2024

GRYDSENSE OMNOS SENSOR

TECHNICAL SPECIFICATION

Revision History

Sl #	Change Description	Version	Date
1	Initial Draft	0.6	21st Oct, 2021
2	Updated imaging sensor specification	1.0	18th June, 2022
3	Added Compliance statements	2.0	22nd Dec, 2022
4	Added Mounting Options	3.0	10th June, 2024

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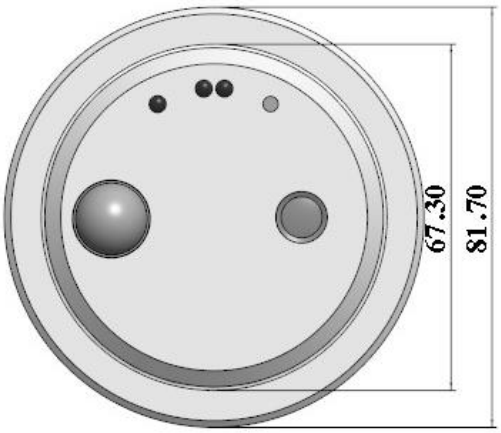
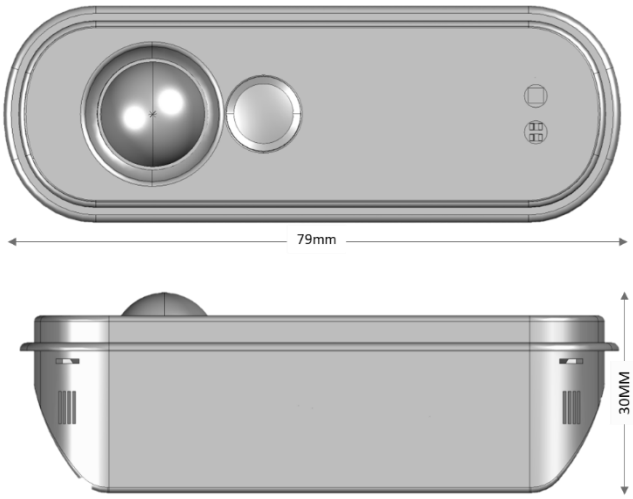




Overview

OMNOS is an integrated wireless sensor, capable of occupancy detection and people counting. The passive infrared (PIR) sensors automatically control lights via integrated dimming and switching devices, control of LED drivers using DALI or 0-10V. The sensor is unique in nature due to its capability of edge processing of data for people counting, the processed data is then transmitted wirelessly to a cloud-based application via a gateway for analytics.

The control system is dynamic, configurable during installation and commissioning process. Option for ON / OFF control system is also provided with the sensor.

Features

Individual loads could be switched on/off and dimming

- Up-to 8 lighting loads can be looped on DALI / 0-10V line
- Individual ballast / driver addressing for DALI
- Individual ballast / driver control
- 6 Scene settings
- 4 Group settings
- Non-Volatile memory backup.
- Zero or Minimal commissioning requirement for default operations.

Multiple ceiling-mount methods available

Integrated people counting sensor with edge processing

Power

- Supply voltage 12 VDC
- Supply current 100 mA @ 12VDC

Communication Module

- Ports 1: 0VDC – 10VDC or 1 x DALI

Environment

- Ambient temperature operating range: 0°C - 50°C
- Relative humidity: less than 90% non-condensing
- For indoor use only

Compliance

- ANSI C137.4-2019
- IEC 62386
- CE and FCC Certified
- RoHS Compliant
- IP rating - IP22

Models Available

- GRYD-WR-SS-INT-WH-C
- GRYD-WR-SS-INT-WH-L
- GRYD-WR-SS-INT-BK-C
- GRYD-WR-SS-INT-BK-L

Technical Specification

Radio

BLE Mesh:

- Supported Standards and Modulation Techniques
  - 802.15.5 - GFSK / 1Mbps
- Antenna - ANT3216LL00R2400A
- Antenna Gain - 5.05 dBi
- Expected Indoor Range - 30 meter

Wi-Fi:

- Supported Standards and Modulation Techniques
  - 802.11b - CCK (DSSS)
  - 802.11g - OFDM
  - 802.11n - OFDM
- Antenna - 1461530050 (Molex)
- Antenna Gain - 3.2dBi
- Expected Indoor Range - 45 meter

PIR Sensor Specification

Basic Principles

PaPIRs is a pyroelectric infrared sensor that detects variations in infrared rays. It could also detect the presence of heat sources of a human body. Efficiency and reliability of the system may vary depending on actual operating conditions

- Difficulty in sensing

Glass, acrylic or similar materials standing between the target and the sensor may not allow a correct transmission of infrared rays. Non-movement or quick movements of the heat source inside the detection area also make it difficult for detection.

- Detection Zones: 208

	Value
Horizontal	125º
Vertical	125º

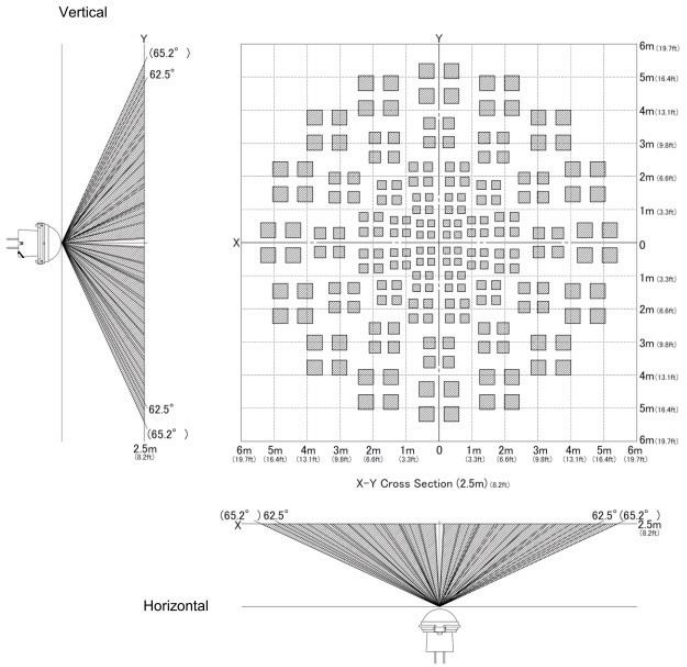
- Detection Performance / Detection Range

Temperature Difference	Value
8ºC (14.4ºF)	Up to 3.5m
4ºC (7.2ºF)	Up to 2.5m

- Area Coverage
  Approximately 70-meter square

Depending on the temperature difference between the target (Object Size 700mm x 250mm) and the surroundings, detection range will change.

Sensor Sensitivity



PIR Sensor Coverage

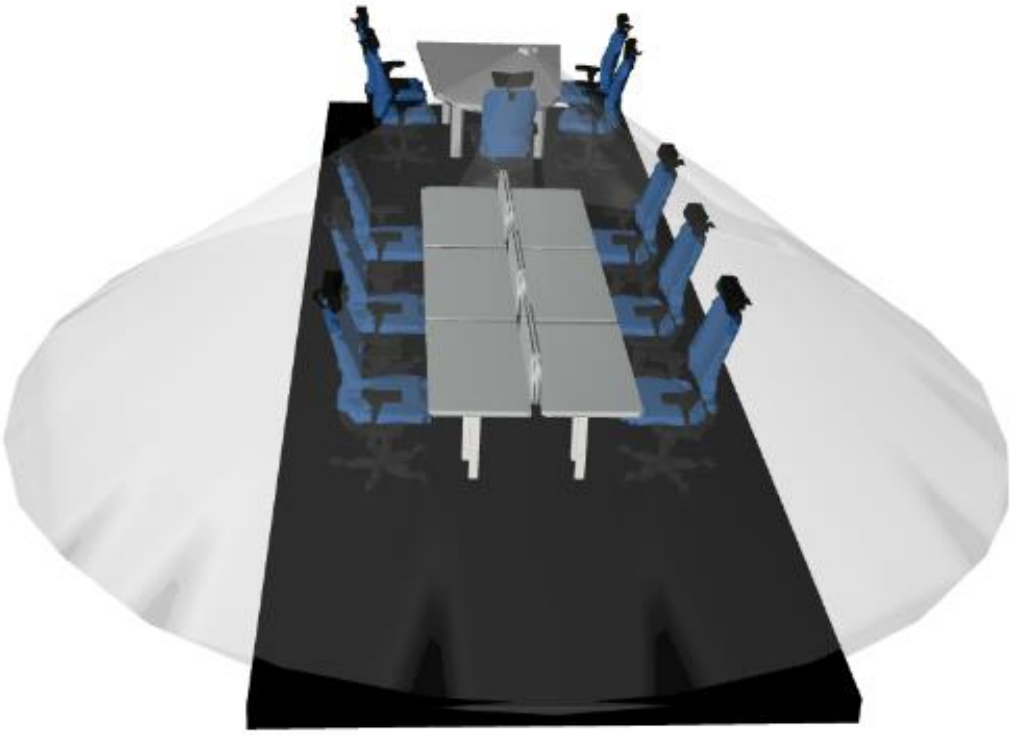
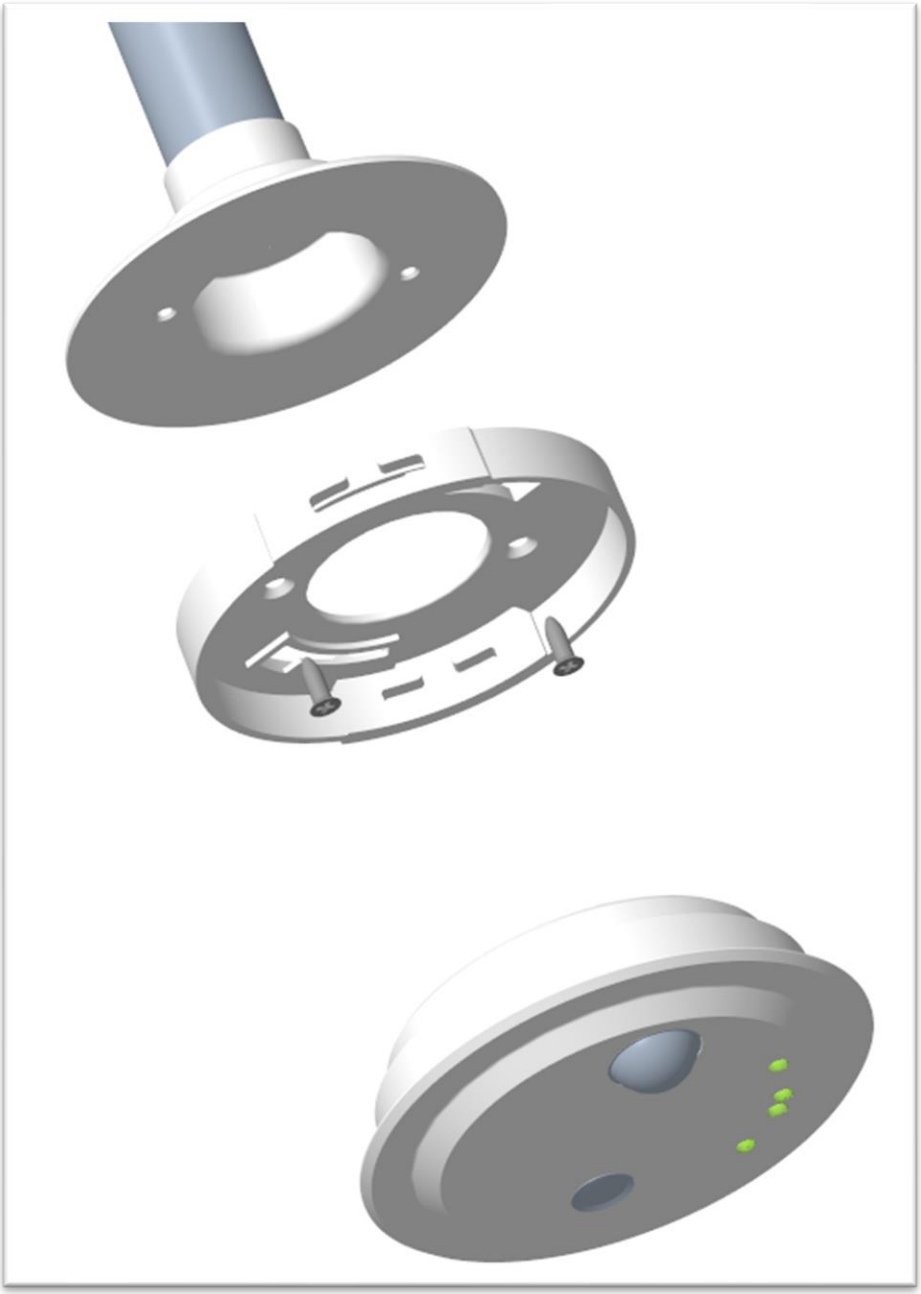


Illustration – At a mounting height of 8 feet, the sensor covers 6 linear work desks covering a total area of 70-meter square

