WSED414 (HIM14)
HF and PIR, Daylight harvest Control for Independent DALI

Mechanical Structure

C - Surface box

B - Facia Cover

43.5
64.7
69.1

Infrared receiver | PIR
HF Sensor module | Photocell
LED indicator
Rotary switch preset | Sensor mode selection

A - Control Board

56
29
50.2
55.2

Ø109
Ø38.6
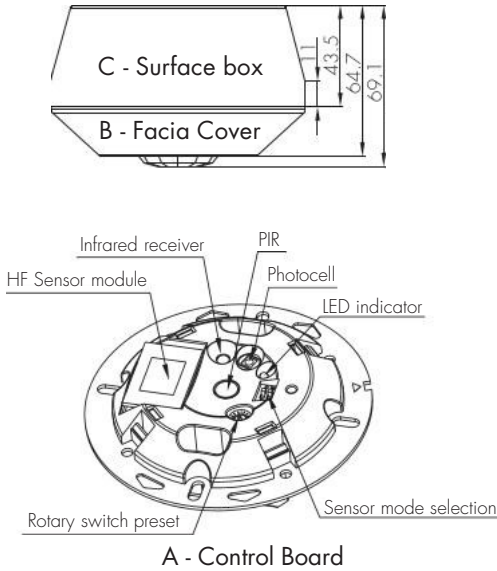
A Blind
B Blind

Note: the blinds are optional, they may be inserted behind the lens for focussing the detection range.

Installation:

For more details, please refer to user manual.

❶ Direct junction "J" box mounting

❷ Surface mount assembly

Note: We recommend the mounting distance between sensor to sensor should be more than 2m to prevent sensors from false-triggering.

Technical Data

Input Characteristics

Model No.	HIM14
Mains voltage	120~277VAC 50/60Hz
Stand-by power	<1W
Switched power	Max. 20pcs devices, 40mA
Warming-up	30s

Safety and EMC

EMC standard (EMC)	EN55015, EN61000
Safety standard (LVD)	EN60669, AS/NZS60669
Radio Equipment (RED)	EN300440, EN301489-1, EN62479
Certification	Semko, CB, CE , EMC, RED, RCM

CE [emc] RED (S) (Λ) **CB** IP20

Sensor Data

Model No.	HIM14
Sensor principle	High Frequency (microwave), PIR
Operation frequency	5.8GHz +/- 75MHz (HF)
Transmission power	<0.2mW (HF)
Sensor mode	4 modes: PIR, HF, PIR+HF, PIR/HF
Detection range	
HIM14	Max. (Ø x H) 12m x 6m
HIM54 (2 lens)	Max. (Ø x H) 16m x 12m Max. (L x W x H) 16m x 6m x 12m
Detection angle	360°

Environment

Operation temperature	Ta: -20°C ~ +55° C
IP rating	IP20

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

HF

* 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

PIR

* 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 via DIP switch or remote control:

* 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;

	1	2	
I	●	●	HF
II	○	●	PIR
III	●	○	HF+PIR
IV	○	○	HF/PIR

Functions and Features

1 Daylight Harvest

Light will not switch on when natural light is sufficient, even there is motion detected.

The light switches on automatically with presence when natural light is insufficient.

The light turns on at full or dims to maintain the lux level. The light output regulates accroding to the level of natural light available.

The light switches off when the ambient natural light is sufficient.

The light dims to stand-by period after hold-time and stays on selected minimum dimming level.

The light switches off completely after the stand-by period.

Note:
The Light automatically dims down and eventually turns off if the natural light lux level exceeds the daylight threshold. However, if the stand-by period is preset at "+∞", the fixture never switches off but dim to minimum level, even the natural light is sufficient.

Settings (Remote Control HRC-11)

Permanent ON/OFF function

Press button "ON/OFF" to select permanent ON or permanent OFF mode.
* Press button "AUTO", "RESET" to quit this mode.
The mode will change to AUTO Mode after power failure.

Reset Settings

Press button "RESET", all settings go back to rotary switch settings. Sensor detection mode returns to DIP switch settings.

Shift Button

Press button "Shift", the LED on the top left corner will flash to indicate mode selection. All values / settings in RED are valid for 20 seconds.

AUTO mode

Press button "AUTO" to initiate automatic mode. The sensor starts working and all settings remain as before the light is switched ON/OFF.

SEMI-AUTO mode

1. Press button "Shift", the red LED flashes for indication.
2. Press button "SEMI-AUTO/AUTO" to initiate semi-auto mode. The fixture is manually turned on by pressing the push-switch, and goes off automatically in this mode. (Absence detection mode)

Power output

Press the buttons to select light output at 80% (at initial 10,000 hours) or 100%.
Note: "Sensor off" and "Twilight" functions are disabled.

Brightness +/-

Press the buttons to adjust the light brightness to reset the target lux level.

HRC-11

Start Memory Apply Scene program - *1-key commissioning*

1. Press button "Start" to program.
2. Select the buttons in "Detection range", "Daylight threshold", "Hold-time", "Stand-by time", "Stand-by dimming level" to set all parameters.
3. Press button "Memory" to save all the settings programmed in the remote control.
4. Press button "Apply" to set the settings to each sensor unit(s).

For example, to set detection range 100%, daylight threshold Disable, hold-time 5min, stand-by time +∞, stand-by dimming level 30%, the steps should be: Press button "Start", button "100%", "Disable", "Shift", "5min", "Shift", "+∞", "30%", "Memory". By pointing to the sensor unit(s) and pressing "Apply", all settings are passed on the sensor(s).

Detection range

Press buttons in zone "Detection range" to set detection range at 100% / 75% / 50% / 10%.

Daylight threshold

Press buttons in zone " Daylight threshold" to set daylight sensor / target lux level at 50Lux / 100Lux / 300Lux / 500Lux / Disable.
Note: 2lux / 10lux are disabled.
To set daylight sensor at 100Lux / 300Lux / 500Lux, press "Shift" button first.

Ambient daylight threshold

1. Press button "Shift", the red LED starts to flash.
2. Press button "Ambient", the surrounding lux level is sampled and set as the new daylight threshold / target lux level.

Hold-time

Press buttons in zone "hold-time" to set the hold-time at 2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min.
Note: 1. To set hold-time at 30s / 5min / 15min / 30min, press "Shift" button first.
2. 2s is for testing purpose only, stand-by period and daylight sensor settings are disabled in this mode.
*To exit from Test mode, press button "RESET" or any button in "Hold-time".

Stand-by time (corridor function)

Press buttons in zone "stand-by time" to set the stand-by period at 0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞.
Note: "0s" means on/off control; "+∞" means bi-level control, the fixture is 100% on when there is motion detected, and remains at the stand-by dimming level when no presence after motion hold-time.

Stand-by dimming level

Press the button in zone "stand-by dimming level" to set the stand-by dimming level at 10% / 20% / 30% / 50%.

Daylight harvest auto-configuration function

1. Press button "Shift", the red LED starts to flash.
2. Select a time period and the sensor will do light level measurement and determine/save the lowest light level (commission line) with 100% light on, so as to set the target lux level automatically.
Note: 1. Make sure the light level measurement covers the night time.
2. The fixture will go into sensor mode after the measurement, all sensor settings remain unchanged.

