IMPORTANT SAFEGUARDS
When using electrical equipment, basic safety precautions should always be followed including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS


2. This luminaire must be installed in accordance with the NEC or your local electrical code. If you are not familiar with these codes and requirements, consult a qualified electrician. 

   *Ce produit doit être installé conformément à NEC ou votre code électrique local. Si vous n’êtes pas familier avec ces codes et ces exigences, veuillez contacter un électricien qualifié.*

3. Suitable for damp location.

4. Maximum ambient operating temperature: 9L, 12L, 18L (M) = 50°C and 24L (H), and 30L= 40°C.

5. **MIN 90°C SUPPLY CONDUCTORS**

   *LES Fils D’ALIMENTATION 90°C MIN.*

6. Check to make sure that all input power connections have been properly made and the module is grounded to avoid potential electrical shock.

7. **DO NOT** lift luminaire by the power cord or any of the cables connected to the LED heatsink and LED driver.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

NOTES:

- Images used in this installation sheet are for illustration purpose, there are different configurations of the luminaire.

- For each mounting application below, when mounting to surface ensure that the mounting surface and customer supplied hardware is capable of supporting the weight of the luminaire.

- The center of mounting is **NOT** the same as the center of luminaire.

TO INSTALL:

**HOOK AND CORD MOUNT**

**STEP 1:**
Push down on retainer spring until top of spring is free of luminaire hook. See Figure 1.

**STEP 2:**
Slide hook into securely mounted customer supplied eye hanger and return retainer spring to original position.

**NOTE:** The luminaire should already be factory set for correct balance. If necessary, the fixture may be balanced by loosening the hook adjustment screws on the top of the housing and sliding the hook as necessary for correct balance. Tighten hook adjustment screws when finished. See Figure 1.

**STEP 3:**
Make wiring connections per the Electrical Connections section. After electrical connections for luminaires with a sensor go to pages 4-6 for installation of sensor.
PENDANT MOUNT

STEP 1:
Remove hinged splice box from top of housing by loosening screw and sliding box to the right and up from "L" channel. Unhook from hinge holes. See Figure 2 and 3.

STEP 2:
Remove hook, slider plate and cord and discard. Plug junction box knockout hole with provided junction box plug.

STEP 3:
Attach the supplied pendant mount slider plate using (2) supplied screws (Adjustment Screws).

Use customer supplied 3/4" threaded pendant, along with two customer supplied locknuts (one for inside the hinged splice box and one for outside the splice box). Pull supply leads into position from customer supplied conduit.

Note: If necessary, the luminaire may be balanced by loosening (2) screws for pendant adjustment on the top of the hinged splice box and sliding the adjustment plate as necessary for correct balance. Tighten (2) screws when finished. See Figure 2.

STEP 4:
Attach one end of the hinged splice box to luminaire by aligning hinge slots on Mounting Bracket with hinges on splice box, and then inserting the hinges into the slots.

STEP 5:
Make wire connections per Electrical Connections and then push the leads into hinged splice box. Close the hinged J-box and re-tighten the screw. See Figure 3.

STEP 6:
Secure other end of the hinged splice box to luminaire by sliding screw on Mounting Bracket up and over in "L" channel on the hinged splice box. See Figure 2.

STEP 7:
Secure luminaire to hinged splice box by tightening screw.

STEP 8:
For luminaires with a sensor go to pages 4-6 for installation of sensor.

REFLECTOR INSTALLATION

TOOL LESS REFLECTOR:

STEP 1:
Place the reflector over the luminaire mounting tabs so that the big reflector keyhole slots align with the tabs. See Figure 4.

NOTE: For aluminum reflectors, insert two screws, provided with the reflector, for retention as shown in Figure 4.

STEP 2:
Turn the reflector counter-clockwise until it locks into place with the locking feature. See Figure 4.

