MAGNUM FIRST M9-ML2 Motion Lux Sensor Installation Guide

Contents

MAGNUM FIRST M9-ML2 Motion Lux Sensor

Description
The Magnum Innovations Motion and Lux sensor (Mx-ML2) is a wireless, self powered, passive infrared sensor that ensures reliable detection of occupant presence. The Mx-ML2 is ideally suited for occupancy based lighting control and also provides for indoor daylight harvesting functionality, with a light range of 0-1020lx. When paired with a relay (Mx-USR-L1) and a wireless rocker switch (Mx-ESRP), the sensor creates an out of the box, cost effective, lighting control system. When combined with an Magnum gateway (Mx-EBOX), the Mx-ML2 can be integrated into an existing BACnet-compatible building automation system.

Operation
Built in solar cells draw and store energy from available ambient light to power the device and keep it operational during periods of darkness. The device must be placed at the location where sensing is required and this location is dependent on individual application (refer to Sensor Placement Tips below). An optional battery back up is available for locations with low or no ambient light. The Mx-ML2 must be paired with a receiver (refer to Compatible Devices section). The device can be paired manually to compatible devices by pressing the LRN button while following the pairing instructions for the receiver. For more sophisticated configuration, please refer to the MES AirConfig tool available at **https://www.dropbox.com/s/mor2z812401nhti/airConfig_Setup.exe?dl=0**
The sensor can be mounted using screws or simply placed in selected location with double stick tape. It is recommended that the pairing of this device be done prior to installing the ceiling sensor.

Applications

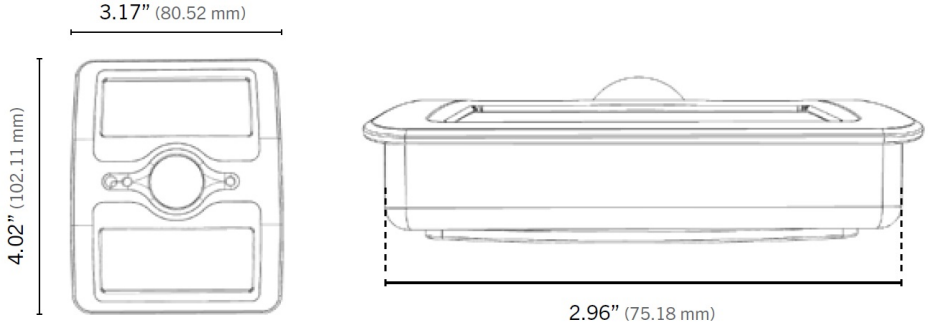
- Hotels & Resorts
- Retrofits
- Executive Offices
- Perimeter Zones
- Restrooms
- Private Offices
- New Construction
- Classrooms
- Cruise Ships
- Daycare Facilities
- Colleges & Universities
- Conference Rooms
- Lighted Hallways
- Daylight Harvesting
- And more..

Technical Specifications

Part Numbers (Frequency Dependant)	M9-ML2 (902 MHz – North America) M8-ML2 (868 MHz – Europe and China) MJ-ML2 (928 MHz – Japan)
Range	150 feet (50-150 typical)
EnOcean Profiles To select profiles other than default, utilize the MES software for configuration “AirConfig Tool *”.Download available at https://www.dropbox.com/s/mor2z812401nhti/airConfig_Setup.exe?dl=0	A5-07-03 (Default) – Occ, Supply Voltage, Illumination 0-1000lx F6-02-01 – Rocker On/Off, Occ Only A5-06-02 – Illumination 0-1020lx only A5-07-01 – Occ, Supply Voltage A5-07-02 – Occ, Supply Voltage A5-08-01 – Occ, Supply Voltage, Illumination 0-510lx A5-08-02 – Occ, Supply Voltage, Illumination 0-1020lx A5-08-03 – Occ, Supply Voltage, Illumination 0-1530lx

Light Sensor	0-95 FC (0-1020 Lux)
Default Transmission Interval	Immediate upon detected occupancy (Status signal sent every 15 minutes)
Default Unoccupied Send Delay	5 minutes (Adjustable via airConfig Tool*)
Minimum Light Required to Charge	4FC (40 Lux)
Minimum Charge Time to Begin Operation	1 minute @ 20FC (200 Lux)
Full Charge Time	8 hours (approx) @100FC (1000 Lux)
Maintain Charge Time	3 hours per 24 hours @ 20FC (200 Lux)
Operation Life at Full Charge (no battery)	up to 72 hours
Optional Battery Life	10 years (1/2AA 3.6V Lithium)
Operating Temperature	-3°F to 140°F (20°C to 60°C)
Detection Distance (PIR Sensor)	39 ft (12 m)
Detection Range (Horizontal & Vertical) (PIR Sensor)	102° x 92°