Dual tech & RF mode

1. Press buttons in this zone to select sensor technology.
   HF+PIR: the light is on when both HF and PIR sensors are activated.
   HF/PIR: the light is on when HF or PIR sensors are activated.
2. Learn / Erase, Transmit, RX100% and RX STBY% are disabled.

Rotary Switch Preset

A rotary switch is built inside the sensor for scene selection / fast programming. Total 16 channels are available:
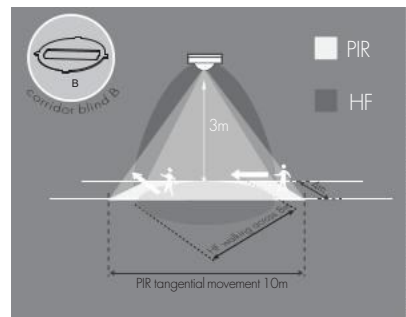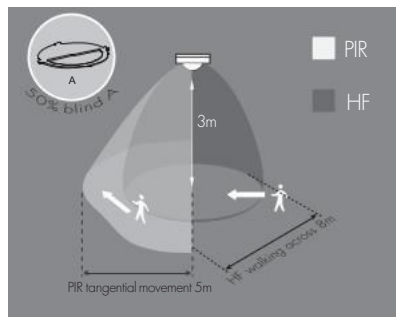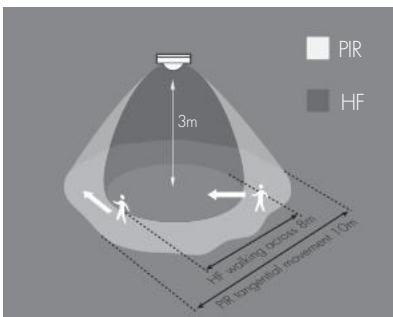

Rotary switch preset

Note: settings can also be changed by remote control HRC-11. The last action controls.

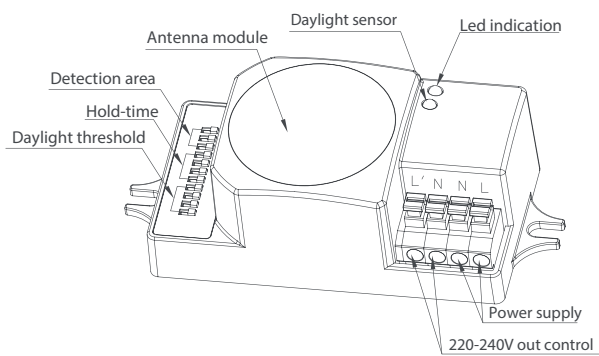| Channel	Detection range	Hold-time	Daylight sensor	Stand-by time	Stand-by dim level
0	100%	5s	Disable	10s	10%
1	100%	1min	50Lux	5min	10%
2	100%	5min	50Lux	10min	10%
3	100%	5min	75Lux	+∞	10%
4	100%	5min	100Lux	+∞	10%
5	100%	5min	200Lux	+∞	30%
6	100%	10min	50Lux	30min	10%
7	100%	10min	75Lux	+∞	10%
8	100%	10min	100Lux	+∞	10%
9	100%	10min	200Lux	+∞	30%
A	100%	20min	100Lux	1h	10%
B	100%	20min	200Lux	+∞	30%
C	100%	30min	100Lux	+∞	10%
D	100%	30min	200Lux	+∞	30%
E	100%	30min	400Lux	+∞	50%
F	100%	5s	100Lux	10s	10%

Wiring Diagram
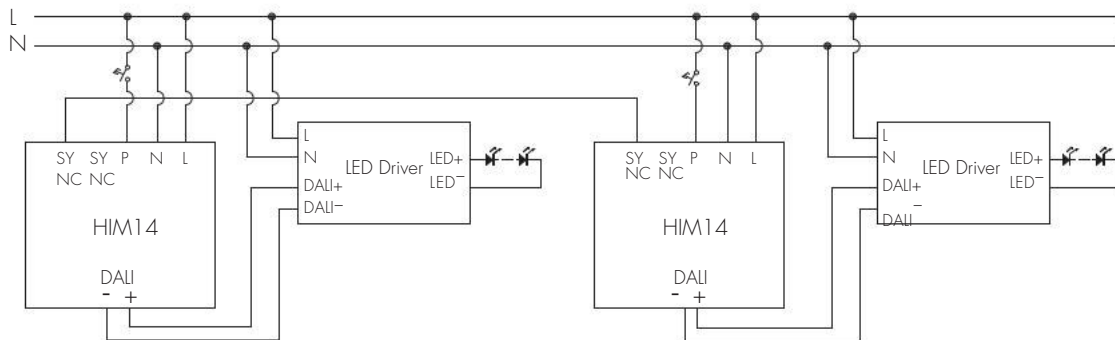
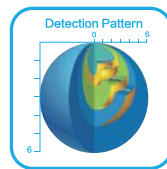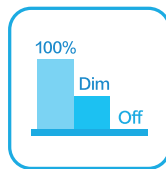### Detection Pattern

Additional Information / Documents

1. 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

2. 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

3. Regarding Hytronik standard guarantee policy, please refer to
   www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy

Super compact version on/off control

Model: HC005S
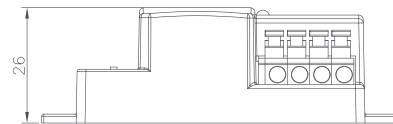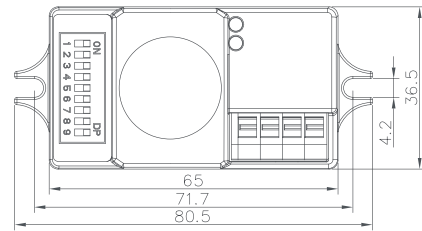
The smallest HF motion sensor on the planet, worldwide patented!!!

- zero-cross relay operation
- sensorDIM®
- 100% Dim Off
- Detection Pattern
- Hold-time 5s~30min
- 2~50Lux

This sensor is a motion switch, turn on the light on detection of people movement, and turn off after a pre-selected holdtime when there is no people around. A daylight sensor is also built-in to switch off the light when there is sufficient natural light.

