Vacancy Basics

What is vacancy detection?

Vacancy detection is when vacancy sensors automatically turn lights off when the room is unoccupied. Sensors may have a preset or adjustable time-out depending on the sensor. Vacancy sensors will not turn lights on automatically when you enter the space. Lights have to be manually turned on by the occupant.

Why use vacancy detection?

Many building spaces remain unoccupied between 40% and 70% of the day. When lighting is left on even though a space is unoccupied, the result is wasted electricity and higher costs. Lutron vacancy sensors automate the switching and dimming of these lights, saving energy and money.

How does it work?

Lutron vacancy sensors incorporate advanced motion detection technologies to determine whether a person is occupying the space. Once the space is unoccupied a time-out begins. After the time-out period, the sensors will send an unoccupied event to the associated Lutron device, and the lights will be turned off.

Unoccupied time-out

When a user leaves the space, there is a specified time-out before the sensor turns the lights off. The default time-out can vary from system to system and can usually be modified per user specifications.
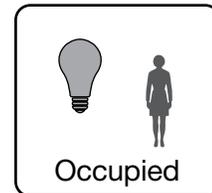
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Basic behavior example

9:30 a.m. –
Betty Smith walks into her office.

Sensor detects that the space is now occupied.
Note: Sensor does not turn on the lights.

Occupied

9:35 a.m. –
Betty manually turns the lights on.

Lights turn on.
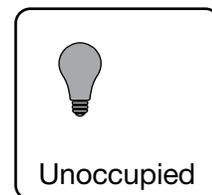
Occupied

10:00 a.m. –
Betty leaves her office.

Sensor detects the space is unoccupied,
and begins the 15-minute time-out.

Occupied

10:15 a.m. –

Sensor turns the lights off after 15-minute time-out.

Unoccupied

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Grouping

Some Lutron systems allow you to group areas so they act as a single large vacancy group. All grouped areas will turn off only when all vacancy sensors in each of the grouped areas report an unoccupied status.

Dependency

Dependency is very similar to grouping, except that dependency only works in one direction. This is most frequently used to make a common area dependent on connected private offices or conference rooms to ensure the safety or comfort of building occupants.

As seen in **Figure 1**, if the hallway is dependent on the two conference rooms, the hallway will remain on if either conference room is occupied. The lights in the hallway will only turn off when both conference rooms and the hallway register unoccupied statuses.
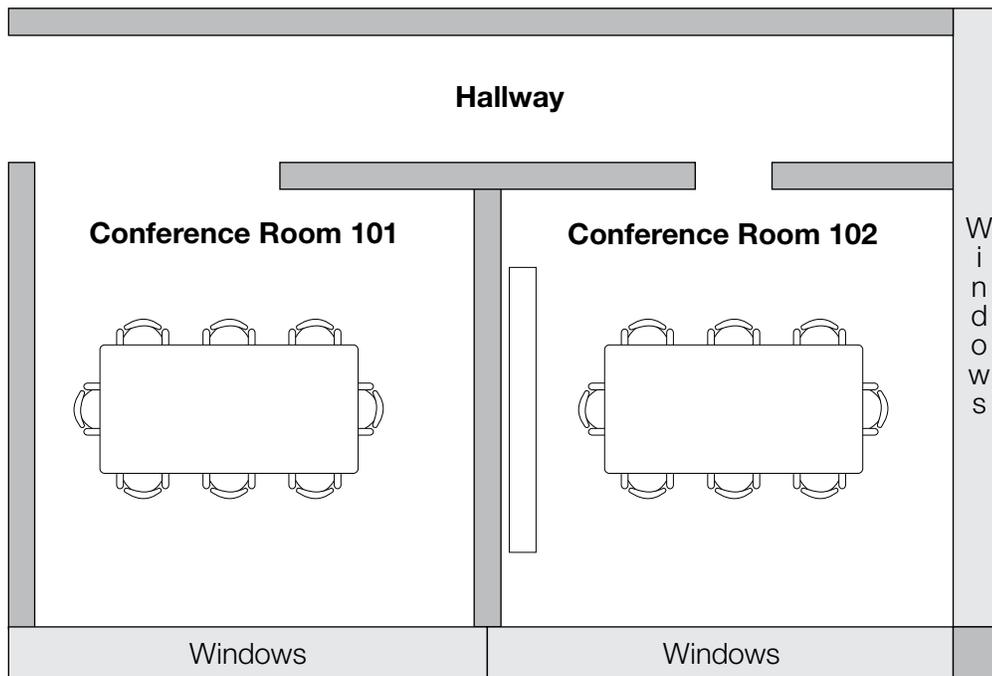

Figure 1: An example of occupancy dependency. In this installation the hallway area would be made dependent on conference room 101, and conference room 102.

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FAQs

How do I adjust my sensor settings?

Most Lutron vacancy sensors allow you to adjust the sensitivity and time-out values directly from the sensor itself. Please consult the individual sensor installation guide for instructions on how to adjust the sensitivity and time-out period.

How can I test sensor coverage?

Different sensors have different range capabilities. It is also possible to inadvertently create "blind spots" by blocking the sensor's field of view. Refer to your individual sensor instructions for details on how to test sensor coverage and sensitivity.

Do heaters, air conditioners, and air vents affect the performance of the vacancy sensor?

Some Lutron sensors analyze the movement and changes in heat through a space. This works really well to detect a person, but can easily be affected by a heat source or air conditioner. The closer the heat source is to the sensor, the greater the chance that it may interfere with the sensor's behavior. If you are having problems with a vacancy sensor check to see if there are any air vents or heating ducts close to the sensor. The sensor may have to be relocated, or air flow redirected.

How do multiple sensors work together?

If there are multiple sensors assigned to the same area, the system will keep track of all assigned sensors. If at least one sensor registers an "occupied" status, the area will remain on. The lights in the area will only turn off when all assigned sensors report "unoccupied" statuses.

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Will my sensor detect motion through the doorway of my private office?

If the motion is within the sensor's depth range, and if the sensor lens has a clear line of sight out a doorway, then the sensor will think the area is occupied when someone walks by. Recommended sensor placement is in a far corner, against the wall with the door.

Will my sensor detect motion through glass?

The technologies used by Lutron vacancy sensors to detect motion will not "see" through glass.

Why is it possible for my lights to turn on automatically if I have a vacancy sensor?

There is a built-in 15-second vacancy grace period that begins when the lights are automatically turned off, during which the lights will automatically turn back on in response to motion. This grace period is provided as a safety and convenience feature; in the event that the lights turn off while the room is still occupied, the user does not need to manually turn the lights back on. After 15 seconds, the grace period expires and the lights must be manually turned on.

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