



The impact of lighting on guest well-being

Hospitality lighting and control solutions

Hotel lighting

Vital for all types of guests

It's a fact of life: guests often arrive at a destination hotel tired or jet-lagged. Different kinds of travelers have different needs and value different hotel amenities, but every tired guest wants to unwind, rest well, and get a good night's sleep.

Lighting offers a unique opportunity to create a memorable and satisfying experience for all the different kinds of travelers who come to your hotel. Lighting plays a major role in creating an appealing ambience, of course, but scientific research demonstrates that it is also bio-adaptive: that is, it has a profound effect on guests' mood, well-being, alertness, and quality of sleep. Good lighting experiences and effective lighting controls create an important sense of comfort, support wellness when designed for good rest and wake-up experiences, and promote relaxation in the hotel spa and other amenity areas.

In this guide, we examine the science behind bio-adaptive lighting, and consider its potential to transform guest experiences in your hotel. Along the way, we offer important insights into how you can gain a competitive advantage by capitalizing on the wellness trend that has transformed the hospitality industry.

Finally, and perhaps most importantly, we show how Dynalite uses leading-edge lighting and scene management software to help you create stand-out experiences in your guest rooms. Lighting can set the mood, simulate a natural wake-up experience, and illuminate a safe path to the bathroom at night. These features work together with other in-room features—refreshing aromas and ionizers, an energising shower, basic exercise equipment, massage chairs—to create a 'wow factor' that will delight your guests like never before.

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Understanding the relationship between light and wellness

“ I like the concept of dividing your time; it matters for your personal well-being. At a certain point, you can tell yourself no more emails, and turn on this relax mode to read a book or watch a show.^① ”

One of the main purposes of a hotel is to provide visitors with a refreshing and comfortable guest room experience. Lighting devised to promote relaxation—a relaxation scene in a guest room, for example, or a candlelight effect in the restaurant—help to do so in the evening. At nighttime, specially-designed experiences, such as anti-stumble lighting, help to preserve a restful atmosphere while indicating a clear path to the bathroom.

In addition to promoting relaxation and good sleep, personalised guest room lighting can now take advantage of exciting research into the effect of light on our circadian (daily) rhythms and sleep cycles. Evidence-based, bio-adaptive lighting experiences combine dynamic LED lighting with smart controls to offer unique wake-up experiences that enhance comfort, health, and well-being—all grounded in science.

The science is clear lighting matters

For the hospitality industry, the science is clear: lighting matters. And getting it right can be the difference between a rested, happy guest and a frustrated, tired one. Light, health, and well-being are all strongly linked to a good sleep and wake cycle. It's important that guests feel at home in their hotel rooms, as disrupted sleep and wake-up rhythms can have a major impact on effective functioning and good health.

Light regulates hotel guests' sleep and wake-up cycle

Provided in the right way, lighting can support relaxation and a healthy sleep-wake cycle. But if light is not provided in right way, it can cause a powerful dysregulation of the human day-night rhythm.

In 2000, researchers discovered a new type of photoreceptor in the eye that powerfully regulates the human sleeping and waking cycle. Via this photoreceptor, light can reset the body clock, which prompts our organs and nervous system to perform their functions properly, and at the right time of day. ② ③ ④

Ideally, if you want to help hotel guests sleep better and wake up refreshed, they need an abundance of light in the morning and during the day, less light in the evening, and as little light as possible at night. Too little light in the daytime and too much light in the evening can disrupt natural sleeping patterns, leading to sleep deprivation and other undesirable consequences. Features such as blackout curtains and in-room devices (such as indicator panels and thermostats) that go completely dark at night can help, but bio-adaptive lighting based on an understanding of the human circadian rhythm is needed too.

Good lighting can help travelers

Guests are frequently affected by travel after spending a long evening or the overnight hours moving through harshly-lit indoor spaces—from terminal to plane to terminal and finally to a hotel room. Light helps to minimize the adjustment time if light and dark exposures are well timed. Light at the wrong time can make things worse.

The timing of lighting is paramount

Our body is governed by several circadian (close to 24-hour) cycles, including the cycles of important hormones such as melatonin and cortisol. Adequate light exposure at the right time of the day helps to keep these rhythms stable, which is important to hotel guests' functioning and well-being. Melatonin production begins two to three hours before the time that we habitually go to sleep and continues throughout the night. The end of melatonin secretion marks the beginning of the regular waking period, at which time the level of cortisol (a stress hormone) has begun to rise naturally. This rise in cortisol helps us wake up in the morning and get ready for action.

Exposure to both artificial and natural light has a number of significant effects on the body's internal clock. Exposure to light enhances alertness at any time of the day or night. While this can be desirable during the daytime, it can be detrimental at night. Light exposure at night suppresses melatonin production^⑤, so a good night's sleep depends on keeping light exposure sufficiently low during the hours before bedtime.



“ A recent survey shows that 32% of hotel guests leave a light on during the night for orientation—a situation that does not contribute to deep sleep. Dynalite anti-stumble lighting solves this problem. ”

Using research science to create innovative guest lighting

Signify Dynalite and the University of Basel investigated the use of a wake-up light that simulates sunrise by gradually increasing light levels before a sleeper's alarm goes off. Researchers varied the brightness of the light in the morning to study the effect on cortisol levels ⑥.

When people wake up with a simulated sunrise, the research indicates, their cortisol levels increase more than if they wake in darkness. Additionally, exposure to simulated dawn light in the morning improves subjective well-being, mood, and cognitive performance—and these effects can last throughout the day.

Researchers at the University of Groningen also found that using a wake-up light has a positive impact on subjective measures of mood, energy levels upon waking, performance, and well-being. It also significantly reduces sleep inertia by twenty minutes compared to a control group ⑦.

“ It reminds me of sunrise, very natural. Like during weekends when you sleep till you wake up naturally. It's a very good feeling. ”

Promoting wellness and good sleep through light

Swissôtel The Stamford in Singapore partnered with Signify to become the first hotel in the world to use specially-designed human-centric lighting to promote a good night's sleep

Swissôtel The Stamford installed Dynalite circadian lighting in its new Vitality rooms, and dynamic lighting with night lights in the rest of the hotel's guest rooms. Hotel guests can choose from a set of predefined lighting scenes at the touch of a button on a control panel. For example, guests can select a Relax scene during the day to promote rest and recovery, while an automatic anti-stumble light setting lights the way to the bathroom while preserving sleep at night. All sensors and panels go to sleep when the guest switches off the lighting from a single button by the bed.

A research study conducted for Signify by market research company Ipsos MORI found that the one-touch Relax scene is the most popular with The Stamford's guests, and is used mostly in the evening before going to sleep. The study also found that the most innovative feature for guests is the unique Wake Up bio-adaptive lighting experience that Dynalite offers, which has been installed in the Vitality rooms of Swissôtel The Stamford.

Wake Up lighting achieves a gentle, slowly unfolding sunrise effect, based on research into the effect of lighting on human circadian rhythms. The lighting experience uses advanced colour-mixing LED luminaires from the world leader in professional LED lighting. With a combination of colored and white-light LEDs, these fixtures offer tunable white light, saturated colour-changing light, and tinted white light to support precisely tunable lighting recipes such as Wake Up.

Using the results of the research cited along with other collaborative studies, Dynalite developed bio-adaptive lighting, designed to promote good sleep and waking experiences in hotel guest rooms.

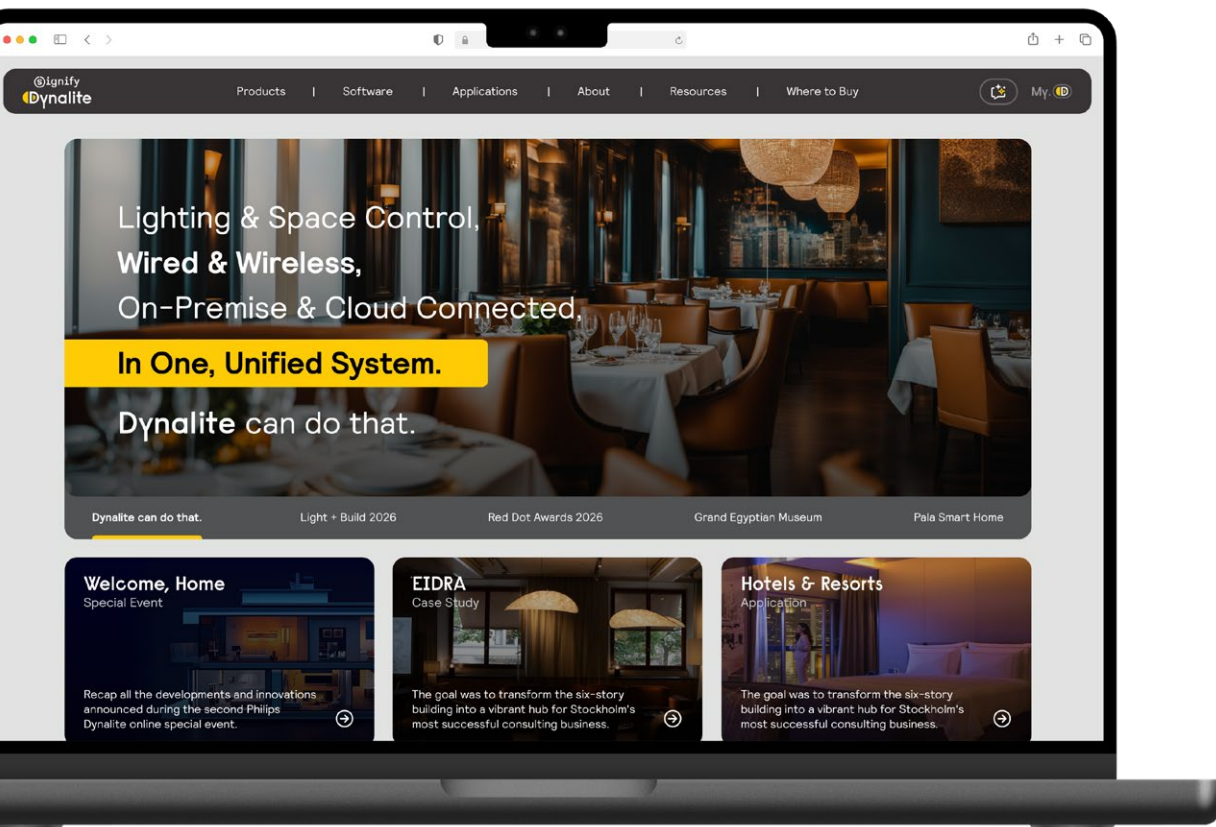
Bio-adaptive lighting is a version of circadian lighting that uses a lighting recipe based on the scientifically demonstrated effects of light exposure and timing:

- Dimmed light prevents exposure to high light levels in the evening just before going to bed, allowing guests to produce darkness hormones (especially melatonin), which helps them unwind and fall asleep easily
- Night lights are just bright enough to guide guests to the bathroom and around the bedroom, with little to no blue light
- Simulated dawn light in the morning mimics the sunrise to help guests wake up when they want to, reducing sleep inertia and improving well-being



Find out more

Discover how Dyalite can transform your environment — enhancing comfort, efficiency, and control. Whether you're planning a new project or upgrading an existing system, our experts are ready to help.



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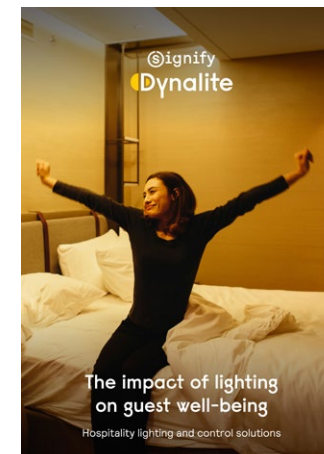
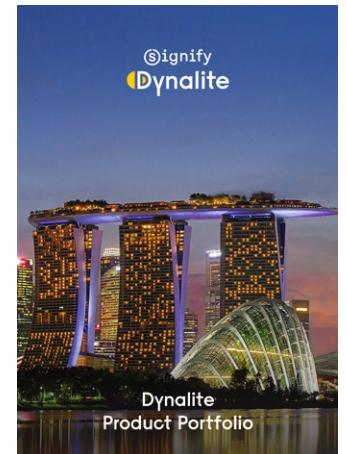


Acknowledgements

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Brochures

Wide variety of on-line literature covering our system benefits, capabilities, products and application solutions.





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