

SPECIFICATION SHEET

SUBJECT

Tri-Level Dimming Sensor Control

CUSTOMER PROJECT

Project: _____
 Type: _____
 Cat. No.: _____
 Qty: _____
 Date: _____
 EEL Rep: _____



**Tri-Level Dimming
Sensor Control
ULT-HC419V**

ACCESSORIES

Tri-Level Dimming Sensor Control

Voltage	120-277V
Detection Angle	30° to 150°
Max Mounting Height	20 ft (6m)
Max Detection Range	39 ft x 20 ft (12m x 6m)
Load	400W @ 120V AC 1000W @ 277V AC
Adjustable Hold Time	15 sec to 30 mins
Operating Temperature	-35°C to 70°C



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SPECIFICATION FEATURES

Functionality

- Tri-level dimming (100% - dimmed light – off)
- Microwave motion detection

Finish

- White

Accessories

- Need Sensor Bracket Cover (sold separately)
- SF/FS-SBC for linear fixtures
- CHB-SBC for CHB/CHBU

Compliance

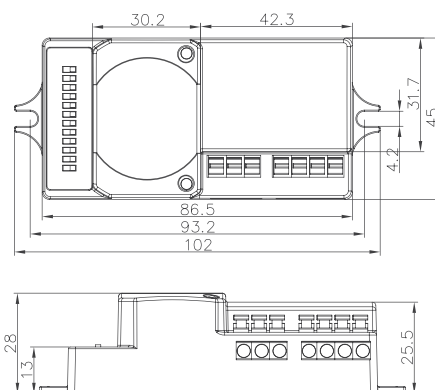
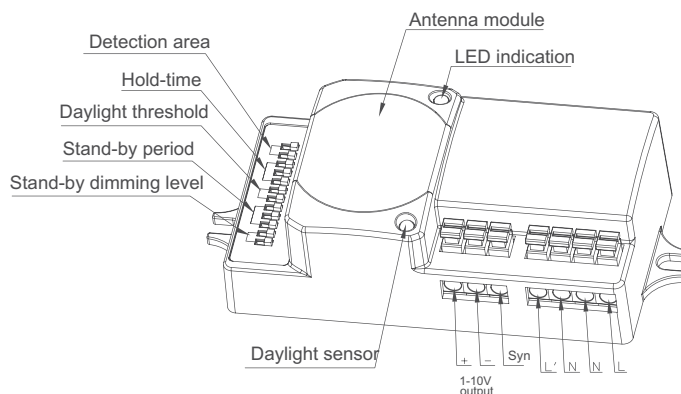
- cULus
- FCC
- IP20

Warranty

- 3 years

Compatibility

- CHB & CHBU (SBC required)
- SF-II, SF-II C & FS (SBC required)
- SW (SBC required)
- VTHB
- Ordinary VT
- VT24
- SPW4



Dimension
 mm | 102(L) x 45(W) x 25.5(D)
 inch | 4(L) x 1.8(W) x 1(D)

ORDERING CODE, ENERGY AND PERFORMANCE DATA

Model No.	Voltage (V)	Load	Colour	Certification
ULT - HC419V	120-277	400W @ 120V AC 1000W @ 277 V AC	White	cULus



Function and Options

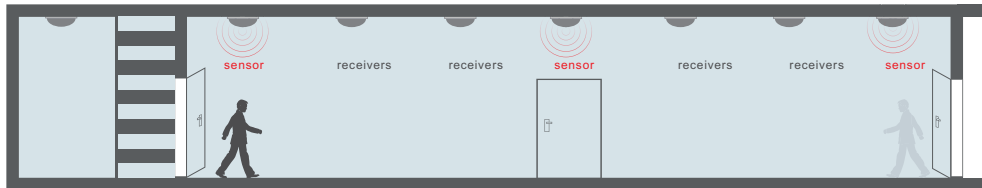
In a lot of buildings, there is a need that the moving object in corridors or undercover garages can trigger a transmitter luminary with connected receiver luminaries from more than one direction. Every transmitter luminaries (containing the sensor) should be able to trigger the whole installation whether it's an on/off or dimming installation.

See the below example that there are several exits/entrances to the corridor, no matter which sensor at exit/entrance is triggered, the luminaries in the group light up.

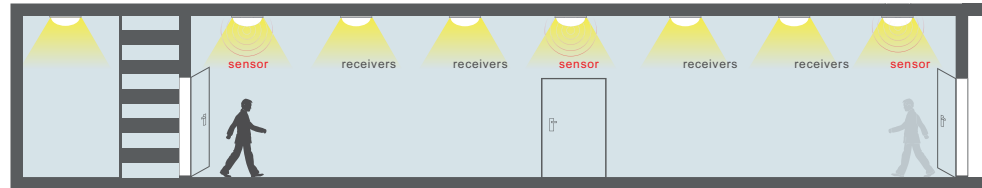
1 Tri-level Control (Corridor Function)

This motion sensor will achieve tri-level control, for some areas require a light change notice before switch-off. It offers 3 levels of light: 100%-->dimmed light (10%, 20%,30%,50% optional)-->off; and 2 periods of selectable waiting time: motion holdtime and stand-by period; Selectable daylight threshold and freedom of detection area.

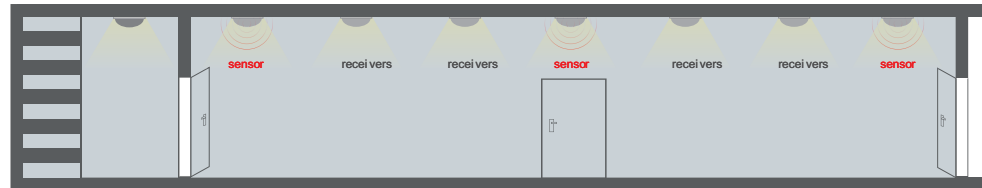
With sufficient natural light, the light does not switch on when presence detected.



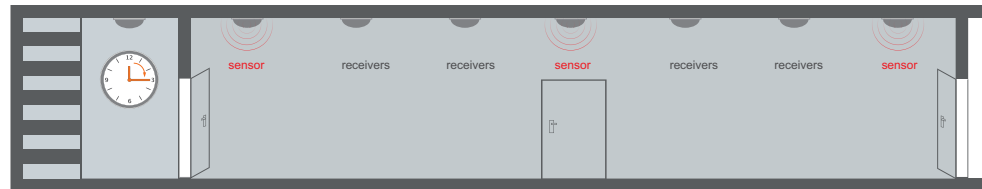
With insufficient nature light, the person comes from any direction, the group of lamps switch on.



After the hold time, the whole group of lamps dims to pre-defined dimming level when no movement detected.



After the stand-by period, the whole group of lamps switches off automatically.



2 100H burn-in mode for fluorescent lamp

With simple operation, rapidly turn off/on the fixture 3 cycles within 3 sec. (the green LED on the sensor flashes and the fixture blinks 3 times to indicate the success of setup), lamp will be 100% on for 100 hours, and then automatically goes to sensor mode after 100 hours. This is crucial to secure the lifetime of fluorescent lamp, when new fixture is installed, or old lamp is replaced.

This 100H burn-in feature can be cancelled by turning off/on the fixture 1 cycle within 1sec.





3 Condominium control function

In many cases, several sensors are connected together to control the same fixture, or to trigger on each other, the sudden on/off of the lamp tube or the ballast/driver causes huge magnetic pulse, which may mis-trigger the sensor. This sensor has a very advanced software to ignore that interference.

By connecting all the "1-10V-" and "SYNC" terminals in parallel (see wiring diagram next page), if there is any transmitter fixture (containing sensor) is triggered by motion, all receiver luminaires will light up at the same time.

