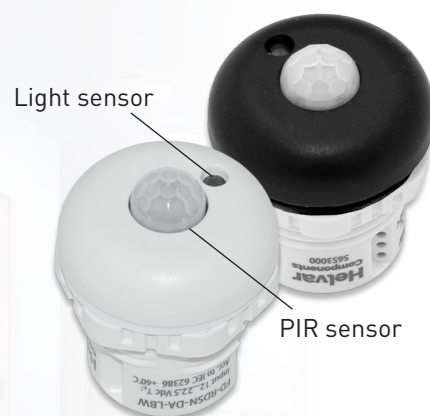


Freedom RadioSense DALI-powered sensor node Series

Product code: 565xxxx
(see table below)

- Integrated luminaire-based smart solution - sensor and wireless node together in small form factor
- Casambi Ready
- Sensor part combines a passive infrared (PIR) movement detector and constant light sensor for daylight harvesting
- For low-bay applications up to 5 meters
- Powered via DALI bus, perfect for D4i applications or with Helvar Components DALI-PSU unit
- Available in black and white



KEY FEATURES

- Zhaga Book 20 compliant dimensions (C22 for Ø22 mm mounting hole) - nut and rubber gasket included for easy installation for IP55 protection class (sensor head)
- No need for mains connection
- Optional lens mask enclosed for adjusting the field of view
- Package includes the following parts: sensor, nut, rubber gasket and lens mask

ORDER CODES

Product name	Order code	Sensor casing colour	Name
<i>Freedom Sensors</i>			
FD-RDSN-DA-LB Casambi	5653100	White	FD-RDSN-DA-LBW Casambi
	5654100	Black	FD-RDSN-DA-LBB Casambi

MATERIALS AND CONDITIONS

Connections

Wire size	0.25 mm ² – 0.75 mm ²
Wire type	Solid core
Wire insulation	According to EN 60598
Maximum allowed cable length	10 m

Mechanical data

Dimensions	Ø28 mm (D) x 35 mm (L)
Material (casing)	Polycarbonate
Colour	White (RAL 9003) Black (RAL 7016)
Sensor head IP rating	IP55 (only sensor head)
Weight	12.5 g

Input

Rated voltage	12 - 22.5 Vdc
Average input current	≤ 10 mA
Peak input current	≤ 30 mA (at 12 V)
Standby power consumption	≤ 0.16 W

Insulation between circuit & sensor case

DALI - Sensor case	Double insulated
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Wireless transmission

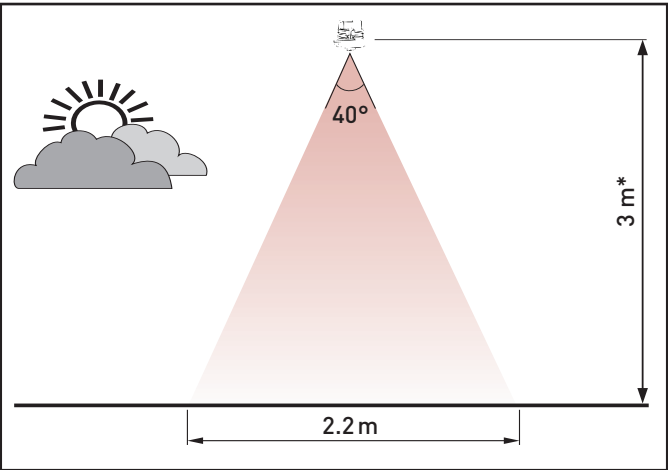
RF range	2.4 - 2.483GHz
Wireless signal range	Up to 25 m (line of sight)

Operating Conditions

Ambient temperature range	-20...+50 °C
	Note: the temperature difference between the detection target and the background must be at least 4 °C.
Relative humidity	Max. 90 %, noncondensing
Storage temperature	-20...+70 °C
Illuminance	5 lx to 1000 lx
Max.temperature at tc point	60 °C
Life time (90 % survival rate)	50 000 h at t _c = 60 °C