Dimensions



User Instructions

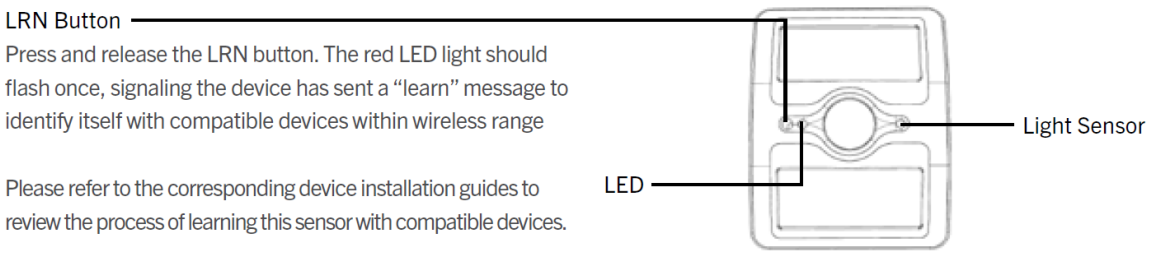
UPON RECEIVING ML2 FOLLOW STEPS BELOW..

1. Insert provided battery into the ML2

2. To ensure proper operation of the device, press and release the learn button and you should see the LED flash once
3. Repeat Step 2 twice for a total of 3 times
4. If the LED does not flash, remove the battery and wait 5 seconds. Then reinstall the battery and repeat Step 2
5. The device is now ready for pairing if so desired

FOR BATTERY FREE OPERATION, place the device under bright light for 8 hours to attain a full charge before operating

PAIRING:

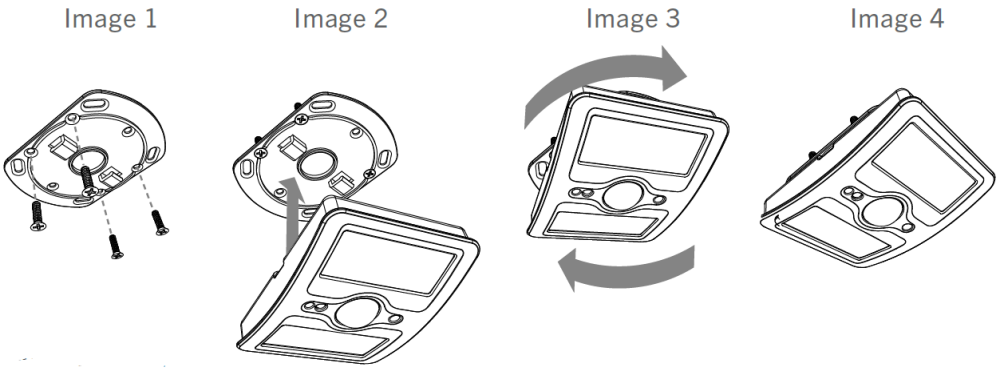


NOTE: It is recommended that pairing of device be done prior to installing the ceiling sensor
NOTE: Use a nonmetallic pin when pressing the Learn Button

Compatible Devices

- M9-TS1 (24V Intelligent Thermostat with 4.3" LCD)
- M9-PFC-EO2037 (24V Thermostat)
- M9-UTR-L1 (Two Channel Lighting Control Module)
- M9-AP2 (Access Point)
- M9-PFC-EO2036 (Line-Voltage Thermostat)
- M9-USR-L1 (Single Channel Lighting Control Module)
- M9-eBox (BACnet IP Gateway)
- M9-ILS2 (Integrated Light Switch)

Mounting



Ceiling Mount (With Screws):

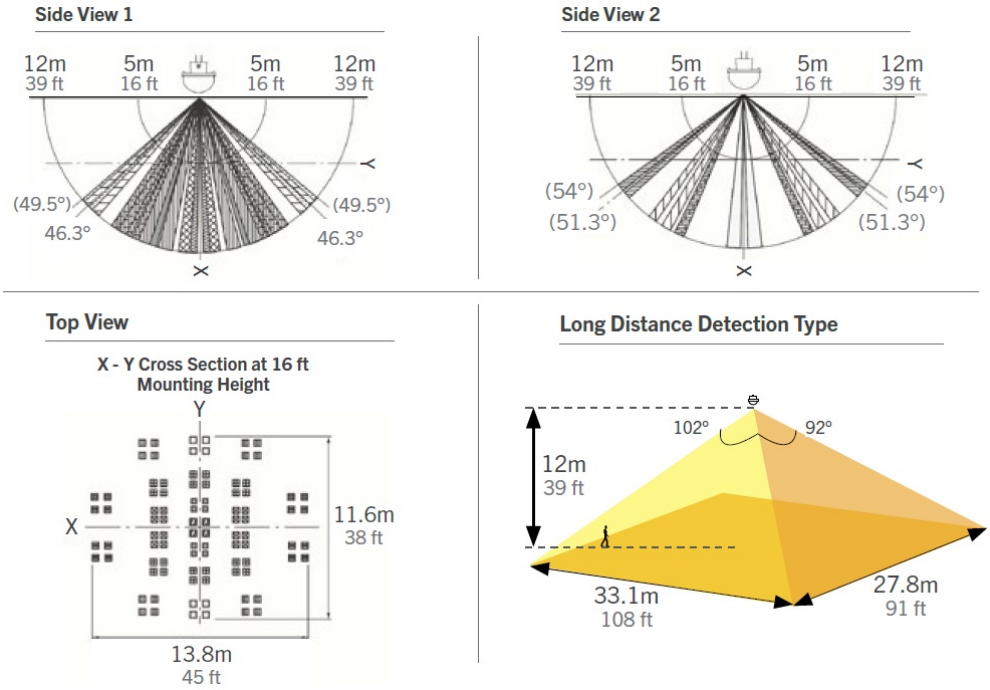
1. Mount backplate to ceiling with the four provided screws (see Image 1)

