

## MICROWAVE SENSOR SUPPLEMENT

### MSHYTHC403V9RC



#### 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:

- 24-hour daylight monitoring
- Tri-level controls
- 1-10V dimming
- Hold-time 2s-30min
- Ambient daylight threshold sensing
- Loop-in/loop-out easy wiring
- Soft-on/Soft-off controls
- Easy user resettable functions via DIP switches
- 3 year warranty

#### COMPATIBLE PRODUCTS:

- WP-WMP Wall Pack Series (MS2)
- LSU Utility Wraps (MSC)
- LSV Vapor Tights (MSC)
- TriMax Vapor Tights (MS)
- LS Linear Strip (MS)
- RS Retrofit Strip (MS)
- BLHE Linear High Bay (MS)
- MLFP V2 Premium Flat Panel (MS) (Daylight harvesting not available)
- ArcMax Single Basket Troffer (MS)
- L-Max Linear LED Luminaire (MS)

#### INSTRUCTIONS:

See compatible product instruction manual.

#### WARRANTY:

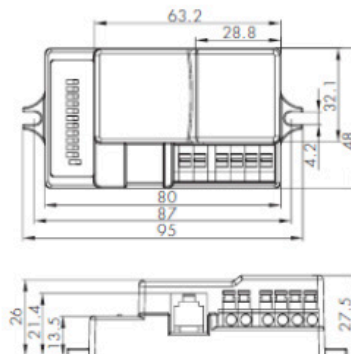
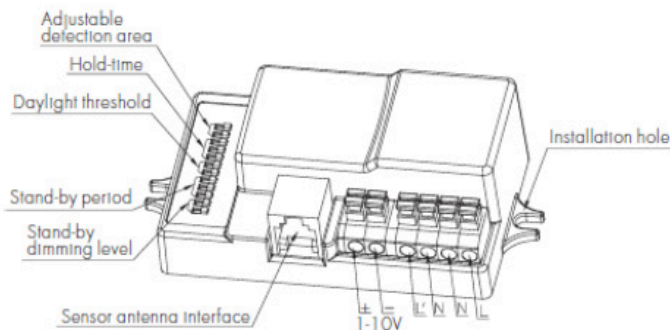
5-year standard warranty\* (further details available at [www.maxlite.com/warranties](http://www.maxlite.com/warranties))

\*Product may be eligible for a warranty extension to 10 years, for an additional fee. Contact MaxLite for details.

#### NOTES:

\*INSTALLERS SHOULD CONFIRM MOUNTING LOCATIONS OR APPLICATIONS ARE NOT IN AREAS SENSITIVE TO RADIO FREQUENCY SIGNALS OR DETECTION

#### DIMENSIONS:



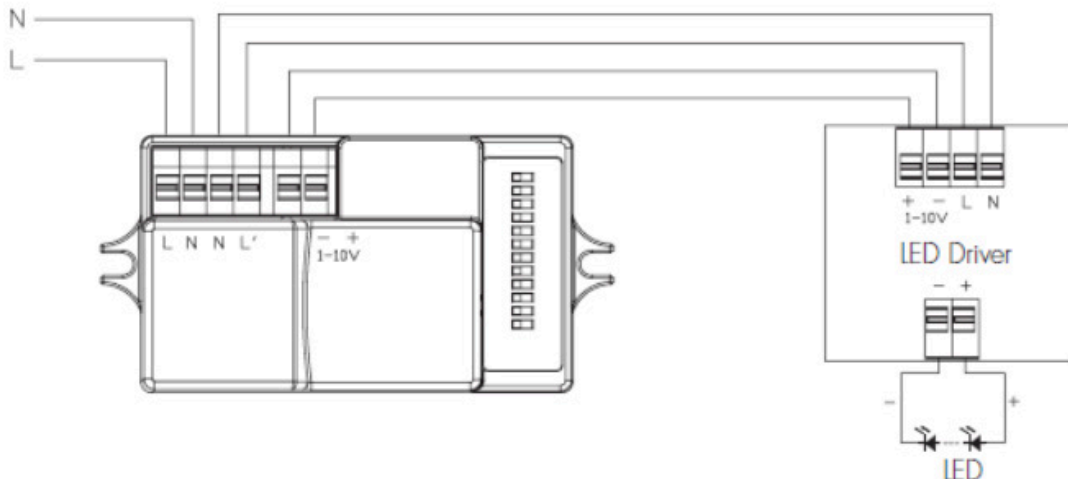
#### ORDERING:

ORDER CODE	MODEL NUMBER	DESCRIPTION
108132	MSHYTHC403V9RC	SENSOR ASSY MOTION/DAYLIGHT REMOTE CTRL COMPATIBLE RF5.8GHZ 120-277V OCC DLH ON-OFF IP20 SAM5 REMOTE DETECTION
108133	RMHYTHRC-05	REMOTE CONTROL FOR COMMISSIONING

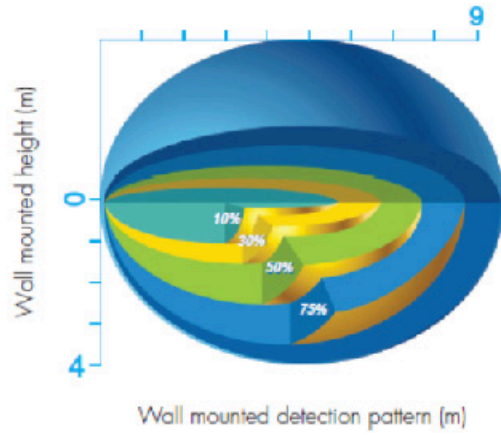
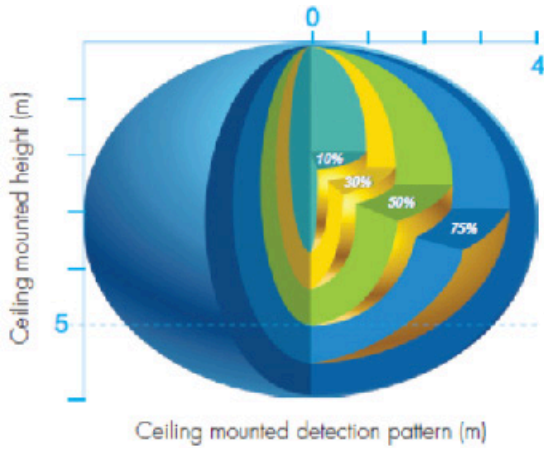
**SPECIFICATIONS:**

SPECIFICATIONS:		MSHYTHC403V9RC
ITEM	SPECIFICATION	DETAILS
<b>ELECTRICAL ASPECTS</b>	Operating Voltage	120V, 277V
	Max Load	400W@120Vac; 1000W@277Vac
	Standby Power	<1W
	Warm Time	20s
	Detection Area	10/50/75/100%, can be customized
	Hold Time	5s/30s/1min/5min/10min/20min/30min (TEST 2s/30s/1min/5min/10min/30min on RC)
	Standby Period	0s/10s/1min/5min/10min/30min/1h/+∞ ( 0s /10s / 1min / 10min/ 30min /+∞ on RC)
	Standby Dimming Level	5%/10%/20%/30% (10%/20%/30% on RC)
	Daylight Threshold	2~50Lux/disable (2Lux /10Lux / 50Lux /Lux disable on RC)
<b>PHYSICAL ASPECTS</b>	Sensor Principle	High Frequency (microwave)
	Microwave Frequency	5.8GHz+/-75MHz
	Microwave Power	<0.2mW
	Detection Range	Max. (0xH): 8m x 5m
	Detection Angle	30o~150o
	Mounting Height	Max.5m
	Operating Temperature	-20oC ~ +60oC
	IP Rating	IP20
	Certificate	Semko, CB, EMC, CE, R&TTE, SAA, UL

