

# Low Voltage Microwave Motion Sensor

## TL-HB/Sensor/Microwave

### Features

- 0-10V Bi-level dimming control.
- 3.5mm Audio jack, save the installation cost at most.
- Operates on 12V DC which can be easily feed from a LED driver, saves OEM cost on manufacturer side.
- Perfectly fit in UFO high bays, area lights and wall packs that have limit to mount a external sensor.
- 5 modes, 10%-100% dimming level, 30"-30' delay time selectable allowed to customize your setting.
- IP65 rated for outdoor fixtures.
- Programs setup by a Remote controller (RM51).

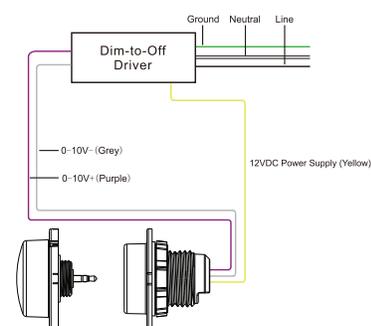


### Specifications

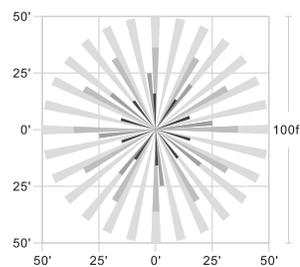
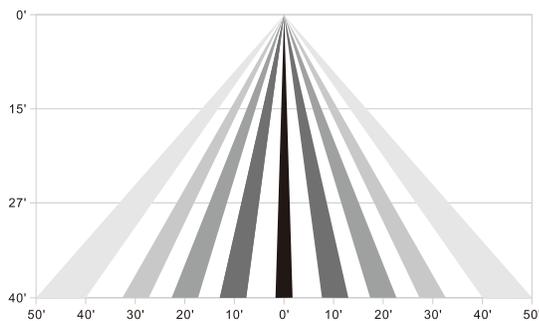
Input voltage	12V DC
Power Consumption	0.1W
Dimming	0-10V
Mounting height	40ft Max.
Detection range	100ft Max.
Op. temperature	-30°F ~ 131°F (-30°C ~ 55°C)
IP rate	IP65
Mode setting	A, B, C, D, E
Dimming level setting	10%, 20%, 30%, 50%, 60%, 70%, 80%, 100%
Delay time setting	10s, 1min, 5min, 10min, 30min
Certification	UL
Warranty	Five year warranty



### Wiring

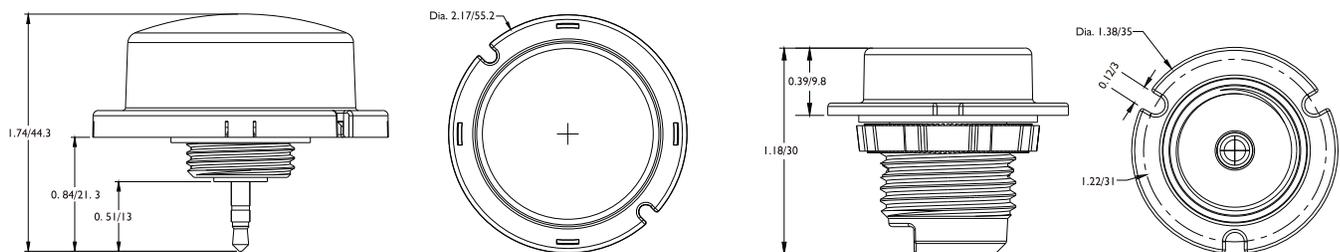


### Coverage



### Line Drawings

Unit:inch/mm



### Note:

- Microwave can penetrate walls or glass thinner than 20cm, movement in adjacent corridors may be detected.
- Detection area will be affected by speed of motion, mounting height and movement volume.
- Installation shall not be mounted to avoid false trigger caused by the luminaire itself shaking. (Rooftop HVAC, upper floor vibration, etc.)
- Shall not be installed next to large operating machines such as ventilator/ceiling fan to avoid false triggering caused by machine vibration.
- They cannot penetrate metal. Large metal object near the sensor may create a "dead zone" behind it.
- Microwave sensors have advantage over PIR device in that they can operate in hot environments, however, they are sensitive devices and can be prone to false detection by everyday items like ceiling fans, moving branches or curtains, loose packaging, etc.

Other options may be available, consult Turolight Sales. Specifications and data are subject to change without notice.  
Microwave sensors should be tested before, if used in close proximity to Airports / Communication towers etc.

# Motion Sensor Controller

## TL-HB/Sensor/Controller

### SPECIFICATIONS

Communication Mode	Infrared
Supply Voltage	3V (1/2 pcs CR2032 battery)
Flame Rating	HB
Working Humidity	≤90% RH
Working Temperature	0~45°C