STEP 3:
To remove the reflector, depress locking tab and turn reflector clockwise.
STANDARD REFLECTOR:

**STEP 1:**
Loosen the (4) screws, shown in Figure 5, at least 0.1 inch from the heatsink.

**NOTE:** The view in Figure 5 is of the underside of the luminaire.

**STEP 2:**
Bring trim into housing and line up the (4) screws from Step 1, with the keyhole slots on the reflector.

**STEP 3:**
Rotate trim, turn clockwise and tighten the (4) screws from Step 1.

Mounting Lens or Wire Guard To Aluminum Reflector

**STEP 1:**
Secure the hinge retainer and frame hinge to the reflector using supplied screw and lock nut. See Figure 6.

**NOTE:** Reflector is pre-punched at position of this installation.

**STEP 2:**
Swing the wire guard into place and secure to the reflector with the attached spring latch. See Figure 6.

Mounting Lens or Wire Guard To Prismatic/Polycarbonate Reflector

**STEP 1:**
Place lens or wire guard onto the bottom of reflector, and place V-band around lens and reflector. See Figure 7.

**STEP 2:**
Secure lens or wire guard to reflector by tightening screw on V-band. See Figure 7.

INSTALLING SAFETY CABLE

**NOTE:** Safety Cable is sold separately as an accessory, please refer to installation sheet in safety cable packaging for complete installing instructions.

**STEP 1:**
Attach one end of the safety cable through the fin of the heatsink. See Figure 8.

**STEP 2:**
Attach other end of the safety cable to mounting surfaces using customer supplied hardware.

---

**ELECTRICAL CONNECTIONS**

**STEP 1:**
Make the following Electrical Connections:

a. For 120/277/347V connect the black fixture lead to the voltage supply or Hot 1 (for 208/240/480V wiring).

b. For 120/277/347V connect the white fixture lead to the neutral supply or Hot 2 (for 208/240/480V wiring).

c. Connect the green or green/yellow ground lead to the green wire position of the terminal block.

**STEP 2:**
For Dimming make the following Electrical Connections:

**NOTE:** The incoming signal cable needs to pass through the 1/2” knockout shown in Figure 3 on page 2.

d. If 0/1-10V Dimming is used, connect the violet lead to the supply positive dimming lead. If dimming is not being used ensure to cap off the violet lead.

e. If 0/1-10V Dimming is used, connect the gray lead to the supply negative dimming lead. If dimming is not being used ensure to cap off the gray lead.

**SUPPLY WIRING**

- **LINE**
- **OR HOT 1**
- **GROUND**
- **OR HOT 2**
- **DIM (+) VIOLET**
- **DIM (-) GREY**
- **NEUTRAL**
- **GROUN  -D GREEN**
- **NEUTRAL -WHITE**

**LUMINAIRE**

<table>
<thead>
<tr>
<th>LINE</th>
<th>LINE-BLACK</th>
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<tbody>
<tr>
<td>OR HOT 1</td>
<td></td>
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<tr>
<td>OR HOT 2</td>
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</tr>
<tr>
<td>VIOLET</td>
<td>DIM (+) VIOLET</td>
</tr>
<tr>
<td>GREY</td>
<td>DIM (-) GREY</td>
</tr>
</tbody>
</table>
ML SENSOR INFORMATION


INSTALLING SENSOR

STEP 1:
Locate the wire form on the sensor and install onto the luminaire by inserting the wire form into the [2] tabs under the driver box. See Figure 9.

STEP 2:
Ensure that the sensor is leveled. To level the sensor, loosen the screw on the top side of the sensor, and retighten the screw once the sensor is leveled. See Figure 9.

SENSOR DESCRIPTION

The occupancy sensor controls high and low light levels based on occupancy.

The sensor uses passive infrared sensing (PIR) technology that reacts to changes in infrared energy (moving heat) within the coverage area. Once the space is vacant and the time delay elapses (adjustable from 30 seconds to 30 minutes), the luminaire will turn off or dim. Sensors must directly “see” motion of an occupant to detect them, so careful consideration must be given to sensor placement. Avoid placement where sensor’s line of sight may be obstructed.

