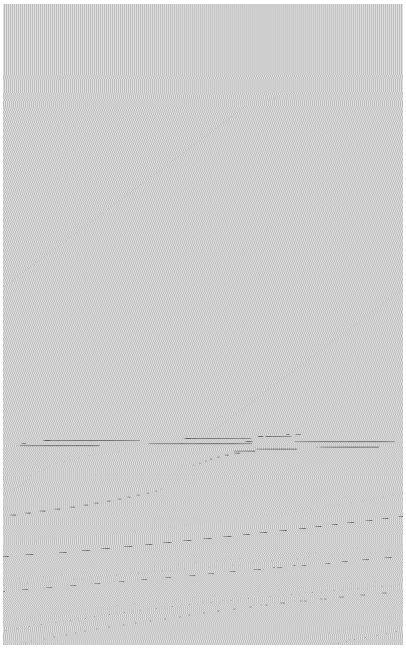
Automatic Nightlight Strikes the Perfect Balance between Guest Comfort and Energy Savings

By David Weigand, Product Manager, Leviton Manufacturing Company



Today's traveler has more choices than ever. Vacationers and business travelers can enjoy a stay at a hotel chain, a bed and breakfast, a timeshare or a resort. With so many lodging options, smart hospitality establishments are looking for ways to make their facilities stand out. And this is where the small amenities can add up big. A heat lamp in the bathroom adds a warm touch. A wireless connection in guest rooms enhances your guests' convenience. Bottled water in the refrigerator makes travelers feel catered to. But have you thought of adding a nightlight to enhance your guests' comfort and sense of well-being?

Surveys show that many travelers bring nightlights from home because it makes them more comfortable when visiting unfamiliar places. So why not equip your guest rooms with nightlights and add them to your list of amenities?

While the obvious, quick solution is to merely plug in a standard nightlight or two in each room, this is an inelegant solution that has its share of disadvantages. Because a standard nightlight requires manual activation, many of your guests won't even notice it or bother to use it. And testing and replacing all those tiny light bulbs just adds another maintenance headache.

Luckily there is an elegant solution: a nightlight integrated within an occupancy sensor wall switch that turns on automatically. This solution will also enable you to cut down on your electrical bills. As you know, a majority of your guests leave at least one light on when they leave the room and many also leave the bathroom light on all night long. A wall switch with an integral occupancy sensor and nightlight will significantly reduce your electricity bills and lower your maintenance costs and it can even prevent lawsuits.

HOW THE OCCUPANCY SENSOR WITH BUILT-IN NIGHTLIGHT WORKS

The OSSNL Occupancy Wall Switch Sensor by Leviton features a passive infrared sensor that detects motion within its coverage area. The sensor has two modes. In the manual-on mode, the sensor will not turn on the overhead lights until someone pushes the switch. In the auto-on mode, the OSSNL will automatically switch the overhead lights on upon motion detection. (The manual-on mode is the right choice for most guestrooms, not only because it generates maximum savings and may help meet codes, but also because it prevents lights from coming on when they are not needed or wanted.)

Either way, the overhead lights will remain on until someone turns them off manually — or when motion is no longer detected and the time delay has expired. When the lights go off, the LED on the OSSNL will immediately turn on, unless it's bright enough without the nightlight. The LED will also turn itself on via a photocell whenever the ambient light falls below a certain level; and turn off when the ambient light brightens amply.

In the dimmed mode, the LED will dim to five percent brightness after no motion has been detected for two minutes. As soon motion is detected again, the LED will brighten to the higher, nightlight level.

A LITTLE LIGHT YOUR GUESTS WILL APPRECIATE

So is a nightlight really an amenity your guests will care about? A WRA Research study found that 16 percent of travelers bring their own nightlights with them while traveling. And it's a good bet that many of those who might not take the trouble to pack a nightlight would still appreciate the benefits of having one in the room. The fact is that many people find it unsettling to grope around a strange room in the dark. That's why so many of them leave at least one light on at night.

Now maybe you're wondering: what about those people who might find a nightlight disturbing? After all, not everyone likes a bright light when they are trying to get a good night's sleep. -That's why both models are available with a dimming feature that reduces the light output to a mere five percent brightness level that it is barely visible. Once the sensor detects motion, however, the nightlight will brighten to a level adequate enough such that the guest will be able to move about the room freely—without bumping into furniture and walls.

Leviton Manufacturing Co., Inc.
Lighting Management Systems Division
Physical Address: 20497 SW Teton Ave, Tualatin, OR 97062-8812 USA
Mailing Address: PO Box 2210, Tualatin, OR 97062 USA

US Customer Service Telephone: (800) 736-6682
US Customer Service Fax: (503) 404-5594
US Technical Support: (800) 959-6004

Website: ***http://www.lutron.com***

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Application Note for OSSNL/OSS10

STUDY PROVES DEVICE DRAMATICALLY LOWERS ENERGY USE

The truth is that when people stay in hotels, they just don't pay attention to energy conservation. Obviously they're not paying for the electricity (you are) and besides, there are many times they actually would prefer to leave a light or two on so they don't have to enter a dark room at night or so they can see better if they have to get up from bed at night.

In fact, according to Sunbeam Hospitality and Andis Company, about 45 percent of travelers leave on the bathroom light when there is no nightlight available. Of course this ends up costing the hospitality industry an awful lot of money every year. Unfortunately, until now, there were no truly effective solutions to address this issue in the past. Putting timers on lights would cause lights to turn off on a rigid schedule that might annoy guests, and even pose a risk to their safety at times. And standard occupancy sensors could leave guests in complete darkness when the devices timed out. Neither of these options would have been very good for business. An occupancy sensor with a built-in nightlight overcomes these drawbacks. A few years back, the California Energy Commission sponsored a Lawrence Berkeley National Laboratory study of one of these devices in bathrooms at the Doubletree Hotel in Sacramento, California. The findings were definitive. Installing nightlight occupancy sensors in hotel bathrooms produces significant energy savings, and reduces maintenance costs including labor and light bulbs.

In the LBNL study, bathroom lights were on about four to five hours per day (on average 4.4 hours) prior to installing the sensor. This decreased to 1.5 to 3 hours (on average 2.4 hours) after the sensor was installed. That is a 46.5 percent drop in usage! With an average load in the study of 180 watts, the approximate savings per day per room was 360 kilowatt-hours. This translates into 33 dollars per guestroom at an average price of 9.2 cents per commercial kilowatt-hour (the average price in the U.S. according to the government).

The actual savings achieved in any given installation depends on a variety of factors. One of the most influential determinants is the size of the load being controlled by the sensor, which may range from 50 watts for a single fluorescent lamp to well over 200 watts for an incandescent vanity light. Then, of course, there's the cost of electricity, which varies greatly across the country. The time delay period is another important factor. The devices in the study were set to a one-hour delayed off but a shorter time delay will result in additional savings. (At Leviton, we think a 30-minute period is the optimal setting for hospitality applications. Anything shorter may end up eliciting complaints from guests.)

Usage patterns also impact savings. People tend to spend a lot more time in their rooms when they travel for pleasure, as opposed to on business. Since the study cited here was conducted in a hotel with a primarily business clientele, it is safe to assume that the benefits of installing a nightlight occupancy sensor will be much greater for establishments catering to vacationers.

But the savings don't stop there. In addition to reducing electricity bills, occupancy sensors extend bulb life. That means fewer light bulbs to purchase and for maintenance staff to change— and fewer complaints from guests.

NIGHTLIGHTS PREVENT ACCIDENTS

When a guest falls or crashes into something, not only might you have an unhappy customer; you might also be facing an expensive lawsuit. Improving lighting is widely acknowledged as one of the best measures for preventing these incidents. "Nightlights are proven to help prevent nighttime falls — the number one cause of guest injury," noted Harry Nobles, industry consultant and former head of the AAA Lodging/ Dining Ratings Program. A person is much less likely to trip, fall and get hurt when they can see where they're going. And the odds of injury certainly rise in an unfamiliar room—especially with the elderly who are most likely to have compromised night vision as well as a tendency to fall.

CONCLUSION

Its value as an amenity and its economic benefits combine to make the nightlight occupancy sensor an attractive option for the hospitality industry on the whole. Still some applications will provide quicker returns on investments than others. New construction applications will result in faster, simple paybacks (taking only energy-related savings into account) than will retrofit jobs.

The additional labor to install this sensor in new construction (as opposed to a standard switch) is negligible; yet it may take an electrician thirty minutes per device in a retrofit situation. The Berkley Lab study estimated a simple payback at around 1.5 years for new hotels and 3.2 years for retrofit applications. When you take into account the savings in the maintenance area, and possibly incentives defraying the initial costs, the payback period can be considerably shorter. Everything after that point is gravy.

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