## Function and options

1 On-off Function
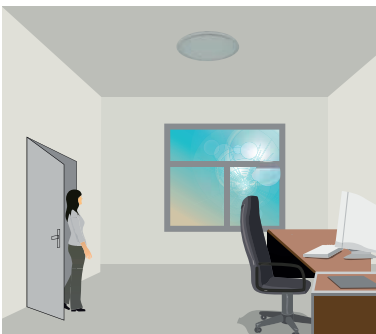
With sufficient natural light, the light does not switch on when presence detected
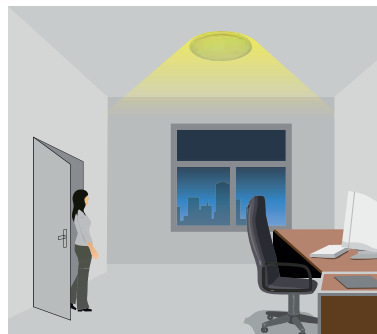
With insufficient natural light, the sensor switches on the light automatically when person enters the room
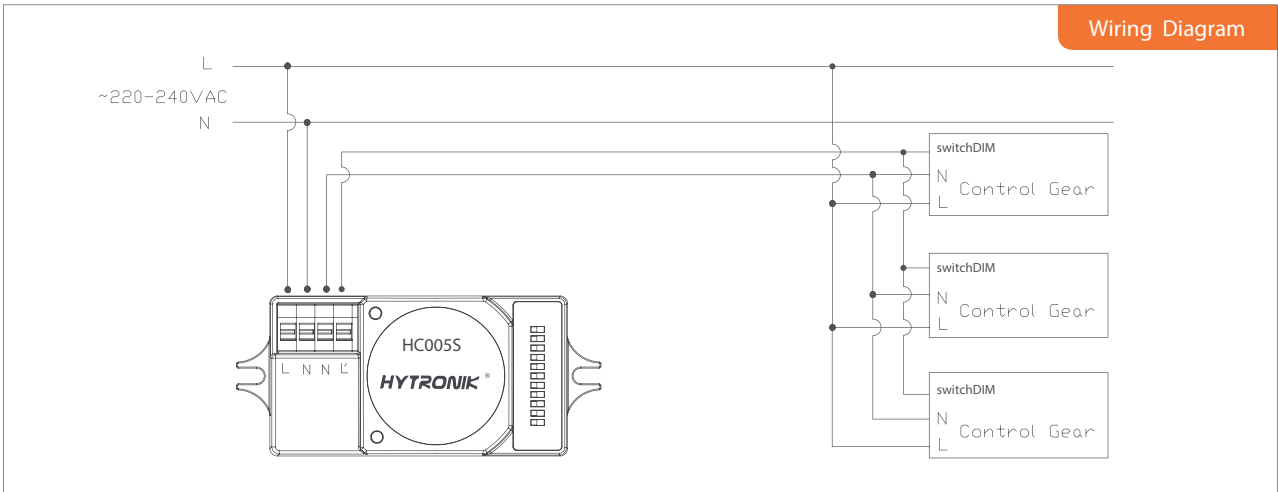

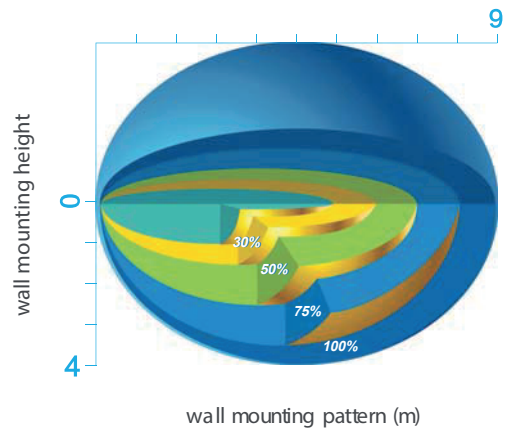After the hold time, then switch off automatically when no movement is detected.
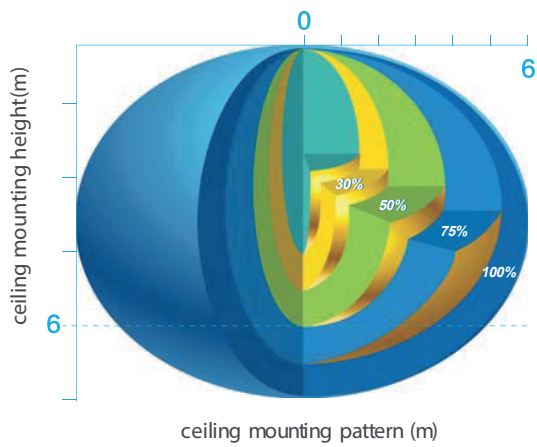
L
~220-240VAC
N

N Control Gear
L

N Control Gear
L

N Control Gear
L

HC005S
HYTRONIK ®
L N N L̸
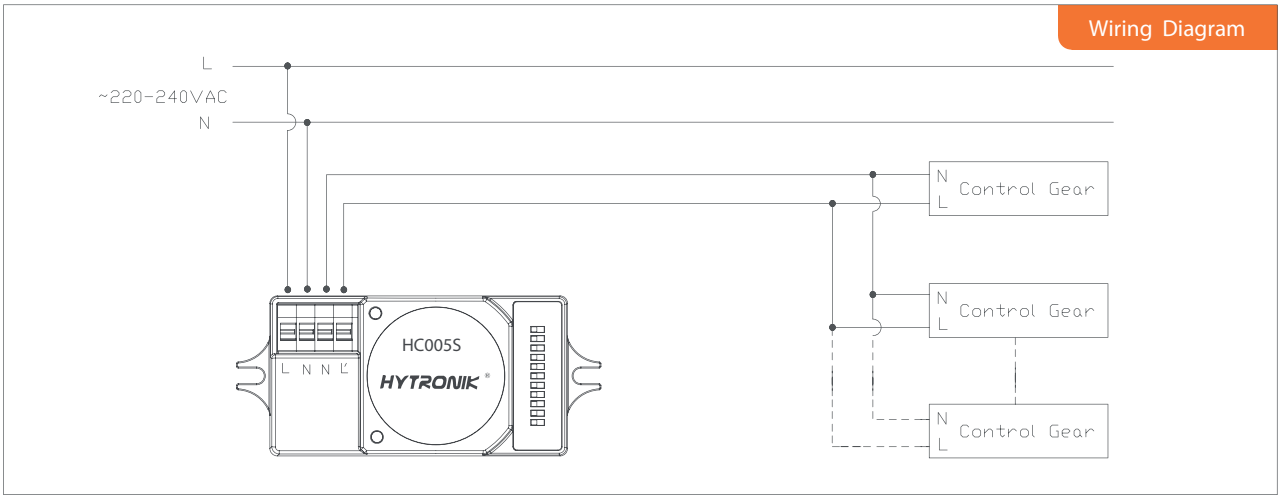
2 3-steps dimming control

with Tridonic switchDIM ballast / driver (Excel ballast/driver, corridor function) , this sensor can also achieve 3-steps dimm ing control...

L
~220-240VAC
N

switchDIM
N Control Gear
L

switchDIM
N Control Gear
L

switchDIM
N Control Gear
L

HC005S
HYTRONIK ®
L N N L̸

Detection Pattern

ceiling mounting height(m)

0

6

6

30%
50%
75%
100%

ceiling mounting pattern (m)

wall mounting height

9

0

4

30%
50%
75%
100%

wall mounting pattern (m)

Zero-cross relay operation

Designed in the software, sensor switches on/off the load right on the zero-cross point, to ensure the min. current passing through the relay contact point, and enbale the max. load and life-time of the relay.

zero-cross point

alternating current
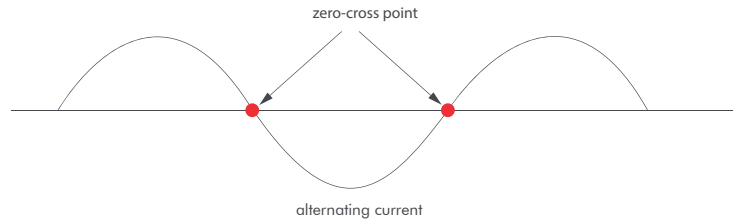
Settings

❶ Detection area

Detection area can be reduced by selecting the combination on the DIP switches to fit precisely for each specific application.

DETECTION AREA	1	2	3	
I	●	●	●	100%
II	○	●	●	75%
III	○	●	○	50%
IV	○	○	●	30%
V	○	○	○	Disable

❷ Hold-time

Hold-time means the time period you would like to keep the lamp on 100% after the person has left the detection area.

HOLD TIME	4	5	6	
I	●	●	●	5s
II	●	○	●	30s
III	●	○	○	1min
IV	○	●	●	5min
V	○	●	○	10min
VI	○	○	●	20min
VII	○	○	○	30min

❸ Daylight sensor

The daylight threshold can be set on DIP switches, to fit for particular application.

ATTENTION! The luminaire operation may be disturbed by moving objects in the detection field.

DAYLIGHT SENSOR	7	8	9	
I	●	●	●	Disable
II	○	●	●	50 Lux
III	○	●	○	20 Lux
IV	○	○	●	5 Lux
V	○	○	○	2 Lux

Technical Data

Operating voltage	220-240V
Switched power	Max.400W (capacitive) Max.1200W(resistive)
Standby power	<0.5W
Warmming-up time	20s
Detection area	30/50/75/100%, can be customized
Hold time	5S/30S/1min/5min/10min/15min/30min, can be customized
Daylight threshold	2~50lux daylight/twilight/darkness, can be customized
Microwave frequency	5.8GHz+/-75MHz
Microwave power	<0.2mw
Detection range	Max. (ØxH): 12m x 6m
Detection angle	30°~150°
Mounting height	Max.6m
Operating temperature	-35°C ~ +70 °C
IP rating	IP20 / IP65(mounting in Hytronik special box)
Certificates	Semko, EMC, CE, R&TTE

1. Due to the risk of interference, the sensors should be located at least 3 m from the next one
2. Due to the difference in construction, materials used and room equipment, the sensor operation test should be carried out in real conditions.
3. The light intensity [lux] values are for reference only to raise awareness of extreme configuration settings and may differ from the actual value measured by the sensor. It should be taken into account that the sensor enclosed under the luminaire diffuser will react to light differently compared to the exposed sensor (the enclosed sensor will receive less light than the exposed one, so the luminaire may remain on even if the light intensity in the room is higher than the selected level). More precise light detection can be provided by a sensor placed outside the lamp, e.g. in a mounting housing.

LENA LIGHTING | Clue

Bluetooth | Intertek | CB C€ emc RED UKCA

Product Description

HC005S/BT is a Bluetooth built-inmicrowave motion sensor with ON/OFF control. It is designed for professional lighting manufactures who would like to incorporate wireless control into their luminaires. HC005S/BT is suitable for any typical indoor applications such as office, classroom, car park, warehouse and other commercial/industrial areas. With Bluetooth wireless mesh networking, it makes communication much easier without any hardwiring, which eventually adds values to luminaires and saves costs for projects. Meanwhile, simple device setup and commissioning can be done device setup and commissioning can be done via Lena Lighting Clue app.

App Features

- Quick setup mode & advanced setup mode
- 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)
- Schedule to run scenes based on time and date
- Astro timer (sunrise and sunset)
- Staircase function (primary & secondary)
- Compatible with EnOcean BLE switches
- Internet-of-Things (IoT) featured
- Device firmware update over-the-air (OTA)
- Device social relations check
- Bulk commissioning (copy and paste settings)
- 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
- Continuous development in progress…

Hardware Features

- Photocell Advance
- ON/OFF control with load ratings of:
  - 300VA (capacitive)
  - 400W (resistive)
- Compact design
- Zero crossing detection circuit to reduce in-rush current and prolong relay lifetime
- Loop-in and loop-out terminals for efficient installation
- 5-year warranty

LENA LIGHTING | Clue

Smartphone app for both **iOS & Android** platform

Web app/platform:
www.iot.koolmesh.com

Fully support EnOcean self-powered switch module PTM215B (HBES01/W & HBES01/B)

Technical Specifications

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

Sensor Data	
Sensor principle	High Frequency (microwave)
Operation frequency	5.8GHz+/-75MHz
Transmission power	<0.2mW
Detection range	Max installation height: 6m Max detection range: 10m (diameter)
Detection angle	30°~150°

Environment	
Operation temperature	Ta: -20°C ~ +50°C
Case temperature(MAX.)	Tc:+75°
IP rating	IP20

Input & Output Characteristics	
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
Load ratings	300VA(capacitive), 400W(resistive)
Warming-up	20s

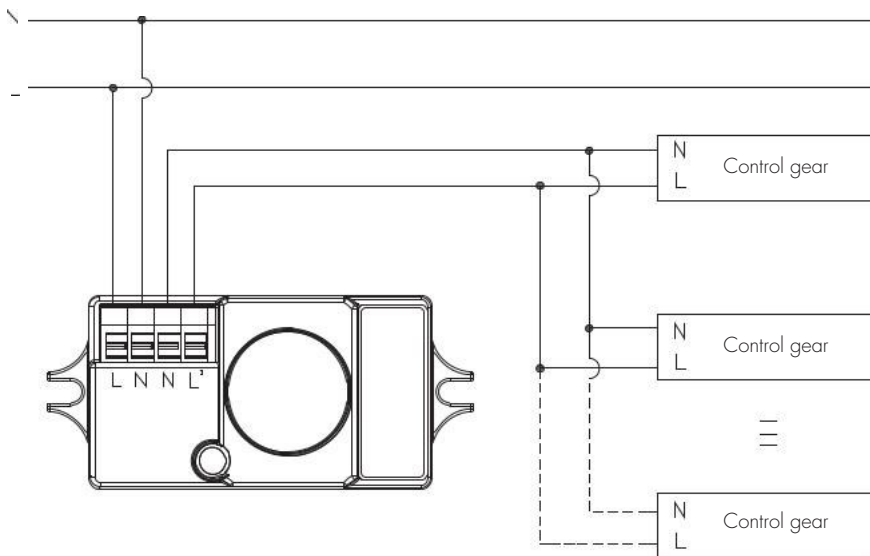| Safety & EMC	
EMC standard (EMC)	EN55015, EN61000, EN61547
Safety standard (LVD)	EN60669-1/2-1 AS/NZS 60669-1/-2-1
Radio Equipment (RED)	EN300400, EN301489-1/-3 EN301489-17, EN62479, EN300328
Certification	Semko,CB, CE , EMC, RED, RCM