IMPORTANT: There is an initial warm-up period. It may take up to a minute before the lights turn on due to a sensor warm-up period required during initial power-up. This occurs during installation or after a lengthy power failure only.

PML SENSOR INFORMATION

NOTE: For programming of sensor and more detailed description of sensor visit https://www.legrand.us/-/media/brands/wattstopper/.../ws-datasheet-fsp-2x1b.ashx.

INSTALLING SENSOR

NOTE: Ensure that you remove the label on the unit that says, “Remove This Label Before Installing Lens”. If this label is not removed, the sensor will not work properly.

STEP 1:
Rotate the wire form up as shown. The wire form will snap into position to hold the Sensor horizontal. Confirm that Sensor screw is tight. See Figure 10.

STEP 2:
Locate the wire form on the sensor and install onto the luminaire by inserting the wire form into the [2] tabs under the driver box. See Figure 11.

STEP 3:
Rotate Sensor as needed to level position or adjust field of view.

NOTE: The horizontal position is fixed.

SENSOR DESCRIPTION

The FSP-2X1 is a motion sensor that controls lighting levels based on occupancy and ambient light.

The sensors use passive infrared (PIR) sensing technology that reacts to changes in infrared energy (moving body heat) within the coverage area. Once the sensor stops detecting movement and the time delay elapses, lights will go from high to low mode and eventually turn off if it is desired. Sensors must directly “see” motion of a person or moving object to detect them, so careful consideration must be given to sensor luminaire placement and lens selection. Avoid placing the sensor where obstructions may block the sensor’s line of sight. See Figure 12.

The FSP-2X1 operates on low voltage output of driver, no power pack is required. It is designed to be installed in indoor and outdoor environments. Once the device is initially powered up, the FSP-2X1 will use factory default parameters to operate. If adjustments are needed, the programming tool must be used.
FSP-2X1 COMMISSIONING

The commissioning process establishes the appropriate operating parameters of the FSP-2X1. This is done using the programming tool.

USING THE PROGRAMMING TOOL

The Wireless IR Programming Tool is a handheld remote control for setup and testing of the FSP-2X1. It provides wireless access to change the parameters of the sensor. The programming tool displays menus and prompts to lead you through each process. The navigation pad provides an intuitive way to navigate through the customization fields. See Figure 13.

Within a certain mounting height of the sensor, 40' (12.2m) or less, the programming tool allows modification of the system simply with the touch of a few buttons, without requiring ladders or tools.

OPERATION

The programming tool’s IR transceiver allows bidirectional communication between the FSP-2X1 and the remote control. Simple menu screens display the current status of the system and allow editing of the sensor parameters, such as high/low mode, sensitivity, time delay, cut off and more. You can also establish and store FSP-2X1 parameter profiles.

BATTERIES

The programming tool operates on three standard 1.5V AAA Alkaline batteries or three rechargeable AAA NiMH batteries (See Figure 15). The battery status is shown in the upper right corner of the home screen (See Figure 16). Three bars next to BAT= indicates a full battery charge. A warning appears on the display when the battery charge falls below a minimum acceptable level. To conserve battery power, the programming tool automatically shuts off 10 minutes after the last key press.

NAVIGATION

Use the (up) or (down) arrow keys to navigate from one field to another. The active field is indicated by a blinking cursor. Once active, use the Select button to move to a menu or function within the active field. Value fields are used to adjust parameter settings. They are shown in angle brackets: <value>. Once active, change them using the (left) and (right) arrow keys. In general, the (right) key increments and the (left) key decrements a value. Selections wrap-around if you continue to press the key beyond maximum or minimum values. Moving away from the value field overwrites the original value. The Home button takes you to the main menu. The Back button can be thought of as an undo function. It takes you back one screen. Changes that were in process prior to pressing the key are lost. See Figure 14.

For further details on the Sensor, Settings, Tips and refer to https://www.legrand.us/-/media/brands/wattstopper/.../ws-datasheet-fsp-2x1b.ashx.

