

IP65 Dual Sense Sensor with Bluetooth® 5.0 SIG Mesh

HIM049D/BT (Ultra High Bay)

DALI/DALI-2 Bolt-on/Batten-fit HF & PIR Sensor

HYTRONIK®



Product Description

HIM049D/BT is a Bluetooth DALI / DALI2 ultra high-bay Dual-sense™ (Microwave + PIR) motion sensor, with capability of up to 21m installation height. HIM049D/BT has a daylight sensor built-in and is specifically designed for mounting onto a batten-style luminaire. It is also designed for professional lighting manufacturers who want to incorporate wireless control into their luminaires. Moreover, since HIM049D/BT is designed with a robust IP65 structure, it is suitable for any typical applications such as factory, car parks, warehouses, and other commercial/industrial areas. With Bluetooth wireless mesh networking, it makes communication much easier without any hardwiring, which eventually adds value to luminaires and saves costs for projects. All simple device setup and commissioning can be done via **Koolmesh™** app.



*Presentation color: RAL7047

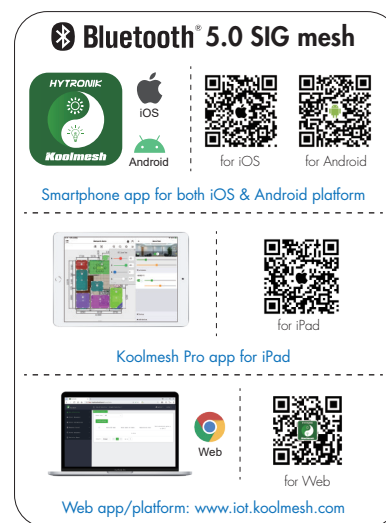
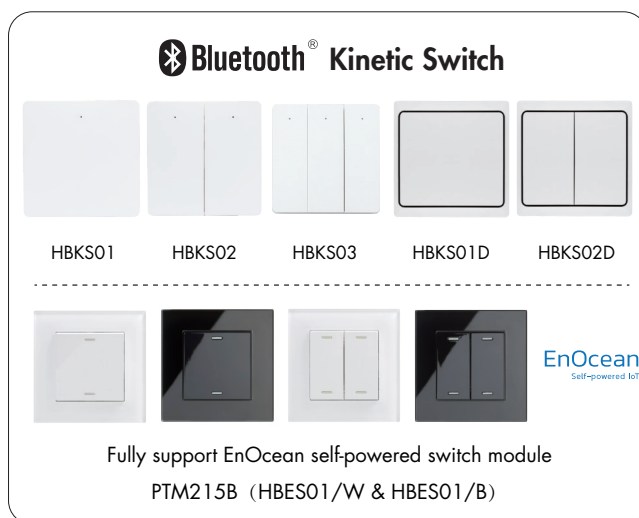
App Features

- Quick setup mode & advanced setup mode
- Tri-level control
- Daylight harvest
- Circadian rhythm (Human centric lighting)
- Floorplan feature to simplify project planning
- Web app/platform for dedicated project management
- Koolmesh Pro iPad version for on-site configuration
- Grouping luminaires via mesh network
- Scenes
- Detailed motion sensor settings
- Dusk/Dawn photocell (Twilight function)
- Push switch configuration
- Schedule to run scenes based on time and date
- Astro timer (sunrise and sunset)
- Staircase function (primary & secondary)
- Internet-of-Things (IoT) featured
- Device firmware update over-the-air (OTA)
- Device social relations check
- Bulk commissioning (copy and paste settings)
- Dynamic daylight harvest auto-adaptation
- Power-on status (memory against power loss)
- Offline commissioning
- Different permission levels via authority management

- Network sharing via QR code or keycode
- Remote control via gateway support HBGW01
- Interoperability with Hytronik Bluetooth product portfolio
- Compatible with EnOcean BLE switches
- Continuous development in progress...

