1. **What is WaveLinx?**

WaveLinx Wireless Connected Lighting (WaveLinx) eliminates the cost and complexity of traditional control systems, and simplifies installation and commissioning while providing a flexible and reconfigurable wireless topology for “on the fly” space changes.

2. **What components do I need to have a complete WaveLinx system?**

- Insight Manager (Pro, Enterprise, Virtual)
- Lighting Xpert Insights Software
- BACnet Integration
- API Integration
- Wireless Area Controller (Gateway)
- WaveLinx Mobile App (Commissioning and user personal control)
- WaveLinx Wallstation (Manual lighting and scene control)
- Wireless Integrated Sensor (Fixture integrated occupancy sensor, ambient light sensor and control)
- WaveLinx Relay Switchpack with 0-10V
- WaveLinx Relays Switchpack with 0-10V 347VAC
- WaveLinx Receptacle 15A and 20A (Wall mounted power outlet)
- WaveLinx Room Based Sensor (Ceiling mounted multi sensor)
- Halo RL 56 (direct wireless downlights)
- WaveLinx Outdoor Load Control Module (area, site, flood lighting control)

3. **What are the wireless design best practices?**

<table>
<thead>
<tr>
<th>DESIGN CONSIDERATION</th>
<th>BEST PRACTICE</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number WAC’s on a network</td>
<td>20</td>
<td>500</td>
</tr>
<tr>
<td>Gateway/WAC Range</td>
<td>150 feet-250 feet LOS</td>
<td>300 feet LOS</td>
</tr>
<tr>
<td>Number of wireless devices</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Number of Interior Walls</td>
<td>2 walls</td>
<td>3 walls</td>
</tr>
<tr>
<td>Distance from WAC to 1st WCL Device</td>
<td>150 ft</td>
<td>200 ft</td>
</tr>
<tr>
<td>Distance between WCL Devices</td>
<td>75 ft</td>
<td>150 ft</td>
</tr>
<tr>
<td>Number of Hops from WAC</td>
<td>4 hops</td>
<td>5 hops</td>
</tr>
<tr>
<td>Number of Areas per WAC</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Number of Zones per Area</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Number of Scenes per Area</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td># of Mobile App Admins per WAC</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td># of Mobile App Users per WAC</td>
<td>10</td>
<td>30</td>
</tr>
</tbody>
</table>

**FAQ**

Wireless Connected Lighting Design

**Powering Business Worldwide**
4. **Can WaveLinx communicate through interior walls?**
Yes, WaveLinx will communicate through two to three interior walls of standard sheetrock construction with wood or aluminum framing.

5. **Can sensors be disabled?**
Yes, Integrated or external sensors can be disabled or have the sensitivity adjusted.

6. **Does the Wireless Area Controller (WAC) need to be install in the space or can it be installed in the Plenum?**
The WAC can installed in the plenum above the drop ceiling and will communicate to the devices in the space. It should not be installed on or next to a metal or concrete wall.

7. **Should I install the WAC next to a concrete or metal wall?**
No, Concrete or metal walls severely impact the strength of the wireless signal and will reduce the overall coverage and performance of the WaveLinx system. The WAC should be installed in the center of the overall space that it will be controlling.

8. **Should I install the WAC in an Electrical Closet or IT room?**
No, these types of rooms are typically surrounded by concrete walls. Concrete walls severely impact the strength of the wireless signal and will reduce the overall coverage and performance of the WaveLinx system. The WAC should be installed in the center of the overall space that it will be controlling.

9. **How does WaveLinx communicate through or around concrete spaces, like stairwells and electrical closets?**
The Wireless Area Controller emits a wireless signal using the 802.15.4 wireless protocol on the 2.4Mhz frequency range. This signal pulses out from the WAC in a wireless bubble. Concrete or metal structures will break this bubble. Ensure to place the WAC at least 15 feet away from these structures to allow the wireless signal to have the best angle around these structures. In addition most WaveLinx devices act as a signal repeater which will allow the wireless signal to communicate around difficult spaces.

10. **What is the maximum distance the WaveLinx system can communicate?**
The Wireless Area Controller can control a maximum 200 WaveLinx devices within 250 feet line of sight (LOS). If you have not reached the 200 device limit within 250ft, wireless hopping will allow you to reach additional devices up to the 200 device maximum. Each wireless device can act as a signal repeater or (hopper) and provides an additional 75 feet of wireless coverage as long as the device is within 75ft of a device within the WAC 250ft range. WaveLinx supports a maximum of 5 hops each adding 75ft of coverage beyond the WAC 250ft range.
11. **Can WaveLinx be installed in the same area as the building Wi-Fi?**
Yes, although 802.15.4 communications using a similar frequency as standard Wi-Fi it uses different channels, modulation and communications structure. This reduces the risk of conflicts of wireless systems.

12. **Can multiple 802.15.4 wireless networks exist in the same area of a building?**
Yes, 802.15.4 is self-healing, auto channel selecting mesh network. This means that these networks can coexist if set up correctly. In addition WaveLinx devices will only communicate with the assigned Wireless Area Controller. Other 802.15.4 wireless networks may not include all the security and performance qualities of WaveLinx and may not perform as well.