Flush Mount PIR Motion Sensor PIR

HIR28DCVFC	HIR28DCVFC/R	HIR28DCVFC/W	HIR28DCVFC/H
Low-bay	Reinforced Low-bay	Wide range Low-bay	High-bay

HYTRONIK®

CE emc S (Intertek) RCM CB UKCA

Applications

Office, classroom and commercial interior spaces where on/off control is required.

- Office / Commercial Lighting
- Classrooms
- Stairwells / Corridors

HIR28DCVFC   HIR28DCVFC/R

HIR28DCVFC/W   HIR28DCVFC/H

HIR28DCVFC with on/off relay control

HIR28DCVFC is a PIR standalone motion sensor, On/Off control with relay output.It's voltage-free contact which is NO relay (normally on). Designed with a low profile for aesthetically demanding architectural projects providing a high quality sensor for simple on/off occupancy control or providing semi-automatic (absence detection) control.

An intelligent photocell is also included to prevent switching of the lights when natural daylight is availible.

Set-up of the sensor is carried out using a remote control handset with program memory allowing one-key commissioning where common settings are used for multiple devices.

Features

- On/Off control with ralay output
- Freely select NO or NC contact

   VFC: Volt-free Contact/Dry Contact – 24VDC@5A – 250VAC@5A

- IP20/IP54 Ceiling/Surface mount box available as accessory
- Various PIR lens and blind inserts options
- User-friendly design for installation
- High bay version available (up to 15m in height)
- Store settings in the remote for easy commissioning when programming multiple sensors.
- Intelligent photocell - lights and sensors only operate when needed, natural light has proirity.
- 5-year warranty

Technical Data

Input Characteristics

Model No.	HIR28DCVFC
Input	12-48VDC
Stand-by power	<0.5W
Output (Loading)	24VDC≤5A 250VAC≤5A
Warming-up	10s

Safety and EMC

EMC standard (EMC)	EN61547
Safety standard (LVD)	EN60669-1, EN60669-2-1
Certification	CB, CE , LVD, RCM

Environment

Operation temperature	Ta: -20℃ ~ +50℃
IP rating	IP20

Sensor Data

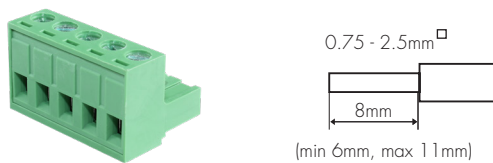| Model No.	HIR28DCVFC
Sensor Model	PIR detection
Detection range (Max.)* HIR28DCVFC	Installation Height : 6m Detection Range(Ø) :9m
Detection range (Max.)* HIR28DCVFC/R	Installation Height : 6m Detection Range(Ø) :10m
Detection range (Max.)* HIR28DCVFC/W	Installation Height : 6m Detection Range(Ø) :18m
Detection range (Max.)* HIR28DCVFC/H	Installation height：15m (forklift) 12m (person) Detection range (Ø)：24m
Detection angle	360°

* For more details of detection range, please refer to "detection pattern" section.
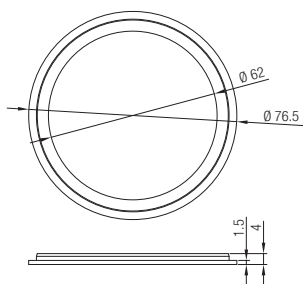
Mechanical Structure & Dimensions

Ø 66~68mm

A B
* Install blind as required

1 2 3 4
* Install lens as required

Ø 78

HIR28DCVFC 62.2 70.5 75.2

HIR28DCVFC/R 62.2 70.5 77.6

HIR28DCVFC/W 62.2 70.5 81

HIR28DCVFC/H 62.2 70.5 80.5

1. Ceiling (drill hole Ø 66~68mm)
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.

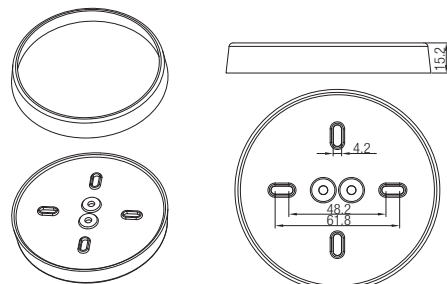## Wire Preparation

0.75 - 2.5mm²

8mm

(min 6mm, max 11mm)