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

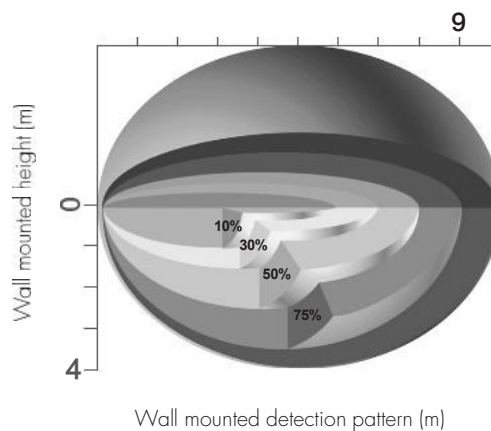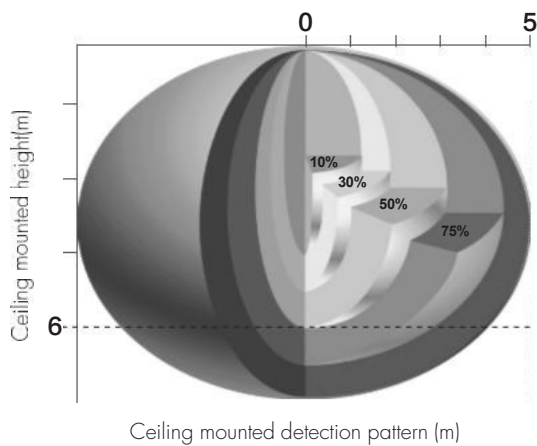## Mechanical Structure & Dimensions
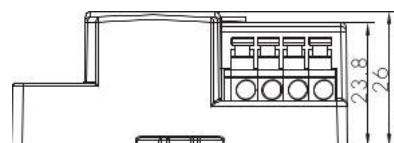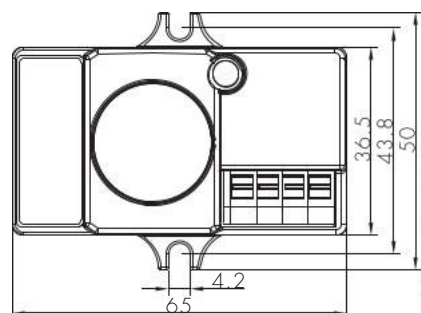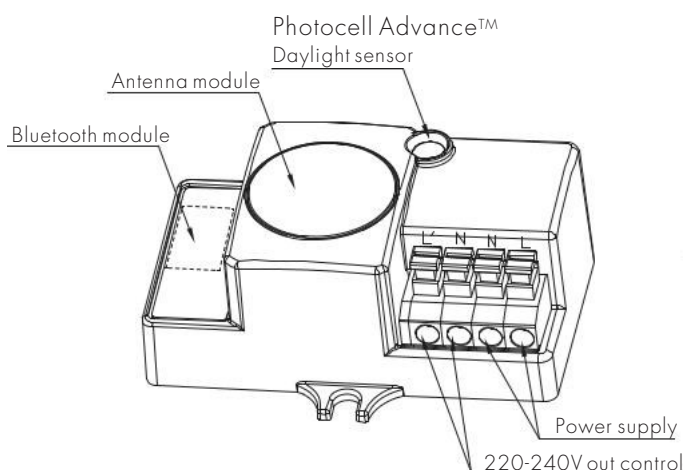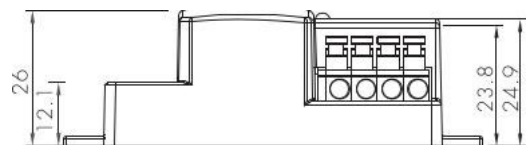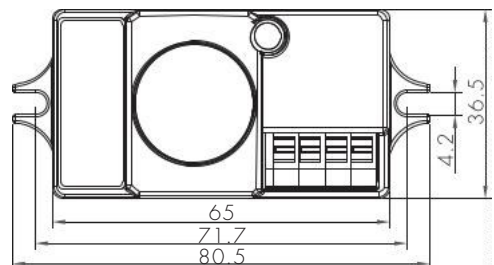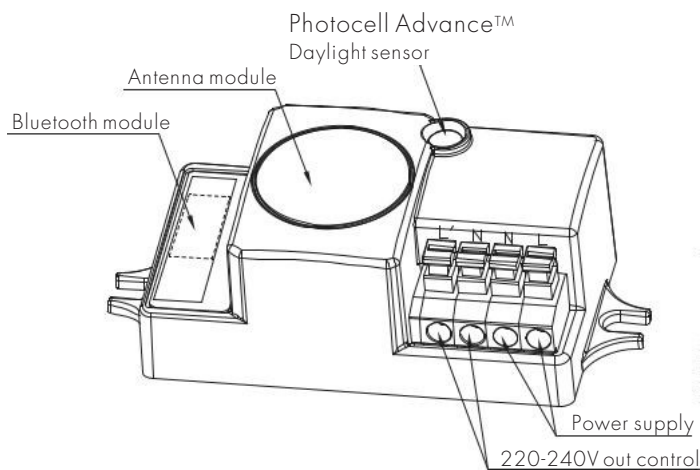
Sensor Installation: In order to ensure good product performance, please avoid sensor being installed at or well below the LED gear tray/aluminum plate. It is highly recommended to expose the antenna part and Photocell Advance™ daylight sensor part by making a cut-out hole. For the Bluetooth module part, the cut-out hole is also recommended when the luminaire design is in a very confined metal environment where the Bluetooth signal transmittion can be potentially blocked or affected.

Wiring Diagram

Detection Pattern

Ceiling mounted detection pattern (m)

Wall mounted detection pattern (m)

Additional Information / Documents

1. For full explanation of Hytronik Photocell Advance™ technology, please kindly refer to
   www.hytronik.com/download ->knowledge ->Introduction of Photocell Advance

2. To learn more about detailed product features/functions, please refer to
   www.hytronik.com/download ->knowledge ->Introduction of App Scenes and Product Functions

3. 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

4. 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

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

Product Description

HCD405/BT is a Bluetooth built-in microwave sensor with 30mA DALI power supply built in. It is designed for professional lighting manufactures who would like to incorporate wireless control into their luminaires. It is suitable for any typical indoor applications such as office, classroom, car park, warehouse and other commercial/industrial areas. With Bluetooth wireless mesh networking, it makes communication much easier without any hardwiring, which eventually adds values to luminaires and saves costs for projects. Meanwhile, simple device setup and commissioning can be done via Lena Lighting Clue app.

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- Device firmware update over-the-air (OTA)
- Device social relations check
- Bulk commissioning (copy and paste settings)
- 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
- Continuous development in progress…

Hardware Features

- Photocell Advance
- DALI Dimmable with 30mA DALI broadcast output for up to 15 LED drivers
- Plug'n'Play for flexible installation and cost saving assemble
- Support to control DT8 LED drivers
- Zero crossing detection circuit reduces in-rush current and prolongs relay life
- 5-year warranty

LENA LIGHTING | Clue

Smartphone app for both **iOS & Android** platform

Web app/platform: www.iot.koolmesh.com

Fully support EnOcean self-powered switch module PTM215B (HBES01/W & HBES01/B)

Technical Specifications

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

Sensor Data	
Sensor principle	High Frequency (microwave)
Operation frequency	5.8GHz+/-75MHz
Transmission power	<0.2mW
Detection range(Max.)	Max installation height: 6m Max detection range: 10m (diameter)
Detection angle	30°~150°

| Input & Output Characteristics	
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
Load ratings:	30mA (max. 15 devices)
Warming-up	20s

Safety & EMC	
EMC standard (EMC)	EN55015, EN61000, EN61547
Safety standard (LVD)	EN60669-1, EN60669-2-1
RED	EN300328, EN301489-1/-17
Certification	Semko, CB, CE , EMC, RED, RCM

Environment	
Operation temperature	Ta: -20°C ~ +55°C
Case temperature (Max.)	Tc: +75°C
IP rating	IP20

