IMPORTANT SAFEGUARDS

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

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. **DANGER** - Risk of shock - Disconnect power before installation.

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.

3. Suitable for damp location.


5. **MIN 90°C SUPPLY CONDUCTORS**

6. This equipment should be installed and operated with a minimum distance 20cm between the radiator and your body.

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

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

9. All electrical connections for the sensor have been made at the factory.

10. The sensor is designed for mounting heights between 8 ft. to 40 ft. (2.4 m to 12.2 m). The handheld remote unit has a range of up to 40ft (12.2 m).

11. When mounting heights are above 30ft. (9.1 m), the sensor generally only detects large objects such as forklift trucks.

12. When the sensor lens assembly is removed the exposed sensor body is sensitive to electrostatic discharge. Take the necessary steps to avoid possible damage to the sensor.

13. Use Class 1 Wiring methods ONLY

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

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.

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. Use 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. 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.

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 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.

SITE MAP LABEL

STEP 1:
Remove unit site map label Snap address. See Figure 8.

STEP 2:
Apply site map label to the correct position on the site map. See Figure 8.

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 9.

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

SYSTEM COMMISSIONING AND CUSTOMIZING

System commissioning is required for the fixtures to be recognized on the Simply SNAP network. Contact Cree Lighting at 800-236-6800 for more details about commissioning and customization.
ELECTRICAL CONNECTIONS

STEP 1:
NOTE: USE MIN. 90°C SUPPLY CONDUCTORS for 120-277V luminaires.

Make the following Electrical Connections for products rated 120V or 277V (Line-Neutral), or rated 208V, or 240V (Line-Line):

a. For products rated 120V or 277V, connect the Black lead from the luminaire to the LINE supply wiring inside the junction box or for products rated 208V, or 240V, connect to the HOT 1 supply wiring.

b. For products rated 120V or 277V connect the White lead from the luminaire to the NEUTRAL supply wiring inside the junction box or for products rated 208V, or 240V, connect to the HOT 2 supply wiring.

c. Connect the Green or Green/Yellow lead from the luminaire to the GROUND supply wiring inside the junction box.

STEP 2:
The Blue/White low-voltage wires are used to override the luminaire to full output. They may be connected to third-party equipment to provide an override signal to the luminaire. Do not wire the Blue/White wires to high-voltage. The wires should be capped if not being used.

- **SHORT:** Luminaire overrides to full output
- **OPEN:** Luminaire operates normally
SENSOR INFORMATION


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 PROGRAMMING

NOTE: The IR Wireless Programming Tool is needed for the following steps. The following settings must match to ensure optimal performance of the Synapse Environment.

NOTE: The FSP-2X1B sensor has been preprogrammed with the optimal settings to provide the widest range of user flexibility in the field. Sensor characteristics can be modified in the Synapse user interface (recommended) or by using the IR Wireless Programming Tool. To reset the FSP-2X1B to the Cree Lighting preprogrammed settings and ensure optimal performance of the Synapse Environment. See Figure 13 for preprogrammed setting chart.

STEP 1:
Select FSP-2X1

STEP 2:
Select New Settings

STEP 3:
Input the following Settings for the Synapse Environment:

<table>
<thead>
<tr>
<th>Setting</th>
<th>KBL WIRELES FSP-201B</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH MODE</td>
<td>10 Volts</td>
</tr>
<tr>
<td>LOW MODE</td>
<td>0 Volts</td>
</tr>
<tr>
<td>TIME DELAY</td>
<td>30 SECONDS</td>
</tr>
<tr>
<td>CUT OFF</td>
<td>1 Min</td>
</tr>
<tr>
<td>SENSITIVITY</td>
<td>MAX</td>
</tr>
<tr>
<td>SETPOINT</td>
<td>Disable</td>
</tr>
<tr>
<td>RAMP UP</td>
<td>Disable</td>
</tr>
<tr>
<td>FADE DOWN</td>
<td>Disable</td>
</tr>
<tr>
<td>PHOTOCELL</td>
<td>Disable</td>
</tr>
</tbody>
</table>

STEP 4:
Select SEND

Follows prompts, if “no response from device” is displayed see the last page for troubleshooting.

SENSOR DESCRIPTION

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

The sensor uses 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 at 120V/230V/240V/277V, 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. If no commissioning steps are taken, the sensor will use its default parameter values. For further details on the Sensor, Settings, Tips and refer to https://www.legrand.us/-/media/brands/wattstopper/.../ws-datasheet-fsp-2x1b.ashx.

**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 14.

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 bi-directional 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 16]. The battery status is shown in the upper right corner of the home screen (See Figure 17). 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.

**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 15.

- 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. Programing 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 same view 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 go 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, call 800-236-6800 for Cree Lighting 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.

The LED in the front of this device operates within Risk Group 1 levels per IEC 62471.

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 licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful 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 bruitage, et (2) l’utilisateur de l’appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement.

Radiation Exposure Statement:

- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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