

## 50 Shades of White --

Tunable white lighting, color preference, and employee environmental satisfaction

### ABSTRACT

Recent discoveries and advancements related to the biological effects of light have revealed new links between light, human performance, and well-being. Meanwhile, advanced LED technologies present new opportunities to define and manage the spectral content of electric lighting systems. These developments are compelling designers and facility managers to conceive and implement general workplace lighting systems with tunable and dynamic color characteristics that purportedly support human circadian entrainment. The intent of this human-centered approach to lighting is to enhance occupant well-being or otherwise drive positive organizational outcomes. However, until now, it was unclear how task lighting preferences change under these conditions and if complementary tunable white task lighting systems afford benefits in user environmental satisfaction and/or cognitive performance.

This session will provide attendees with an overview and update regarding the science of circadian lighting and circadian health, the features and operation of tunable white LED systems, and research findings related to occupant environmental satisfaction and cognitive performance using a tunable white task and ambient workplace lighting system.

### LEARNING OBJECTIVES

- Explain the difference between lighting color temperature and lighting spectral power distribution
- Name two types of tunable white LED lighting systems
- Recognize the role light plays in maintaining human health and well-being
- Choose task lights that support cognitive performance in offices with tunable white ambient lighting

### PRESENTER



Dave Pfund  
President, tambient  
The Lighting Quotient

As president of tambient, the task ambient lighting division of The Lighting Quotient, Dave is focused on emerging workplace issues and solutions. He became president in 2005 after serving the company for 14 years and is inventor or co-inventor of numerous lighting technology and design patents embodied in the tambient product line. Dave's early work in lighting design was recognized with several International Lighting Design Awards of Merit and the Edwin F. Guth Memorial Award of Excellence. Dave was granted professional status in the International Association of Lighting Designers in 1991. Dave is a four-time Neocon speaker and twice presented at IFMA World Workplace. He has also presented at AIA National Conventions, LightShow East, ASHRAE's High Performance Buildings Conference, and Atlanta Workplace 2015.