

**MICROWAVE SENSOR SUPPLEMENT**  
MSHYTHC419VRC



**PRODUCT DESCRIPTION:**

The motion and daylight sensor helps to further conserve energy by turning the fixture on or off, or by dimming the light level when motion is detected or the level of daylight drops.

**FEATURES:**

- Tri-level controls
- 1-10V dimming
- 8 Hour Manual On Mode for LED Lamp
- Manual Override Options
- Daylight Monitoring
- Absence Detection Functions
- Optional Remote Control Operating Feature
- Master/slave Group Control Options: Multiple Sensors can Control the Same group of Ballast/Drivers

**CONTROLS:**

**Motion/Daylight Sensor with Remote Control Compatibility:**

0-10V microwave-based motion sensor with integral photocontrol, allowing for three output states: 100%; 10/20/30/50% output; or 0% output. Detection area, hold time, daylight threshold, and dimming level are configurable via DIP switches. At its maximum mounting height of 32 feet, the sensor can detect motion up to 30 feet away. Sensor mounted internally, behind lens.

A compatible remote control is available with the sensor, which allows for easy sensor configuration, reprogramming, and troubleshooting when necessary. Users should review supplementary motion sensor datasheets and the product Instruction Manual for detailed remote control programming and operation.

**COMPATIBLE PRODUCTS:**

- CPL Canopy Series

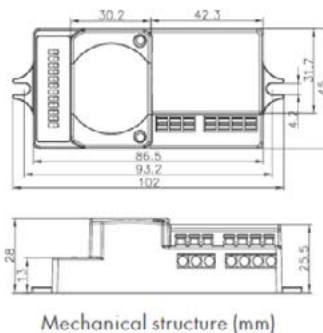
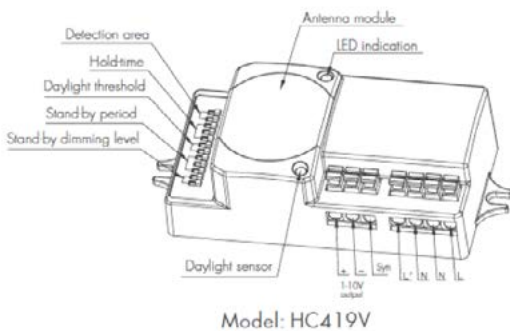
**INSTRUCTIONS:**

See compatible product instruction manuals.

**NOTES:**

\* Installers should confirm mounting locations or applications are not in areas sensitive to radio frequency signals or detection

**DIMENSIONS:**



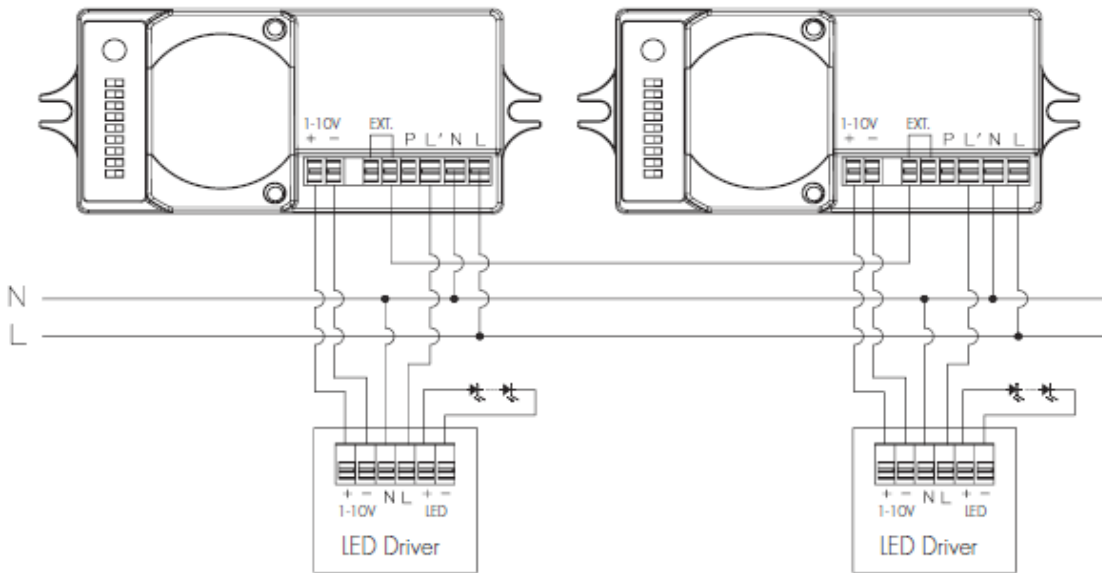
**ORDERING:**

APPLICATION	ORDER CODE	MODEL NUMBER	ITEM DESCRIPTION	MODEL NUMBER SUFFIX
CPL Series	107242	MSHYTHC419VRC	SENSOR MOTION/DAYLIGHT RF5.8GHZ 120-277V OCC DLH ADJUSTABLE IP20	-400
Optional Remote Control	108133	RMHYTHRC-05	REMOTE CTRL PROGRAMMING HC403VRC/HC419VRC	N/A

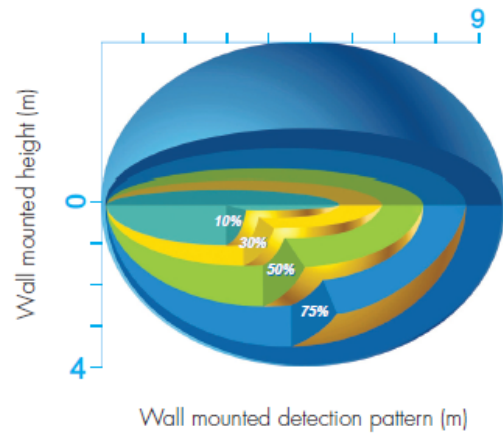
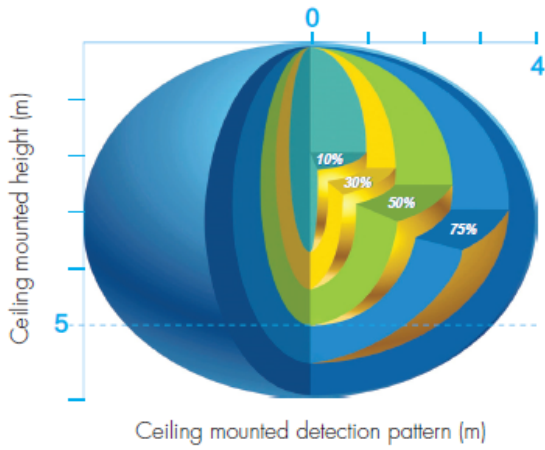
**SPECIFICATION:**

		MSHYTHC419VRC	
ITEM	SPECIFICATION	DETAILS	
ELECTRICAL ASPECTS	Operating Voltage	120-277VAC, 50Hz/60Hz	
	Max Load	400W@120Vac; 1000W@277Vac	
	Standby Power	<1W	
	Warm Time	20s	
	Detection Area	Max. 16 meters in diameter	
	Hold Time	5s/30s/1min/5min/10min/20min/30min (TEST 2s/30s/1min/5min/10min/30min on RC)	
	Standby Period	0s, 10s~1h, +∞	
	Standby Dimming Level	10%~30%	
	Daylight Threshold	2~50Lux/disable (2Lux /10Lux / 50Lux /Lux disable on RC)	
PHYSICAL ASPECTS	Sensor Principle	High Frequency (microwave)	
	Microwave Frequency	5.8GHz+/-75MHz	
	Microwave Power	<0.2mW	
	Detection Range	Max. (0xH): 8m x 5m	
	Detection Angle	30°~150°	
	Mounting Height	Max.5m	
	Operating Temperature	-20°C ~ +60°C	
	IP Rating	IP20	
Certificate	Semko, CB, EMC, CE, R&TTE, SAA		

**WIRING DIAGRAM:**



**DETECTION PATTERN:**



**Scene mode options [zone 4]**

There are 4 scene modes built into the remote control for different applications:

Scene options	Detection range	Hold time	Stand-by period	Stand-by dimming level	Daylight sensor
SC1	100%	1min	10min	10%	2Lux
SC2	100%	5min	10min	10%	2Lux
SC3	100%	10min	30min	10%	10Lux
SC4	100%	10min	+∞	10%	50Lux

Note: the end-user can fine tune the settings by pressing buttons of detection range ⑥ / hold time ⑦ / stand-by period ⑧ / stand-by dimming level ⑨ / daylight sensor ⑩, the last setting will over-write that feature of the pre-set scene.


**SECTION 3 SETTINGS**

**Detection area**

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

- I – 100%
- II – 50%

	1	
I	●	100%
II	○	50%




**Hold-time**

This setting determines the time period the lamp will remain at 100% upon detection.

Note: The timer is reset upon each motion detection.

- I – 5s
- II – 3min
- III – 10min
- IV – 30min

	2	3	
I	●	●	5s
II	●	○	3min
III	○	●	10min
IV	○	○	30min




**Daylight sensor**

The daylight threshold can be set on the DIP switches, suit to the particular application.

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

	4	5	
I	●	●	Disable
II	●	○	50Lux
III	○	●	10Lux
IV	○	○	2Lux




**Stand-by period (corridor function)**

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

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

	6	7	8	
I	●	●	●	0s
II	●	●	○	10s
III	●	○	●	1min
IV	●	○	○	5min
V	○	●	●	10min
VI	○	●	○	30min
VII	○	○	●	1h
VIII	○	○	○	+∞



Note: "0s" means on/off control;


" +∞ " means bi-level control, fixture never switches off when daylight sensor is disabled.

**Stand-by dimming level**

This is the dimmed low light output level setting after the hold-time has expired.

- I – 10%
- II – 30%

	1	
I	●	10%
II	○	30%



## **SECTION 4 FUNCTIONS**

### **4.1 8H Manual on Mode for LED Lamp**

Turn off/on the power supply three times within 3 seconds, the light will be turned on for 8 hours, automatically returning to sensor mode after 8 hours. Note: this 8H manual on mode can be cancelled by turning off/on the power supply one time within 1 second.

### **4.2 Ambient Daylight Threshold**

Switch the power supply to the sensor two times within 2 seconds, the sensor will set the ambient lux level as the new threshold. Both the settings on DIP switch and the ambient lux threshold learned can overwrite each other. This feature enables the daylight sensor to be commissioned to the environment in which it is installed. The last adjustment remains in memory.

### **4.3 Zero-cross Relay Operation**

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

### **4.4 Synchronization Function**

By connecting the "SYNC" terminals in parallel (maximum 10pcs, see wiring diagram), no matter which sensor detects motion, all HC419VRC/R in the group will turn on the lights when surrounding natural light is below the daylight threshold. The sensor antenna is shared and the detection area could be widely enlarged in this way. Other settings such as hold-time, stand-by period, stand-by dimming level and daylight threshold on each individual unit stay the same.

Note: if the surrounding natural light of the sensor which detects movement is sufficient, all lights in the group will remain off.

### **4.5 Manual Override**

This sensor maybe over-ridden by the end-users to switch on/off the lights manually, or adjust the maximum brightness during motion hold-time with the push-switch. This makes the product more user-friendly and offers more options to fit for extra-ordinary demands.

\* Short push (<1s): on/off function;

ON → OFF: the light turns off immediately and cannot be lightened for a certain time (equals to hold time preset) even there is movement is detected. After this period, the sensor goes back to auto sensor mode.

OFF → ON: the light turns on 100% and goes to auto sensor mode, even when ambient Lux level exceeds the daylight threshold.

\* Long push (>1s): adjust the maximum brightness (between 10% and 100%) during hold-time. Both the settings on DIP switch and manual override can overwrite each other, the latest action controls.

\* If no end-user adjustment is desired, simply leave this terminal disconnected.

### **4.6 Absence Detection Function**

The motion sensor is employed, but only activated on the manual press of the push switch, light will remain on in presence, and dimmed down in the absence, and eventually switch off automatically in the long absence.

### **4.7 Daylight Monitoring Function**

Hytronik specially designed this function in software for deep energy-saving purpose. A built-in daylight sensor is designed to provide a "smart photocell" function. This function can only be activated when stand-by period is set to "+∞". In this mode the lamp will automatically illuminate at the dim level setting when the natural light goes below the threshold setting. The fixture will also switch off as the natural light returns.

**REMOTE CONTROL SETTINGS:**

**Permanent ON/OFF [ button ① ]**

1. Press button ①, to select permanent ON or permanent OFF mode.
2. Press button ② ③ ④ to resume automatic operation. (Please refer to explanation below)

**Auto Mode [button ②]**

Press button ② to in initiate automatic mode. The sensor starts working and all settings remain as before the light was switched ON/OFF.

**RESET [button ③]**

Press button ③, all settings go back to the value of DIP switch settings.

**Test 2s function [button ③]**

1. Press button ③, the sensor goes into testmode (hold time 2s). N.B. the stand-by period and daylight sensor settings are disabled in test mode.
2. Press button ③ ④ ① to exit from this mode, and the sensor settings are changed accordingly.

**Ambient daylight threshold [button ⑩]**

Press button ⑩, the latest surrounding lux value overwrites previous lux value learned, and is set as the daylight threshold. This feature enables the fixture to function well in any environment.

**Power output [ button ⑤ ]**

Press button ⑤, the output shifts between 80% and 100%, for energy saving purposes.

**Dim +/- [button ⑨]**

Press button ⑨ to adjust the light brightness between 10%~100% during hold-time. "+" increases the light level, "-" will decrease the light level.

**Lux disable [button ⑭]**

Press button ⑭, the built-in daylight sensor is disabled, the light will always operate upon detection regardless of ambient light level.

**Manual override/ Semi-auto [button ⑬]**

Press button ⑬, the sensor goes to manual override or semi-auto function.

Note: The buzzer beeps twice if it is in manual override mode, and beeps once if shifts to semi-auto mode.

**Detection range [zone ⑥]**

Press buttons in zone ⑥ to set detection range at 100% / 50% / 10%.

**Hold time [zone ⑪]**

Press buttons in zone ⑪ to set hold time at 30s / 1min / 5min / 10min / 30min.

**Stand-by period [zone ⑫]**

Press buttons in zone ⑫ to set the stand-by period at 0s / 10s / 1min / 10min / 30min / +∞.

Note: "0s" means on/off control; "+∞" means bi-level of dimming control, the light will never switch off. (i.e. the light remains at the stand-by dimming level until motion is detected.)

**Stand-by dimming level [zone ⑦]**

Press buttons in zone ⑦ to set the stand-by dimming level at 10% / 20% / 30% .

**Daylight sensor [zone ⑬]**

Press buttons in zone ⑬ to set daylight sensor at 2lux / 10lux / 50lux.