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

Big and small silicon gasket used to make IP54 degree protection when HIR28DCVFC series device mounted into HA03 housing for ceiling mount
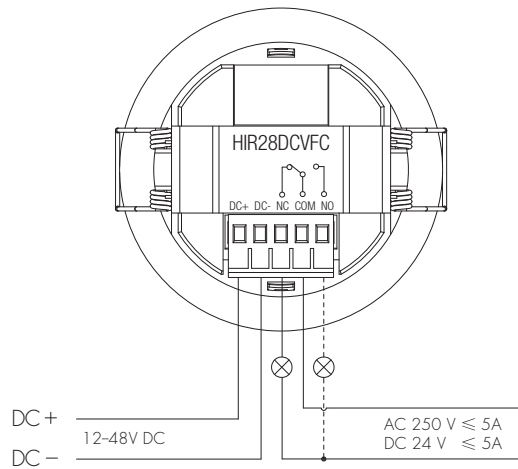
Small silicon water-proof gasket dimension(size:mm)

Ø 62
Ø 76.5

1.5 4

Big silicon water-proof gasket dimension(size:mm)

15.2
4.2
48.2
61.8

Wiring Diagram

DC +	12–48V DC
DC −	

AC 250 V ⩽ 5A
DC 24 V ⩽ 5A

Detection Pattern & Optional Accessories

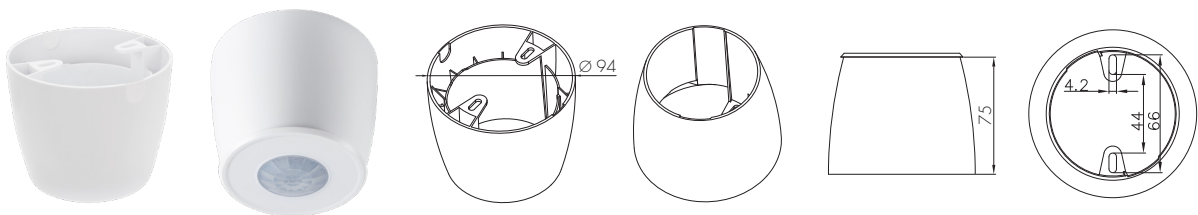| 1. HIR28DCVFC (Low-bay) |
|---|

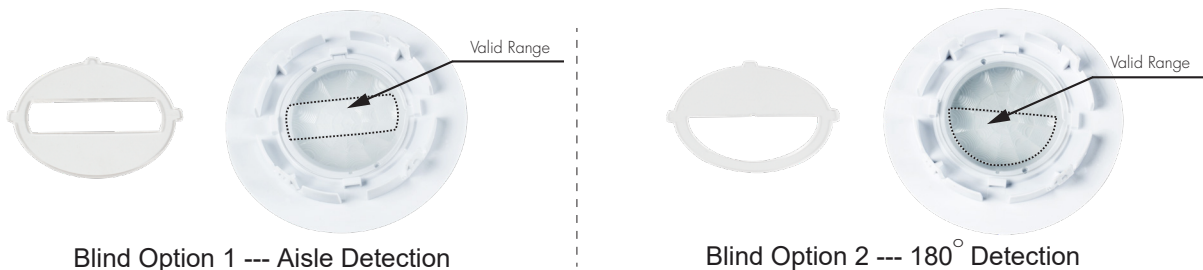**HIR28DCVFC**: Low-bay flat lens detection pattern for **single person** @ Ta = 20°C

(Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement

h = max.6m

Tangential: max. 9m

insensitive — sensitive

B: Radial movement

h = max.6m

Radial: max. 4m

insensitive — sensitive

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

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

∅ 94   75   4.2   44   66

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

Valid Range

Valid Range

Blind Option 1 --- Aisle Detection

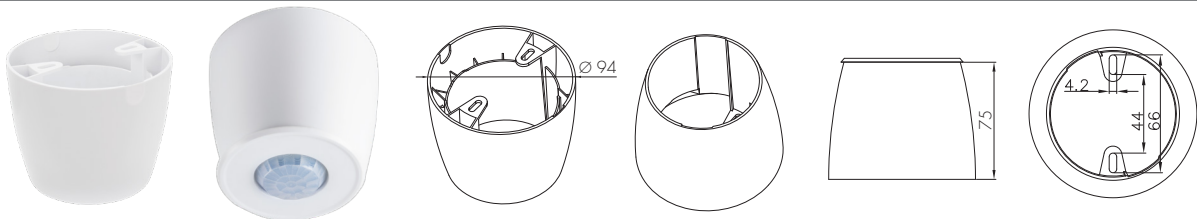Blind Option 2 --- 180° Detection

2. HIR28DCVFC/R (Reinforced Low-bay)

HIR28DCVFC/R: Low-bay convex lens detection pattern for **single person** @ Ta = 20°C

(Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement

B: Radial movement

insensitive   sensitive

insensitive   sensitive

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

Ø 94

75

4.2

44

66

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

Valid Range

Valid Range

Blind Option 1 --- Aisle Detection

Blind Option 2 --- 180° Detection

3. HIR28DCVFC/W (Wide range Low-bay)

HIR28DCVFC/W: Low-bay convex lens detection pattern for **single person** @ Ta = 20°C

(Recommended ceiling mount installation height **2.5m-6m**)

A: Tangential movement

B: Radial movement

insensitive   sensitive

insensitive   sensitive

Mount height	Tangential (A)	Radial (B)
2.5m	max 254m² (Ø = 18m)	max 28m² (Ø = 6m)
3m	max 254m² (Ø = 18m)	max 28m² (Ø = 6m)
4m	max 154m² (Ø = 14m)	max 28m² (Ø = 6m)
5m	max 113m² (Ø = 12m)	max 28m² (Ø = 6m)
6m	max 79m² (Ø = 10m)	max 13m² (Ø = 4m)

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

Ø 94

75

4.2

44

66

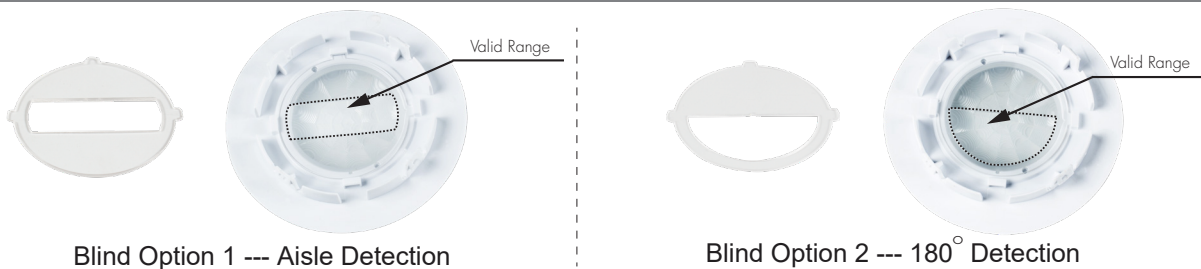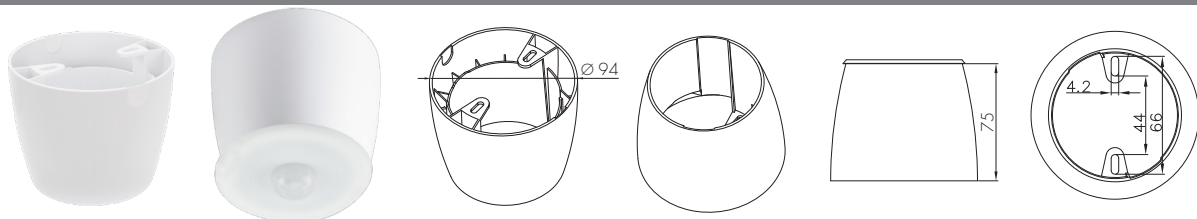**HIR28DCVFC/H**: High-bay lens detection pattern for **forklift** @ Ta = 20°C

(Recommended ceiling mount installation height **10m-15m**)

| A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
h = max.15m Tangential: max. 24m insensitive — sensitive	h = max.15m Radial: max. 16m insensitive — sensitive	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)

HIR28DCVFC/H: High-bay lens detection pattern for **single person** @ Ta = 20°C

(Recommended ceiling mount installation height **2.5m-12m**)

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
h = max.12m Tangential: max. 20m insensitive — sensitive	h = max.12m Radial: max. 3m insensitive — sensitive	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
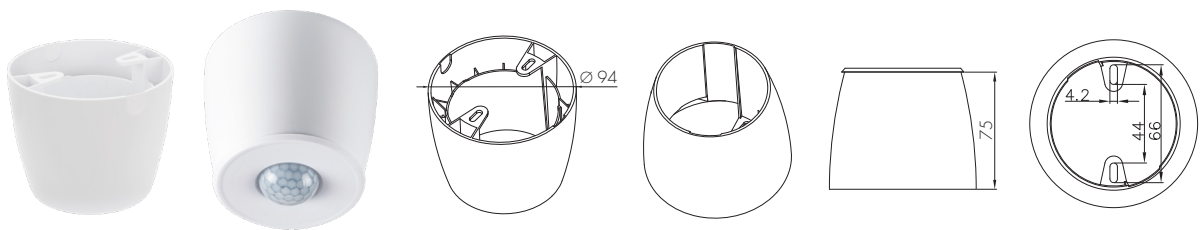
Ø 94

75

4.2

44

66

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

Valid Range

Valid Range
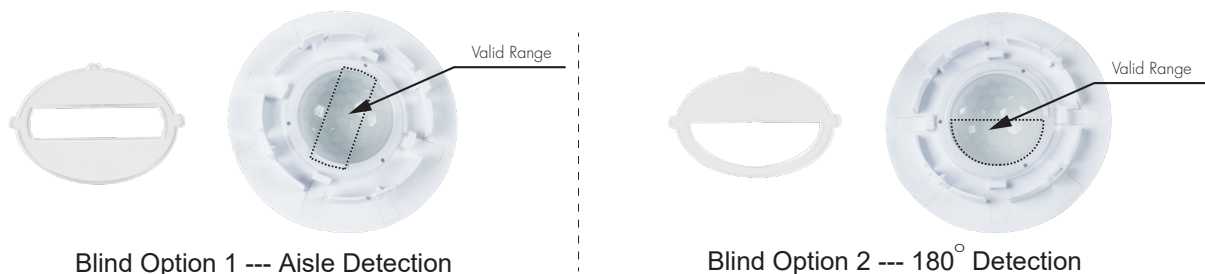
Blind Option 1 --- Aisle Detection

Blind Option 2 --- 180° Detection

1 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.

2 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.
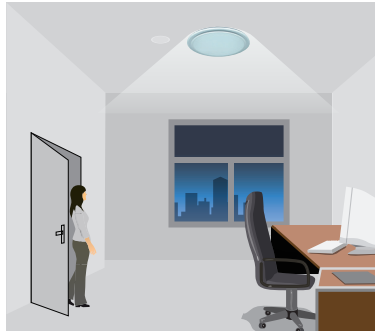
With insufficient natural light, the sensor switches on the light automatically when presence is detected.

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

Settings (Remote Control HRC-12)

ON / OFF   Permanent ON/OFF function

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

RESET   Reset Settings

Press button "RESET", all settings go back to default values as below:
Detection range: 100%; Hold-time: 5min; Lux disabled

AUTO   Sensor mode

Press "Auto Mode" button, the sensor starts to function and all settings remain the same as the latest status before the light is switched on/off.

SEMI AUTO   SEMI-AUTO mode

This button is disabled.

HRC-12

Daylight threshold

Press buttons in zone " Daylight threshold" to set daylight sensor at 2Lux/ 10Lux / 50Lux / 100Lux / 300Lux / 500Lux / Disable.

Ambient daylight threshold

Press button "Ambient", the surrounding lux level is sampled and set as the new daylight threshold.

Hold-time

Press buttons in zone "hold-time" to set the hold-time at 5sec / 1min / 5min / 10min / 15min / 30min / 60min.

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