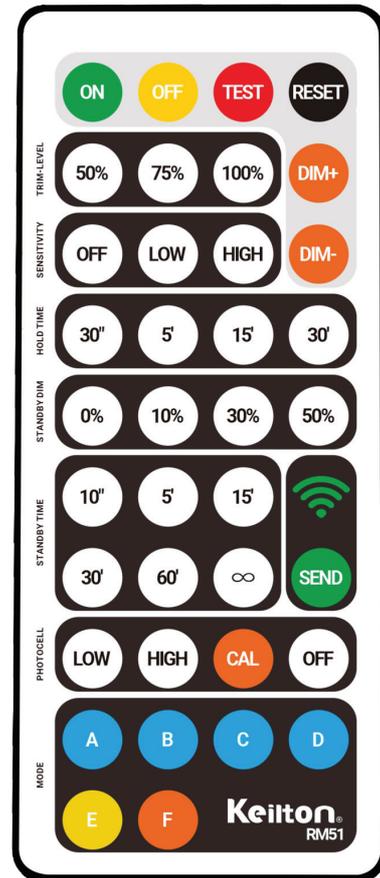
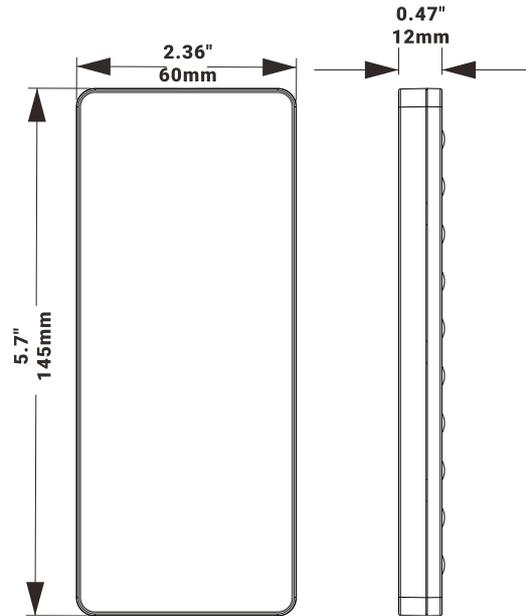
### FEATURES

1. Low power consumption
2. Infrared communication
3. Setting most of Keilton Sensors G2
4. Memory can be saved to A, B, C, D, F

### INSTRUCTIONS

ON	Turns On Luminaires
OFF	Turns OFF Luminaires
TEST	Test mode will last 5 mins then return to previous setting Test mode will hold time 2 seconds SDL 50% and standby time 2 seconds
RESET	Trim-High=100%, sensitivity=High, T1=5min, Standby Dim=30%, T2=60min, Photocell=OFF
DIM+/-	Remote will manually dim luminaire up or down by increments of 0.5volts. Must be smooth dimming if holding dimming button.
TRIM-LEVEL	Set Maximum threshold value 50/75/100%
SENSITIVITY	OFF(PIR OFF Enter PC ON/OFF function)/LOW(50%)/HIGH (100%)
HOLD TIME	(time of no occupancy after which fixture goes to stand by) 30s / 5min / 15min / 30min
F MODE DAYLIGHT HARVESTING	(Enable/Disable) Measure and set feature to allow the fixture to maintain a light level. If turned ON.
STANDBY DIM	Select any standby dim level 0/10/30/50%
STANDBY TIME	Stand by time - 10s / 5min / 15min / 30min / 1h / ∞. "∞" means the stand-by time is infinite and the fixture is effectively controlled by the daylight sensor)
PHOTOCELL	LOW (1fc) / HIGH (50fc)/CAL Collecting The current Lux Level OFF
MODE	Set settings to a Program profile A to F
SEND	Send settings to sensor
DEFAULT MODE A	Trim-High=100%, sensitivity=low, T1=30min, Standby Dim=50%, T2=∞, Photocell=CAL
DEFAULT MODE B	Trim-High=100%, sensitivity=low, T1=30min, Standby Dim=50%, T2=15min, Photocell=CAL
DEFAULT MODE C	Trim-High=100%, sensitivity=low, T1=30min, Standby Dim=50%, T2=15min, Photocell=OFF
DEFAULT MODE D	Trim-Low=50%, sensitivity=low, T1=30s, Standby Dim=50%, T2=30min, Photocell=CAL
DEFAULT MODE E	Manual Mode, Trim-High=100%
DEFAULT MODE F	Daylight Harvesting, Trim-Low=50%, sensitivity=low, T1=15min

### Diagram



# Motion Sensor Controller

## TL-HB/Sensor/Controller

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### Memory Mode (Commissioning)

To begin commissioning, follow the steps below:

1. Select either **A, B, C, D**.
2. Indicator lights on the remote will flash to indicate the current saved settings.
3. Settings can be configured by pressing appropriate buttons in the highlighted gray area of the remote. (TRIM-LEVEL, SENSITIVITY, HOLD TIME, STANDBY DIM, STANDBY TIME, and PHOTOCCELL). Review selected settings and make changes as necessary.
4. Point IR remote to desired luminaire for configuration and press "SEND".
5. If configuration is successful, luminaire will flash two times suggesting settings are saved. Any parameter change to the current saved settings on A to F will override previous settings and will be automatically saved on the remote. If configuring multiple luminaires, select the configured memory mode A to E then follow steps 4 and 5.

\*\*\* **E Mode** allows visual adjustment to choose the desired dimming Level.

### Continuous Adjustment Mode or Daylight Harvesting (F Mode)

Enables dimmability in response to daylight availability.

1. Point IR remote to desired luminaire
2. Press "ON" then press DIM+ or DIM- to adjust dimming level.
3. Press "F", indicator lights on the remote will indicate current saved settings. Note: only TRIM-LEVEL, SENSITIVITY, and HOLD TIME can be selected for Daylight Harvesting settings.
4. Review selected settings and make changes as necessary. Press "SEND".
5. If configuration is successful, luminaire will flash twice to confirm setting saved.  
If configuring multiple luminaires, select the configured Daylight Harvesting settings then follow steps 4 and 5.

### Reset Mode

Default Settings: Motion --> 100%, No Motion >= 5min --> dim to 30%, No Motion >= 60min --> Off