IP65 High Bay Dual Sense Sensor

DUALsense™

HYTRONIK®

HIM30
HF and PIR, On/off Control with Remote Control

CE emc RED CB IP65

Technical Data

Input Characteristics

Model No.	HIM30
Mains voltage	220-240VAC 50/60Hz
Stand-by power	<1W
Load ratings:	800VA (Capacitive) 1000W (Resistive)
Max withstandable in-rush current	120A@160μs
Warming-up	30s

Sensor Data

Model No.	HIM30
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. (Ø x H) 10m x 12m
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

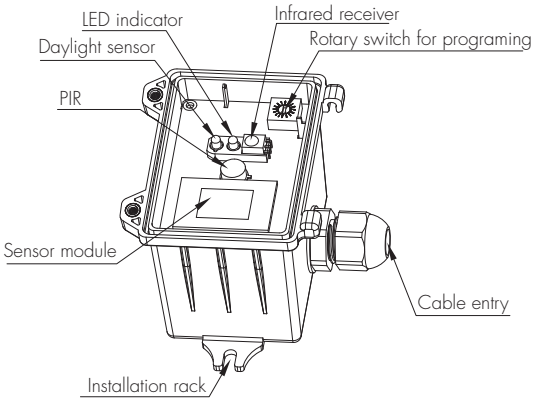
Environment

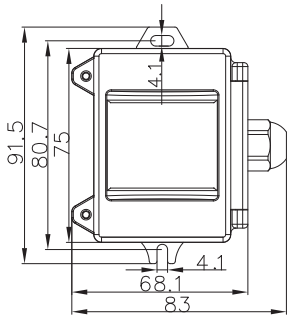
Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP65

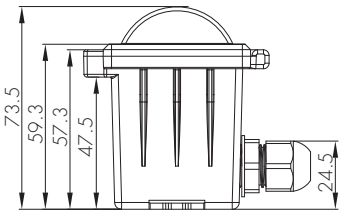
Mechanical Structures and Installations

For more details, please refer to user manual.

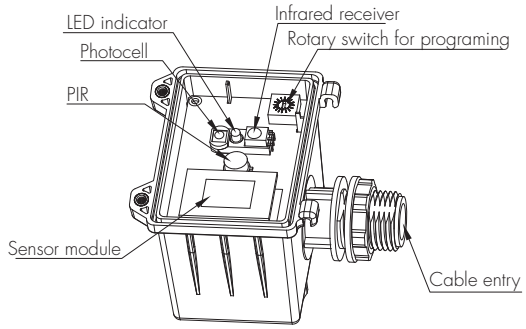
A. Ceiling mount (HIM30A)

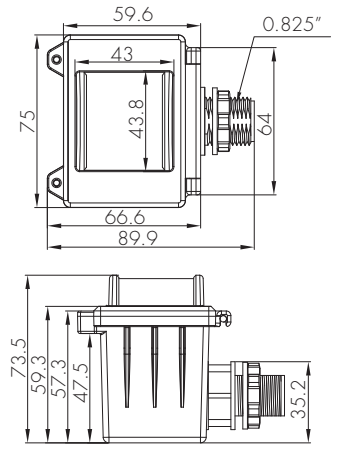




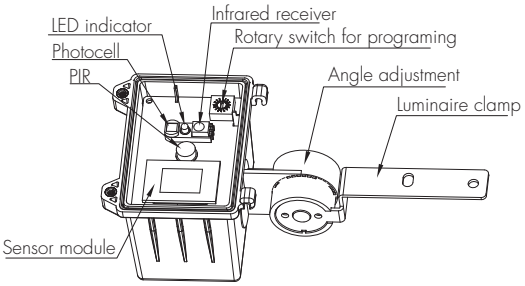


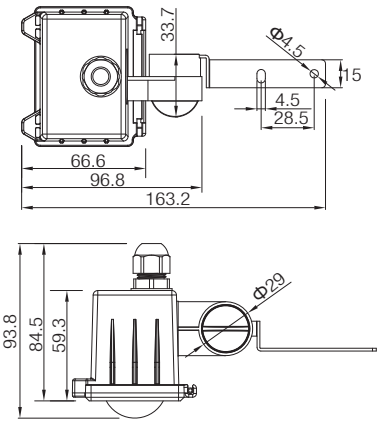
B. Screw to the Luminaire by conduit (HIM30B)





C. Attach to the shade by clamp (HIM30C)





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.