Hardware Features

- DALI bus power supply
 - I guaranteed: 64mA
 - I max: 80mA
 - U rated: 16VDC
- Support D4i driver and collect energy, fault & diagnostics data
- 4 Modes
 - HF only
 - PIR only
 - HF + PIR
 - HF / PIR
- IP65 design
- High-bay (up to 21m height)
- 5-year warranty



Technical Data

Bluetooth Transceiver	
Operation frequency	2.4 GHz - 2.483 GHz
Transmission power	4 dBm
Range (Typical indoor)	10~30m
Protocol	Bluetooth® 5.0 SIG Mesh

Safety & EMC	
EMC standard (EMC)	EN55015, EN61547 EN61000-3-2/-3-3
Safety standard (LVD)	EN61347-1, EN61347-2-11
RED	EN300328, EN301489-1 EN301489-17
Certification	EN300440, EN301489-3 LVD, RCM, CE

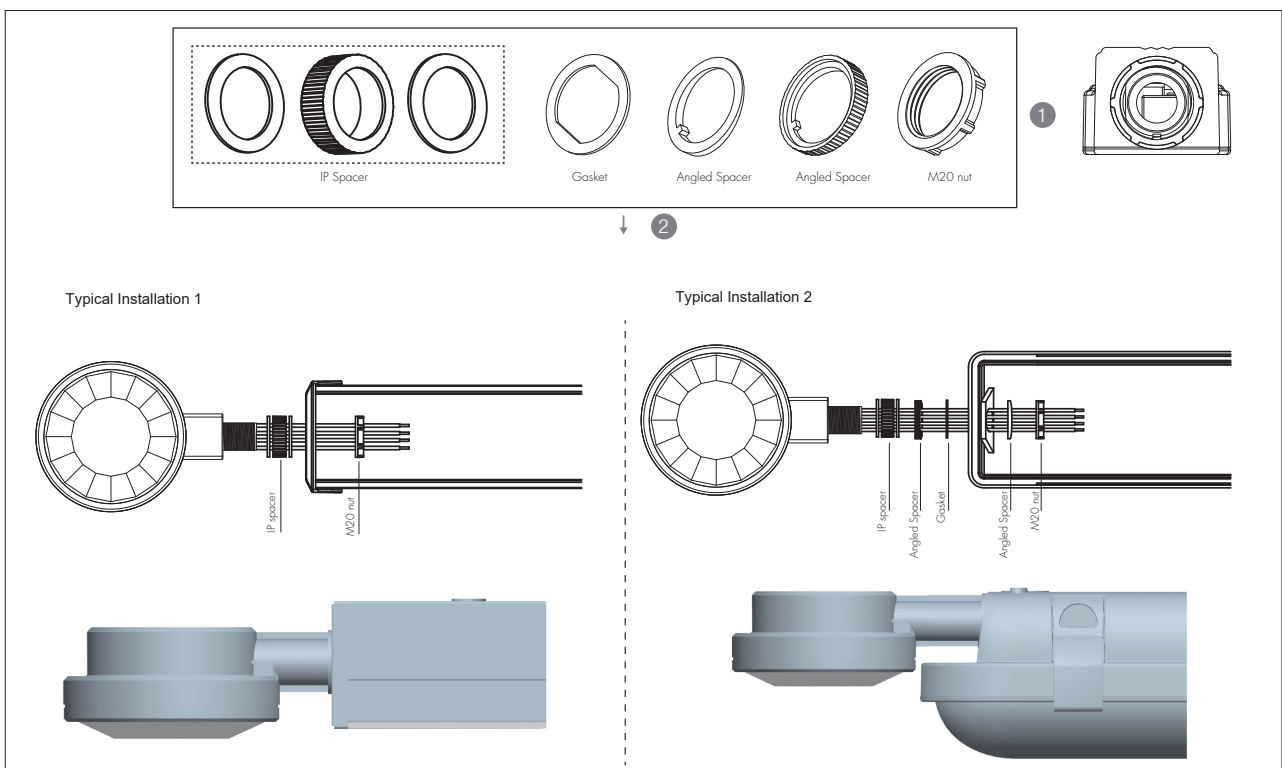
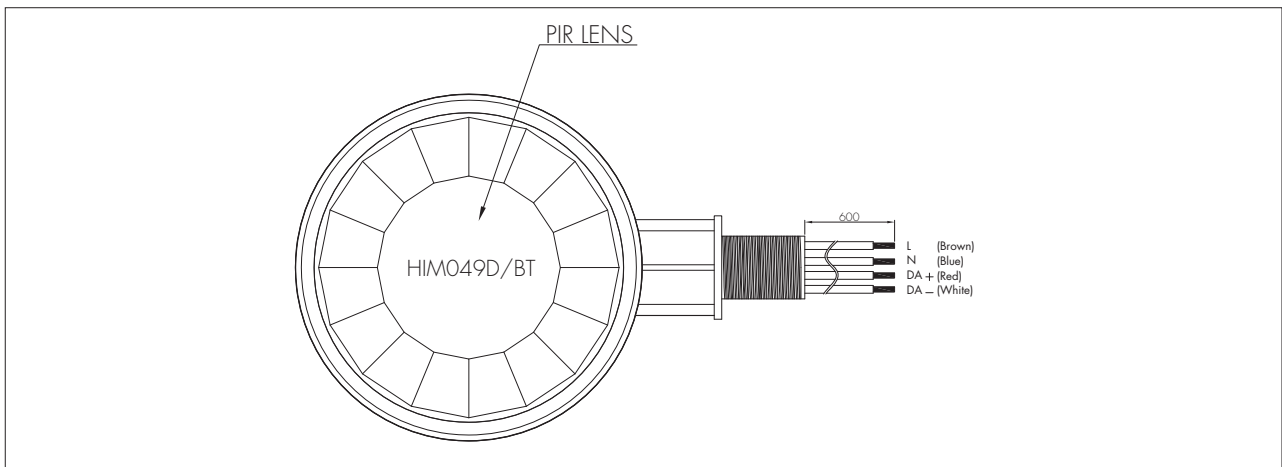
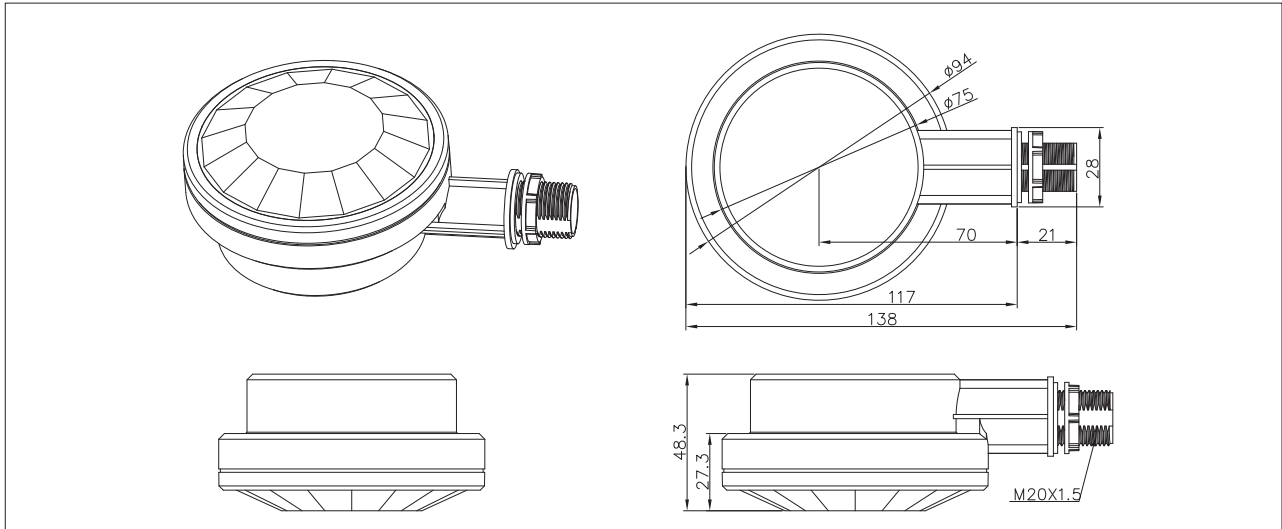
Input & Output Characteristics	
Operating voltage	220 ~ 240VAC 50/60Hz
Stand-by power	<1.5W
DALI bus power supply	I guaranteed: 64mA I max: 80mA U rated: 16VDC
Warming-up	20s

