

elitedali™ - for Niagara

smart lighting controls

www.elitedali.com

elitedali MSensor4 Datasheet

Introduction

CNS's elitedali MSensor4 manufactured in the UK, is available as a licensed option for elitedali Multidrop for Niagara solution, version v2.0.6 and later.

The DALI® MSensor4 with its built-in intelligence gives a DALI smart lighting system the important ability to detect movement in a room and to measure the lighting levels. It is a high sensitivity PIR detector suitable for high bay applications, such as warehouses and factories, and



where high detection sensitivity is needed. When used with elitedali for Niagara offers highly automated lighting control including constant light level or daylight harvesting, maximising the use of natural light to minimise expense of energy to achieve required light levels. Additionally, information from the sensor may be used to affect control of other devices and sub-systems connected to Niagara building and lighting control platforms.

Features

- ◆ Licensed option on a per JACE/Niagara platform basis, see page 10
- ◆ Fully compatible to be used with any DALI Ballast which conforms to current DALI Open Standards
- ◆ All device settings (timers, sensitivity and groups) programmable seamlessly through elitedali for Niagara software, no manual adjustments needed
- ◆ Powered directly from the DALI network

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- ◆ Simple fitting and wiring directly to DALI network with non-twisted, non-shielded and non-polarized plenum rated wires
- ◆ Sharing sensor data with third party automation systems significantly reduces total bill of materials
- ◆ Daylight sensing, occupancy detection
- ◆ High sensitivity to reflected low light levels and occupancy detection
- ◆ Offers up to 15m mounting height and 30m diameter range
- ◆ Available with selectable masking shield for specific area and direction coverage

Mounting Options

Choosing a Suitable Location

The PIR Detector is designed to be ceiling mounted and must satisfy the following criteria:

- ◆ Avoid positioning the unit where direct sunlight may enter the sensor element.
- ◆ Do not site the sensor within 1m of any lighting, forced air heating or ventilation.
- ◆ Do not fix the sensor to an unstable or vibrating surface.
- ◆ Position the sensor so that the occupants of the room fall inside the detection zone.

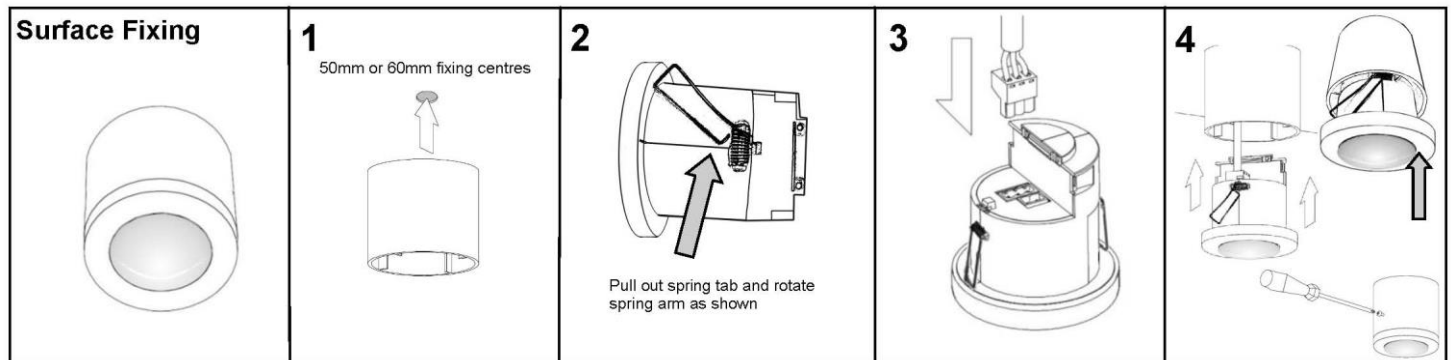
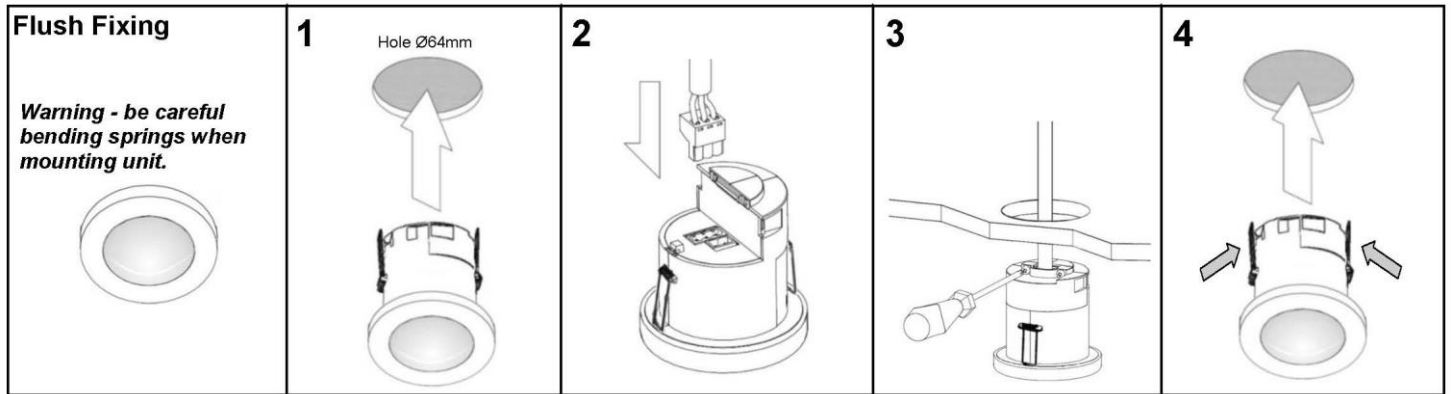
Mounting Methods