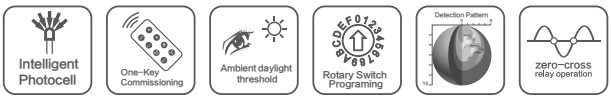
Disadvantage

* 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 remote control:

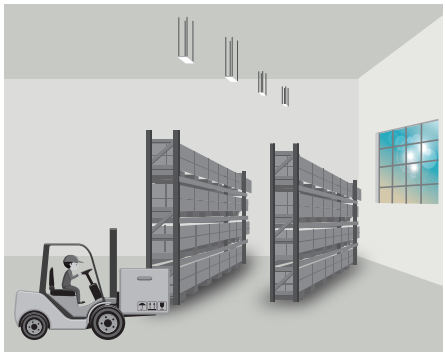
* HF: Microwave only
* PIR: PIR mode only
* HF+PIR: both PIR and microwave mode, to decrease the detection capability and detection area. Only when both detections are activated, the motion is considered valid. This is to prevent the sensor from false trigger by heat source, air conditioner, ventilation 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.



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.

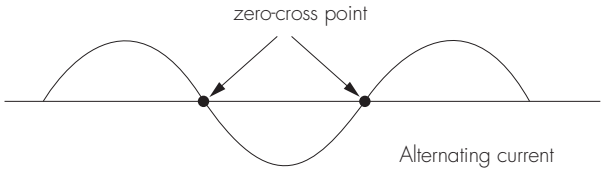
The sensor switches off the light when natural light is sufficient, even with presence.

2 On/off Control

This sensor is a motion switch, which turns on the light upon detection of motion, and turns off after a pre-selected hold-time when there is no movement. A daylight sensor is also built in to prevent the light from switching on when there is sufficient natural light.

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.



Rotary Switch Preset

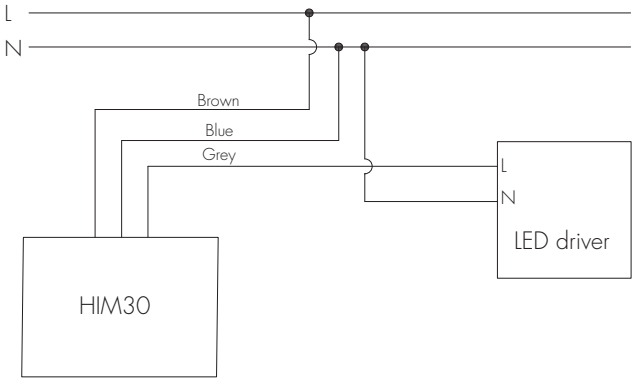
A rotary switch is built inside the sensor for scene selection / fast programming. Total 16 channels are available:

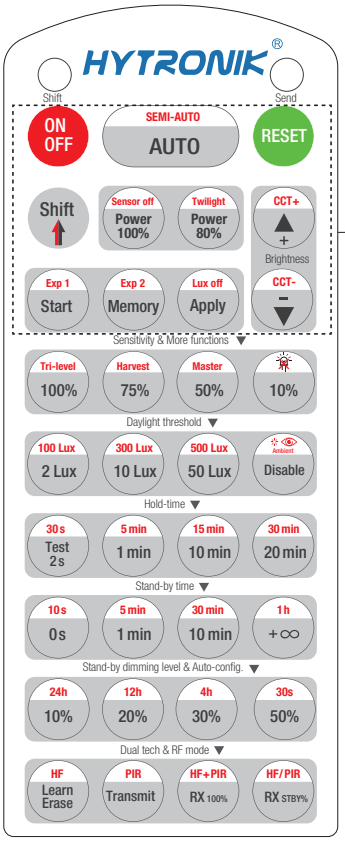
Rotary switch preset

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

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

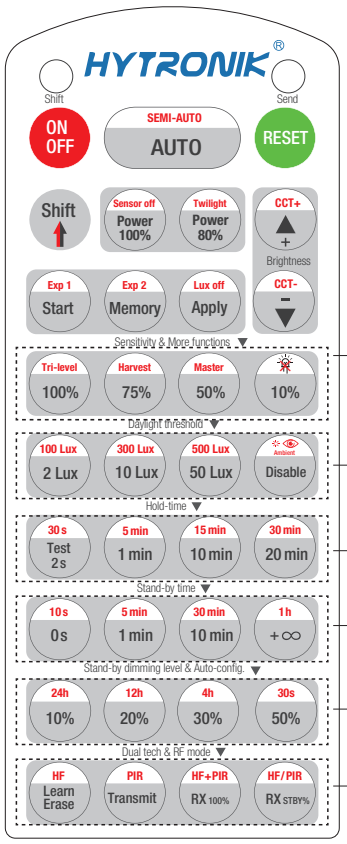
Wiring Diagram





HRC-11

ON OFF	Press button "ON/OFF" to select permanent ON or permanent OFF mode. * Press button "AUTO"/ "RESET" to exit this mode.
RESET	Press button "RESET", perform DIP Switch/Rotary Switch settings. *The default settings are: Detection range 100%; Hold-time 5min; Daylight threshold disable; HF/PIR detection mode.
Shift	Press button "Shift", the LED on the top left corner is on to indicate mode selection. All values / settings in RED are valid for 20 seconds.
AUTO	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	Press button "AUTO" to initiate automatic mode. The sensor starts working and all settings remain as before the light is switched ON/OFF. *Note: "Semi-auto" function is disabled.*
Power 100% 80%	This key is not appliable on this product.
Sensor off Twilight	This key is not appliable on this product.
	This key is not appliable on this product.
CCT+ CCT-	This key is not appliable on this product.
Start Memory Apply	1. Press button "Start" to program. 2. Select the buttons in "Detection range", "Daylight threshold", "Hold-time", "Stand-by time", 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 +∞, the steps should be:* *Press button "Start", button "100%", "Disable", "Shift", "5min", "Shift", "+∞", "Memory".* *By pointing to the sensor unit(s) and pressing "Apply", all settings are passed on the sensor(s).*
Lux off	The "Lux off" function is activated as default. When the ambient lux level exceeds the target level continuously for more than 5 minutes, the lights will be turned off. In AUTO /SEMI-AUTO/Twilight modes, to disable "Lux off": 1. Press "Shift" button first, the red LED on. 2. Press "Lux off" button, the "Lux Off" function will be deactivated. The lights will not turn off even when the ambient lux level exceeds the target lux level but will dim down the brightness to the stand-by time level. *For Sensor LED indicator references: 1.Fast flash 1s, "Lux off" function activated.* *2.Remains on 2s, "Lux off" function deactivated.*
Exp 1 Exp 2	"Exp" refer to Expansion, these two buttons are reserved functions and pending future development.