**WIRING DIAGRAM:**

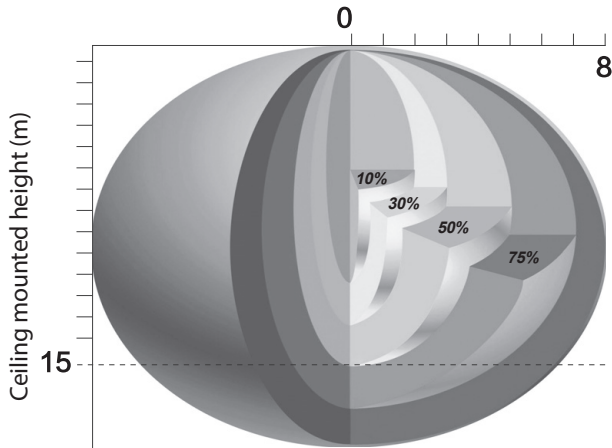


**DETECTION PATTERN: SAM5**



**DETECTION PATTERN: SAM6**

Model SAM6



**BELOW ARE ALL AVAILABLE SETTINGS FOR THIS MOTION SENSOR. FACTORY DEFAULT SETTINGS CAN BE CHANGED USING DIP SWITCHES, OR USING REMOTE CONTROL (RMHYTHRC-05 – PURCHASED SEPARATELY).**

**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%	I – 100%
II	●	○	75%	II – 75%
III	○	●	50%	III – 50%
IV	○	○	10%	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	●	●	●	I – 5 s
II	●	●	○	II – 30 s
III	●	○	●	III – 1 min
IV	●	○	○	IV – 5 min
V	○	●	●	V – 10 min
VI	○	●	○	VI – 20 min
VII	○	○	○	VII – 30 min

**3 Daylight sensor**

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

“Daylight” : The lamp works always, even during daylight.

“Twilight” : The lamp works only in twilight and darkness.

“Darkness” : The lamp works only in darkness.

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

**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 when daylight sensor is disabled.

	1	2	3	
I	●	●	●	I – 0 s
II	●	●	○	II – 10 s
III	●	○	●	III – 1 min
IV	●	○	○	IV – 5 min
V	○	●	●	V – 10 min
VI	○	●	○	VI – 30 min
VII	○	○	●	VII – 1 hr
VIII	○	○	○	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	●	●	5%	I – 5%
II	●	○	10%	II – 10%
III	○	●	20%	III – 20%
IV	○	○	30%	IV – 30%

## REMOTE CONTROL SETTINGS:

### Permanent ON/OFF [button ① ]

1. Press button ①, to select permanent ON or permanent OFF mode.
2. Press button ②③④ to resume automatic operation (Please refer to example below)

### Auto Mode [button ② ]

Press button ② to 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 ④ ]

1. Press button ④, 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 ③④① to exit from this mode, and the sensor settings are changed accordingly.

### Ambient daylight threshold [button ⑤ ]

Press button ⑤, 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 ⑥ ]

Press button ⑥, the output shifts between 80% and 100%, for energy saving purposes.

### Dim +/- [button ⑦ ]

Press button ⑦ to adjust the light brightness between 10%~100% during hold-time. "+" increases the level of light, "-" will decrease the light level.

### Lux disable [button ⑧ ]

Press button ⑧, the built-in display sensor is disabled, the light will always operate upon detection, regardless of ambient light level.

### Manual override / Semi-auto [button ⑨ ]

Press button ⑨, 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 it shifts to semi-auto mode.

### Detection range [button ⑩ ]

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

### Hold time [button ⑪ ]

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

### Stand-by period [button 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 [button ⑬ ]

Press buttons in zone ⑬, to set the stand-by dimming level at 10% / 20% / 30%.

### Daylight sensor [button ⑭ ]

Press buttons in zone ⑭, to set daylight sensor at 2lux / 10lux / 50lux.

**BEFORE COMMISSIONING:**

Before commissioning every fixture, these steps confirm that the remote communicates with the fixture and the sensors work as intended. An audible beep is heard from the fixture sensor when it receives a command from the sensor.

