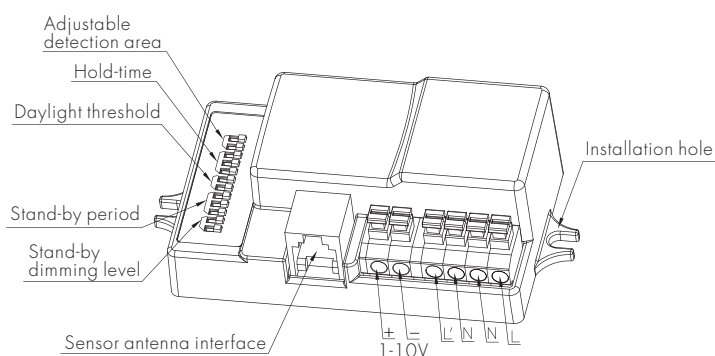# Detached Version

Tri-level Control @ 347VAC
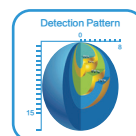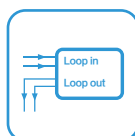
Model: HC603VRC-KD with HRC-11

Adjustable detection area
Hold-time
Daylight threshold
Stand-by period
Stand-by dimming level
Sensor antenna interface
Installation hole
1-10V
± — L' N N L

Model: HC603VRC-KD
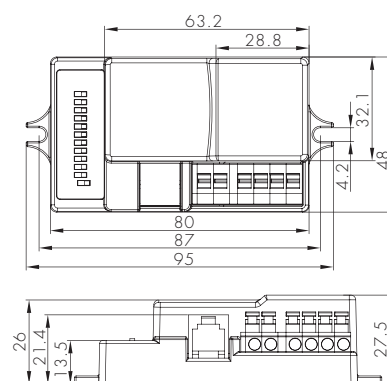
Mechanical structure (mm)

63.2 | 28.8 | 32.1 | 4.2 | 48 | 80 | 87 | 95 | 26 | 21.4 | 3.5 | 27.5

24h Daylight Monitoring | 100% Dim Off sensorDIM™ | 1...10V dimming | zero-cross relay operation | Loop in Loop out | Hold-time 2s~30min | 2~50Lux | Detection Pattern
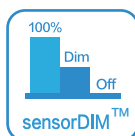
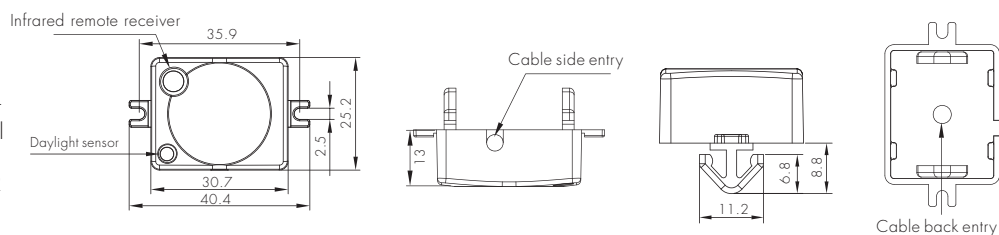## Detached sensor antenna module:

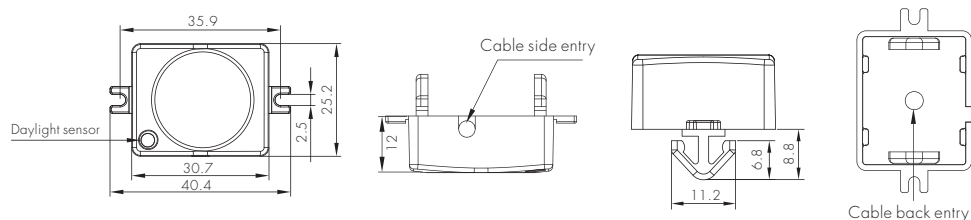### Model SAM5
(D x H: 12m x 6m)

Super-compact sensor antenna, with optional cable entry (side entry and back entry) and IR receiver.

Infrared remote receiver
35.9
Daylight sensor
25.2
2.5
30.7
40.4
Cable side entry
13
6.8
8.8
11.2
Cable back entry

Model SAM9
(D x H: 12m x 6m)

Super-compact sensor antenna, with optional cable entry (side entry and back entry), without IR receiver.

