

LUMINAIRE LEVEL LIGHTING CONTROLS FAQ

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WHAT ARE LLLCS?

Luminaire Level Lighting Controls (LLLC) are lighting products with wirelessly networked integrated sensors, enabling luminaires within the system to communicate with each other. These systems provide multiple control capabilities in one package, from occupancy and vacancy sensing to daylight harvesting and data transmission, as well as combinations of each.

WHY ARE LLLCS THE FUTURE?

- **Strong savings potential:** Preliminary estimates show **25 to 70 percent savings** compared with non-controlled fixtures.
- **Simpler lighting path:** LLLCs address limitations of earlier generations of controls:
 - Pre-programmed settings offer a better **out-of-the-box** experience
 - **Less wiring**
 - Same **basic installation** process as non-controlled fixtures
 - **Wireless features and apps** ease the commissioning process
 - **Finer tuned controls** offer a better customer experience, such as daylight harvesting for even space lighting and continuous dimming, which allows dimming over a continuous range, as opposed to step-dimming which only allows for preset increments between off and full output.
 - Each fixture is embedded with sensors and software that work together to adapt to the space and can be **individually controlled** via smartphone or tablet, making it easier for customers to reconfigure as needs change.

WHEN IS A LLLC SYSTEM RIGHT FOR MY CUSTOMER?

For all building types, today's LLLC systems provide the best light quality and most aggressive energy savings currently on the market. They also provide a simple path to multiple control capabilities including:

- **Occupancy & vacancy sensing**
- **Daylight harvesting**
- **Task tuning**
- **Continuous dimming**

LLLC systems can also provide high value non-energy benefits*:

- Asset tracking
- Space utilization planning
- Simple adaptability for new tenants
- Integration with building systems, including HVAC and CO² sensing systems
- Integration with building security and emergency response systems such as facial recognition
- Demand response capabilities
- Energy code compliance

* Not all systems have all of the capabilities listed

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Building types that can benefit from these additional capabilities include:

- Hospitals, utilizing asset tracking and space utilization
- Warehouses, for asset tracking and demand response
- Schools, for security and emergency response system integration and to enable lighting adjustments throughout the day for optimal learning environments
- Mixed-use office buildings, that take advantage of LLLC's building systems integration, demand response, space utilization and lighting flexibility.

WHAT ARE SOME EXAMPLES OF LLLC SYSTEMS?

Design Lights Consortium (DLC) maintains a **Qualified Product List (QPL)** for Networked Lighting Controls that includes a filterable subset for Interior Lighting and LLLC systems. As of January 2018, the following systems are listed as Luminaire Level Lighting Controls:

Acuity Controls nLight and nLight Air®	Enlighted
Acuity Controls Xpoint™ Wireless	LG Sensor Connect
Cree SmartCast™ Technology	Lutron Vive Wireless Solutions
Daintree Networks ControlScope®	Magnum Energy Solutions Magnum OPUS
Digital Lumens LightRules® and Siteworx Tune®	Philips SpaceWise and EasySense Advanced Grouping SNS200
Eaton WaveLinX Wireless Connected Lighting and LumaWatt Pro	RAB Lighting Lightcloud

QUESTIONS?

Contact an Energy Advisor at **(206) 684-3800** or **SCLEnergyAdvisor@seattle.gov** to learn more.



Enlighted Luminaire Level Lighting Controls installed in the Pacific Tower building in Seattle, WA.