

# **LOS 2500**

## **SUPER CEILING SENSOR**

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### **Installation Manual**



**RAB**  
LIGHTING®

## How Do RAB Occupancy Sensors Work?

The LOS2500 sensor "sees" infrared heat changes caused by the motion of people within its detection zone and turns on lights automatically.

### How long do the lights stay on?

Lights stay on as long as motion is detected. They turn off a short time after motion in the detection range stops. You can adjust this time from 10 seconds to 15 minutes. Since the lights are only on when needed, and the sensor uses a negligible amount of power, the savings in energy costs are substantial.

### How much motion is necessary to keep lights on?

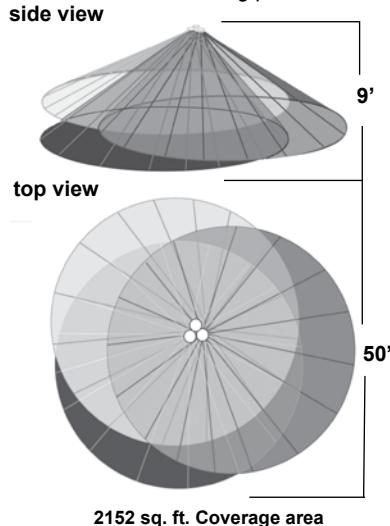
A 6" wave of a hand or head tilt once every 15 minutes is sufficient to keep the lights on.

### How do you adjust the sensor?

Time delay, sensitivity and photocell adjustments are located on the back of the unit. A red LED indicator on the front panel shows when motion is detected and aids installation testing.

### How large an area does the LOS2500 cover?

At a 9' mounting height, the maximum coverage is 2000 square feet. The detection pattern covers 360 degrees from the sensor location in the following pattern:



The LOS 2500 has 3 separate 360° detectors. Triple overlapping coverage provides super sensitivity and reliability.

## Selecting A Location:

Locate the LOS2500 where it has an unobstructed view of the room, particularly the areas normally occupied by people.

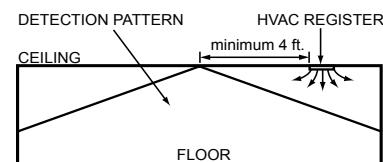
If people can not see the sensor lens from their normal positions in the room, the sensor will not detect their presence.

High cabinets, walls, columns, doors and other obstructions may limit the sensors view of the entire room. If obstructions can be moved the sensor will have a better view. If the obstructed areas are not normally occupied, the sensor will still see sufficient activity to operate properly.

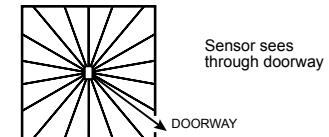
Several sensors can be used to cover large or oddly shaped rooms.

### Avoiding HVAC Turbulence

When Heating, Ventilating or Air Conditioning (HVAC) registers turn on they create turbulence which can cause the sensor to activate. It is important that the sensor and HVAC register be separated by at least 4'.



If the sensor's location gives it a view of other rooms or hallways, lights will be turned on when movement is detected in these adjacent areas. The sensor's detection zone may be restricted by masking a portion of the lens; or move sensor to eliminate detection through doorway.



## Mounting & Wiring

**CAUTION: For your own safety and to prevent damage to the unit, turn off ALL power by removing the power fuse or turning off the circuit breaker.**

- Please read the entire Installation Manuals before proceeding.
- All wiring should comply with local electrical codes and requires a qualified electrician.
- Make sure the total lighting load connected to the LOS2500 does not exceed the following ratings:

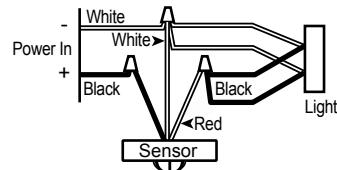
<u>120V</u>	<u>277V</u>
3.35hp	6.7hp
2000W    Fluorescent	1500W
2000W    Incandescent	1500W

To switch more wattage, install a relay to handle the load.

Switches most types of fluorescent and/or incandescent lighting. Instant Start fluorescent ballasts may not be rated for use with any kind of occupancy sensor. However, the LOS2500 cannot be used with dimmers.

1. Place sensor in circuit in front of all lights.
2. Connect as shown in wiring diagram.
3. Twist on wire nuts. Secure with electrical tape.
4. Make "Time" and "Sensitivity" adjustments while power is off (see section #3)
5. Insert plastic cap in mounting screw hole. Apply LightAlert label over other screw hole.
6. Mount on box, turn on power.

## Wiring Diagram



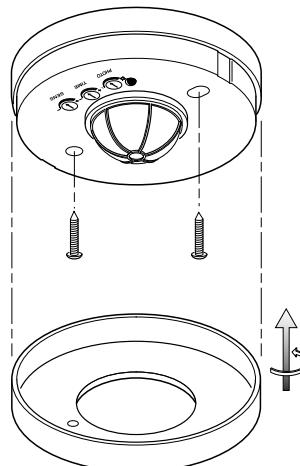
## Set-up & Adjustment

The unit will not turn off lights when power is initially applied until the time delay period (10 secs to 15 minutes) has elapsed.

### Detection Test

1. Walk to an area of the room where normal activity will occur. Remain motionless for 5 seconds. This 5 second period allows the Red LED Test Circuit to recharge. Move one arm until the LED blinks. This indicates that your movement has been detected.
2. Move to other areas. Repeat the test. Red LED will blink when sensor detects movement.