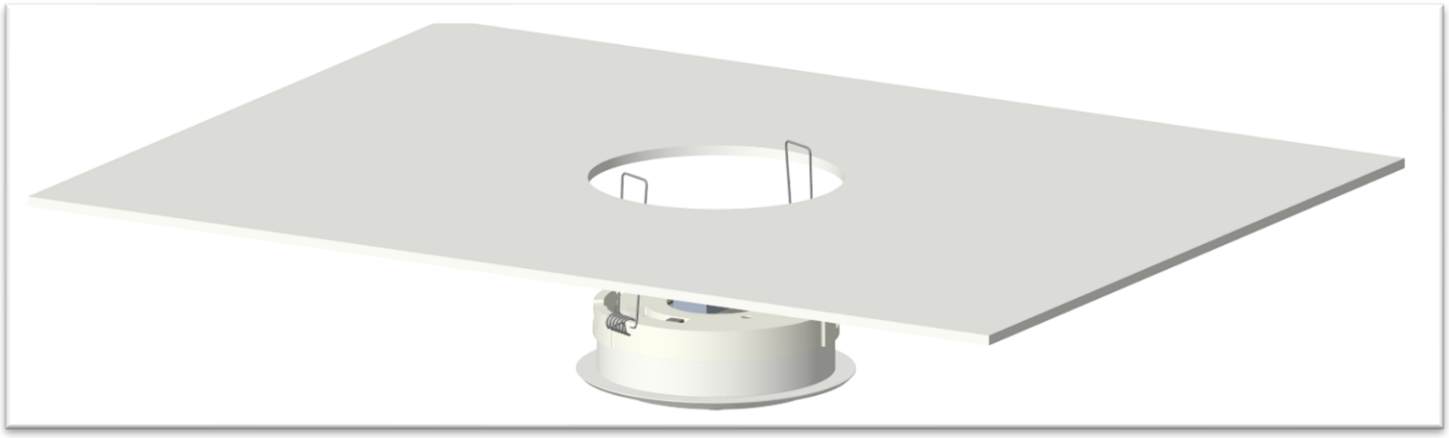
Product Mounting

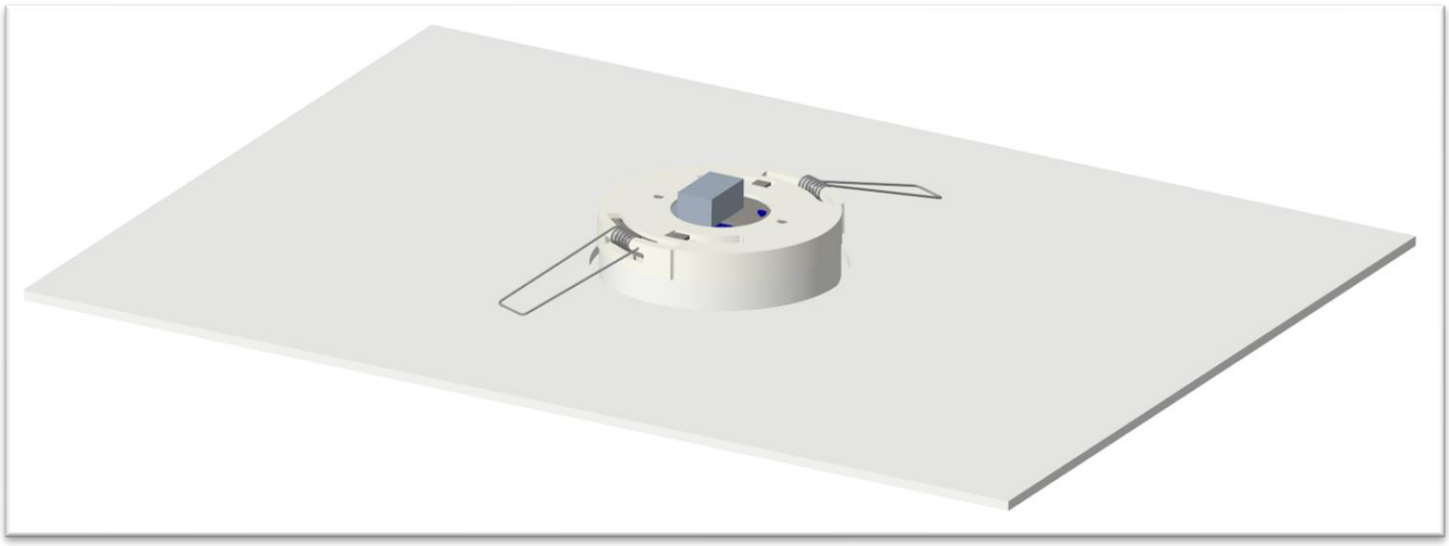
Mounting Option 1 - Ceiling drop with Conduit

Note : Conduit diameter – 19 mm

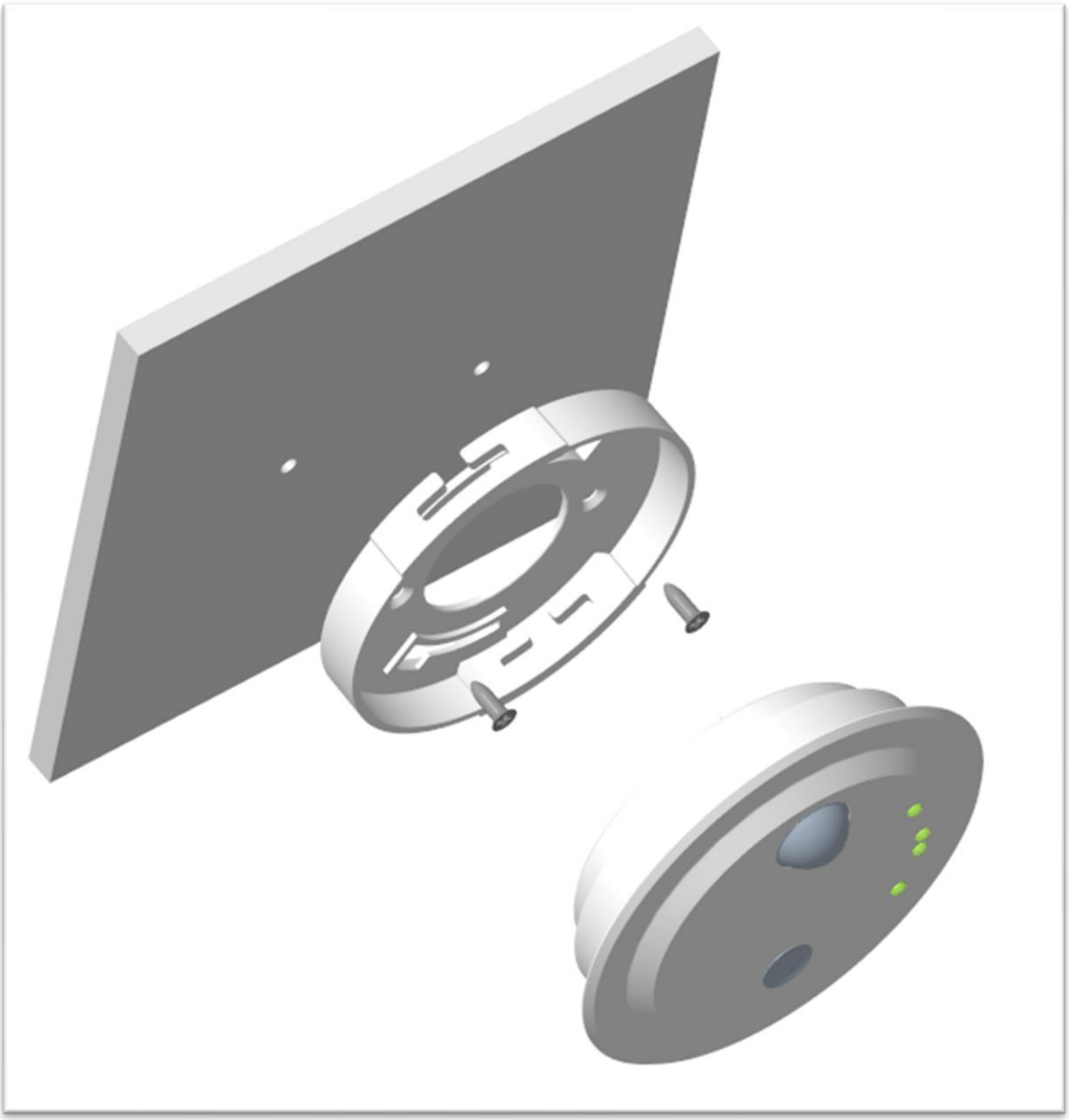


Mounting Option 2 - with Ceiling mount Springs





Mounting Option 3 - Ceiling mount with screw



Imaging Sensor Specification

Basic Principles

CMOS sensor that provides the full functionality of a single-chip UXGA sensor and processor in a small footprint package. The sensor provides full-frame, sub-sampled, scaled, or windowed 8-bit/10-bit data in a wide range of formats.

With edge processing of the data to provide high accuracy of space utilization in the specific area.

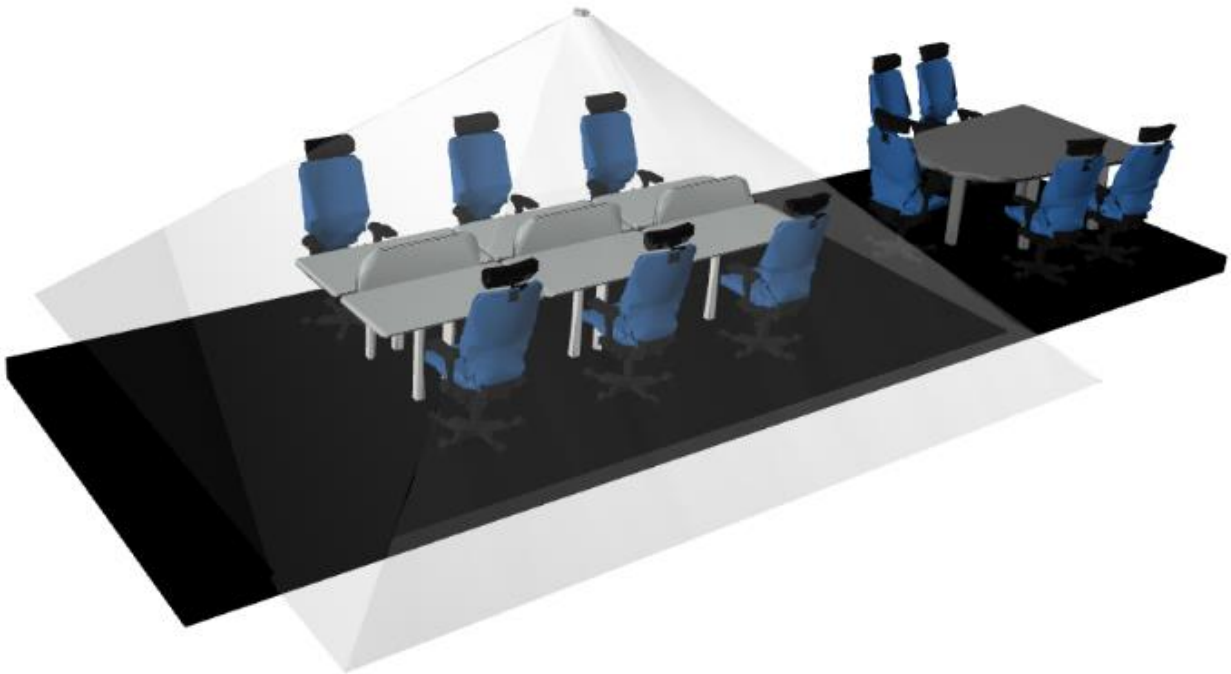
Combined with the PIR sensor, the efficient and accuracy is improved for space management in building automation.

