

# So, you're ready to explore Luminaire Level Lighting Controls (LLLC) for your lighting project. What's next?



## **Find the type of LLLC that is right for you.**

- Identify the business benefits you require from your lighting system and understand the particular performance specifications you need.
- Read through free resources to better understand the types of systems available. Visit [betterbricks.com/LLLC](https://betterbricks.com/LLLC) to get started.
- If you're in the Pacific Northwest, contact your local utility or leverage the [Northwest Trade Ally Network](#) and talk to a lighting specialist who can point you in the right direction.

## **Ask for LLLC!**

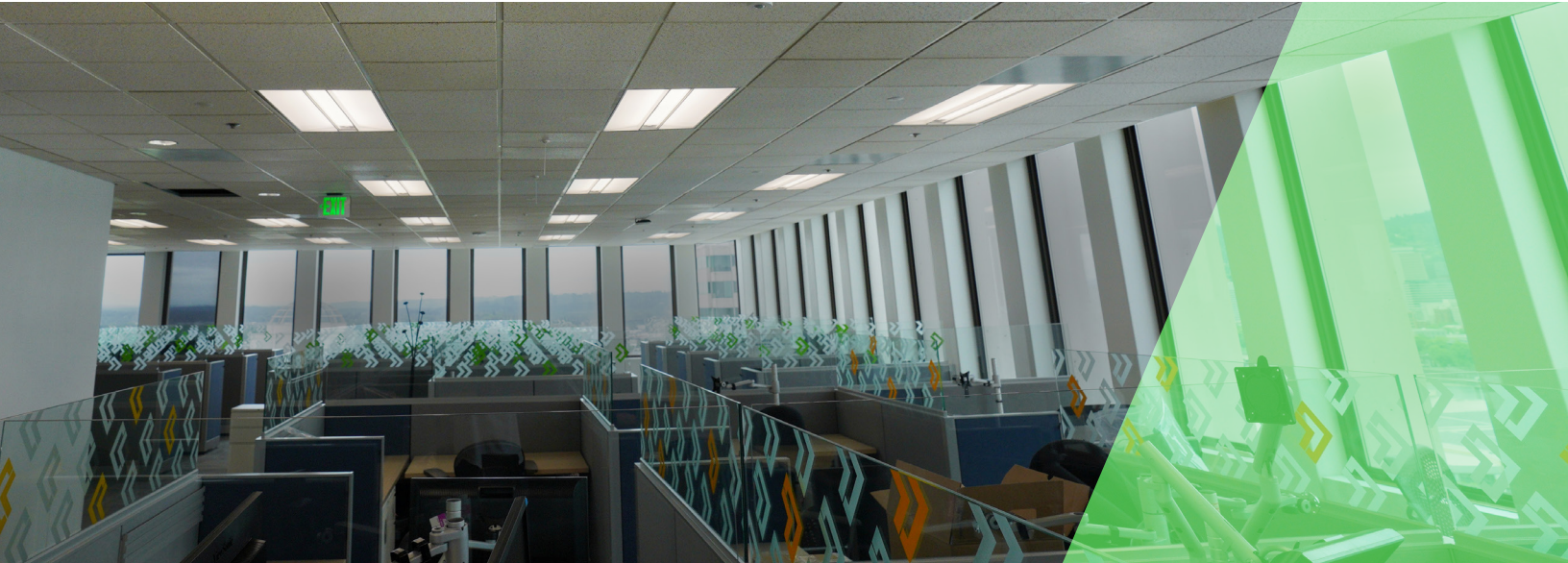
- At the earliest opportunity, request pricing for an LLLC system from your contractor or distributor. Include the performance specifications and business benefits you require with your LLLC system.
- Ask for standalone pricing of the LLLC vs. standard LED fixtures and ensure they include utility incentives in the price comparison. This ensures you'll be able to compare apples-to-apples pricing.
- Request contractors detail the pricing for additional pipe, wire, and labor required for non-LLLC projects. If your go-to contractor doesn't have experience with wireless control systems or can't provide this detail, encourage your developer to find a contractor who is comfortable with wireless technologies. Your local utility or the [Northwest Trade Ally Network's](#) lighting specialists can help if needed.

## **Get key stakeholder buy-in.**

- When calculating return on investment, remember to include the utility incentives and wireless installation savings of an LLLC system vs. other lighting control systems.
- Emphasize the specific business benefits, including that LLLC systems often cost less to install than wired solutions, offer optimal control to make the space just right, provide flexibility to rezone to future space use without additional costs, and help achieve code efficiently.
- Show stakeholders a mock-up of the system. Some contractors will install a demonstration in one room, or contractors can ask the manufacturer's rep to bring in a product demonstration to show how it works. Seeing it could be just the thing stakeholders need to understand the value proposition of an LLLC system.

The following table identifies the most common project drivers and offers specific language which can be leveraged when developing your performance specifications.

Project Drivers	LLLC Performance Feature	Specific Performance Spec Language for Vendor Communications
<b>Low install cost</b>	LLLC, wireless controls	<ul style="list-style-type: none"> <li>• We prefer a wireless controls system to minimize installation costs.</li> <li>• Wireless systems should have a rated battery life of at least three years.</li> </ul>
<b>Low operating costs</b>	LLLC, energy monitoring and reporting	<ul style="list-style-type: none"> <li>• Upon installation, we expect the contractor to work with building tenants and management to optimize system performance.</li> <li>• As possible, wireless devices shall not require batteries.</li> </ul>
<b>Space Flexibility</b>	LLLC, individually addressable, wireless rezoning	<p>To accommodate space changes and tenant preferences, the controls system should:</p> <ul style="list-style-type: none"> <li>• Address all luminaires at the fixture level.</li> <li>• Be capable of rezoning via an app-based tool, and without rewiring.</li> <li>• Offer wireless and surface mount wall controllers.</li> </ul>
<b>Reliability</b>	LLLC mesh networks	<ul style="list-style-type: none"> <li>• To ensure reliability across a large space, the controls system should operate on a mesh network and feature devices which automatically rejoin networks in the event they drop offline.</li> <li>• If not on a mesh network, controls system should highlight how wireless signals are routed around building materials which might attenuate signal strength.</li> </ul>



<p><b>Cyber Security</b></p>	<p>Mesh networks with no gateways, systems with cyber/IoT certification</p>	<p>To ensure a networked system doesn't increase our cyber risk profile, the lighting controls system should:</p> <ul style="list-style-type: none"> <li>• Be on its own separate network.</li> <li>• Be certified or list appropriate cyber certificates and accreditations.</li> <li>• Specify exactly which system capabilities are available without a gateway device, and which system capabilities do require a gateway.</li> <li>• Allow multiple levels of user permission (e.g., tenants, facility operators, building owners)</li> </ul>
<p><b>Accessibility Remote Access/Override</b></p>	<p>LLLC with remote access, diagnostics alerts, scheduling override, and personal control</p>	<p>To ensure the value of the lighting system is realized, the following accessibility considerations need to be considered by the lighting controls system.</p> <ul style="list-style-type: none"> <li>• Remote (offsite) access to operating and viewing system performance (gateway required).</li> <li>• Diagnostics alerts, which can be auto-generated and sent to a facilities operator.</li> <li>• Scheduling override features which can be accessed by multiple user interface paths (e.g., wall controls, mobile app).</li> <li>• Allow multiple levels of user permission (e.g., tenants, facility operators, building owners).</li> </ul>
<p><b>Ease of Use</b></p>	<p>LLLC with app-based configuration, personal app-based control, programmable scene control, personal control</p>	<p>To ensure ease of use, the lighting system should offer the following:</p> <ul style="list-style-type: none"> <li>• App-based configuration from either Android, Apple iOS, or both (user-specified).</li> <li>• Programmable scene controllers offering: <ul style="list-style-type: none"> <li>◦ One-button touch scenes</li> <li>◦ Manual dim and raise</li> </ul> </li> <li>• Allow multiple levels of user permission so that tenants have access to basic lighting control features (e.g., scenes, light levels, tunable white).</li> </ul>



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