

Friendly Motion-Activated Lights

Shen K. Yang, Ph.D. (楊憲桂)

Motion-activated lights (lights with motion sensors) are widely used in homes, offices, streets, etc. The use of these lights enhances safety and saves electricity.

Many homes at SCA have sections that are dark all the time. It is quite often one has to walk into the dark to turn on the light. Would it be nice to have something there all the time to turn on the light for you when you need to walk into the dark area? This can be accomplished with the help of a motion-activated light.

One common solution, which is fairly expensive and involved extensive work through the ceiling and the roof, is to install a solar tube (a.k.a. sun tube, sun tunnel, or light tube) over the dark area so that the area can be lit during the day time. Another familiar solution is to install a skylight through the ceiling and the roof. The disadvantage of either solar tube or skylight is that there is no light available at night.

A motion-activated light can be achieved by one of two methods. Once carried out, the homeowner won't have to worry about forgetting to turn off the light anymore.

One method is to replace the regular light switch in the dark area of the home with a motion-activated light switch (cost ~\$18). The light is turned on when the motion-sensor "sees" the motion of a person. When the person is moving in that area, the light stays on. The light is turned off by itself in 1 minute or longer when the motion-sensor does not "see" the motion of a person anymore. Another location of the home that can be greatly benefited with the use of a motion-sensor switch is the garage. After the regular light switch is replaced with a motion-sensor light switch, the home owner will no longer walk into a dark garage at night.

The second method is to replace the ceiling light bulb in the dark area with a LED motion-sensor light bulb (cost ~\$14). The light is turned on when the motion-sensor of the light bulb "sees" the motion of a person. When the person is moving in that area, the light stays on. The light is turned off by itself in 1 minute when the motion-sensor does not "see" the motion of a person. The stem portion of a LED motion sensor light bulb on the market is usually short. It may be necessary to use a socket extender (cost ~\$3).

Many homes have a ceiling light outside of the front door. The use of a motion-sensor light bulb at this location is very beneficial since it is turned on automatically when there is a visitor coming to the door at night. The motion-sensor light bulb does not turn on during the day time (dawn to dusk).

In summary, either a motion-sensor light switch or a motion-sensor light bulb is highly recommended when you want the light to turn on whenever you are there and off whenever you are not there. A motion-sensor light switch can also be used to control the on/off of a ceiling fan.