- **Detection Angle**

	Value
Horizontal	160º
Vertical	120º

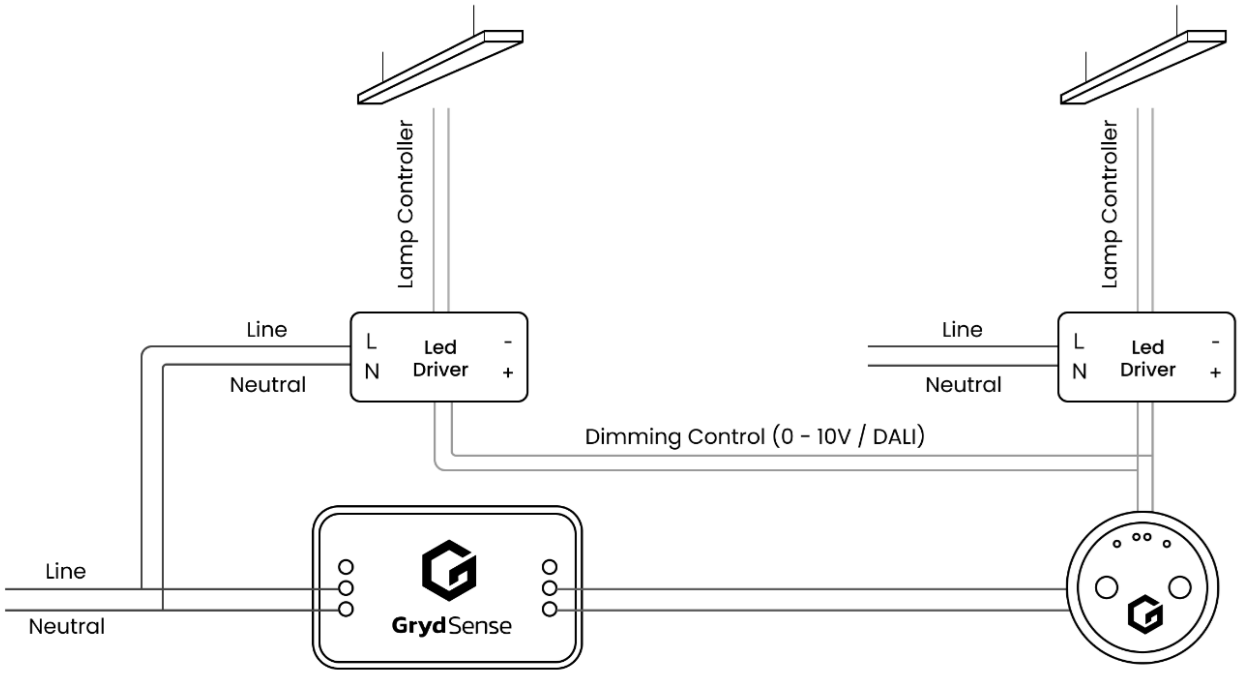
- **Effective Area Coverage at 8 feet installation is 160 square feet**