The Detector is designed to be mounted using either:

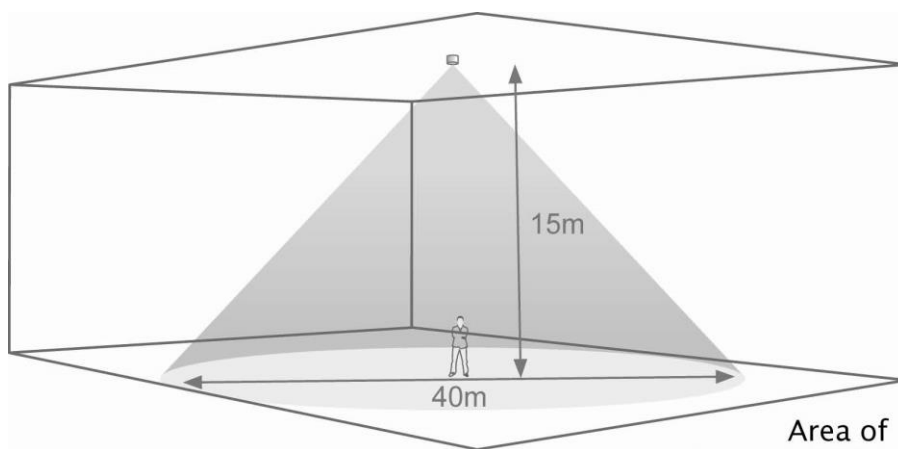
- ◆ Flush fixing (recommended), or
- ◆ Surface fixing, using the optional Surface Mounting Box (part no. CNS-DBB).

Both methods are illustrated in below.

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Detection Diagrams

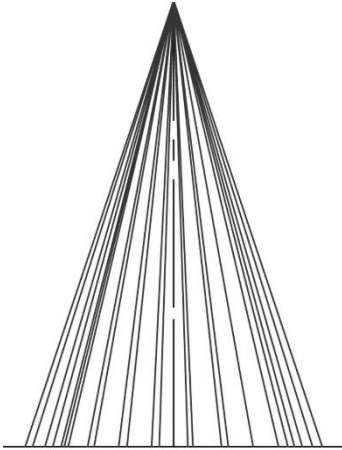


Height	Range Diameter
15m	40m
10m	26m
6m	16m
3m	8m

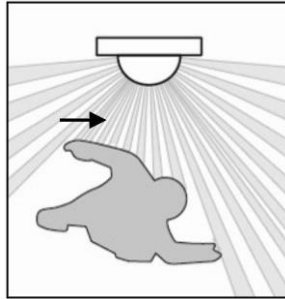
Area of low sensitivity  Area of high sensitivity 