Environment	
Operation temperature	Ta: -20°C ~ +50°C
Storage temperature	-40°C ~ +70°C
Relative humidity	10 ~ 90%
IP rating	IP65

Sensor Data	
Sensor principle	High Frequency (microwave), PIR
Sensor mode	5 modes: PIR, HF, PIR+HF, PIR/HF, Bluetooth Receiver
Detection range (max.)	HF: Height = 1.5m (forklift)/ 1.2m (human) Diameter(Ø) = 20m PIR: Height = 21m Diameter(Ø) = 28m *When relative humidity < 65%, storage temperature < 25 °C
Detection angle	360°

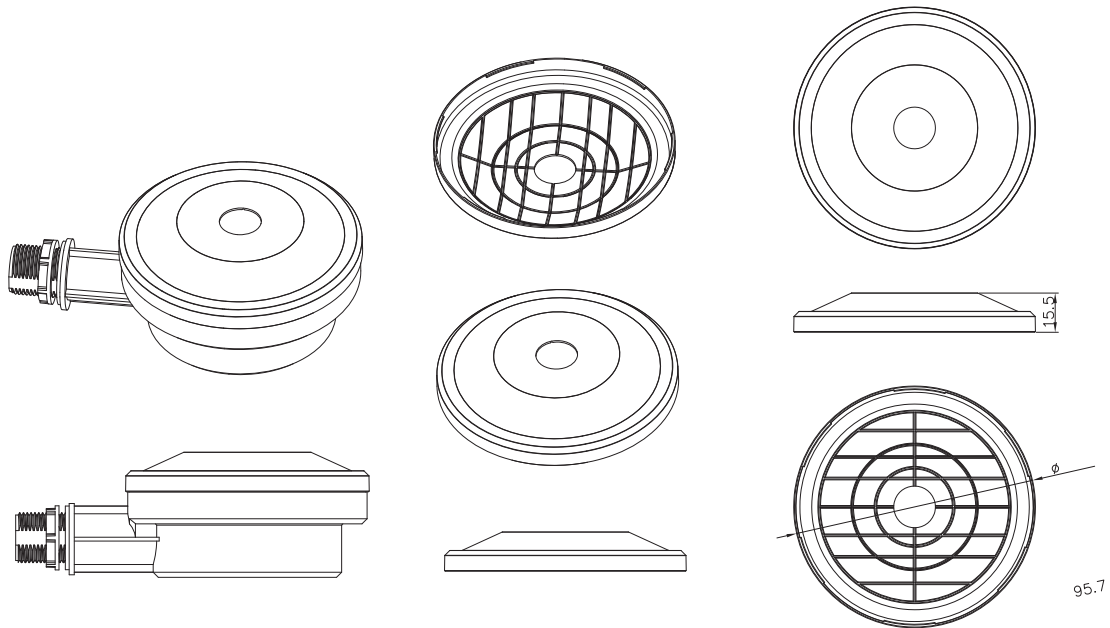
* The detection range is heavily influenced by sensor placement (angle) and different walking paces. It may be reduced under certain conditions.

Mechanical Structure & Dimensions

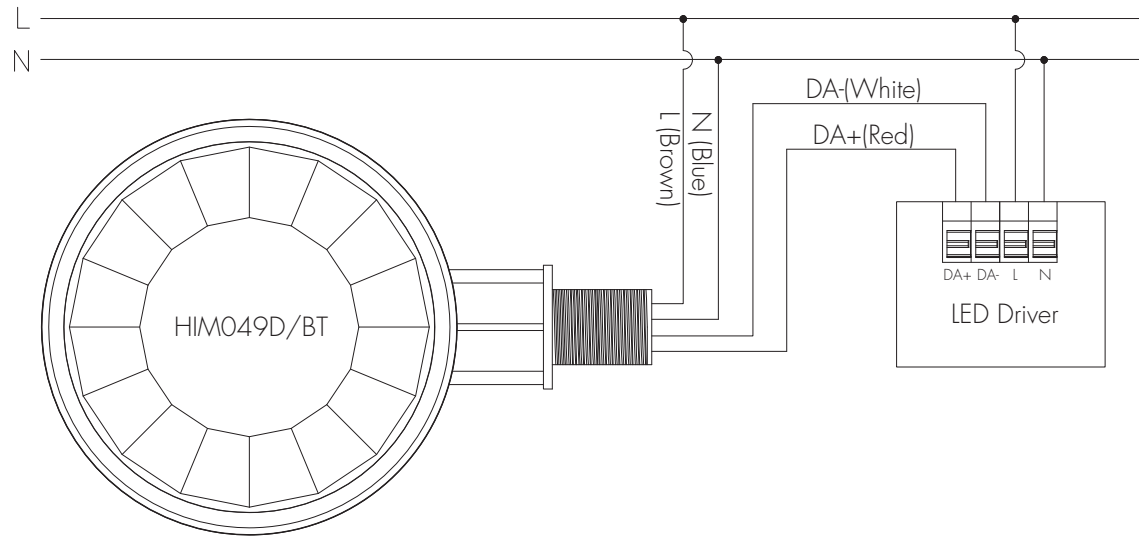


Shielding Accessory

For the application of limited coverage areas (hallways), the line pattern of the shielding accessory can be freely removed by cutting to achieve a different range of shielding induction, for example, rectangular detection and semi-sphere detection. The portable design also provides an easy installation, which only needs to buckle the shielding accessory onto the lens.



Wiring Diagram



Dual Sense Introduction

It's commonly known Microwave and Infrared are main detecting technologies in lighting controls. Both have the advantage and disadvantage for industrial applications.

Advantage

- * sensitive to minor motion.
- * sensitive to radial movement.
- * can be reflected by objects hence covering big detection area
- * resilient to heat source, smoke and and air conditioner.



Disadvantage

- * penetrates walls, picks up motions outside of the office area;
- * back wave detection, false trigger by motions at the back.
- * can be false triggered by ventilation fans, water pipe, elevators etc. in industrial application.

Advantage

- * no penetration, confined detection area.
- * sensitive to tangential movement.
- * resilient to motion object which has no heat radiation.



Disadvantage

- * can be false triggered by air conditioner, smoke and other heat sources.

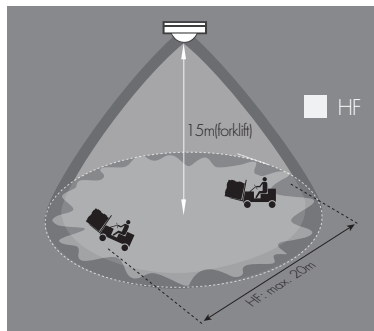
The remedy is to create Dual Sense by combining both technologies to make use of the advantage and bypass the disadvantage.

4 optional detection modes selectable:

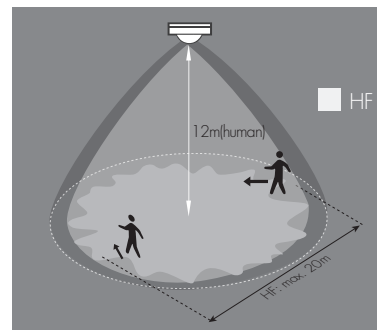
- * HF: Microwave only
- * PIR: PIR mode only
- * HF+PIR: both PIR and microwave mode, to decrease the detection capability and detection area. Only when both detections are activated, the motion is considered valid. This is to prevent the sensor from false trigger by heat source, air conditioner, ventilation fans, water pipe and elevators etc...
- * HF/PIR: either PIR or microwave mode, to increase the detection capability and detection area;

Detection Pattern

a. High Frequency (microwave)



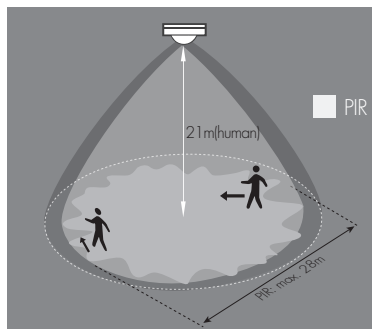
Forklift



Human

b. PIR

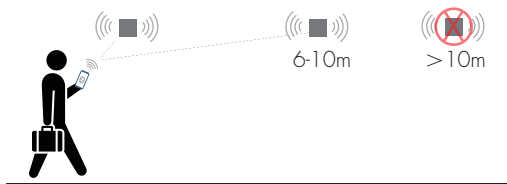
*When relative humidity < 65%, storage temperature < 25 °C



Human

Placement Guide and Typical Range

Smart Phone to Device Range



The smart device with the App installed will have a typical range of 10m, but varies from device to device. During commissioning, the installer will need to be in range of the devices when searching for devices to add to the network.

Once the devices have been added to the network via the App, the devices will start communicating within the wireless mesh. This means that once the network is complete, all devices are accessible from the smart device when in a 20m range of a single point.

Additional Information / Documents

1. To learn more about detailed product features/functions, please refer to www.hytronik.com/download->knowledge->Introduction of App Scenes and Product Functions
2. Regarding precautions for Bluetooth product installation and operation, please kindly refer to www.hytronik.com/download->knowledge->Bluetooth Products - Precautions for Product Installation and Operation
3. Regarding precautions for microwave sensor installation and operation, please kindly refer to www.hytronik.com/download->knowledge->Microwave Sensors - Precautions for Product Installation and Operation
4. Regarding precautions for PIR sensor installation and operation, please kindly refer to www.hytronik.com/download->knowledge->PIR Sensors - Precautions for Product Installation and Operation
5. Data sheet is subject to change without notice. Please always refer to the most recent release on www.hytronik.com/products/bluetooth technology->Bluetooth Sensors
6. Regarding Hytronik standard guarantee policy, please refer to www.hytronik.com/download->knowledge->Hytronik Standard Guarantee Policy