

# Radio Powr Savr

Installation Instructions  
Please Read Before Installing

English



041753  
Rev. A  
05/2020

## Wireless Battery-Powered Occupancy Sensor

LRF5-OCR2B-P 3 V<sup>===</sup> 14  $\mu$ A 865 MHz (Occupancy/Vacancy)

### Compatible Products/Additional Information

For a full list of compatible products and other additional information visit [www.lutron.com/globalenergysolutions](http://www.lutron.com/globalenergysolutions)

### Product Description

Lutron's ceiling-mounted occupancy sensors are wireless, battery-powered, passive infrared (PIR) devices that automatically control lights via RF communication with a dimming or switching device.

### Important Notes

1. This sensor is part of a system and cannot be used to control a load without a compatible dimming or switching device. Refer to the instruction sheets of the receiving device(s) for installation information.
2. Use only high-quality lithium batteries, size CR123, 3 V<sup>===</sup> (ANSI-5018LC, IEC-CR17345). **DO NOT** use rechargeable batteries. Using improperly rated batteries could damage the sensor.

**NOTICE: DO NOT** disassemble, crush, puncture, or incinerate batteries. **DO NOT** dispose of batteries in normal household waste. Please recycle, take to a proper battery disposal facility, or contact your local waste disposal provider regarding local restrictions on the disposal or recycling of batteries.



**CAUTION: Risk of Fire, Explosion, and Burns.** Do not recharge, disassemble, heat above 200 °F (100 °C) or incinerate. This product contains a lithium battery. The battery in this device contains Perchlorate Material — special handling may apply. For more information visit [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate)



**WARNING: Entrapment hazard.** To avoid the risk of entrapment, Serious Injury, or Death, these controls must not be used to control equipment which is not visible from every control location or which could create hazardous situations such as entrapment if operated accidentally. Examples of such equipment which must not be operated by these controls include (but are not limited to) motorized gates, garage doors, industrial doors, microwave ovens, heating pads, etc. It is the installer's responsibility to ensure that the equipment being controlled is visible from every control location and that only suitable equipment is connected to these controls. Failure to do so could result in Serious Injury or Death.

### Sensor Operation

The sensor will automatically turn the lights on when the space is occupied and automatically turn the lights off after the space is vacated.

### Customer Assistance

For questions concerning the installation or operation of this product, call the **Lutron Customer Assistance**. Please provide exact model number when calling.

India, New Delhi  
**+91.11.4051.4300**

United Kingdom  
**0800.282.107 or +44.(0)20.7680.4481**

Other countries  
**+1.610.282.3800**

[www.lutron.com/support](http://www.lutron.com/support)

### Limited Warranty

Lutron EA Ltd. ("Lutron EA") warrants each unit to be free from defects in material and workmanship and to perform under normal use and service. To the extent permitted by law, Lutron EA and Lutron Electronics Co. Inc. ("Lutron") make no warranties or representations as to the units except as set forth herein. This warranty shall run for a period of two years from the date of purchase and Lutron's obligations under this warranty are limited to remedying any defect, replacing any defective part or replacement (at Lutron EA's sole option) and shall be effective only if the defective unit is shipped to Lutron EA postage prepaid within 24 months after purchase of the unit. Repair or replacement of the unit does not affect the expiry date of the warranty. This warranty does not cover damage or deficiencies due to abuse, misuse, inadequate wiring or insulation or use or installation other than in accordance with instructions accompanying the unit. To the extent permitted by law, neither Lutron EA nor Lutron shall be liable for any other loss or damage including consequential or special loss or damages, loss of profits, loss of income, or loss of contracts arising out of or relating to the supply of the unit or the use of the unit and the purchaser assumes and will hold harmless Lutron EA and Lutron in respect of all such loss or damage. Nothing in this warranty shall have the effect of limiting or excluding Lutron EA's or Lutron's liability for fraud or for death or personal injury resulting from its own negligence, or any other liability, if and to the extent that the same may not be limited or excluded as a matter of law. This warranty does not affect the statutory rights of consumer purchasers of this product. Although every attempt is made to ensure that catalogue information is accurate and up-to-date, please check with Lutron EA before specifying or purchasing this equipment to confirm availability, exact specifications, and suitability for your application.

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**LUTRON**

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# Instructions

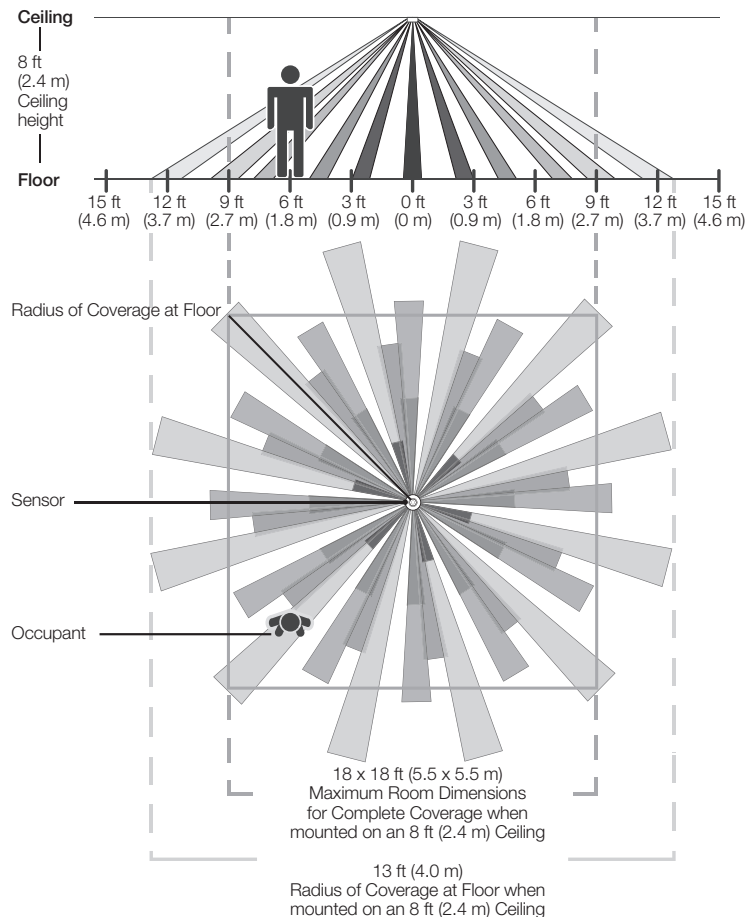
## A Pre-Installation

1. Before setting up the sensor, the corresponding dimming or switching device(s) must be installed.
2. Twist and remove mounting bracket to insert battery into battery cavity.

## B Set-Up

In order for the sensor to operate properly, it must first be set up with a corresponding dimming or switching device/system. Consult [www.lutron.com/occensors](http://www.lutron.com/occensors) and click on "Coordinating products" to find your system.

## C Sensor Detection Range



Sensor Coverage Chart (for sensor mounted in center of room)

Ceiling height	Maximum room dimensions for complete floor coverage*	
8 ft (2.4 m)	18 ft x 18 ft (5.5 m x 5.5 m)	324 ft <sup>2</sup> (30.2 m <sup>2</sup> )
9 ft (2.7 m)	20 ft x 20 ft (6.1 m x 6.1 m)	400 ft <sup>2</sup> (37.2 m <sup>2</sup> )
10 ft (3.0 m)	22 ft x 22 ft (6.7 m x 6.7 m)	484 ft <sup>2</sup> (44.9 m <sup>2</sup> )
12 ft (3.7 m)	26 ft x 26 ft (7.9 m x 7.9 m)	676 ft <sup>2</sup> (62.4 m <sup>2</sup> )

\* 12 ft (3.7 m) is the recommended maximum mounting height

## D Sensor Placement and Coverage

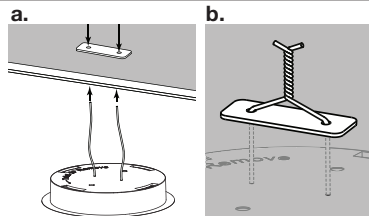
Before mounting the sensor, please note the following:

- The sensor is designed for ceiling use only. **DO NOT** install on ceilings higher than 12 ft (3.7 m).
- The sensor should be installed in a location where it has a good view of all parts of the room. The sensor requires line of sight to operate properly. **If you cannot see the sensor, it cannot see you.** The sensor cannot see through glass objects such as patio or shower doors.
- **DO NOT** mount the sensor within 4 ft (1.2 m) of HVAC vents, halogen or incandescent light bulbs, microwave ovens, Wi-Fi routers, IOT cameras, or other non-Clear Connect wireless devices. When using Clear Connect—Type X lamps or fixtures, ensure sensor is mounted at a distance of 2 ft (0.6 m) or greater from the lamp or fixture.
- The sensor may be installed up to 60 ft (18.3 m) away from the associated dimming or switching device(s) if they are in direct line of sight. If there are walls or other barriers between the sensor and receiving device(s), the sensor should be located within 30 ft (9.1 m).
- Whenever possible, avoid placing the sensor in a location where it has a broad view outside the intended space. If this is unavoidable, the lens can be masked to block the view of undesired areas (see [www.lutron.com/occensors](http://www.lutron.com/occensors)).

## E Mounting Methods

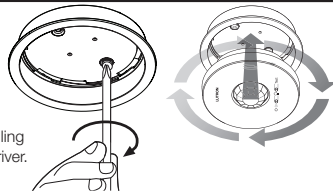
### 1 Drop-Ceiling Mounting

- Place the mounting wire through the mounting bracket and pierce ceiling tile in the desired location. From the opposite side of the tile, slip the Ceiling Tile Backer through both legs of the wire.
- Twist the wire tightly to prevent sensor sagging. The Ceiling Tile Backer will prevent the tile from breaking.



### 2 Solid-Ceiling Mounting

- Drill two 3/16 in (4.6 mm) pilot holes for the provided screw anchors.
- Press the anchors into the holes and tap flush with a hammer.
- Place the flat side of the mounting bracket against the ceiling and install the two provided screws using a hand screwdriver.
- Attach the sensor to the mounting bracket by inserting and twisting in a clockwise direction until the sensor locks into place.

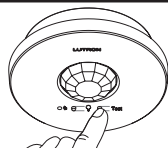


**NOTE:** For details on temporary mounting on solid ceiling surfaces, visit [www.lutron.com/occsensors](http://www.lutron.com/occsensors).

## F Testing Sensor Coverage

- With the sensor mounted on the ceiling, press and release the "Test" button. The lens will glow briefly, indicating the test mode has been entered.

**NOTE:** There is a warm-up period of 90 seconds after the battery is installed before the test mode is activated. If the button is pressed during this time, the lens will flash continuously until the warm-up period is complete, and then the test mode will be automatically entered.



- Confirm the coverage area by walking through the space and observing the lens. The lens will glow solid every time motion is detected. If the lens remains off during motion, the Sensor cannot detect motion at that location.

- Press and release the "Test" button again to exit the test mode. If the button is not pressed, the test mode will automatically time out 15 minutes after being enabled, or 5 minutes after the last detected motion if the room is vacated.

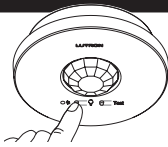
- If the sensor has significant trouble detecting motion during the test, it should be moved to another location and re-tested. **NOTE:** If the sensor is detecting motion in areas that are not desirable, such as hallways or adjacent rooms, refer to [www.lutron.com/occsensors](http://www.lutron.com/occsensors).

- If sensor detection is satisfactory during this test, perform the wireless communication test as described in section **G. Testing Wireless Communication**.

## G Testing Wireless Communication

This test should be performed to verify the sensor has been correctly set up with the corresponding dimming or switching device and that there is proper wireless communication from the chosen sensor location.

Press and release the "Light" button multiple times to toggle the lights on and off.



## H Advanced Set-Up (Optional)

The sensor features several advanced set-up modes. For the majority of installations, the default settings will provide the best performance and you will not need to utilize the advanced set-up. If you determine the default settings require adjustment, refer to the back of the sensor.

The sensor has three adjustable advanced set-up modes: Timeout, Auto-On, and Activity.

The default settings are listed below.

Auto-On	Activity	Timeout	
Enabled		30 min	<input type="radio"/>
LowLight		15 min	<input type="radio"/>
Disabled		5 min	<input type="radio"/>

### Default Settings:

Timeout: 15 minutes

Auto-On: Enabled

Activity: Low Activity

## Advanced Set-Up Modes

### Timeout

The sensor will turn the lights off if no motion occurs for the duration of the timeout period. There are four available timeout settings: **1\*, 5, 15, and 30 minutes**.

### Auto-On

The automatic-on functionality of the sensor can be adjusted to control how the lights respond upon initial occupancy. There are three available settings: Always, Low light, and Disable.

**Enabled:** The lights will always turn on.

**Low light:** The lights will only turn on automatically upon entry if there is not already sufficient ambient light in the room.

**Disabled:** This setting converts the sensor to vacancy mode. The lights will not automatically turn on but will still automatically turn off after vacancy. The lights must be manually turned on by using the associated dimming or switching device.

### Activity

The sensitivity of the sensor can be adjusted based on the expected level of activity within the room. There are three available activity settings: Low Activity, Medium Activity, and High Activity.

**Low Activity:** This is the most sensitive setting and will detect very slight motions. This is the recommended setting, as it will work well for nearly all applications. It is ideal for spaces where occupants will often be seated for long periods of time.

**Medium Activity\*\*:** This setting is slightly less sensitive than the Low Activity setting and can be used for spaces that experience normal activity.

**High Activity\*\*:** This is the least sensitive setting and can be used for spaces that will generally only experience large motions, such as foot traffic.

\* To select a 1-minute timeout, press and hold the timeout button for approximately 10 seconds until all 3 LEDs begin flashing rapidly. To save the 1-minute timeout setting, press and hold the timeout button until all 3 LEDs turn on solid, indicating the 1-minute timeout has been saved.

\*\* The Low Activity setting is the default and will perform best for most applications. Rarely, if the sensor is placed near external noise sources such as heating vents, air conditioning vents, or light bulbs, it may turn the lights on without occupancy or keep the lights on too long after vacancy. If this occurs, changing the sensitivity to Medium Activity or High Activity should resolve the problem.

## Troubleshooting

Symptom	Possible Causes	Solution
Lights do not turn ON when space is occupied.	Sensor is not correctly added to dimming/switching device(s).	Refer to section <b>B. Set-Up</b> .
	Sensor's Auto-On setting is set to "Low light" or "Disabled".	Refer to section <b>H. Advanced Set-Up</b> .
	The lights were recently turned off manually and the timeout has not yet expired.	For more details, refer to <b>Frequently Asked Questions</b> at <a href="http://www.lutron.com/occsensors">www.lutron.com/occsensors</a>
	Sensor does not have full view of room.	Refer to section <b>C. Sensor Detection Range</b> .
	Sensor is outside wireless range of dimming/switching device.	Refer to section <b>D. Sensor Placement and Coverage</b> or <b>G. Testing Wireless Communication</b> .
	Battery has been installed incorrectly.	Refer to section <b>A. Pre-Installation</b> .
	Dimming/switching device has been improperly wired.	Refer to the instruction sheet of the receiving device or call Lutron Customer Assistance at 1.844.LUTRON1.
Lights turn OFF while space is occupied.	Breaker is off or tripped.	
	Sensor's timeout is too short for this application.	Refer to section <b>H. Advanced Set-Up</b> .
	Sensor does not have full view of room.	Refer to section <b>C. Sensor Detection Range</b> .
Lights stay ON after space is vacated.	Lens mask is improperly applied.	Refer to <a href="http://www.lutron.com/occsensors">www.lutron.com/occsensors</a>
	Sensor's activity setting is too low.	Refer to section <b>H. Advanced Set-Up</b> .
	Sensor's timeout has not yet expired.	Refer to section <b>H. Advanced Set-Up</b> .
Lights turn ON when walking past room.	An external noise source such as an HVAC vent is interfering.	Try moving Sensor to a new location or reducing sensitivity. Refer to section <b>D. Sensor Placement and Coverage</b> or <b>H. Advanced Set-Up</b> .
	Battery has been installed incorrectly.	Refer to section <b>A. Pre-Installation</b> .
Behavior of lights does not match Sensor settings.	Sensor coverage extends beyond room perimeter.	Refer to section <b>D. Sensor Placement and Coverage</b> .
	The intended setting was not saved.	Refer to section <b>H. Advanced Set-Up</b> .
Sensor lens does not glow in response to motion during Sensor coverage testing.	Multiple Sensors are added to a dimming/switching device and their settings do not match.	Refer to section <b>H. Advanced Set-Up</b> .
	Sensor cannot see motion due to obstruction.	Move Sensor to another location. Refer to section <b>C. Sensor Detection Range</b> .
	Room is too big or oddly shaped.	Multiple Sensors may be necessary for full room coverage. For more details, refer to <b>Frequently Asked Questions</b> at <a href="http://www.lutron.com/occsensors">www.lutron.com/occsensors</a>
Lens does not stop glowing during sensor coverage testing even when there is no motion.	Battery has been installed incorrectly.	Refer to section <b>A. Pre-Installation</b> .
	An external noise source such as an HVAC vent is interfering.	Try moving Sensor to a new location or reducing sensitivity. Refer to section <b>D. Sensor Placement and Coverage</b> or <b>H. Advanced Set-Up</b> .
Lights do not respond correctly during wireless communication testing.	Sensor is not correctly added to dimming/switching device.	Refer to section <b>B. Set-Up</b> .
	Sensor is outside wireless range of dimming/switching device.	Move Sensor closer to dimming/switching device and retry test. Refer to section <b>G. Testing Wireless Communication</b> .
	Battery has been installed incorrectly.	Refer to section <b>A. Pre-Installation</b> .
	Dimming/switching device has been improperly wired.	Refer to the instruction sheet of the receiving device or call Lutron Customer Assistance at 1.844.LUTRON1.
	Light bulb(s) burned out.	
Sensor lens flashes and lights do not turn ON when space is occupied.	Breaker is off or tripped.	
	Battery is low.	Replace battery. For more details, refer to <b>Frequently Asked Questions</b> at <a href="http://www.lutron.com/occsensors">www.lutron.com/occsensors</a>
	Sensor is in test mode.	Remove sensor from test mode. Refer to section <b>F. Testing Sensor Coverage</b> .