35.9
Daylight sensor
25.2
2.5
30.7
40.4
Cable side entry
12
6.8
8.8
11.2
Cable back entry

1. LED panel light, where the space is limited and ordinary sensors are too big and too high, easily cast shadow in the shade.
2. Office light, most of which have narrow space in between the LED array or aluminium lovres.
3. 2D bulkhead, where the space between the tube is too narrow for the complete sensor.

LED array
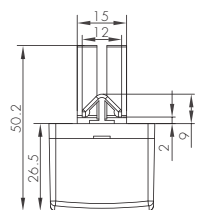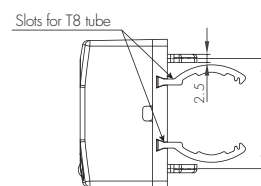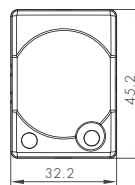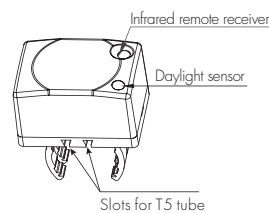
LED linear fixture
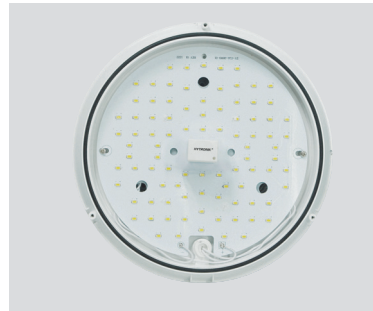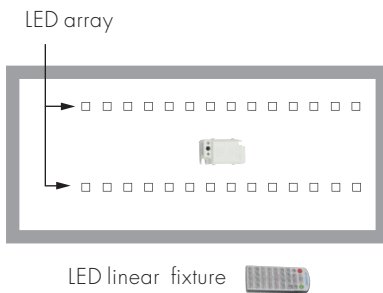
For LED bulkhead

For 2D 28/38W lamps

tiny antenna is placed in between the LED array, while the main body is hidden beneth the metal tray.

This sensor is particularly designed for light fittings where the space is very limited for a big sensor, for instance, on the LED panel bulkhead, and 2D lamp. In such applications, only the detached small antenna is needed on the outer surface, while the sensor body and the driver/ballast can be hidden behind the panel.

Detached sensor antenna module (extended range detection):

Model SAM6
(D x H: 16m x 15m)

Flat sensor antenna, with plastic fingers to hook on highbay or T5/T8 tubes

Infrared remote receiver

Daylight sensor

Slots for T5 tube

Slots for T8 tube

45.2

32.2

2.5

33.5

15
12

50.2

26.5

2
9

High bay, which is usually installed at a much higher place such as warehouse and need a much larger detection range. Thanks to SAM6 and the remote control, the sensor is enable to function well in much higher places, say up to 15m.
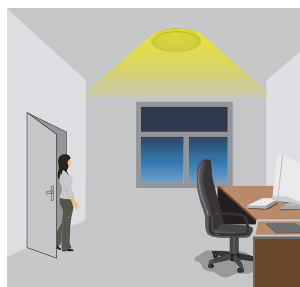
Functions and Options

1 Tri-level Control (Corridor Function)

It offers 3 levels of light: 100%-->dimmed light (10%, 20%, 30%, 50% optional)-->off; And 2 periods of selectable waiting time: Motion hold-time and stand-by period; selectable daylight threshold and freedom of detection area.
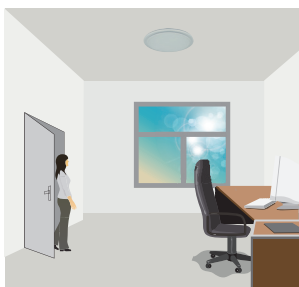
With sufficient natural light, the light does not switch on when presence detected.

With insufficient natural light, the sensor switches on the light automatically when person enters the room.
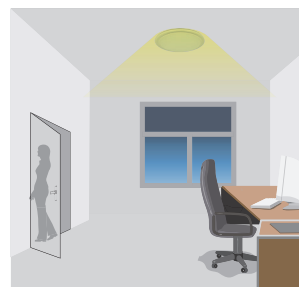
After hold-time, the light dims to stand-by level or turns off completely if surrounding natural light is above the daylight threshold.

Light switches off automatically after the stand-by period elapsed.

2 Zero-cross Relay Operation

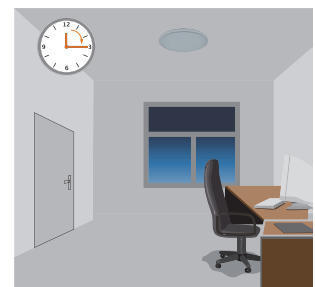Designed in the software, sensor switches on/off the load right at the zero-cross point, to ensure the in-rush current is minimised, enabling the maximum lifetime of the relay.

3 Loop-in and Loop-out Terminal

Double L N terminal makes it easy for wire loop-in and loop-out, and saves the cost of terminal block and assembly time.

4 Daylight Monitoring Function

Hytronik specially design this function in software for deep energy-saving purpose. A built-in daylight sensor is designed to provide "smart photocell" function. This function can only be activated when stand-by period is set to "+∞ ".
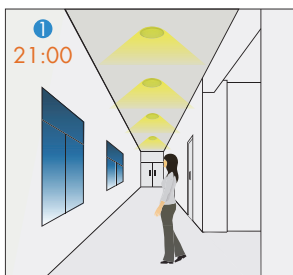
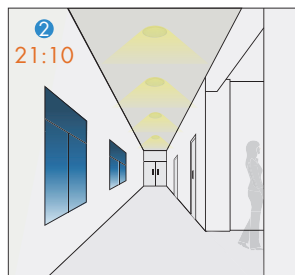### Settings on this demonstration:

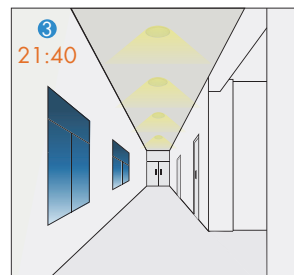Hold-time: 10min   Daylight threshold: 50lux   Stand-by dimming level: 10%   Stand-by period: +∞

❶
21:00

❷
21:10

❸
21:40

❶ ⇄ ❸ goes in cycle during the night …
100% on when movement detected, and dims to 10% in long absence.

The light switches on at 100% when there is movement detected.

Light dims to stand-by level after the hold-time (no motion).

Light keeps in dimming level during the night.

❹
08:10

❺
17:40
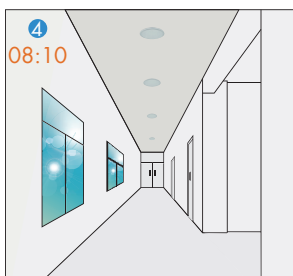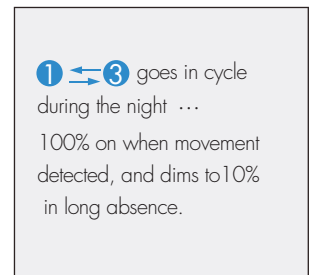
At dawn, light turns off completely when natural light reaches above daylight threshold.
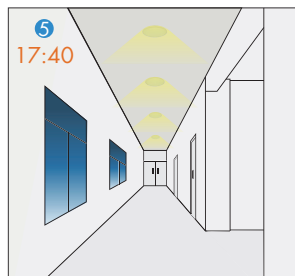
Light turns on 10% automatically when natural light is insufficient.

insufficient light and with presence, 100% on

hold-time ends

check   motion

sufficient light

insufficient light   dimming level

every 30min

off   sufficient light   check   insufficient light

Wiring Diagram

N
L

L N N L'
− +
1~10V

+ − L N
1~10V

LED Driver

− +

LED
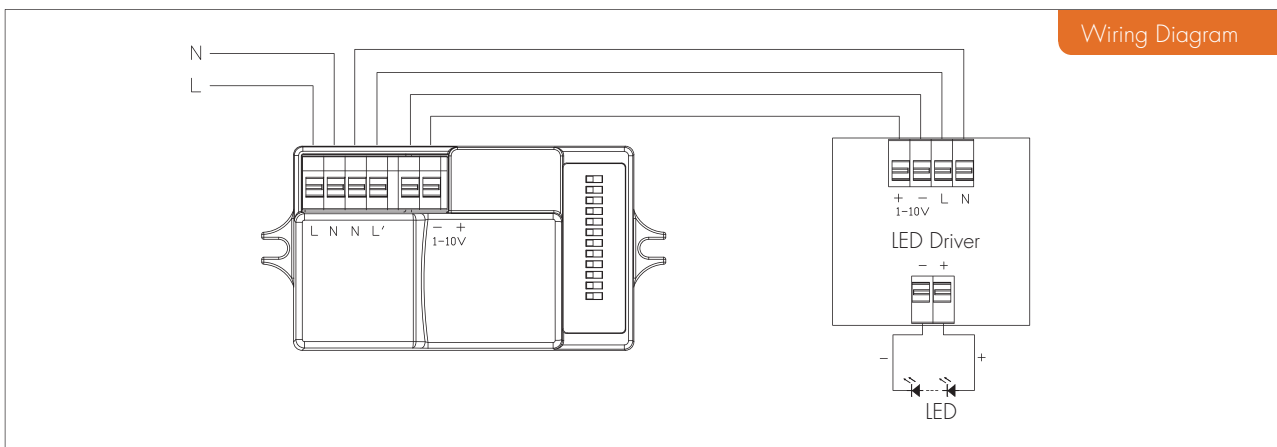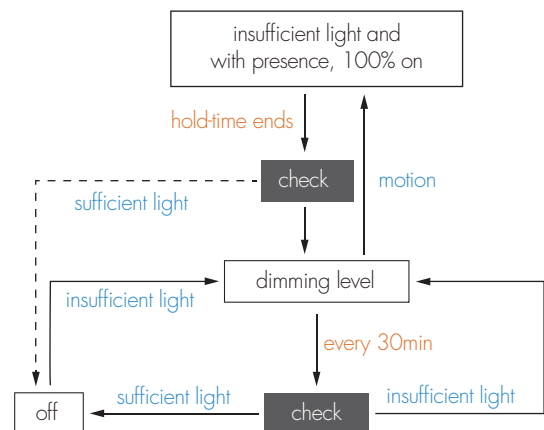
Note: this 1-10V is a isolated SELV control signal.

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 button "Shift" 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 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, 100% on when motion detected, and remains at the stand-by dimming level when no presence after hold-time.

Stand-by dimming level

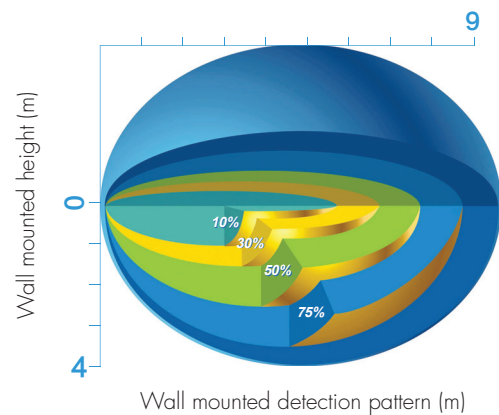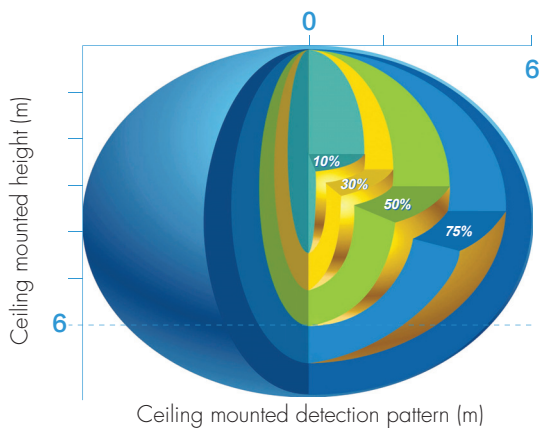Press the button in zone "stand-by dimming level" to set the stand-by dimming level at 10% / 20% / 30% / 50%.

Dual tech & RF mode

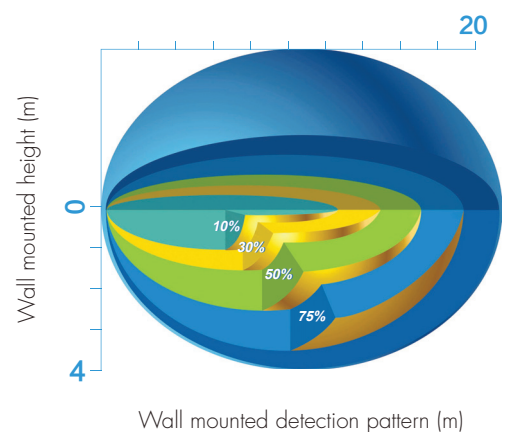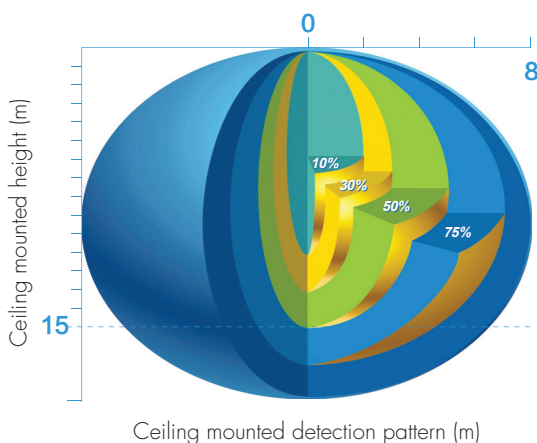All buttons in zone "Dual tech & RF mode are disabled.

Detection Pattern

With SAM5 / SAM9:

Ceiling mounted detection pattern (m)

Wall mounted detection pattern (m)

With SAM6:

Ceiling mounted detection pattern (m)

Wall mounted detection pattern (m)

Settings

❶ Detection area

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

	1	2	
I	●	●	100%
II	●	○	75%
III	○	●	50%
IV	○	○	10%

I – 100%
II – 75%
III – 50%
IV – 10%

❷ Hold-time

Hold-time means the time period to keep the lamp on 100%, after all motion has ceased (detection area vacated).

	1	2	3	
I	●	●	●	5s
II	●	●	○	30s
III	●	○	●	1min
IV	●	○	○	5min
V	○	●	●	10min
VI	○	●	○	20min
VII	○	○	○	30min

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.

	1	2	
I	●	●	Disable
II	●	○	50Lux
III	○	●	10Lux
IV	○	○	2Lux

I – Disable
II – 50Lux
III – 10Lux
IV – 2Lux

❹ Stand-by period (corridor function)

This is the time period you would like to keep at the low light output level before it is completely switched off in the long absence of people.

Note: "0s" means on/off control;
"+∞" means bi-level dimming control, fixture never switches off when daylight sensor is disabled.

	1	2	3	
I	●	●	●	0s
II	●	●	○	10s
III	●	○	●	1min
IV	●	○	○	5min
V	○	●	●	10min
VI	○	●	○	30min
VII	○	○	●	1H
VIII	○	○	○	+∞

I – 0s
II – 10s
III – 1min
IV – 5min
V – 10min
VI – 30min
VII – 1H
VIII – +∞

❺ Stand-by dimming level

This is the dimmed low light output level you would like to have after the hold-time in the absence of people.

	1	2	
I	●	●	10%
II	●	○	20%
III	○	●	30%
IV	○	○	50%

I – 10%
II – 20%
III – 30%
IV – 50%

Technical Data

Operating voltage	347 VAC 60Hz
Switched power	2000W (resistive load); 1200W (capacitive load)
Stand-by power	<0.5W
Detection area	10%/50%/75%/100%
Hold-time	5s/30s/1min/5min/10min/20min/30min (TEST 2s ~ 30min on RC)
Stand-by period	0s/10s/1min/5min/10min/30min/1h/+∞
Stand-by dimming level	10%/20%/30%/50%
Daylight threshold	2~50Lux/disable (2Lux ~ 500Lux /Lux disable / Ambient on RC)
Sensor principle	High frequency (microwave)
Microwave frequency	5.8GHz+/-75MHz
Microwave power	<0.2mW
Detection range	Maximum (D x H): 12m x 6m (SAM5, SAM9); 16m x 15m (SAM6)
Detection angle	30°~150°
Mounting height	Maximum 6m (SAM5, SAM9); 15m (SAM6, for forklift)
Operating temperature	-20°C ~ +60°C
IP rating	IP20
Certificate	Semko, CB, EMC, CE, R&TTE, SAA