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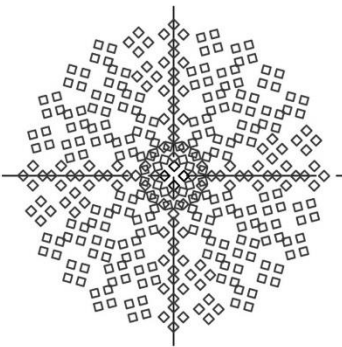
Detection Pattern



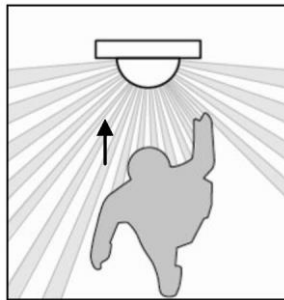
Walk Across:



Height	Range Diameter
15m	40m
10m	26m
6m	16m
3m	9m



Walk Towards:

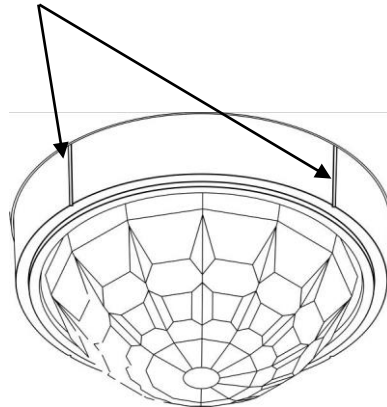


Height	Range Diameter
15m	30m
10m	20m
6m	12m
3m	8m

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Alignment Marks:

The sensor head has 4 alignment marks. These correspond to the 4 outer passive infrared sensors under the lens. Use these marks to align with aisles and corridors to ensure the best detection characteristics.

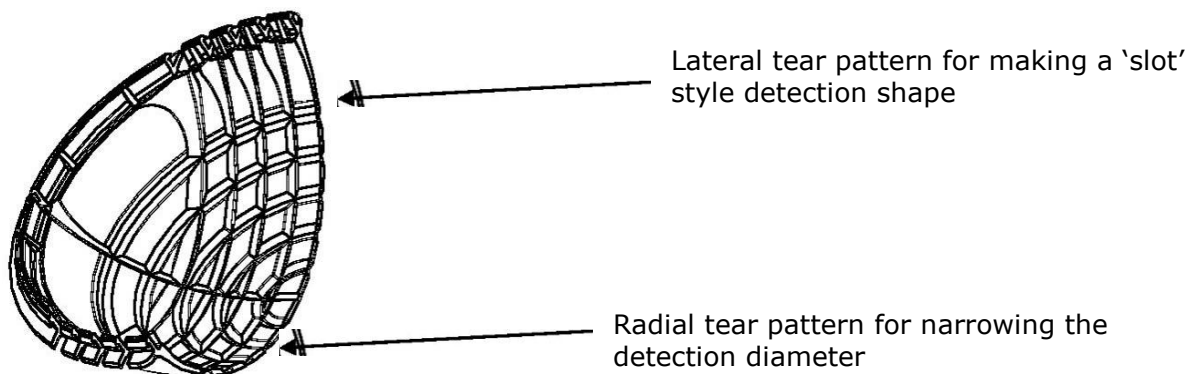


See examples below.

Masking Options

This MSensor4 includes two clip-on masking shields to allow for precise masking of the detection shape.

The masks can be easily shaped to produce detection patterns suitable for applications such as aisles and corners and for narrowing the detection diameter.

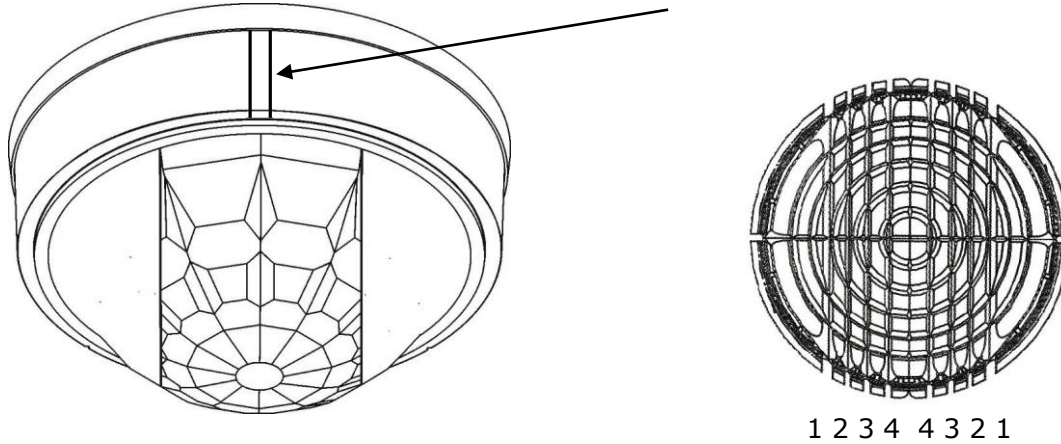


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Masking Options for Aisles

Masking shields trimmed for aisle shaped detection

Align trimmed shields with sensor head alignment marks and aisle



Slot Number	Masking Shield % Coverage
1	45%
2	32%
3	22%
4	11%

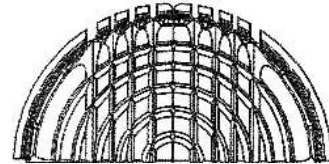
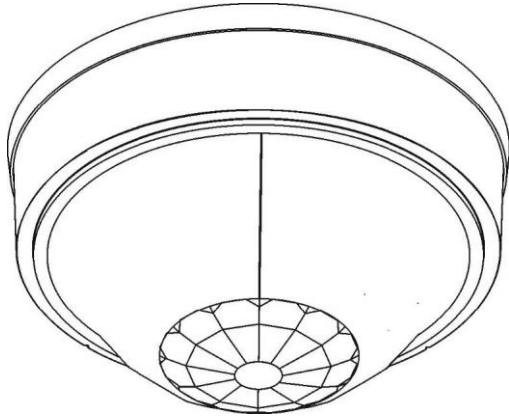
Example:

Mounting height 6m
 Trimmed to slots 2
 Aisle detection width 16m x 32% = 5.1m walk across
 12m x 32% = 3.8m walk towards

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Narrow Detection Option

Masking shields trimmed for a narrow beam of detection



Diameter number 1 2 3 4 5 5 4 3 2 1

Diameter Number	Masking Shield % Coverage
1	89%
2	63%
3	45%
4	32%
5	22%

Example:

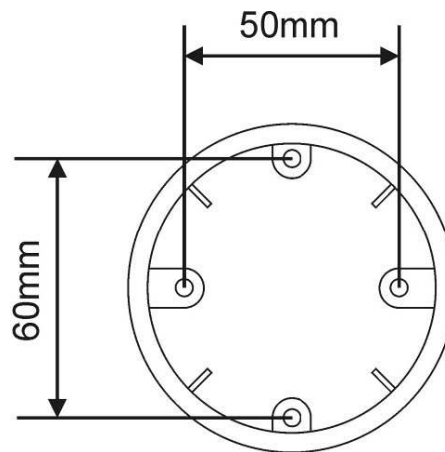
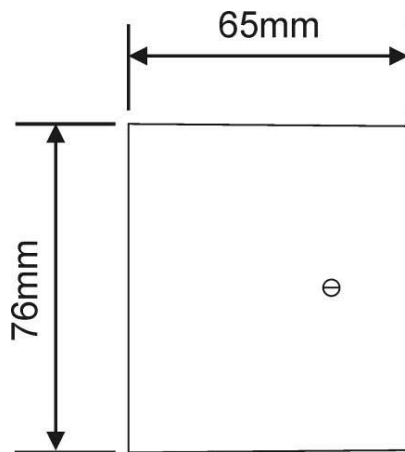
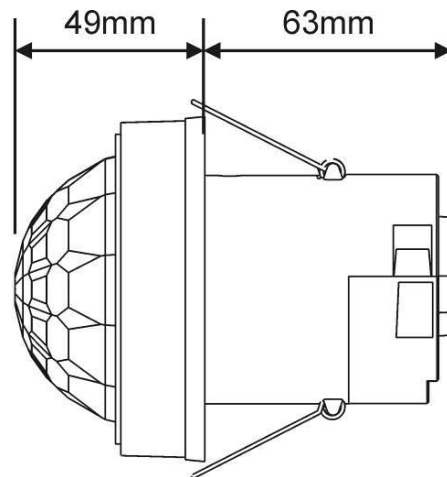
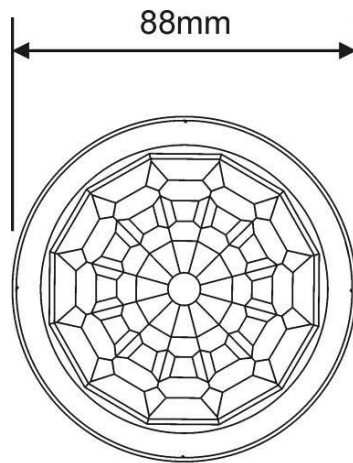
Mounting height 15m
 Trimmed to diameter 3
 Detection diameter 40m x 45% = 18m walk across
 30m x 45% = 13.5m walk towards

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Specifications

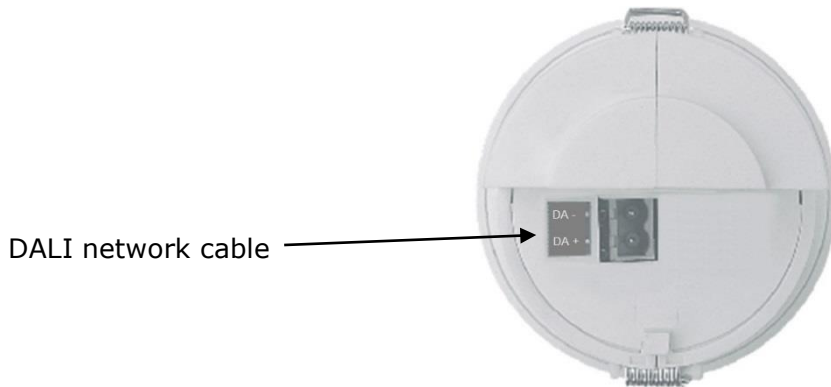
Mechanical

DIMENSIONS (MM)



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Electrical



The unit comprises:

- ◆ **PIR Sensor**
- ◆ **IR Receiver**
- ◆ **Light Level Sensor**
- ◆ **Status LEDs**

Direct Lux Sensitivity range:	1 to 1,000 Lux, measured at the sensor
Supply Voltage:	9.5VDC—22.VDC via DALI PSU
Supply Current:	8.0mA from DALI communications Bus
Communications Interface:	DALI ($\leq 22\text{VDC}$) communication bus
Electrical Connection:	Two wire DALI communication interface, 2.5mm ² (solid or stranded) Non-twisted, non-shielded, plenum rated pair
Environmental:	Operational temperature range -10 to +50C* IP 40 without suitable surface mount enclosure IP 65 with suitable surface mount enclosure, see separate datasheet, click here .
Material (casing):	Flame retardant ABS and PC/ABS
Compliance:	CE certified to EMC-89/336/EEC, LVD-2006/95/EC, CE

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Electrical Connections

The DALI MSensor4 connects to the DALI communication bus using two low voltage DALI communication wires. The DALI communication wires are non-twisted, non-shielded, non-polarised and have a maximum length of 300M/984 ft. The DALI wires on the sensor are 18 AWG and rated for 600 V. All sensor current is drawn from the DALI communication bus. The DALI MSensor4 can communicate to DALI devices on different DALI busses via the **elitedali** Multidrop for Niagara platform.

*Environmental and Operational

This product can electrically function when its “positional operating temperature” is between -10 and +50degC. Like all PIR detectors, it detects a change in the pattern of the infra-red emitted from objects below within its detection area. This change is usually caused by a warm object moving through its detection area, the warm object must be at least 2degC warmer than the background temperature, greater if the object is small or moving slowly etc. For example, to detect humans/people the background floor level temperature must be less than 35degC. These floor level temperature criteria will be the same for all DALI sensors that rely on PIR technologies.

Licensing Options

The MSensor 4 is a licensed option so it is **important** that when advising CNS of how many **elitedali** Connectivity Kits are required to be licensed to a suitable Niagara platform that at the same time **CNS is advised of how many MSensor 4 units need to be licensed to each Niagara platform.**

Order Details

Description:

Part No:

- ◆ High Bay DALI MSensor
- ◆ IP 65 Surface Mount Enclosure

elitedali.MSen4
elitedali.MSen4IP65/DBB

Additional **elitedali** compatible DALI products are also available, [click here](#) for more details.

Contact Details

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