IR COMMUNICATION

IR communication can be affected by the mounting height of the sensor and high ambient lighting such as direct daylight or other electric light sources in close proximity. When trying to communicate with the FSP-2X1, be sure to be positioned directly under the sensor without any obstructions. Every time the programming tool establishes communication with the FSP-2X1, the controlled load will cycle. See Figure 14.

- If communication is not successful, (if possible) move closer to the sensor. In some cases, a ladder or lift may be required
- If still not successful, there may be too much IR interference from other sources. Programming the unit at night when there is no daylight available may be the only way to communicate with the sensor.
- If multiple FSP-2X1 sensors are within the transceiver’s range, all of the loads may cycle and the “no response from device” message may appear on the display.
TROUBLESHOOTING

NO RESPONSE SCREEN APPEARS:

• Make sure that the sensor is not obstructed.
• Move closer to the sensor. A ladder or lift may be required.
• The angle may be too high, move closer so that you are directly underneath the sensor.
• Make sure that multiple sensors are not in the range of the transceiver. If this happens, then all of the luminaires will cycle.
• If still not successful, there may be too much IR interference from other sources. Programming the unit at night may be the only way to communicate with the sensor.

LIGHTS WILL NOT go to high mode:

• Make sure that the sensor is not obstructed. The sensor must detect motion to switch to HIGH mode. The red LED indicator will blink when motion is detected.
• Check the light level parameter, to find out the amount of light that the sensor is detecting. Cover the sensor lens to simulate darkness in the room. If the luminaire goes to high mode, then the setpoint needs to be adjusted to a value greater than the detected light level. See the new settings and current settings sections for instructions.
• If the light level is higher than the setpoint value but less than the photocell value, then the luminaire will remain in low mode. Adjust the setpoint and photocell values as needed.
• Make sure that the high and low settings are correct by checking the current settings.

Lights will not go into Low Mode:
The time delay can be set from a minimum of 30 seconds to a maximum of 30 minutes. Ensure that the time delay is set to the desired value and that there is no movement within the sensor’s view for that time period.

• To quickly test the unit operation, enable Test Mode and move out of the sensor’s view. The luminaire should switch to LOW mode after 5 seconds.

Lights will not turn OFF:

• Cut Off time may be set to “None.”
• Ensure that the Cut Off is set to the desired time and that there is no movement within the sensor’s view for that time period when the lights are in Low Mode.
• To quickly test the unit operation, enable test mode and move out of the sensor’s view. The luminaire should switch to LOW mode after 5 seconds and then turn OFF (if cut off is enabled) after 10 sec.
• If the luminaire does not turn off in daylight, check the ambient light level. Adjust the photocell setting to a value lower than the ambient light level. The setpoint may also need to be adjusted if the difference is less than 10 fc.
• Make sure that the Sensitivity field is not set to On-Fix.

Lights will not turn ON:

• Check all wire connections and verify that the load and the ground wires are tightly secured.
• Check the current settings. If the setpoint value is lower than the ambient light level, the luminaire will be held OFF. Increase the setpoint value.
• Disable the cut off function, if not desired.
• Make sure that the Sensitivity field is not set to Off-Fix.

OPERATION DURING POWER-UP

During the sensor warm-up period, which can last up to a minute after initial power-up (or after a lengthy power outage), the load will remain ON until the selected time delay expires.

TECHNICAL SUPPORT

If unable to successfully resolve problems with the sensor, contact Cree Lighting at 800.236.6800 for technical support.

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

CAUTION: Changes or modifications not expressly approved could void your authority to use this equipment.

This device complies with Part 15 of the FCC Rules. Operation to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the device is operated in a commercial environment. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this device in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

INDUSTRY CANADA STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. In addition, this device complies with ICES-003 of the Industry Canada (IC) Regulations.

Le présent appareil est conforme aux CNR d’Industrie Canada applicables aux appareils radio exempts de licence. L’exploitation est autorisée aux deux conditions suivantes : (1) l’appareil ne doit pas produire de brouillage, et (2) l’utilisateur de l’appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement.