Installation and Instruction Manual

HYTRONIK®

FLUSH MOUNT PIR MOTION SENSOR

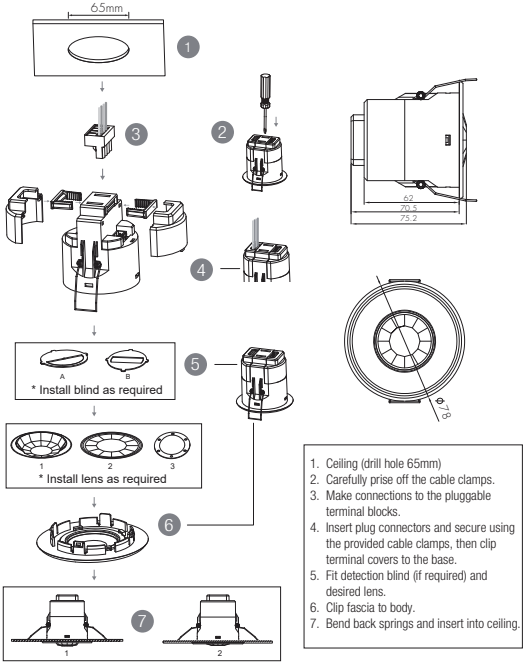
Two DALI Channels Output

HIR32 HIR32/R
HIR32/H HIR32/RH

1. Technical Specifications

Mains voltage	220~240VAC 50/60Hz
Stand-by power	<0.5W
DALI Channel 1	Max. 25pcs devices, 50mA
DALI Channel 2	Max. 15pcs devices, 30mA
Warming-up	Appr. 20s
Sensor principle	PIR detection
Detection range (Max.)* HIR32	Installation Height : 6m Detection Range (Ø) :9m
Detection range (Max.)* HIR32/R	Installation Height : 6m Detection Range(Ø): 10m
Detection range (Max.)* HIR32/H	Installation height: 15m (forklift) 12m (person) Detection range (Ø): 24m
Detection range (Max.)* HIR32/RH	Installation height: 15m (forklift) 12m (person) Detection range (Ø): 40m
Detection angle	360°
Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP20
EMC standard (EMC)	EN55015, EN61000
Safety standard (LVD)	EN60669, AS/NES60669
Certification	CB, CE , EMC, RCM

2. Installation

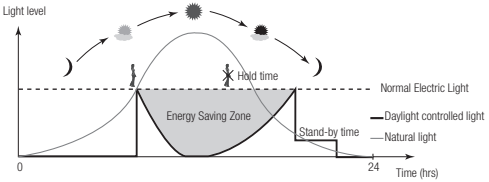


1. Ceiling (drill hole 65mm)
2. Carefully prise off the cable clamps.
3. Make connections to the pluggable terminal blocks.
4. Insert plug connectors and secure using the provided cable clamps, then clip terminal covers to the base.
5. Fit detection blind (if required) and desired lens.
6. Clip fascia to body.
7. Bend back springs and insert into ceiling.

3. Functions

3.1 Daylight Harvest (Daylight Regulating)

Daylight sensor measures the available surrounding natural light, calculates how much electrical light is needed to reach the total lux expected. The demand is given to the LED driver by DALI signal, so as to deliver the needed amount of electric light.



3.2 Lux Off Function

The built-in daylight sensor can measure ambient natural light and switch off the fixture automatically whenever artificial light is not required (natural light lux level exceeds daylight threshold).

3.3 Dual DALI Output Control

Two channels of self-powered DALI output are available on HIR32 for connection of two groups of LED drivers. Please note that both channels share the same control settings sent from the occupancy sensor and photocell.

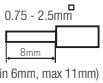
System Capacity	DALI channel	DALI Driver < 2mA
HIR32 includes 2 channels total 80mA max. DALI PSU	DALI PSU Channel 1 (max 50mA)	25 pcs
	DALI PSU Channel 2 (max 30mA)	15 pcs

3.4 Manual Override (Push Function)

Three push terminals (P1, P2, P3) are available on the HIR32 for end-users to switch on/off, change the light brightness, colour temperature of the two DALI channels temporarily. The settings will revert to daylight harvest mode after sensor time-out.