2. Attach the body of the sensor to the backplate by rotating until locked into place (see Images 2-4)

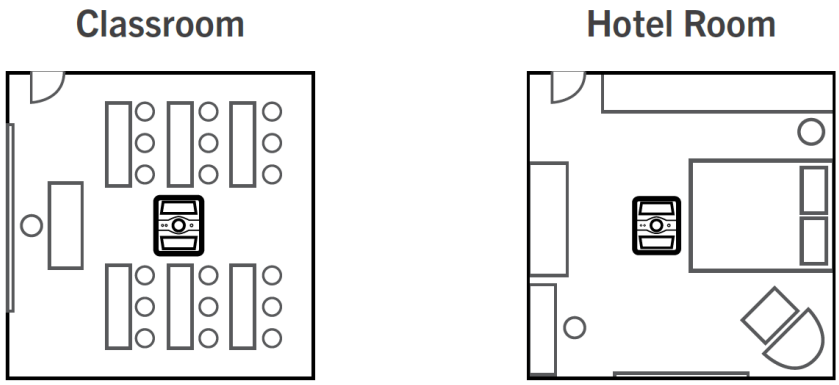
Ceiling Mount (With Tape:

1. Peel layer off double stick tape and place one side onto back of sensor housing.
2. When ready to place, peel other layer off tape and firmly push motion sensor onto surface and hold for 30-60 seconds.

Coverage



Sensor Placement



Sensor Placement Tips:

1. Do not mount sensor near obstacles that could potentially block sensor's line of sight.
2. Keep sensors 10-15ft away from heating vents and radiators. If a sensor detects a rapid change in heat, it could inaccurately detect occupancy.
   If mounting on a wall or in a corner (anywhere other than ceiling) aim sensor towards the likely entry point.
   If sensor is to be used to control lights based on occupancy and perform daylighting controls, and there is a question related to appropriate placement, please refer to the guidance herein or call tech support at 330.656.9365.

NOTE: remember this device is charged and operates using the light in the room, if there are several mounting location choices, choose the brightest option.

Troubleshooting

1. Verify the LED flashes when the LRN button is pressed and released
2. If the LED light does not blink, check to see if the device is equipped with a back up battery
3. If the device has no back up battery, place the sensor under light, allowing it to charge
4. If the LED still does not flash after the LRN button is pressed and released, the sensor could be defective.
5. If the device includes a back up battery, then the battery might need to be replaced.

Warranty

U.S. Two-year Limited Warranty: Products purchased in the U.S.A. are warranted for two years from date of purchase by Magnum Innovations to be free of defects in materials and workmanship. In the event of such defect, product will be repaired promptly without charge or, at our option, replaced with a new product of equal or superior value if delivered to Magnum or an Authorized Service Center, prepaid, together with the sales slip or other proof of purchase date. This warranty excludes defects due to normal wear, abuse, shipping damage, or failure to use product in accordance with instructions. This warranty is void in the event of unauthorized repair or modification, or removal or defacing of the product labeling. The Magnum warranty specified herein covers material only and does not include labor or incidental costs associated with product replacement or repair.

Documents / Resources

	MAGNUM FIRST M9-ML2 Motion Lux Sensor [pdf] Installation Guide M9-ML2 902 MHz - North America, M8-ML2 868 MHz - Europe and China, MJ-ML2 928 MHz - Japan, M9-ML2, M9-ML2 Motion Lux Sensor, Motion Lux Sensor, Lux Sensor, Sensor

References

- Dropbox - File Deleted - Simplify your life
- BMS | Building Management Systems | Magnum First
- Dropbox - File Deleted - Simplify your life