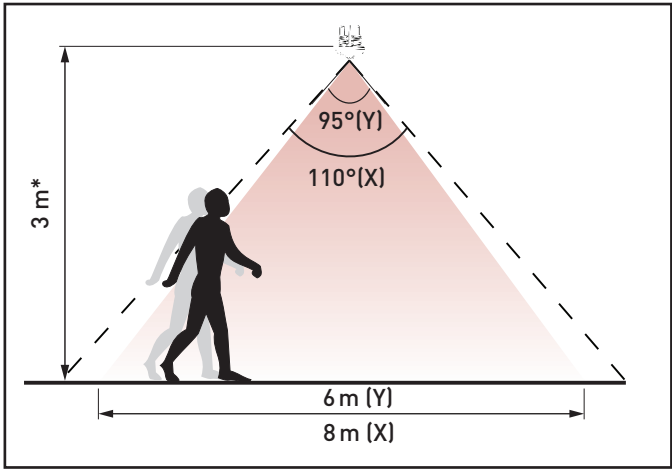
SENSOR FIELD OF VIEW

Light Sensor - For constant light functions



*Max mounting height 5 m

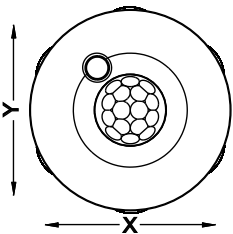
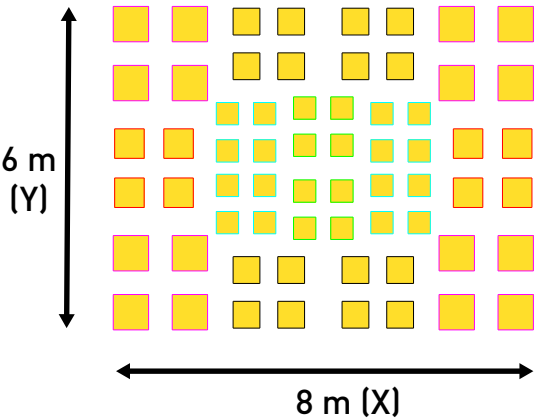
Presence Detector - Passive infrared (PIR)



*Max mounting height 5 m

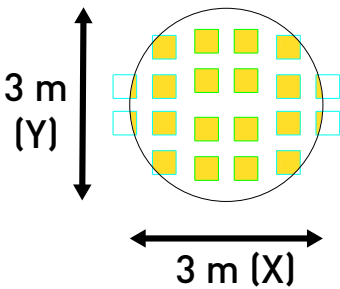
DETECTION PATTERNS

Detection pattern at floor level for 3 meters mounting height



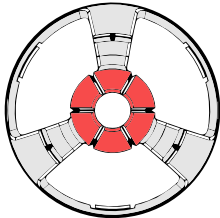
Height	Detection pattern size	
	X	Y
3 m	8 m	6 m
4 m	10 m	8 m
5 m	8 m	8 m

Detection pattern at floor level for 3 meters mounting height, with the lens mask

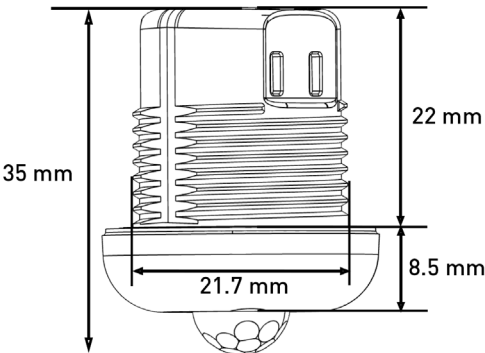
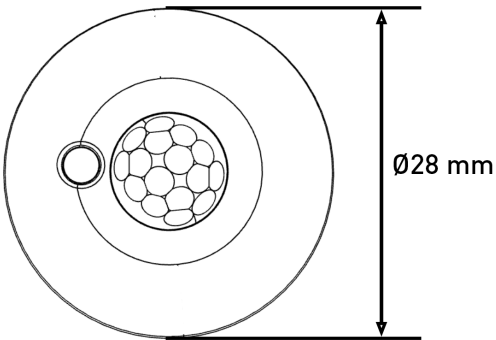


Height	Detection pattern size (with lens mask)	
	X	Y
3 m	3 m	3 m
4 m	4 m	4 m
5 m	4 m	4 m

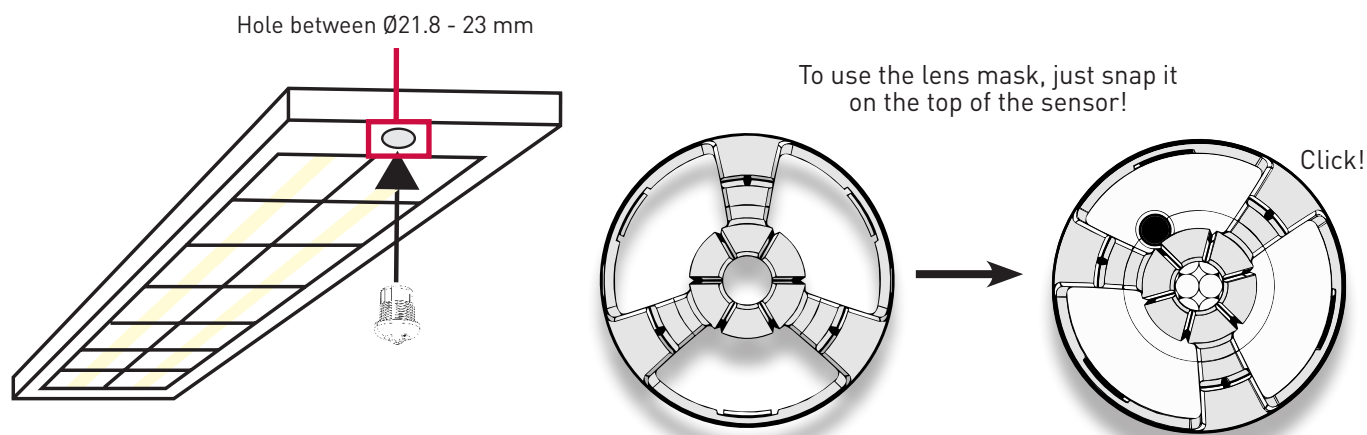
Note! You can expand the pattern directionally by snapping off individual pieces from the lens mask:



DIMENSIONS

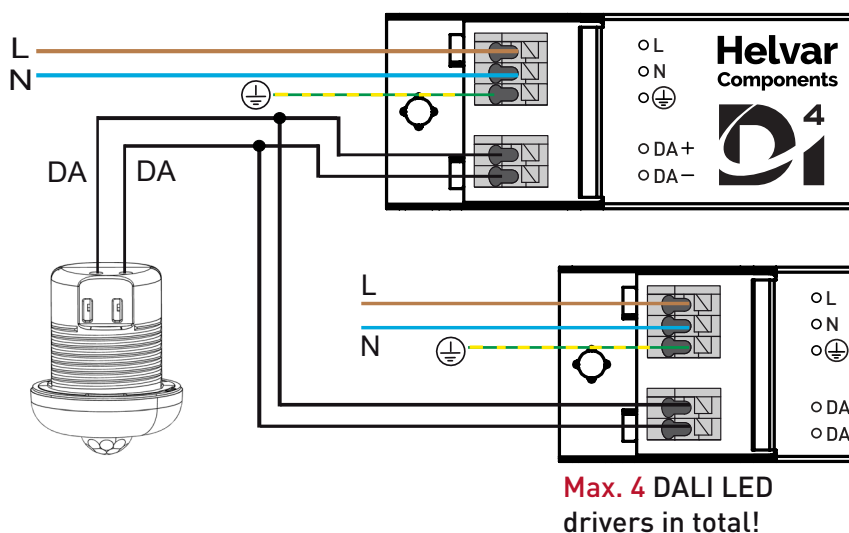


MOUNTING

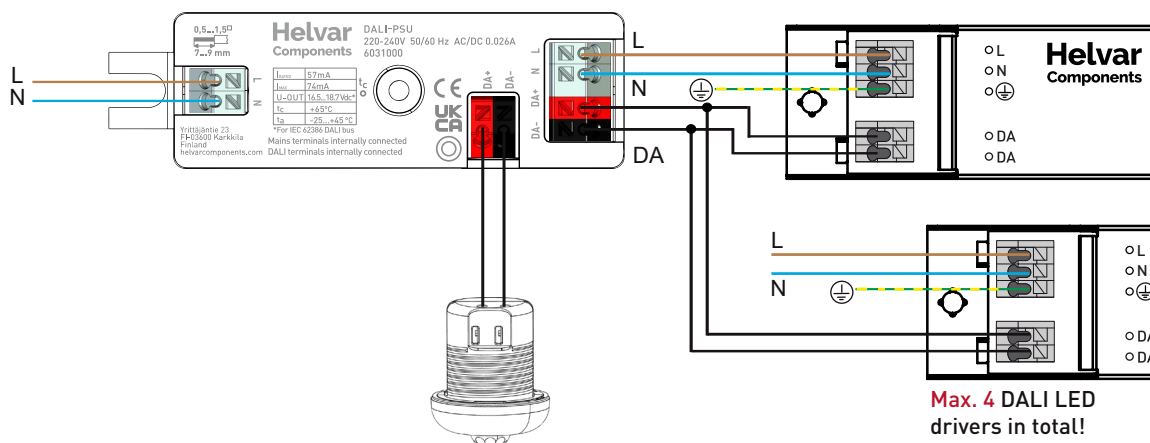


CONNECTION

Use Case 1: Connection with D4i LED driver with built-in DALI power supply



Use Case 2: Connection with normal DALI LED driver + DALI-PSU



FD-RDSN-DA-LB sensor for wireless control is suited for built-in usage in LED luminaires. In order to have safe and reliable operation, these luminaires will need to comply with the relevant standards and regulations (e.g. IEC/EN 60598-1). The LED luminaire shall be designed to adequately protect the live parts of the sensor backside from touching, as well as from dust, moisture and pollution. The luminaire manufacturer is responsible for the correct choice and installation of the sensor according to the application and product datasheets. Operating conditions of the sensors may never exceed the specifications as per the product datasheet.

Label symbols



Double insulated control device suitable for built-in use.



D4i certified sensor. This model is designed for indoor use and it draws power from intra-luminaire DALI bus & acts as a single-master application controller.

Conformity & standards

General and safety requirements	EN 61347-1
Particular requirements - Miscellaneous electronic circuits used with luminaires	EN 61347-2-11
Radio frequency interference	EN IEC 55015
Immunity standard	EN 61547
Digital addressing lighting interface:	
General requirements for DALI system	EN 62386-101 (DALI-2)
General requirements -Control devices	EN 62386-103 (DALI-2)
Luminaire-mounted Control Devices	DALI Part 351
Radio equipment directive (RED):	
Compliance for 2.4 GHz ISM Band Devices	EN 300 328
EMC Common technical requirements	EN 301 489-1
Specific conditions for Broadband and Wideband Data Transmission Systems	EN 301 489-17
Compliant with relevant EU directives	
RoHS/REACH compliant	
CE / UKCA marked	