1. Power up the fixture (turn on the wall switch)
2. Press Reset button (3). The Fixture would now be set to the dip-switch settings which is considered its default. (note that the default may vary from fixture to fixture)
3. Press 100% detection range (6) to make sure the sensor has maximum detection.
4. Press Test button (8). This would allow us to make sure that the sensor works.
  - a. If the sensor works, the fixture should turn off after 2 seconds of no movement and turn back on upon detection on movement.
5. If the above steps work as described, the fixture/Sensor works as intended and is now ready to be programmed as needed for the application. Make sure to set detection range to appropriate percentage based on application.

**Note:**

If the above steps do not work, (try one more time just to make sure), then the problem is either with the communication between the remote and the fixture or the fixture/sensor itself.

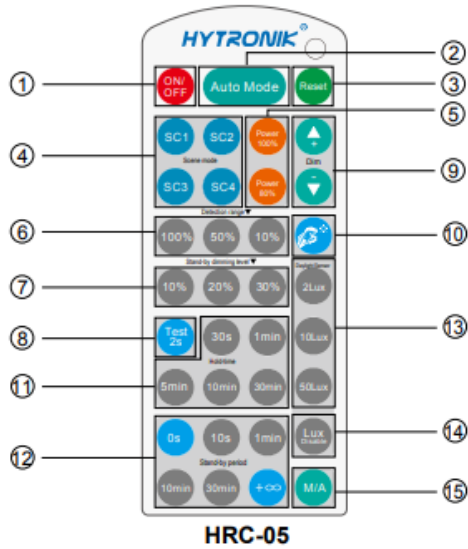
Do not hit the On/Off button after commissioning. On/Off button puts the sensor on manual override mode disabling the sensor.

**TROUBLE SHOOTING GUIDE FOR MICROWAVE SENSORS:**

Before starting to trouble shoot, make sure above steps have been performed and confirm that the fixture/sensor works as intended.

PROBLEM	PROBABLE CAUSE	POTENTIAL SOLUTION
	Detection range too low	Increase Detection range as per range diagram
The lights do not turn on with movement	Remote "Off" button was pressed	The On/Off button puts the sensor on manual override mode disabling the sensor. Redo the "Before commissioning" steps and then commission. Do not hit the On/Off button after commissioning
	No power supply	Turn on power supply
	Daylight Threshold too low	Turn off Daylight sensing off or adjust threshold
	Detection range too high	Reduce Sensitivity
The Lights do not turn off/dim after expected hold time	Other Sensor triggers - movement behind walls - water running in pipes between floors, fan movement - other communications equipment in the room interfering with the sensor frequency	If reducing Sensitivity does not work, If possible, change the location of the sensor. If that also does not help, this would be the wrong application for a microwave sensor.  Check Maxlite for PIR sensor options.

**SECTION 2 REMOTE CONTROL**



**TECHNICAL DATA**

Operating Voltage	120~277VAC
Switched power (captive load)	400W@120VAC; 800W@230VAC; 1000W@277VAC
Stand-by power	<1W
Detection area	10% / 50% / 75% / 100% (100% / 50% / 10% on RC)
Hold-time	5s/30s/1min/5min/10min/20min/30min (TEST 2s/30s/1min/5min/10min/30min on RC)
Stand-by period	0s/10s/1min/5min/10min/1hr/+∞ (0s /10s/1min/10min/30min/+∞ on RC)
Stand-by dimming level	5%/10%/20%/30% (10%/20%/30% on RC)
Daylight threshold	2~50Lux/disable (2Lux/10Lux/50Lux disable on RC)
Sensor principle	High frequency (microwave)
Microwave frequency	5.8GHz+/-75MHz
Microwave power	<0.2mW
Detection range	Max (OxH): 8m x 5m
Detection angle	30° ~ 150°
Mounting height	Max. 5m
Operating temperature	-20°C ~ +60°C
Certificate	Semko, CB, EMC, CE, R&TTE, SAA