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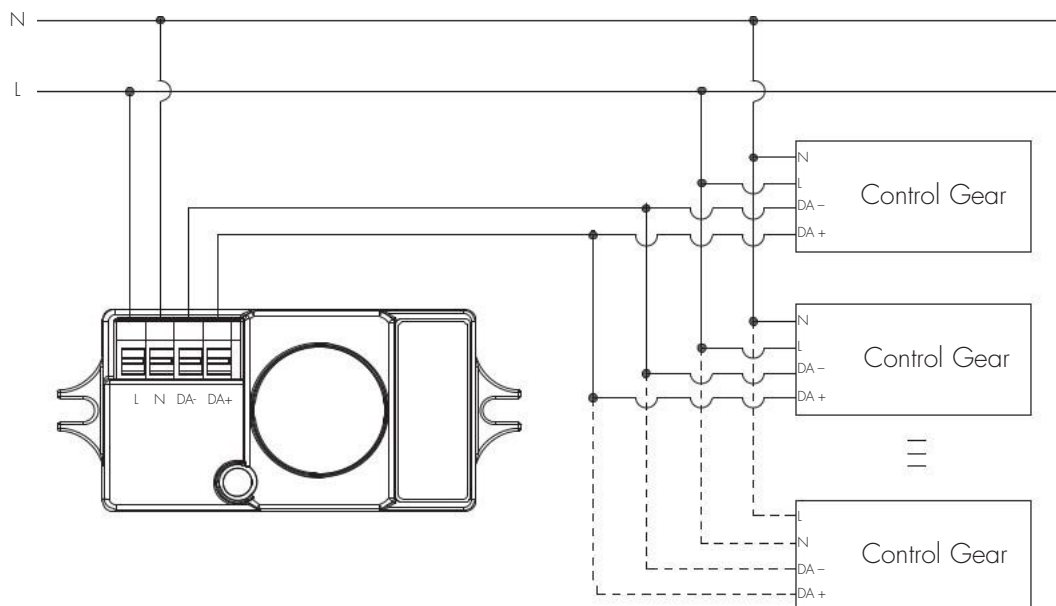
Mechanical Structure & Dimensions

Wire Preparation

0.75~1.5mm

8mm
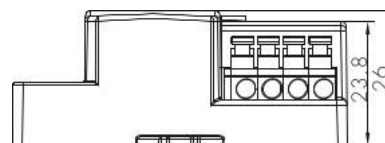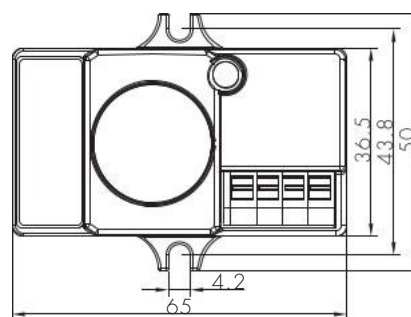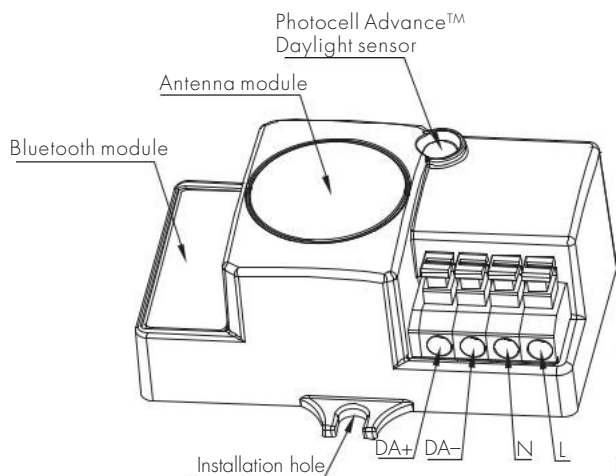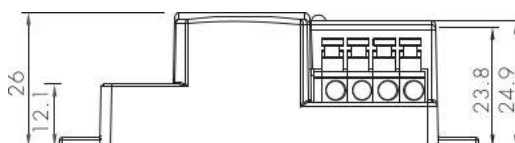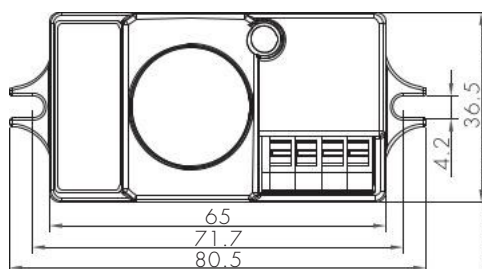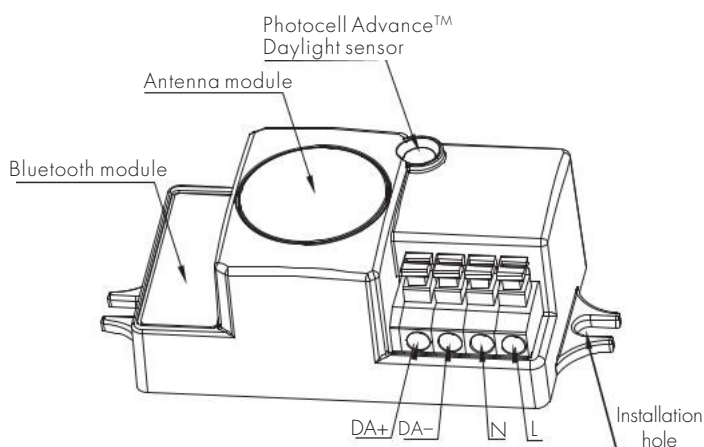
To make or release the wire from the terminal,
use a screwdriver to push down the button.

1. 200 metres (total) max. for 1mm² CSA (Ta = 50℃)
2. 300 metres (total) max. for 1.5mm² CSA (Ta = 50℃)

Wiring Diagram

N

L

L N DA- DA+

| | | Control Gear |
|N|L|DA −|DA +|

Control Gear

Control Gear

Detection Pattern

0   5

Ceiling mounted height(m)

10%
30%
50%
75%

6

Ceiling mounted detection pattern (m)

9

Wall mounted height (m)

0

10%
30%
50%
75%

4

Wall mounted detection pattern (m)

Additional Information / Documents

1. For full explanation of Hytronik Photocell Advance™ technology, please kindly refer to
   www.hytronik.com/download ->knowledge ->Introduction of Photocell Advance

2. To learn more about detailed product features/functions, please refer to
   www.hytronik.com/download ->knowledge ->Introduction of App Scenes and Product Functions

3. 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

4. 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

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

LENA LIGHTING

Technical Data

Input Characteristics

Model No.	HIM31
Mains voltage	220-240VAC 50/60Hz
Stand-by power	<1W
Load ratings:	
Capacitive	800VA
Resistive	1000W
Warming-up	30s

Sensor Data

Model No.	HIM31
Sensor principle	High Frequency (microwave), PIR
Operation frequency	5.8GHz +/- 75MHz (HF)
Transmission power	<0.2mW (HF)
Sensor mode	4 modes: PIR, HF, PIR+HF, PIR/HF
Detection range	Max. ($\varnothing$ x H) 18m x 15m
Detection angle	360°

Safety and EMC

EMC standard (EMC)	EN55015, EN61000
Safety standard (LVD)	EN60669, AS/NZS60669
Radio Equipment (RED)	EN300440, EN301489-1, EN62479
Certification	Semko, CB, CE , EMC, RED

Environment

Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP65

CE emc RED Ⓢ ⊘ CB IP65

Mechanical Structures and Installations

For more details, please refer to user manual.

A. Ceiling mount

LED indicator
Daylight sensor
PIR
Infrared receiver
Rotary switch for programing
Sensor module
Cable entry
Installation rack

91.5 80.7 75 4.1 4.1 66.6 81.5
73.5 59.3 57.3 47.5 24.5
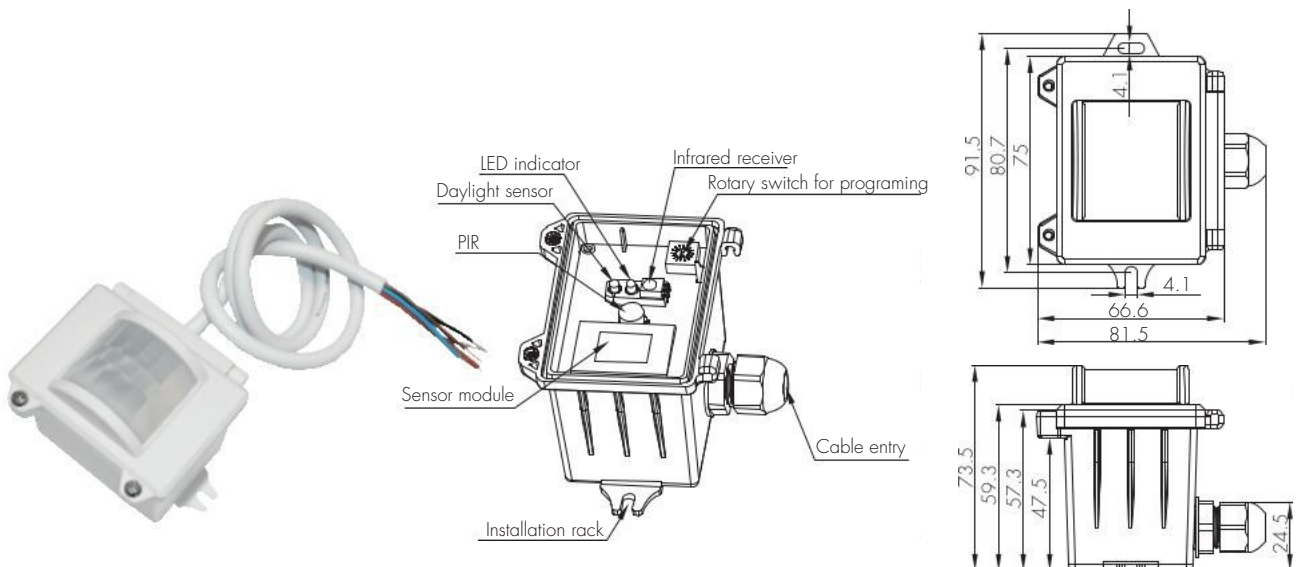
B. Screw to the Luminaire by conduit

LED indicator
Daylight sensor
Infrared receiver
Rotary switch for programing
PIR
Sensor module
Cable entry

59.6
43
43.8
75
0.825″
64
66.6
89.9
73.5
59.3
57.3
47.5
35.2
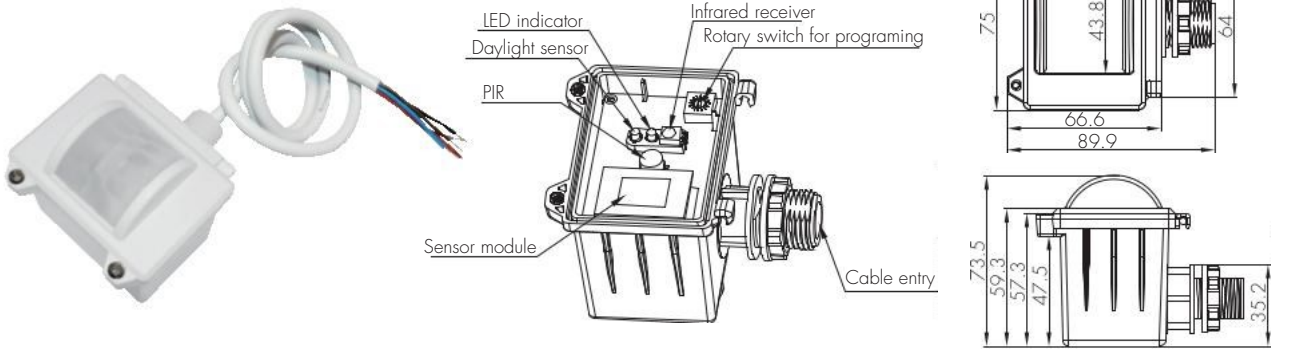
C. Attach to the shade by clamp
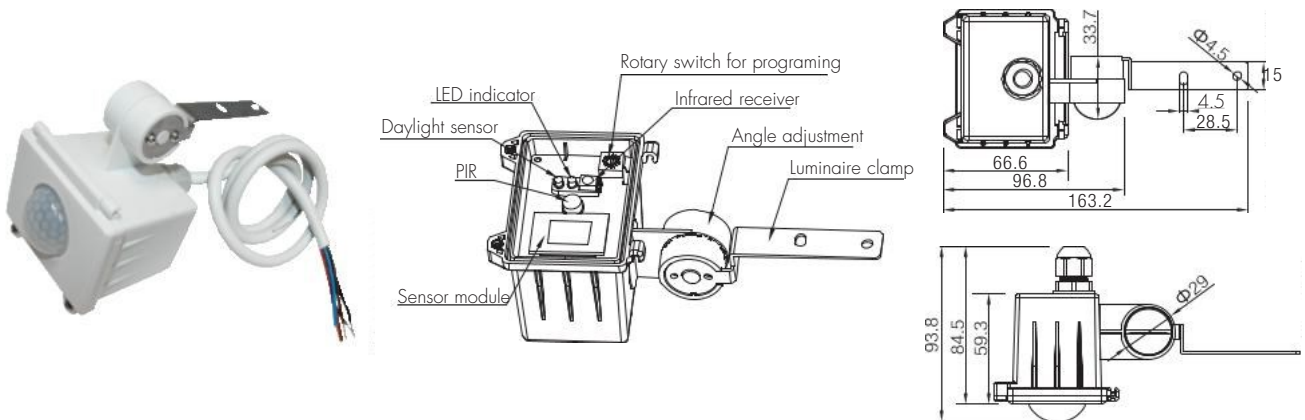
Rotary switch for programing
LED indicator
Daylight sensor
Infrared receiver
Angle adjustment
PIR
Luminaire clamp
Sensor module

33.7
Φ4.5
15
4.5
28.5
66.6
96.8
163.2
93.8
84.5
59.3
Φ29

Note:We recommend the mounting distance between sensor to sensor should be more than 2m to prevent sensors from false-triggering.

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   **HF**

* 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.

Advantage   **PIR**

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

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.

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 via remote control:

* 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;

Functions and Features

1 Intelligent Photocell (daylight detection prior to motion detection)

The built-in photocell will also automatically turn off the light when the ambient natural light exceeds the programmed lux level for more than 5min, regardless of whether motion is detected or not. This feature can be disabled if it is required that the fixture stays at dimmed level during absence.