* Long push on P1: adjust the hold-time light brightness of DALI channel 1;
  Short push (<1s) on P1: on/off function
* Long push on P2: adjust the hold-time light brightness of DALI channel 2;
  Short push (<1s) on P2: on/off function
* Long push on P3: cycles through colour tuning on both channels. (work with DT8 LED driver only)
  Short push (<1s) on P3: resume automatic daylight harvest mode .

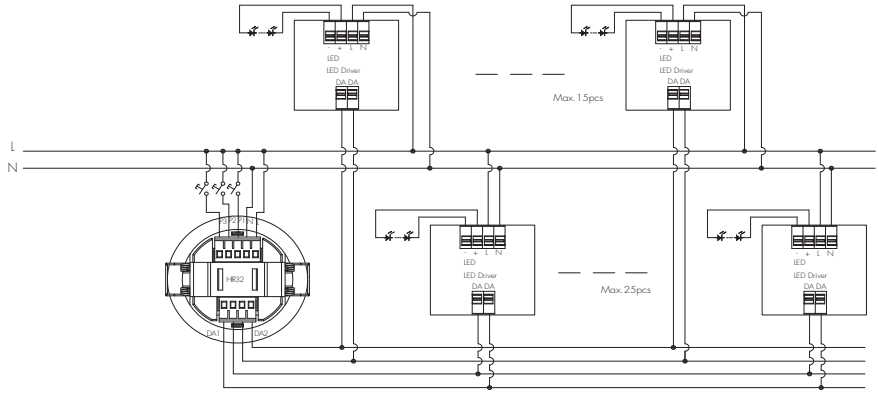
Wire Preparation



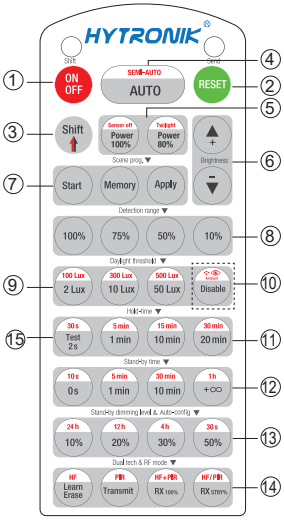
(min 6mm, max 11mm)

Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor.

4. Wiring Diagram



5. Description of the Button Functions (remote control HRC-11)



HRC-11

Permanent ON/OFF [button①]
Press button ①, to select permanent ON or permanent OFF mode.
* Press button ②/④to to quit this mode.

RESET[button ②]
Press button ②, all settings go back to default values as below:
Hold-time 5min, Daylight sensor 100Lux, Stand-by time: 10min, Stand-by dimming level: 20%

Test Mode[button⑮]
This button is for testing purpose only. The sensor goes to test mode (hold-time is 2s) after commissoning, meanwhile the stand-by period and daylight sensor are disabled.
* This mode can be ended by pressing "reset", or any button of "scene mode" and "hold-time". The sensor settings are changed accordingly.

Shift [button③]
Press button③, the LED on the top left corner is on to indicate mode selection. All values / settings in RED are in valid for 20 seconds.

Auto Mode [button④]
Press button④to initiate automatic mode. The sensor starts working and all settings remain as before the light is switched ON/OFF.
Note: the function of Semi-auto is disabled.

Semi-auto Mode [button③&④]
1. Press button③Shift (the red LED is on for indication).
2. Press button④to initiate semi-auto mode. The fixture is manually on by push-switch and automatically off in semi-auto mode.

Power output [button⑤]
Press button⑤, the light output shifts between 80% and 100%.
Note: the function of "Sensor off" and "Twilight" are disabled.

Brightness +/- [button⑥]
Press button⑥to adjust the light brightness and color temperature between 10%~100%.

Scene prog. [zone⑦] (One-key-commissioning)
1. Press button "Start" to program.
2. Select the buttons in⑧"Detection range",⑨/⑩"Daylight threshold", ⑪"Hold time" to set all parameters.
3. Press button⑦"Memory" to save all the settings programmed in the remote control.
4. Press button⑦"Apply" to set the settings to each sensor unit(s).

