

## **RECOMMENDATIONS FOR FIXTURE-INTEGRATED PASSIVE INFRARED OCCUPANCY SENSORS**

### **Litecontrol CS/ir Control Solution**

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Passive infrared (PIR) occupancy sensors primarily serve for the detection of large movements of a heat source, such as a walking human. Although these sensors can detect small movements when the movements occur close to the sensor, the range of movement required for detection by the sensor is larger as the distance away from the sensor increases. Consequently, medium and small movements that occur towards the outer areas of the rated detection range may not be detected by the sensor. This can result in lights being switched off while the area is still occupied, and can lead to occupant inconvenience and complaints.

PIR sensors also require a direct line of sight to the motion in order to maintain detection. If any sort of barrier, such as a partition, file cabinet, or even the person's own body, blocks the view from the sensor to the motion, the motion will not be detected and the sensor will switch the lights off, again leading to occupant inconvenience and complaints.

Because of these limitations, Litecontrol currently only recommends the CS/ir solution in our Staklite 500 fixture, intended for lighting of library stacks. In the intended applications for this fixture, the expected movements are large – someone walking along the stack – and there are usually no barriers that would block the view of the motion.

We further recommend placing a sensor every eight feet in the Staklite fixture row, beginning at the end of the fixture, and we recommend a sensor at both ends of the row to ensure adequate motion detection at the critical point where the person enters the stack. We recommend these practices to help minimize the potential for the lights being switched off while someone is in the stack. Some conditions may still occur where the sensor will fail to detect movement even when the stack is occupied – for example, a person who sits on the floor and makes only small movements near the limit of the sensor's coverage area may not be detected – but in general we believe that the system will work adequately if our recommendations are followed.

In some cases, a customer may desire to use the CS/ir solution in the Staklite 500 fixture in conditions other than those we recommend, or they may want us to provide the CS/ir solution in a different fixture. In many cases, the system may perform as intended when used in configurations that are not included in our recommendations. However, because performance of the occupancy sensing solution depends on many factors in the application that are beyond our control, we are not able to assure the proper operation of the system in these instances. We can only provide the CS/ir solution for these uses for customers willing to indicate their willingness to release Litecontrol from responsibility for the system's operation in the non-recommended configurations.