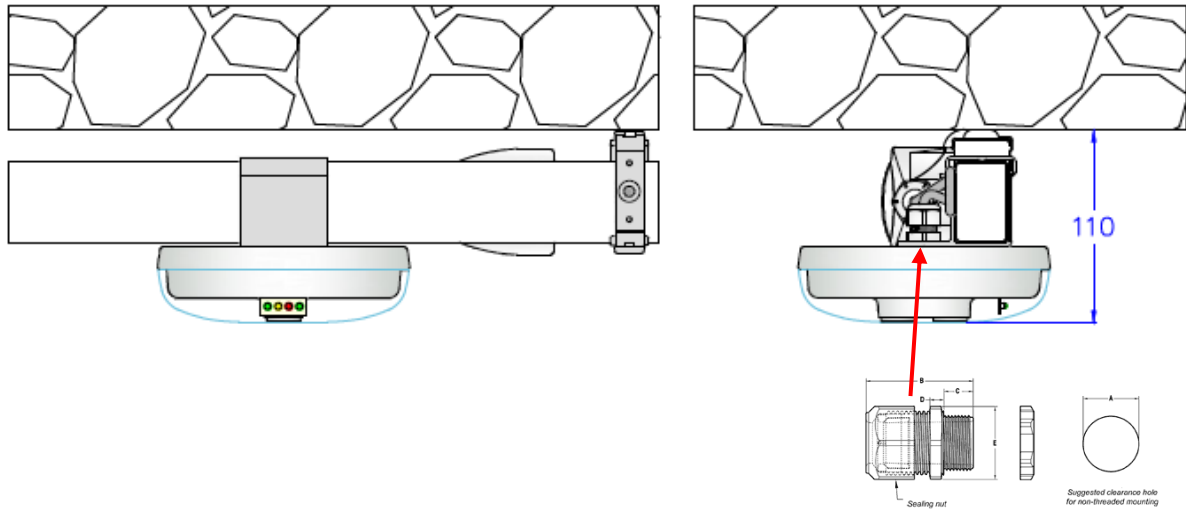
- Visual obstructing elements
- No longitudinal mounting obstruction

6 DETECTOR MOUNTING

There are several supports to fix the detector SP2-114.

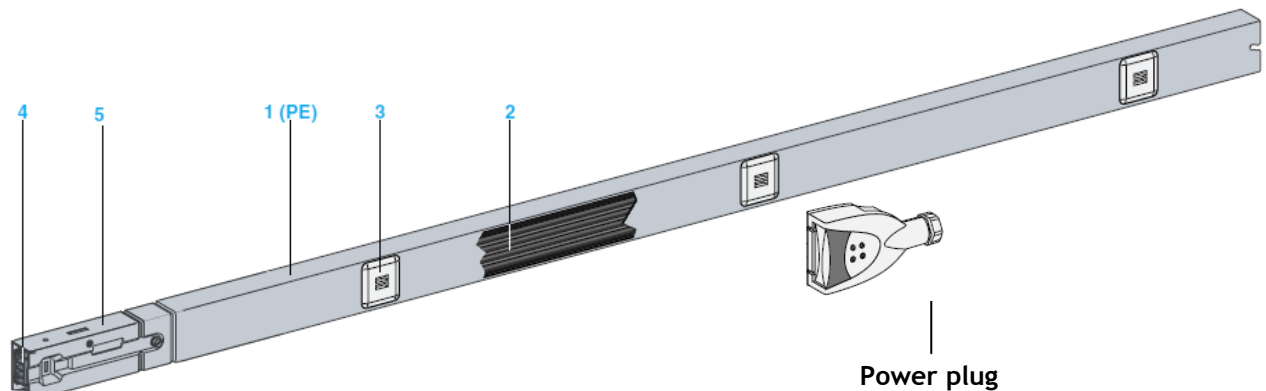
6.1 CANALIS® BUSBAR SPECIFICATION

This is the preferred mounting solutions due to his fast mounting and low cabling errors. The detector is fixed on the CANALIS® using an aluminium fixing part with M16 cable gland .LED orientation is made possible by rotating the whole detector.