### Mounting & Installation

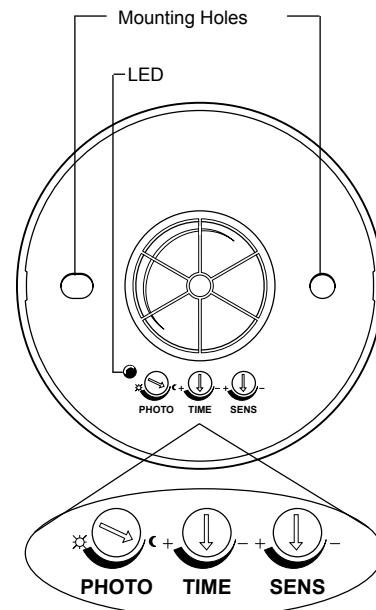


### Adjusting Photo Control

The photo control allows the LOS2500 to keep lights on during sunny days or to operate only during low light levels.

For operation on sunny days use a 1/4" screwdriver to turn "photo" arrow to sun symbol.

For operation only on days with low light levels turn "photo" arrow to moon symbol.



## Set-up & Adjustment

### Time Adjustment

The LOS2500 allows adjustment of the delay time from 10 seconds to 15 minutes.

If no movement is detected for the time period selected, the lights turn off. The Time Adjustment is factory set for 5 minutes.

The Time should be reduced only in heavy traffic areas such as hallways, kitchens, copier rooms, etc. to achieve maximum energy savings.

Keep the time setting at maximum in large rooms (over 400 sf).

### Sensitivity Adjustment

Adjusting the Sensitivity control is not normally necessary. It can reduce detector sensitivity 5%. Less sensitivity may be desired for smaller rooms (less than 400 sf).

If the unit is being activated by HVAC or other infrared sources (other than people), reducing the sensitivity may help.

### Masking the Lens

If the sensor's location gives it a view of other rooms or hallways, lights will be turned on when movement is detected in these adjacent areas. The sensor's detection zone may be restricted by covering a portion of the lens with the masking elements provided.

### Temperature Stabilization

If the sensor was in transit and subjected to extreme heat or freezing before installation it may take up to an hour for the sensor to reach room temperature and operate normally.

## Troubleshooting

### Lights do Not Turn On

1. Check for obstructions between sensor and area of activity.
2. Check that the bulbs and fixtures work. Check wiring against diagram.
3. Check that the power is on.
4. Increase sensitivity control to maximum.

### Lights Do Not Turn Off

1. Check items #1, 2 & 3 above.
2. Make sure there is no motion in the room for at least 15 minutes. Stay completely out of the protection pattern to avoid activating the unit.
3. Check the room for possible sources of infrared energy sources within view. Look for air conditioners, heaters, fans, concentrated or reflected lights, moving equipment or machinery with heat venting fans (computers, copiers, etc). Move the offending infrared source, or mask the lens facing the source to avoid detection. Reducing sensitivity will also help.

4. Make sure the sensor is not "seeing" people in other rooms or hallways through open doorways. Mask the lens in the direction of the door.
5. Make sure line voltage has not browned out below 110 volts. If voltage is not adequate sensor will not operate properly.

### Lights Turn On Without Reason

1. Check items #2, 3 & 4 under Lights Do Not Turn Off.

### Maintenance & Repair

A LOS2500 requires no maintenance other than keeping the lens area clean and free of obstructions. Do not attempt to open or repair the unit—there are dangerous voltages inside the case, and no user serviceable parts. For repair service, follow your warranty instructions.

# LOS2500 Specifications



	<u>LOS2500/120</u>	<u>LOS2500/277</u>
Coverage Area	2152 sf @ 9' ht	2152 sf @ 9' ht
Incandescent Watts switched	2000W	1500W
Fluorescent Watts switched	2000W	1500W
Relay Rating	5.4amps	5.4amps
Horsepower	3.35hp	6.7hp
Time Delay	10 secs to 15 mins	10 secs to 15 mins
Adjustments	Time Sensitivity Photo	Time Sensitivity Photo

## Limited Warranty

Your LOS2500 will be replaced or repaired at our option, if it proves to be defective in workmanship or materials within one year from the date of original purchase.

For repair or replacement return the product (freight prepaid and insured) to the address on back after packing it carefully. Please include your sales receipt and description of problem.

If your unit is out of warranty, or the damage is unrelated to the original manufacture, return your unit directly to us with a check for \$20 (made payable to RAB Lighting Inc.) for repair or replacement of the unit.

Under no circumstances shall we be liable for any incidental or consequential damage arising out of or in connection with the use or performance of this product or other indirect damages with respect to loss of property or revenue or cost of installation, removal or re-installation. This warranty gives you specific legal rights which vary from state to state.

**NOTE: THESE INSTRUCTIONS DO NOT COVER ALL DETAILS OR VARIATIONS IN EQUIPMENT NOR DO THEY PROVIDE FOR EVERY POSSIBLE SITUATION DURING INSTALLATION, OPERATION OR MAINTENANCE..**



### Easy Installation & Product Help

Tech Help Line  
Call our experts 888 RAB-1000

[rabweb.com](http://rabweb.com)  
Visit our website for product info

email  
Answered promptly [sales@rabweb.com](mailto:sales@rabweb.com)