Imaging Sensor Coverage

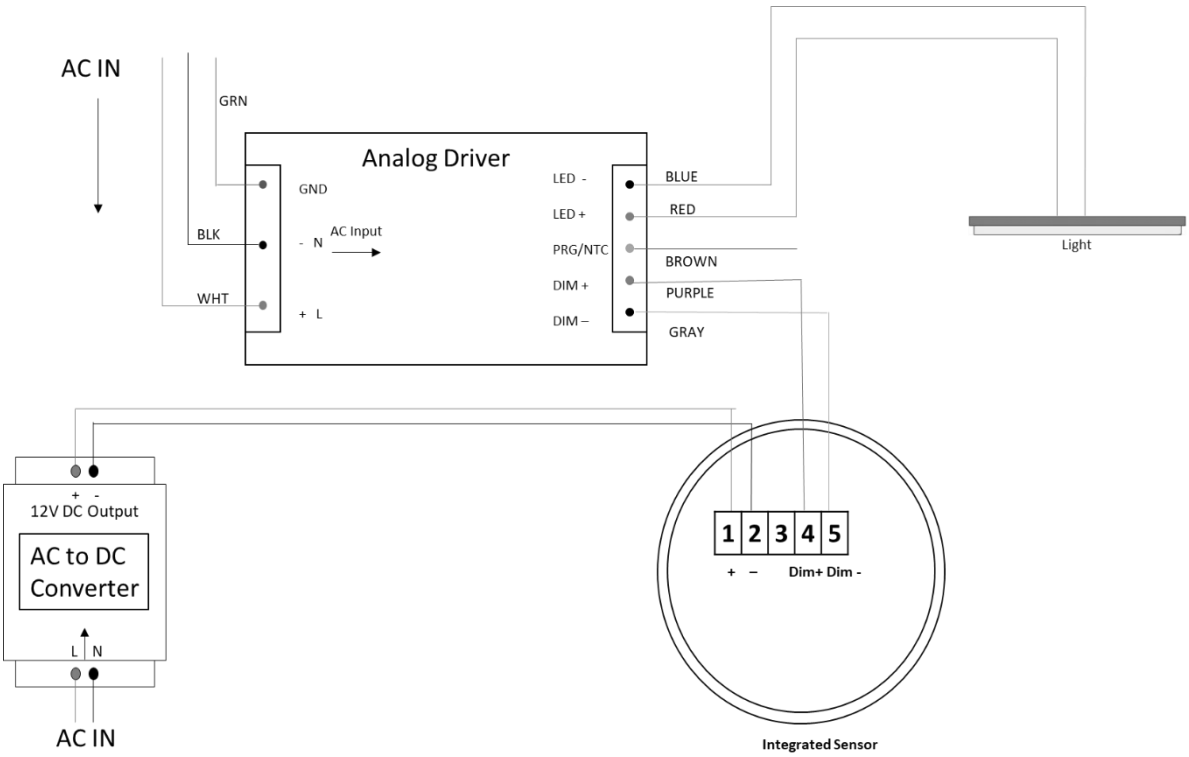


Sensor Connections Diagram

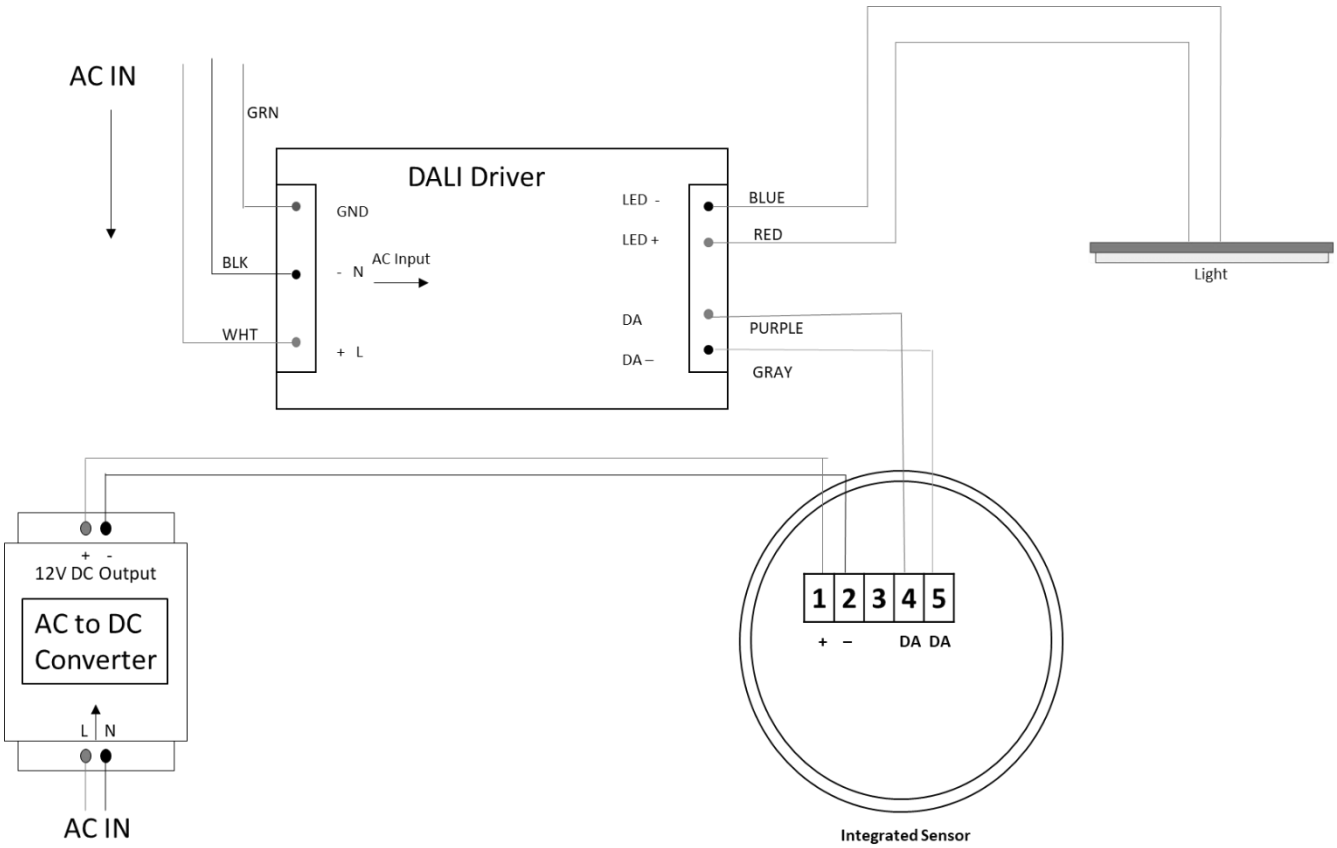
Sensor Power and Lighting Connections



Sensor Wiring with Analog (0-10v) lighting driver



Sensor Wiring with DALI lighting driver

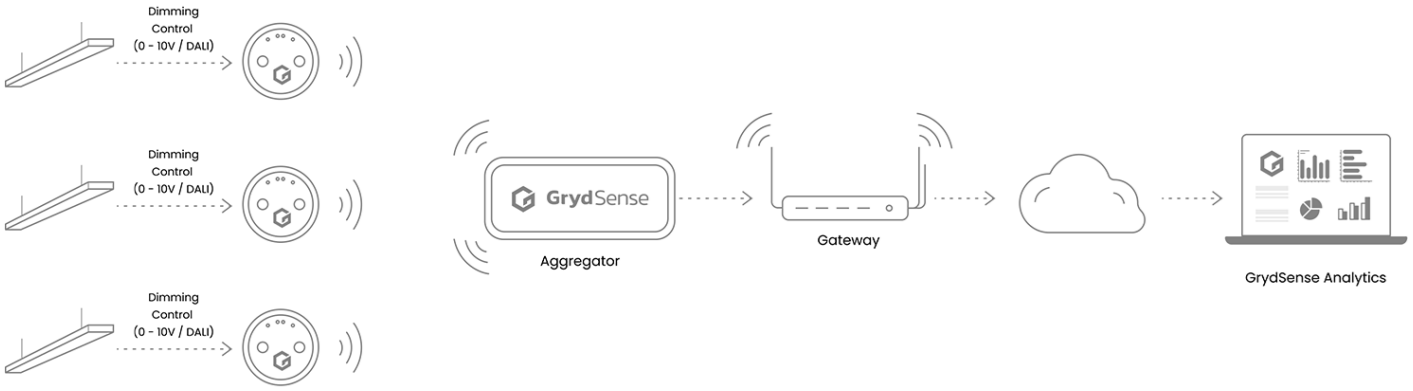


LED Indications

The product has three LED (Red, Greed and Blue) indicating various states of the product and the functions the sensors is performing. Blue LED is used for Imaging sensor state and functionality and Red and Green are used for Lighting state and functionality. The following table summarises the system and LED state,

LED	**Description**
Imaging sensor un-provisioned (No network and security information)	Blue LED blinks continuously
Imaging Sensor provisioned using a BLE provisioner	Blue LED glows for 5 seconds, Blinks 5 times (7-10 seconds gap) and again blinks fast for 5 times and switches off.
Imaging Sensor switching to Configuration mode	Blue LED blinks 20 times
Identify command sent to Imaging Sensor	Blue light blinks 10 times
Lighting Sensor power ON	RED and GREEN LED glows continuously (LONG BLINK) for 3 seconds and after 15 seconds RED and GREEN LED blinks together 3 times indicating motion sensor ready
Lighting Sensor un-provisioned	Red LED blinks continuously
Lighting Sensor Identify command	The Red and Green LED both together blinks 5 times

System Diagram



FCC ID: 2A6VEGRYDOMNOS

Compliance Statements

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including, an interference that may cause undesired operation.

Caution Statements

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

INFORMATION TO THE USER

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.