4 Ambient daylight threshold

With simple operation, rapidly turn off/on the fixture 2 cycles within 2 sec:

1. The green LED on the sensor flashes slowly for 5 seconds, meanwhile the fixture blinks twice.
2. The photodiode measures and remembers the surrounding lux for 1 sec.
3. The fixture and green LED will be on for 10s to indicate successful learning.

This feature enables the fixture to sample luminance at any time to set lux threshold level.

The latest surrounding lux value overwrites previous lux value learned.

Both the settings on DIP switch and the learned ambient lux threshold can overwrite each other. The latest action controls.

5 Zero-cross relay operation

Designed in the software, sensor switches on/off the load right at the zero-cross point, to ensure the minimum current passing through the relay contact point, and protect the relay for long life.

6 Loop-in and loop-out

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

- Note:**
1. Motion sensor overwrites daylight sensor, meaning the daylight sensor starts to check the ambient natural light only when the lamp is switched off (motion hold-time elapsed).
 2. This 1-10V output is isolated, SELV output.



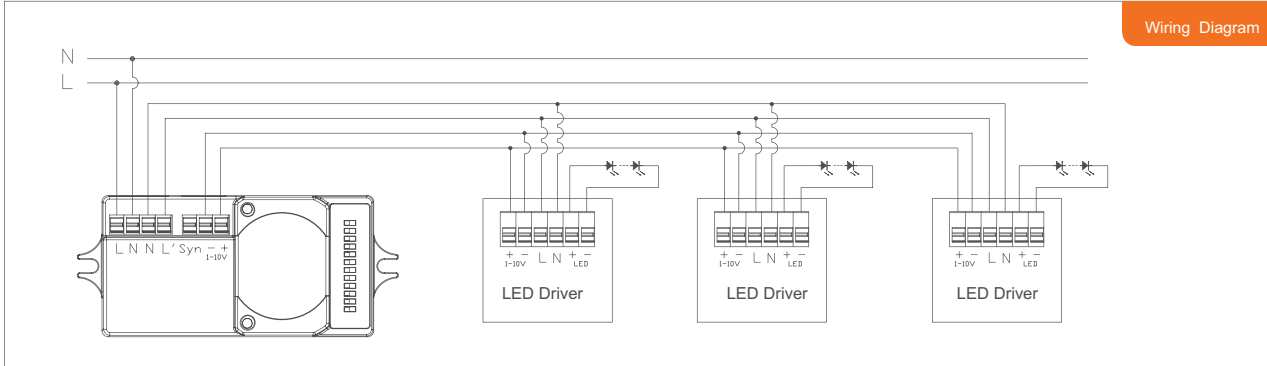
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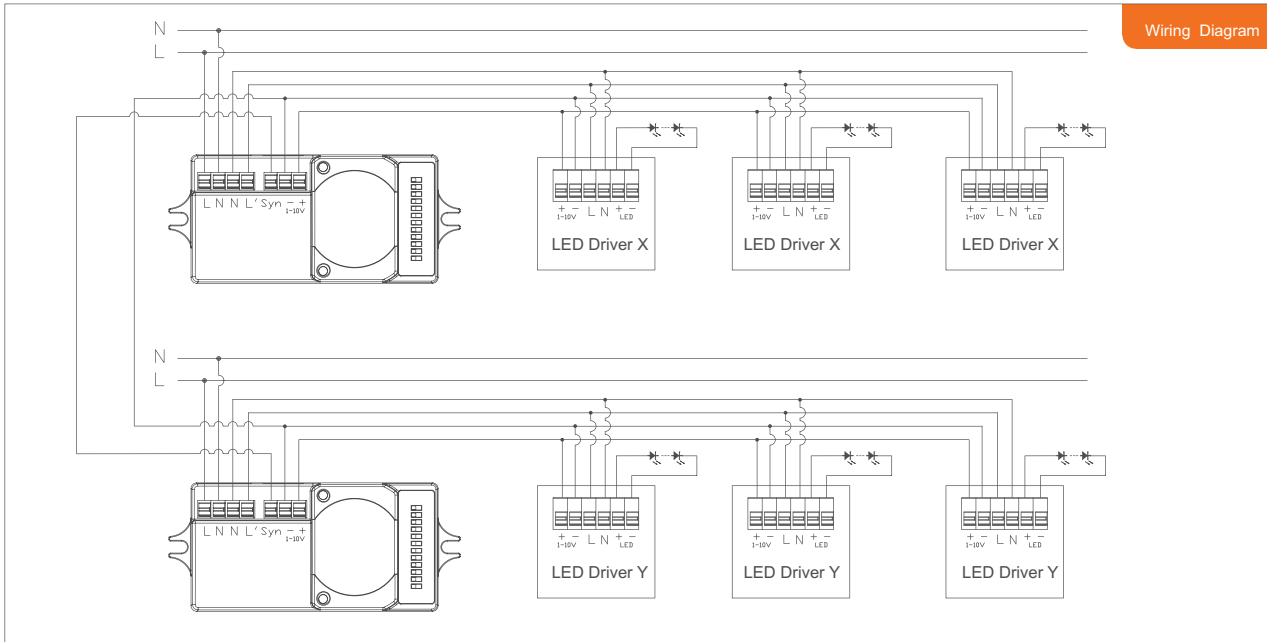
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7 Wiring diagram

1 sensor controls a group of ballast /driver--

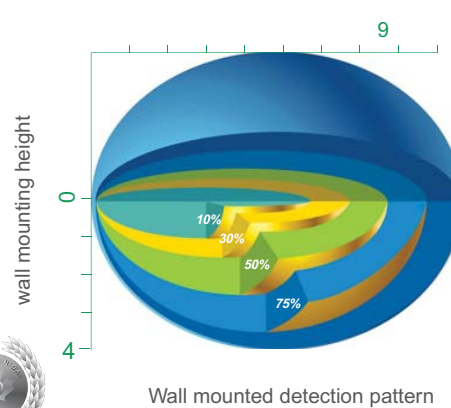
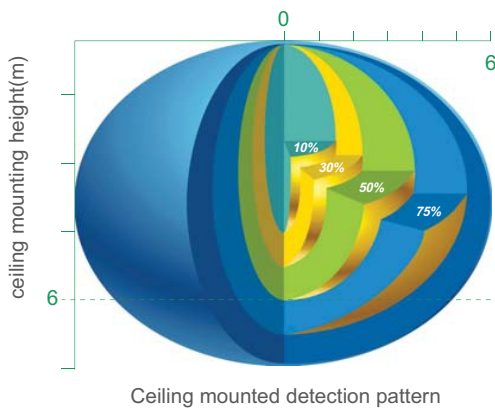


Multiple sensors control the same group of ballast /driver--



Note: Do not connect the 1-10V terminals on driver X to Driver Y.

Detection Pattern



Please allow for tolerance on specifications and dimensions.
If required, please consult EEL.



Settings

1 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%

2 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

3 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

4 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.

	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 – +∞

5 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	120-277 V AC
Switched power (capacitive load)	400W@120 V AC; 1000W@277 V AC
Standby power	<1W
Warm time	20s
Detection area	10/50/75/100%, can be customized
Hold time	5s/30s/1min/5min/10min/20min/30min, can be customized
Standby period	0s/10s/1min/5min/10min/30min/1h/+∞, can be customized
Standby dimming level	10%/20%/30%/50% can be customized
Daylight threshold	2~50Lux daylight/twilight/darkness, can be customized
Sensor principle	High Frequency (microwave)
Microwave frequency	5.8GHz+/-75MHz
Microwave power	<0.2mW
Detection range	Max. (Ø x H): 12m x 6m
Detection angle	30°~150°
Mounting height	Max.6m
Operating temperature	-35°C ~ +70 °C
IP rating	IP20
Certificate	FCC, cULus