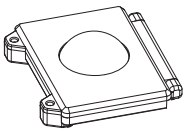
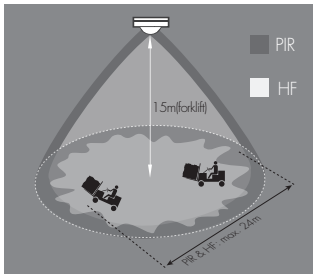
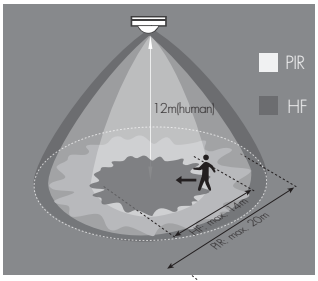
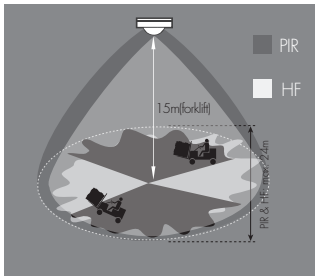
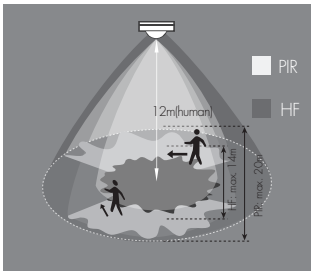
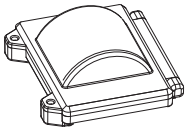
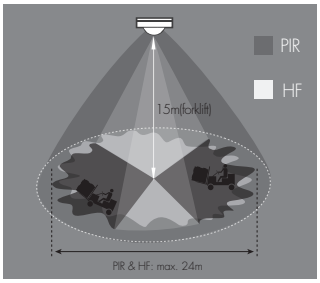
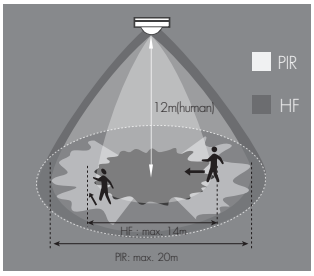


HRC-11

Sensitivity & More functions	
100% 75% 50% 10%	In AUTO /SEMI-AUTO modes, press buttons in zone "Detection range" to set detection range at 100%/75%/50%/10%. *Note: only work for HF sensitivity*
Tri-level Harvest	This key is not appliable on this product.
Master	This key is not appliable on this product.
Daylight threshold	
2 Lux 100 Lux 10 Lux 300 Lux 50 Lux 500 Lux Disable	Press buttons in zone "Daylight threshold" to set daylight sensor at 2Lux/ 10Lux / 50Lux / 100Lux / 300Lux/500Lux / Disable. *Note: To set daylight sensor at 100Lux / 300Lux/500Lux , press "Shift" button first.*
Ambient	1. Press button "Shift", the red LED on. 2. Press button "Ambient", the surrounding lux level is sampled and set as daylight threshold / target Lux level.
Hold-time mode	
Test 2s 30 s 1 min 5 min 10 min 15 min 20 min 30 min	In AUTO /SEMI-AUTO modes, 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 mode	
0s 10 s 1 min 5 min 10 min 30 min +∞ 1h	Press buttons in zone "stand-by time", the stand-by period time can be extended by overlaying the time in the "hold-time" zone with the time in"stand-by time" zone. For example, press button "5 min" in "hold-time" zone + button "30 min" in "stand-by time" zone, the stand-by period time is total of 35 minutes. *Note: 1. To set stand-by time at 10s/ 5min / 30min / 1h, press "Shift" button first.* *2. When "Lux off" is activated as default, press button"+∞", the product is a daylight sensor and will be turned off when the ambient lux level exceeds the target lux level, no longer motion detected. When "Lux off" function be deactivated, "+∞" means the fixture will remains on.*
Stand-by dimming level & Auto-config.	
10% 20% 30% 50%	This key is not appliable on this product.
24h 12h 30s 4h	This key is not appliable on this product.
Dual tech & RF mode	
Learn Erase	This key is not appliable on this product.
Transmit	This key is not appliable on this product.
HF+PIR HF/PIR HF PIR	1.Press button "Shift" ,the red LED on. 2. Choose one of the four detection mode "HF only", "PIR only", "HF& PIR" or" HF/PIR".

Detection Pattern

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

		Detection pattern for forklift	Detection pattern for human
L1		 PIR detection: Ø = 24m (max.) HF detection: Ø = 24m (max.)	 HF detection: Ø = 14m (max.) PIR detection: Ø = 20m (max.)
L2		 PIR detection: Ø = 24m (max.) HF detection: Ø = 24m (max.)	 HF detection: Ø = 14m (max.) PIR detection: Ø = 20m (max.)
L3		 PIR detection: Ø = 24m (max.) HF detection: Ø = 24m (max.)	 HF detection: Ø = 14m (max.) PIR detection: Ø = 20m (max.)

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