With sufficient natural light, the light does not switch on when presence is detected.

With insufficient natural light, the sensor switches on the light automatically when presence is detected.

The sensor switches off the light when natural light is sufficient, even with presence.

Note: if the stand-by time is preset at "+∞", the fixture never switches off but stays at preset dimming level even when natural light is sufficient.

2 Tri-level Control (Corridor Function)

Hytronik builds this function inside the motion sensor to achieve tri-level control, for some areas which require a light change notice before switch-off. The sensor offers 3 levels of light: 100%-->dimmed light (natural light is insufficient) -->off; and 2 periods of selectable waiting time: motion hold-time and stand-by period; Selectable daylight threshold and freedom of detection area.

3 Zero-cross Relay Operation

Designed in the software, sensor switches on/off the load right at the zero-cross point, to ensure that the in-rush current is minimised, enabling the maximum lifetime of the relay.
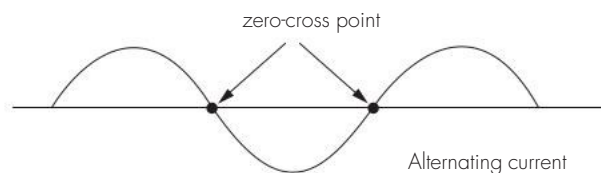
zero-cross point

Alternating current

Rotary Switch Preset

A rotary switch is built inside the sensor for scene selection / fast programming. Total 16 channels are available:

Rotary switch preset

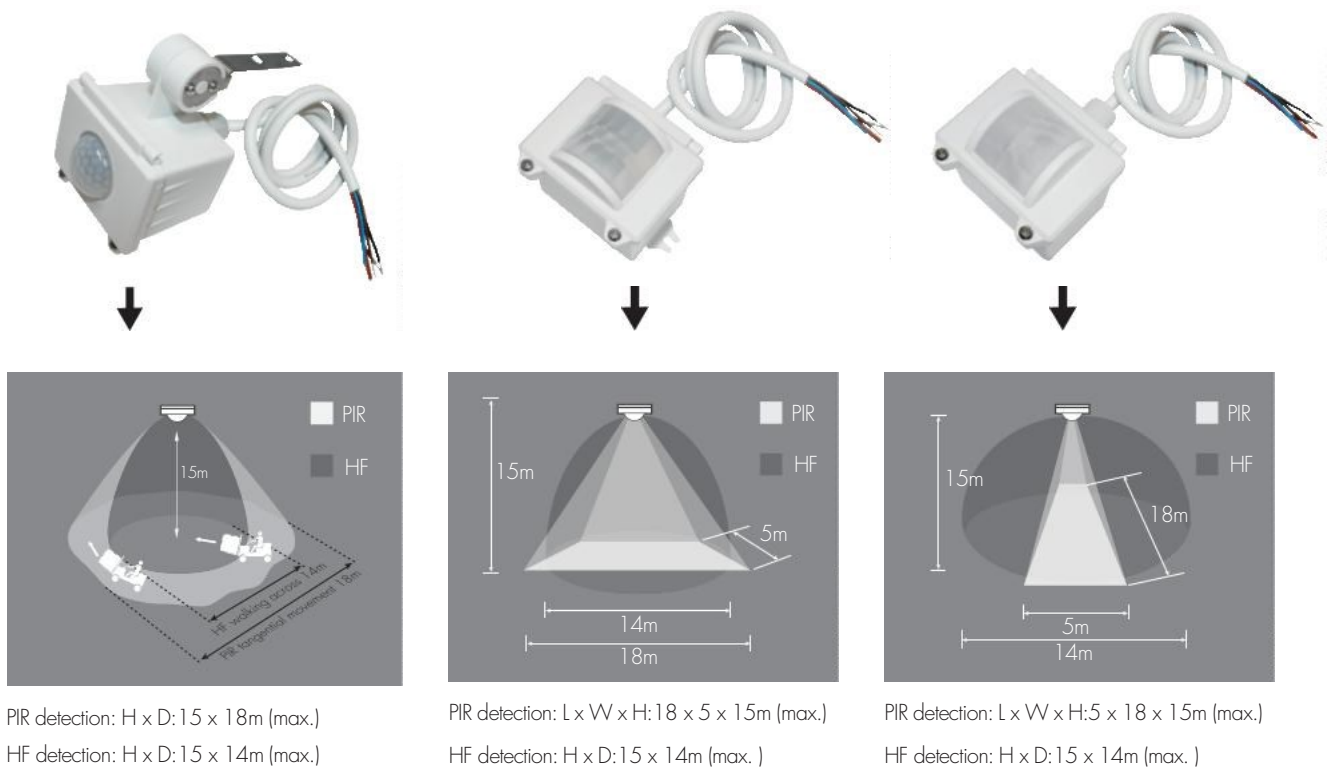*Note: settings can also be changed by remote control HRC-11. The last action controls.*

Channel	Detection range	Hold-time	Daylight sensor	Stand-by time	Stand-by dim level
0	100%	5s	Disable	10s	10%
1	100%	1min	2Lux	5min	10%
2	100%	5min	10Lux	10min	10%
3	100%	5min	30Lux	30min	10%
4	100%	5min	10Lux	0s	Disable
5	100%	5min	30Lux	+∞	10%
6	100%	5min	Disable	+∞	30%
7	100%	10min	2Lux	10min	10%
8	100%	10min	10Lux	30min	10%
9	100%	10min	30Lux	+∞	10%
A	100%	10min	Disable	+∞	30%
B	75%	10min	30Lux	+∞	10%
C	50%	10min	10Lux	+∞	10%
D	100%	30min	50Lux	+∞	10%
E	100%	30min	Disable	+∞	30%
F	100%	5s	2Lux	10s	10%

Wiring Diagram
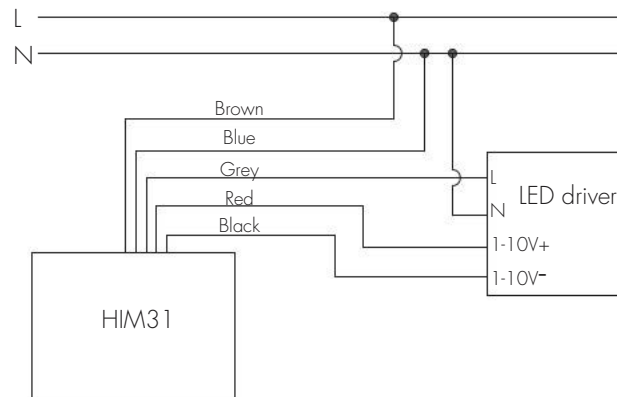
End user can choose the suitable PIR lens in real application to fulfill various requirements. Three options are offered for selection:

PIR detection: H x D: 15 x 18m (max.)

HF detection: H x D: 15 x 14m (max.)

PIR detection: L x W x H: 18 x 5 x 15m (max.)

HF detection: H x D: 15 x 14m (max.)

PIR detection: L x W x H: 5 x 18 x 15m (max.)

HF detection: H x D: 15 x 14m (max.)

* For single person walking across, the detection range is reduced by 1/3.

Additional Information / Documents

1. 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

2. 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

3. Regarding Hytronik standard guarantee policy, please refer to
www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy