

ARCHITECTURAL LIGHTING

ARCHITECTURAL SSL | Tunable white light and its benefits become more accessible

In an excerpt from Architectural SSL, GREGORY KAY of PureEdge Lighting summarizes advanced, customizable illumination solutions that improve building occupant experience.

[Gregory Kay](#)

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Tunable white technology enables the independent control of color temperature and light intensity within a given application. The color temperature of the light can change from warm to neutral to cool in appearance over time, based on the needs of the occupants or space.

The pandemic has changed how we think about offices, remote working, and employee workplace needs. While many office positions have allowed for remote work since 2020, many workers are being asked to return on-site today.

To entice employees back to the office, building owners and company facility managers have implemented strategies to improve indoor air quality and overall interior environments. Lighting is also critical as it affects productivity, health, and wellbeing.

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In 2017, the American Society of Interior Designers in partnership with Cornell University, Delos, and the Innovative Workplace Institute researched the impact of workplace design on behavior and performance; the impact of spatial design on organizational goals; and the impact of design on human, organizational, and environmental sustainability. The study found that 68% of employees were dissatisfied with the lighting in their offices. In other words, there's ample room for improvement.

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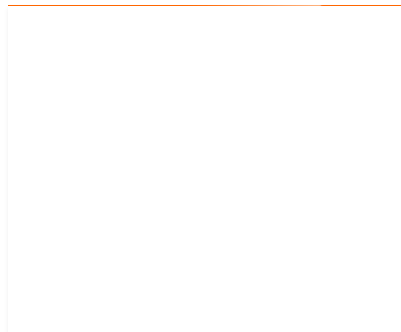
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Today, tunable white lights are a reliable technology that can support alertness and productivity in an environment by helping workers maintain their natural circadian rhythm.

A 2013 study of human-centric lighting in five government office buildings by Rensselaer Polytechnic Institute's Lighting Research Center (LRC) found that employees working under human-centric tunable lighting had better sleep and lower levels of depression and stress than those who did not. Additional studies have shown the impact of light's spectral content and intensity on circadian rhythm. For example, too much blue light at night can undermine sleep.

In 2016, property company CBRE Netherlands along with the University of Twente and Vrije Universiteit Amsterdam installed time-controlled, Kelvin-changing lighting at CBRE's Amsterdam offices. High illuminance levels and cool, indirect white light were used in the morning and early afternoon; warmer, lower levels were used at midday and in the late afternoon. Approximately 120 employees were surveyed over a seven-month period via questionnaires, biological data, and interviews. Employees working under the new light settings experienced notable benefits:

- Productivity increase of 18%.
- Work accuracy improvement of 12%.
- Happiness increase of 76%.
- 71% felt they had more energy.





At the study's completion, the office returned to its original lighting conditions. One of the first things the participants requested? Resuming the new lighting settings.

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"Tunable white light and its benefits become more accessible" originally appeared on Architectural SSL, an Endeavor Business Media partner site.

GREGORY KAY is president and founder of [PureEdge Lighting](#). He has worked in the lighting industry for more than 30 years as an accredited lighting designer, engineer, and entrepreneur, and he has received countless awards for his innovative design work. Reach him at greg@pureedgelighting.com.

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