

## LUMINAIRE LEVEL LIGHTING CONTROLS SERIES

# Lighting Controls in Healthcare Facilities

This guide outlines key concepts and design considerations best addressed with Luminaire Level Lighting Controls (LLLC).

Healthcare project types can improve many types of spaces ranging from private practice medical offices, acute care hospitals, and everything in between. Some spaces may be highly specialized such as elder care or rehab facilities. While the lighting needs of each healthcare space may vary significantly, well designed lighting control systems may improve the patient and staff experience in all of them.

### Shift workers

In the United States, an estimated 16% of the workforce spends at least part of their professional lives doing shift work (time scheduled outside of the hours of 7am and 6pm.). Among those workers, healthcare professions make up a significant number.

Shift workers tend to be at increased risk for poor sleep, insomnia, and a wide variety of potential diseases. While not all healthcare workers presently work swing shifts, most will at some time in their careers.

### Luminaire Level Lighting Controls

LLLC fixtures are appropriate for many healthcare environments including transition corridors, toilet rooms, offices, exam rooms, and covered parking. They offer maximum flexibility while simplifying design, installation, and operation. They can also fit seamlessly into a large comprehensive LLLC system implemented throughout the entire facility.

### Internet of things

Lighting controls are increasingly being utilized as a platform on which to create the Smart Building Ecosystem. Functionality including things like asset tracking, contact tracing, and room allocation may all provide benefits to the healthcare environment.



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### Retrofit opportunity

Wireless LLLC systems are a perfect fit for retrofit projects with high quality aspirations and installation challenges. In almost all cases, existing wiring may be retained with new luminaires installed one for one. Wireless switches, sensors, and app-based programming completes the retrofit.

### Light and health

It is now understood that exposure to light has an impact on human physiology and our circadian system. This can have profound impacts on healthcare staff and overnight patients. While research is ongoing into the relationship between light and health, there appears to be agreement on the key lighting stimulus variables related to circadian entrainment.

Until a fully vetted recommendation is achieved, evidence suggests the best path is to include LLLC which may be reprogrammed and configured to align with emerging scientific consensus.

### Five variables that may be controlled by LLLC

**Intensity** – How much light

**Distribution** – Direction of the light

**Spectral power distribution** – Colors of the light

**Duration** – Length of exposure to the light

**Timing** – When is the exposure to the light