6.1.1 STANDARD RAIL

3000 MM SECTION LENGTH, 1000 MM BETWEEN OUTLETS



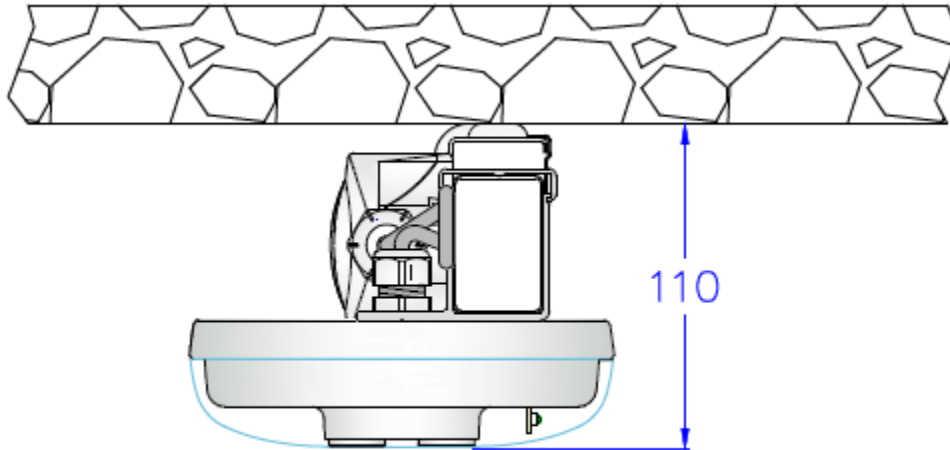
Straight lengths constitute the basic structure of the line and are made up of:

- 1 an all-in-one carrier casing, crimp closed, forming a rigid beam made of sheet steel, hot galvanized on both sides. This casing also acts as the protective earth conductor (PE), equivalent in size to 11 mm² of copper. As an option (code W), the casing is available in RAL 9001 white lacquered sheet steel,
- 2 a ribbon cable with two or four copper conductors, protected against corrosion by tinning,
- 3 one, two, three or five tap-off outlets,
- 4 an electrical jointing unit ensuring automatic and simultaneous connection of all live conductors,
- 5 a mechanical joining device made of galvanized sheet steel that makes the connection of two lengths rigid and resistant to bending.

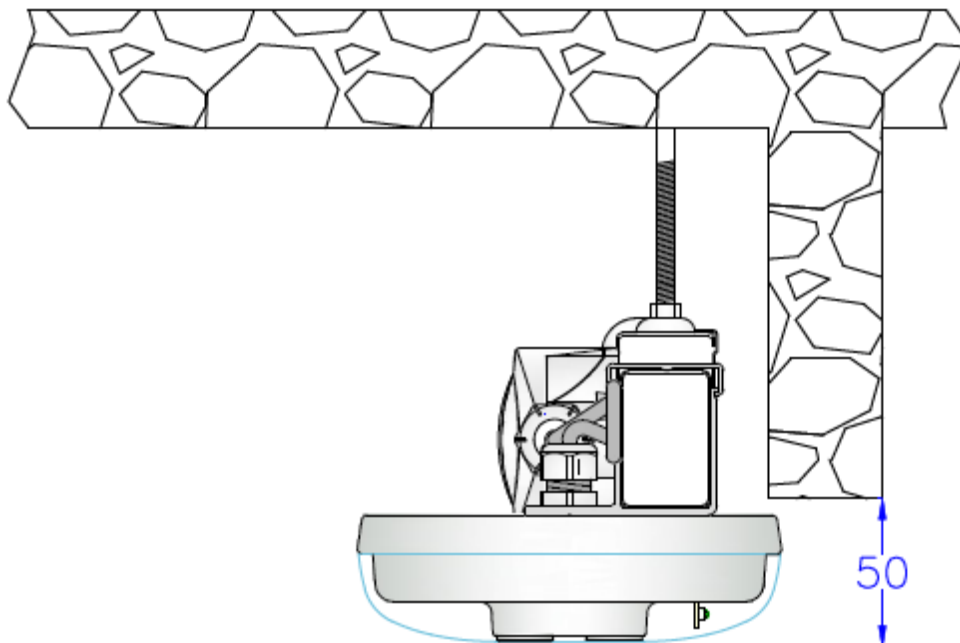
6.2 POSITIONING OPTIONS

The detector needs to be hanged at 5 meters max from the floor. If the roof is higher, then the hanged option is necessary.

6.2.1 DIRECT MOUNTING

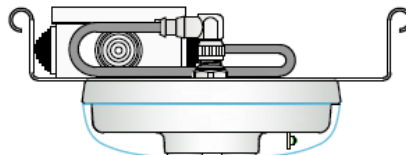
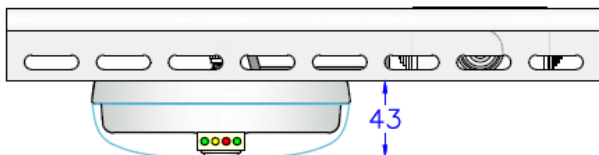


6.2.2 HANGED



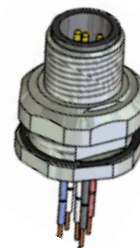
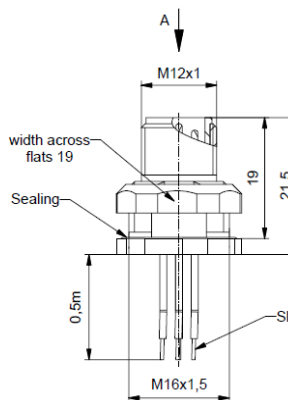
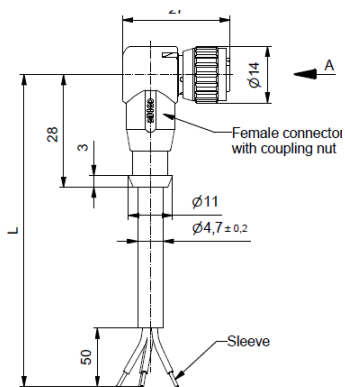
6.3 CABLE RUN

The detector is fixed on the cable run using the M16 nut of the central M12 connector. LED orientation is made possible by rotating the whole detector.



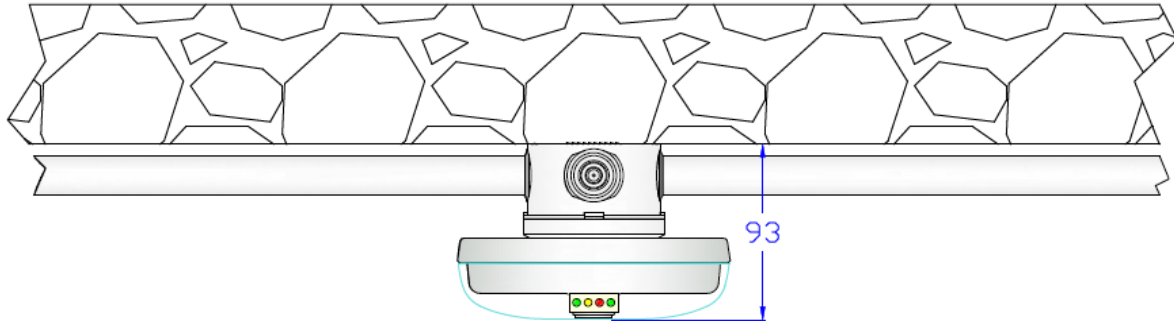
Angled female connector

M12 male socket with wires



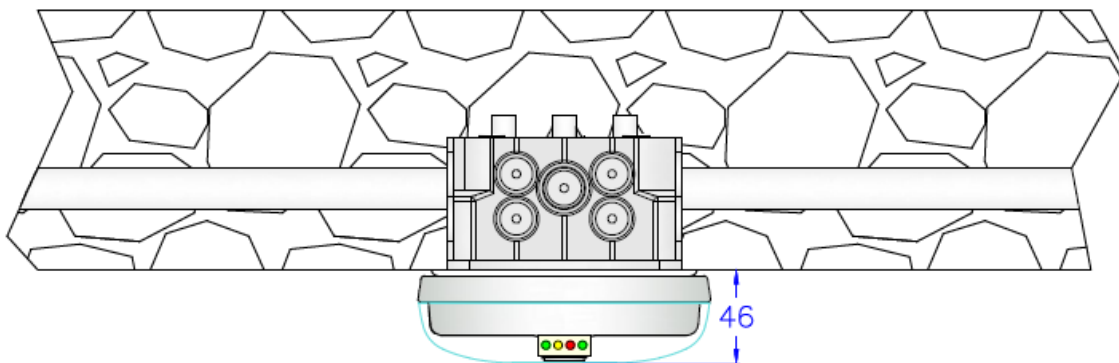
6.4 FLUSHED

The detector is mounting on the cover of a LEGRAND brand electrical box. The detector is supplied with a M16 cable gland.



6.5 FITTED

The detector is mounting under an AGRO brand electrical box, type 9909.99. The detector is supplied with a M16 cable gland.

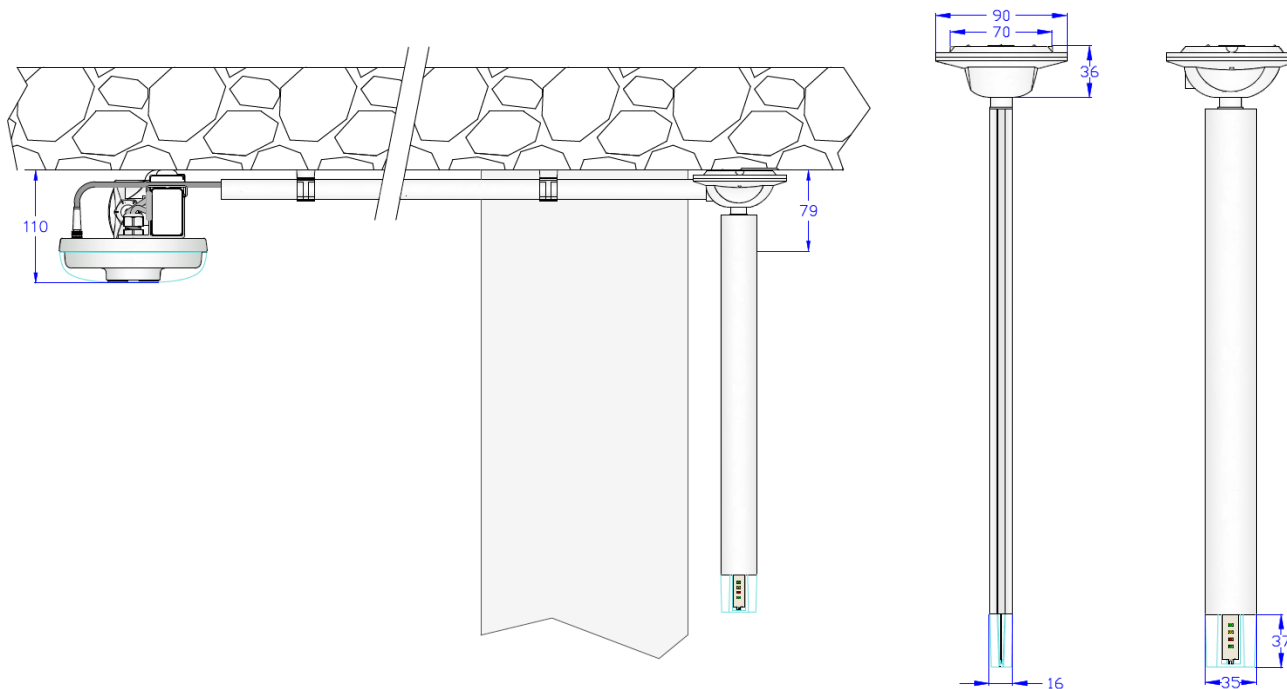


7 DISPLACED LEDS

The ideal arrangement for spaces those are hard to see. The LEDs can be put in a position that gives to the motorist a better view of vacant spaces.

7.1 THE FLEX

The length of the flex can be chosen between **150mm** and **2000mm**.



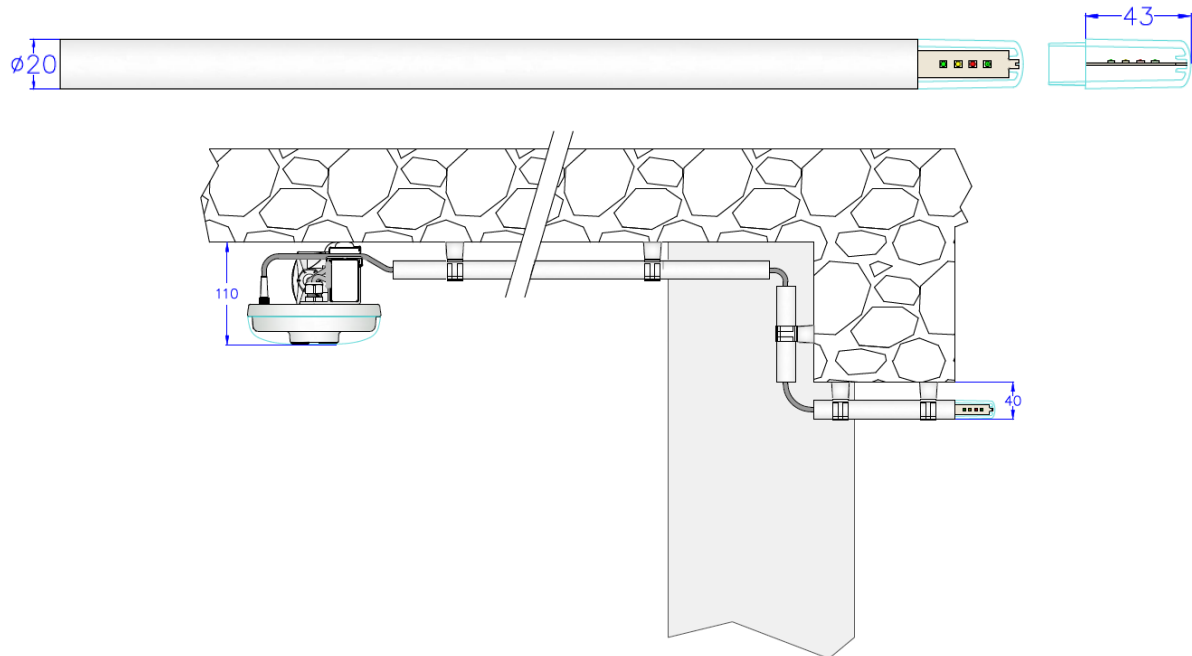
For more information, refer to the specific documentation.



7.2 THE FINGER

This option is made for all parking with reduced visibility.

For more information, refer to the specific documentation.



The “FINGER” detached LED is mounted on $\text{Ø}20\text{mm}$ plastic electrician tubes. A dot of glue is used for the assembly.





⚠ The internal diameter of the tube must be $\text{Ø}17.6\text{mm}$.



8 LED

8.1 STATES

Here is the presentation of the principal states.

VACANT	
OCCUPIED or CLOSED	
VACANT but RESERVED	
OCCUPIED and in OVERTIME	

8.2 COLORS OPTION

On request, blue or white LED is available for specific places such as handicapped places.

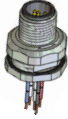
8.3 SINGLE/DOUBLE OPTION

Option	Viewing angle	Apparence	Aisle traffic
Simple LED <i>Prefered option</i>	180°		unidirectionnal
Double LED	360°		bidirectionnal

9 ELECTRICAL CONNECTIONS

9.1 MAIN CONNECTION

The main connection regroups the power supply and the data bus in one M12 male connector or a cable gland at the center of the detector.

		Designation	Color	M12 pin
	POWER bus	+48V	BROWN	1
		0V	BLUE	3
	DATA bus	D+	WHITE	2
		D-	BLACK	4

9.2 DISPLACED LED

The displaced LED is connected to the detector through a 4 poles M8 connector. The cable length must not be longer than 10m (30ft).

9.3 MASTER / SLAVE INTERCONNECTIONS

The MASTER/SLAVE interconnection uses a 3m (3ft) 3 poles M8 male-female extension cable. The use of longer cable is forbidden.

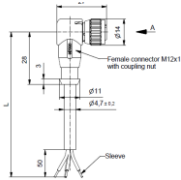


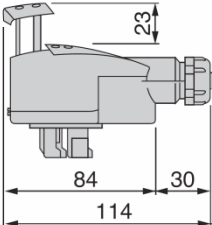
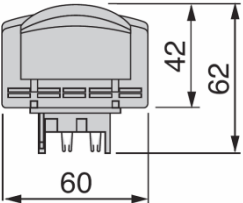
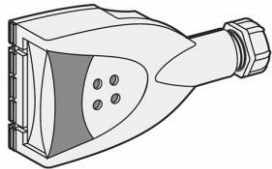
9.4 LOUD-SPEAKER

Connect a loud-speaker with 8Ω impedance or more on the dedicated M8 3 poles female connector.



Use the supplied 1m (3ft) cable with the loud-speaker for connecting on a detector with voice option. Using longer speaker cable than 3m (3ft) is forbidden.

10 ACCESSOIRES

10.1 CONNECTION

POWER SUPPLY and COMMUNICATION			
Art.	Length		
42670	60cm		
42670.020	200cm		
MASTER/SLAVE INTERCONNECTION			
Art.	Length		
240	300cm		
Canalis [®] plug KBC-10DCB40			
Art.			
2760			

10.2 FIXING PARTS

FIXATION FOR CANALIS			
Art.	Material		
3621	Aluminum		

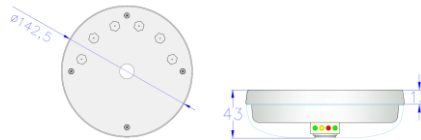
11 FEATURES

Detection range	0.05m - 4.0m (5.0m in optimal condition)
Detection methode	40KHz ultrasonic pulses
Addressing	0 to 240
LED mode	ON, OFF, flashing
Variable LED intensity	12.5% to 100%
Same device for space and entrance	✓
LED synchronization	✓
Field updatable embedded software	✓


12 SHORT SPECIFICATIONS

12.1 GENERAL

Size	Ø142.5mm x H42.6mm (without connectors)
Weight	269g (0.6lb)
Housing material	ABS. Color RAL7035 (light grey) PMMA. Transparent
Operating temperature range	-25°C to 55°C (-13°F to +131°F)
Degree of protection	IP44 (IP67 for M12 connector)



12.2 ELECTRICAL

Power supply	48VDC nominal (43.0VDC to 48.5VDC)
Insulation category	Class III 
Consumption	35mA max.
Communication bus standard	RS-485, 2 wires (half-duplex)

12.3 LED INDICATOR

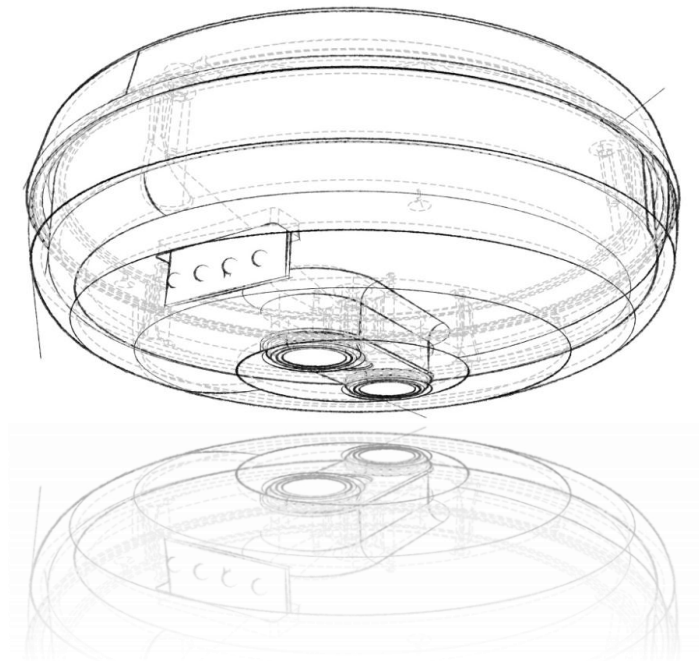


The state indication of the detector uses high intensity surface mounted LED with lens.

Size: 21 x 3mm
 Viewing angle (half intensity): 30°
 Viewing angle: 180°

12.3.1 LED CHARACTERISTICS

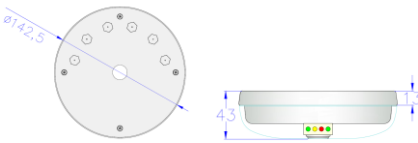
Color	100% Intensity (typ.)	Wavelength
Green	2x 1600mcd	525nm
Red	1600mcd	626nm
Amber	1600mcd	590nm
Blue	700mcd	470nm




1 SP2-114 / TECHNICAL DATA SHEET



1.1 GENERAL

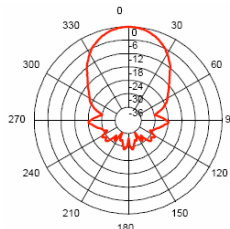
Size	Ø142.5mm x H42.6mm (without connectors)
	
Weight	269g (0.6lb)
Housing material	ABS. Color RAL7035 (light grey) PMMA. Transparent <i>UL94-V0 compliant plastics</i>
Operating temperature range	-25°C to 55°C (-13°F to +131°F)
Storage temperature range	-40°C to 85°C (-40°F to +185°F)
Relative humidity	5 - 95%RH (not condensing)
Altitude	0 to 2000m
Degree of protection	IP44 (IP67 for M12 connector) <i>Note: water on the ultrasonic cells prevents correct detection</i>

1.2 ELECTRICAL

Power supply	48VDC nominal (43.0VDC to 48.5VDC) <i>Note: voltages above 49.0V destroys internal surge protection</i>
Insulation category	Class III 
Consumption	35mA max.
Communication bus standard	RS-485, 2 wires (half-duplex)

1.3 ULTRASONIC

Detection range	0.05m to 4.0m (5.0m with optimal conditions) <i>0.16 ft to 13.2ft (16 ft with optimal conditions)</i>
Frequency	40KHz
Emission mode	400µs pulses
Sound pressure	112dB @ 30cm (1ft)
Total beam angle	55° (-6db)



See [§7 ULTRASOUND DETECTION](#) for details

1.4 LED INDICATOR



The state indication of the detector uses high intensity surface mounted LED with lens. Color and intensity can change slightly between productions due to components tolerances.

Size:	21 x 3mm
Viewing angle (half intensity):	30°
Viewing angle:	180°