



Energy Efficiency Solutions

Lighting control

The principle of lighting control is to light only those areas that are occupied or truly need light in your hotel. This can be achieved with technical measures, such as automatic devices. Lighting controls allow your hotel to vary the level of artificial light output but they can be also used to alter the mood or ambiance of the lighting to suit different times of the day.

Which lighting control systems are most suitable for my hotel?

Control of lighting systems ranges from the most basic manual wall switch to sophisticated computer control lighting management systems. Modern advances on occupant sensing and daylighting add additional cost-effective options for managing lighting systems.

Different automatic devices are available that make switching off easier:

Products available	Principle	Applications
Time control	Can switch lights on and off at pre-set times, each day	May be used in areas of regular usage
Occupancy sensor	Can switch on lights when movement is detected and switch them off after pre-set period of inactivity	May be used in areas of infrequent use by staff and public (such as washrooms in public areas, or sections of the property that are not much used during times of low occupancy)
Photocell control	Can switch off or dim lights when there is adequate daylight available	May be used in rooms with natural light
Automatic control with key card	Turns off all electrical appliances in guest rooms (except the minibar) when the guest rooms are unoccupied	For guest rooms

Note:

- Lighting control can also be integrated into the hotel’s Building Energy Management System (BEMS) if one is installed.
- Where applicable, it is recommended to adopt lighting zone control to optimize electricity use.





Where does it make more sense to install these lightning control systems?

Studies show that hotel guest bathrooms offer one of the largest energy saving opportunities – eliminating unnecessary extended operation of the lighting. The studies also conclude that when the control solution includes provisions for nightlighting energy waste is prevented and guest satisfaction is improved.

Do the lifetime of lights decrease because of sensors constantly switching them on and off?



Occupancy sensor

Source: Alliance to Save Energy website.

Even though lamp running life may be somewhat shortened by increased switching due to occupancy sensors, the overall chronological life of lamps is usually extended by the reduced daily burn hours.

How expensive and complicated are lighting control systems to build?

Like most technology, lighting control systems have become more affordable while their capability and features have dramatically improved. Today's products are also easier to install and simpler to use. Many functions can be used either manually with one touch control or programmed to happen automatically and require no user operation.

The cost of an occupancy sensor may vary from 75€ (automatic sensor for an incandescent lamp) to 125€ (for a fluorescent lamp and/or a more complex system).

Can my hotel update the lighting control systems as the need change?

Today's lighting control systems are very scalable. This provides you with the ability to select a system that is tailored to the size and use of your hotel. Additionally, smaller systems typically have the built-in ability to grow, so expanding later is usually an option.

Which is the return on investment time for lightning control systems?

Note that costs and return on investment may vary greatly depending on the local context and on the hotel's initial situation but for lightning control systems a return of investment between 1-8 years can be assumed.

How to proceed?

The first step is to review existing lamps and bulbs in use in the different areas of the hotel (rooms, floor, restaurant, outdoor area, kitchen, back office, etc.).

For each of these areas, try to evaluate if it is preferable to install energy saving light bulbs and/or lighting controls (solution n°XI). Should you plan to install an energy saving lamp together with a lighting control, make sure that you choose an energy-efficient lamp that works with the lighting control you plan to use and that lifetime of the lamp is not influenced by extensive switching, e.g. manufacturers' information.

Link with other solutions in the database?

Solution n°XII (lighting control) is to be considered together with solution n°XI (key card systems) and solution n°XIII (energy saving light bulbs).





Which other lightning improvements can I implement in my hotel?

Paint your hotel with light colors: optimize available light. Ensure all light colored surfaces are regularly cleaned and paint dark walls and ceilings with lighter colors to reflect and maximize available light.

Re-wire central lighting: when small sections of lighting are required, central lighting is not the most efficient solution. By re-wiring, localised lights can be switched on when and if required, saving energy and money.

Dust lights: Establish a cleaning schedule of lights to ensure that all lights operate at an optimum level. lighting. Replacing yellowed diffusers or fitting reflectors can also increase light output. Clean windows and skylights regularly.

Use the sunlight: is free and the most energy efficient lighting source. Remove objects that are blocking windows to ensure you maximise optimal lighting. Encourage staff to keep lights off where there is sufficient daylight.

Exchange exit sign lighting: Replace incandescent exit lighting with light emitting diode LED lamps. LED models use less energy than conventional units and can provide significant energy and cost savings.

Outdoor lightning: for your hotel outdoor garden lighting, try solar-powered lights.

Prepare a 'good housekeeping' list: your hotel can save a lot of energy with easy actions such as turning off lights when not needed, keeping windows and light fittings clean and labeling light switches.

Look for improvements: identify old, failing or inefficient systems and plan for their replacement. Replace dim, flickering or failed lamps, preferably with more efficient alternatives. Update yellowing fittings and controls.

Raise awareness: motivate staff and hotel guests to take simple actions to save on lighting costs and reduce environmental damage.

Market availability

Maturity of the solution: mature.

Manufacturers

- Philips Lighting www.lighting.philips.com (movement detectors, daylight linking, lighting management systems, luminaire-based products, etc.),
- OSRAM www.osram.com (lighting management systems),
- ZUMTOBEL www.zumtobel.com (lighting management systems),
- THEBEN www.theben.de/?L=1 (occupancy sensors, time controls),
- Legrand (/WattStopper) www.wattstopper.com (lighting control panels, daylight sensors and controls, occupancy sensors, etc.)
- Hager Group www.hagergroup.net (occupancy sensors, time controls),
- Sarlam www.sarlam.com (occupancy sensors – France),
- Schneider Electric www.schneider-electric.com (dimming systems, guest room controls),
- Siemens www2.sea.siemens.com/?languagecode=en (lighting control panels).

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