For example, to set detection range 100%, daylight threshold Disable, hold time 5min, the steps should be:
Press button⑦Start, button⑧100%,⑩Disable,③Shift,⑪5min, ⑦Memory. By pointing to the sensor unit(s) and pressing⑦Apply, all settings are passed on the sensor(s).

Detection range [zone⑧]
These two buttons are disabled.

Daylight threshold [zone⑨]
Press buttons in zone⑨to set daylight sensor at 2Lux/ 10Lux / 50Lux / 100Lux / 300Lux / 500Lux / Disable.
Note: To set daylight sensor at 100Lux / 300Lux / 500Lux, press ③Shift button first.

Ambient daylight threshold [button⑩]
1. Press button③Shift, the red LED starts to flash.
2. Press button⑩, the ambient lux level is sampled and set as the new daylight threshold / target Lux level.

Hold time [zone⑪]
Press buttons in zone⑪to 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 button ③Shift at first.
2. 2s is for test purpose only, stand-by period and daylight sensor settings are disabled in this mode.
*To exit from Test mode, press button②or any button in zone⑪.

Stand-by time [zone⑫]
Press buttons in zone⑫to set the stand-by period at 0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞.
Note: "0s" means on/off control; "+∞" means bi-level control, 100% on when motion detected, and remains at the stand-by dimming level when no presence after hold-time.

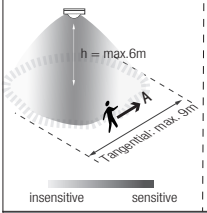
Stand-by dimming level [zone⑬]
Press buttons in zone⑬to set the stand-by dimming level at 10% / 20% / 30% / 50%.
Note: the function of 24h/12h/4h/30s are disabled.

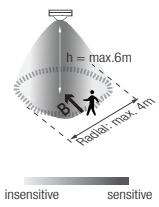
Dual tech & RF mode [zone⑭]
All buttons in zone⑭are disabled.

6. Detection Pattern & Optional Accessories

1. HIR32 (Low-bay)

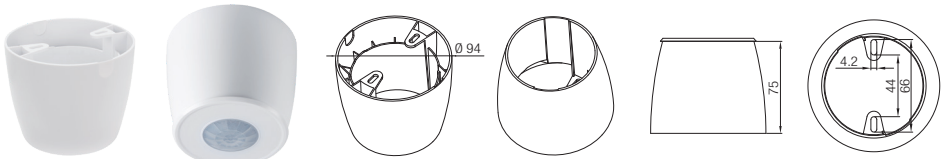
HIR32: Low-bay flat lens detection pattern for **single person** @ Ta = 20ºC
(Recommended ceiling mount installation height **2.5m-6m**)



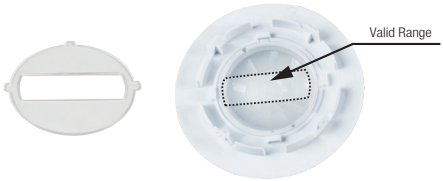


Mount height	Tangential (A)	Radial (B)
2.5m	max 50m² (Ø = 8m)	max 13m² (Ø = 4m)
3m	max 64m² (Ø = 9m)	max 13m² (Ø = 4m)
4m	max 38m² (Ø = 7m)	max 13m² (Ø = 4m)
5m	max 38m² (Ø = 7m)	max 13m² (Ø = 4m)
6m	max 38m² (Ø = 7m)	max 13m² (Ø = 4m)

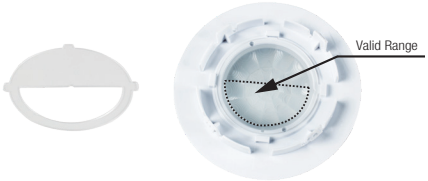
Optional Accessory --- Ceiling/Surface Mount Box: HA03



Optional Accessory --- Blind Insert for Blocking Certain Detection Angles



Blind Option 1 --- Aisle Detection

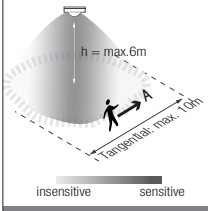


Blind Option 2 --- 180º Detection

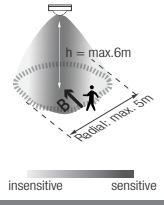
2. HIR32/R (Reinforced Low-bay)

HIR32/R: Low-bay convex lens detection pattern for **single person** @ Ta = 20ºC
(Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement

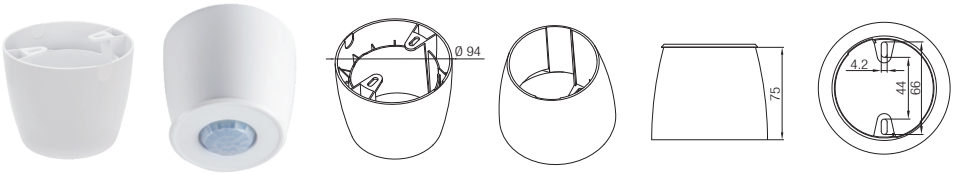


B: Radial movement

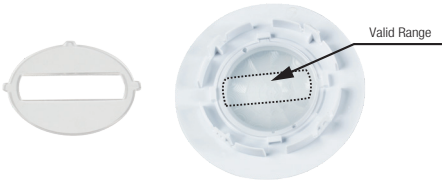


Mount height	Tangential (A)	Radial (B)
2.5m	max 79m² (Ø = 10m)	max 20m² (Ø = 5m)
3m	max 79m² (Ø = 10m)	max 20m² (Ø = 5m)
4m	max 64m² (Ø = 9m)	max 20m² (Ø = 5m)
5m	max 50m² (Ø = 8m)	max 20m² (Ø = 5m)
6m	max 50m² (Ø = 8m)	max 20m² (Ø = 5m)

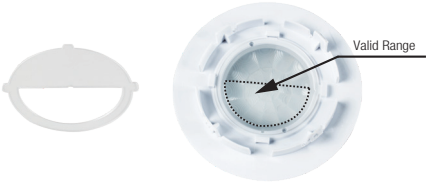
Optional Accessory --- Ceiling/Surface Mount Box: HA03



Optional Accessory --- Blind Insert for Blocking Certain Detection Angles



Blind Option 1 --- Aisle Detection

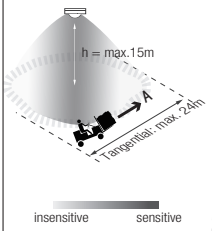


Blind Option 2 --- 180º Detection

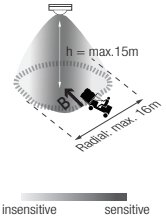
3. HIR32/H (High-bay)

HIR32/H: High-bay lens detection pattern for **forklift** @ Ta = 20ºC
(Recommended ceiling mount installation height **10m-15m**)

A: Tangential movement



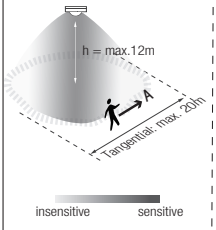
B: Radial movement



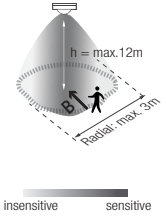
Mount height	Tangential (A)	Radial (B)
10m	max 380m² (Ø = 22m)	max 201m² (Ø = 16m)
11m	max 452m² (Ø = 24m)	max 201m² (Ø = 16m)
12m	max 452m² (Ø = 24m)	max 201m² (Ø = 16m)
13m	max 452m² (Ø = 24m)	max 177m² (Ø = 15m)
14m	max 452m² (Ø = 24m)	max 133m² (Ø = 13m)
15m	max 452m² (Ø = 24m)	max 113m² (Ø = 12m)

HIR32/H: High-bay lens detection pattern for **single person** @ Ta = 20ºC
(Recommended ceiling mount installation height **2.5m-12m**)

A: Tangential movement

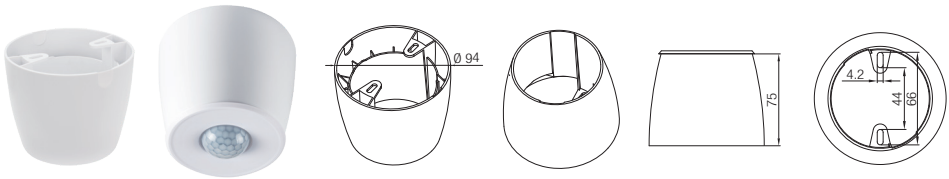


B: Radial movement

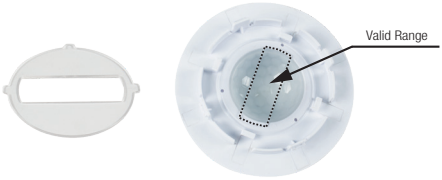


Mount height	Tangential (A)	Radial (B)
2.5m	max 50m² (Ø = 8m)	max 7m² (Ø = 3m)
6m	max 104m² (Ø = 11.5m)	max 7m² (Ø = 3m)
8m	max 154m² (Ø = 14m)	max 7m² (Ø = 3m)
10m	max 227m² (Ø = 17m)	max 7m² (Ø = 3m)
11m	max 269m² (Ø = 18.5m)	max 7m² (Ø = 3m)
12m	max 314m² (Ø = 20m)	max 7m² (Ø = 3m)

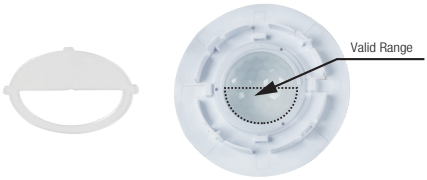
Optional Accessory --- Ceiling/Surface Mount Box: HA03



Optional Accessory --- Blind Insert for Blocking Certain Detection Angles



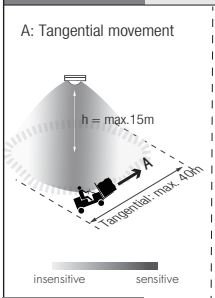
Blind Option 1 --- Aisle Detection



Blind Option 2 --- 180º Detection

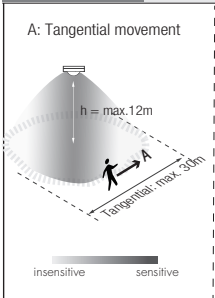
4. HIR32/RH (Reinforced High-bay with 3-Pyro)

HIR32/RH: Reinforced high-bay lens detection pattern for **forklift** @ Ta = 20ºC
(Recommended ceiling mount installation height **10m-15m**)



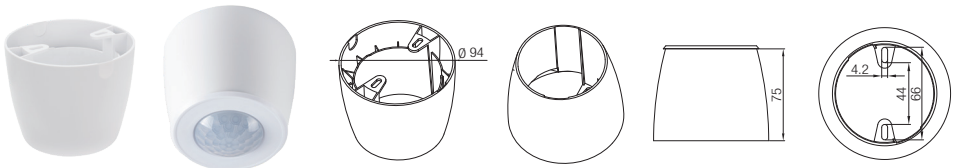
Mount height	Tangential (A)	Radial (B)
10m	max 346m² (Ø = 21m)	max 177m² (Ø = 15m)
11m	max 660m² (Ø = 29m)	max 177m² (Ø = 15m)
12m	max 907m² (Ø = 34m)	max 154m² (Ø = 14m)
13m	max 962m² (Ø = 35m)	max 154m² (Ø = 14m)
14m	max 1075m² (Ø = 37m)	max 113m² (Ø = 12m)
15m	max 1256m² (Ø = 40m)	max 113m² (Ø = 12m)

HIR32/RH: Reinforced high-bay lens detection pattern for **single person** @ Ta = 200C
(Recommended ceiling mount installation height **2.5m-12m**)



Mount height	Tangential (A)	Radial (B)
2.5m	max 38m² (Ø = 7m)	max 7m² (Ø = 3m)
6m	max 154m² (Ø = 14m)	max 7m² (Ø = 3m)
8m	max 314m² (Ø = 20m)	max 7m² (Ø = 3m)
10m	max 531m² (Ø = 26m)	max 13m² (Ø = 4m)
11m	max 615m² (Ø = 28m)	max 13m² (Ø = 4m)
12m	max 707m² (Ø = 30m)	max 13m² (Ø = 4m)

Optional Accessory --- Ceiling/Surface Mount Box: HA03



7. Additional Information / Documents

1. 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

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