Taking Control of Outdoor Lighting

Trilliant’s intelligent wireless outdoor lighting controllers provide the tools necessary to take control of your energy and maintenance costs.

As energy costs continue to increase, taking control of outdoor lighting costs while keeping lights turned ON is imperative to cities, towns, colleges, utilities and industrial operations. In addition, if left ON for long periods of time, outdoor lights can adversely affect the environment. Outdoor light maintenance is also a major source of expenses, and if not properly done, can result in significant cost, inconvenience, liability, and safety risks. Trilliant Streetlights is the solution for these problems. Trilliant’s Lighting platform is an intelligent, centralized wireless outdoor management system with advanced features for control and safety. Maximize your Return on Investment (ROI) by using this powerful platform to realize cost savings and efficient operation. Trilliant’s Lighting platform provides:

- Tools to achieve reduced energy and maintenance costs
- Intelligent switching for sunset/sunrise based ON/OFF and dimming scheduling
- Increased lamp life operation with fault interlocks
- Revenue grade energy metering
- Extensive reporting on performance and energy savings
- Powerful asset management with complete and accurate inventory control
- Powerful industry standard web-based software with GPS mapping
- Easy installation and operation

Rely on Trilliant to provide all the tools and capabilities organizations need to maximize the energy and operational cost savings from their outdoor lighting systems.

Minimize Installation Costs with a True “Plug & Play” Design

Trilliant’s intelligent wireless outdoor lighting control system can be easily retrofitted for traditional outdoor lights, can be installed on new LEDs or solar-based LEDs, or can be easily transferred from traditional lights to LEDs.

These wireless controllers can be easily installed on any outdoor light fixture in a matter of minutes and begin communicating with the wireless Gateway via mesh or RPMA technology. Trilliant’s family of wireless lighting controllers provides advanced capabilities for a wide variety of outdoor lighting applications, including but not limited to: street and highway lights, area lighting, and campus lighting.
Applications for Wireless Outdoor Lighting Systems

Street and Highway Lighting
For cities, towns, and utilities, Trilliant’s Lighting solution reduces street light energy usage, maintenance costs, and light pollution, while preserving public safety through the use of the latest RPMA and mesh technologies. It enables remote programming, monitoring and control of street lights. Easily installed or retrofitted on traditional, LED, or solar-based LED street lights, Trilliant’s Lighting solution can be used to monitor and control just a few street lights on a given street to many thousands of street lights within a city, all from the comfort of your office. Trilliant’s Lighting platform’s scheduling and grouping capabilities, along with its Street Light Health Monitoring and Fault Notification capabilities, drive the cost of maintaining large numbers of street lights down by at least 50%, and can provide a reduction in energy usage by 30%.

Parking Lot Lighting
Adequate lighting in parking lots, car dealerships, and office parks is important for maintaining visitor and employee safety. However, during late night hours when there is little or no traffic, keeping lights on at full power is both a significant expense and contributor to environmental light pollution. Trilliant’s intelligent controllers allow retail and business facilities to easily control when and for how long lights are on. Trilliant’s Lighting platform’s support for motion-based control and daylight harvesting allows for advanced dimming controls that reduce costs without sacrificing safety. This enables additional lights to be dimmed while ON based on pedestrian or traffic movement.

Area Lighting
Lighting on college and business campuses and in parks is critical to public safety; but it represents a significant operations and maintenance expense. Trilliant’s Lighting solution allows colleges and businesses to fully control their campus-wide lighting from a web-based control interface that allows them to turn lights ON/OFF or be dimmed either on predetermined schedules or based on pedestrian activity in the area. Safety considerations are also maintained by Trilliant’s Lighting platform’s automated fault detection and alert system, which notifies facilities management via email and text messages when a fault occurs. This enables quick and timely repairs.

Key Benefits of Trilliant’s Lighting Platform

- **Maintains Public Safety**
  The system assures that lights are ON when they are needed and scheduled.

- **Failure-Based Reporting**
  Notification is provided automatically in real-time to the responsible individual(s) as soon as a fault occurs.

- **Reduced Light Pollution and Increased Lamp Life**
  By dimming or turning lights OFF when and where they are not needed, light pollution is reduced and lamp life is increased.

- **Easy Expansion**
  Scalable to new or remote areas quickly and easily since no cables are involved.

- **No Photocell Required**
  The built in astronomical time clock accurately computes sunset and sunrise times, eliminating the need for a photocell. A photocell option exists as a backup.

- **Power Savings**
  Reduces energy costs by as much as 30% through intelligent scheduling.

- **Maintenance and Repair Savings**
  Save 50-80% on repair costs with the “1 Trip Repair” capability.

- **Low Initial Costs**
  Very low investment cost because no cable installation is required.

- **No Training Required; Simply “Plug and Play”**
  If you can install a photocell, you can install the Trilliant controller.

- **Robust and Reliable**
  The system has been designed and proven in field operations to offer unmatched reliability for sustained performance over a wide range of operating conditions.
Trilliant’s Lighting Platform Architecture

Trilliant’s control system is made up of Light Controllers (SLC units), Gateways, and web-based management and control software. Trilliant’s wireless control systems are available for traditional, LED and solar-based LED light fixtures, and can be used in a wide variety of outdoor applications. This includes but is not limited to: street lights, highway sighting, area lighting, and parking lot lighting.

Key Features of Trilliant’s Lighting Platform

- **Wireless Technology**
  Trilliant utilizes the latest developments in wireless technology and employs RPMA and Mesh technologies to program, monitor, and control outdoor lights.

- **Google Maps and Google Earth User Interface**
  Fully integrated with Google Maps, Trilliant’s Lighting platform provides an intuitive and familiar interface for users that requires little or no training.

- **Remote Control and Scheduling**
  Individual lights or groups of lights can be controlled based on sunset/sunrise times, remotely programmable schedules, photocell feedback, or on demand.

- **Dimming**
  Lights or groups of lights can be dimmed based on a programmable schedule. Dimming is only limited by the fixture’s electronics.

- **Health Monitoring, Asset Management, and Fault Notifications**
  The system provides comprehensive asset management, which coupled with health monitoring and fault notifications allows for “one trip” repairs.

- **Fault Tolerant Intelligent Light Controllers**
  The lighting controller operates independently from the Gateway, network, and management software. This provides the highest level of operational reliability.

- **Highly Scalable and Reliable Management Software**
  Multi-threaded web-based architecture with clustering enables support for hundreds of thousands of outdoor lights.

- **Revenue-Grade Energy Metering**
  The wireless controllers contain a dedicated energy measurement engine for revenue-grade metering.

- **Light Agnostic**
  Trilliant’s Lighting solution works with any lamp type or manufacturer. Multiple light fixture installation options include: standard NEMA, NEMA threaded replacement, and integrated board options for LED fixtures.

- **Easy Field Configuration using Handheld Configurator**
  A dedicated, simple handheld configurator enables quick verification of the installation, energy metering, GPS location stamping, lamp condition monitoring, and commissioning of the wireless mesh network.
Trilliant’s Lighting platform is a web-based management platform that provides full system control to maximize energy and maintenance cost savings.

Available as an enterprise install or cloud hosted solution.

Server Hardware Requirements (On-Premises)

<table>
<thead>
<tr>
<th>Dual Server</th>
<th>RAM (Memory)</th>
<th>Storage (Hard Drive)</th>
<th>CPU Core</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
<td>Recommended</td>
<td>Minimum</td>
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<tr>
<td>Application Server</td>
<td>6 GB</td>
<td>8 GB</td>
<td>80 GB</td>
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<tr>
<td></td>
<td>Recommended</td>
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<td>Minimum</td>
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<tr>
<td></td>
<td>8 GB</td>
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<td>1 TB</td>
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<tr>
<td>Database Server</td>
<td>6 GB</td>
<td>8 GB</td>
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<tr>
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<td>Recommended</td>
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<td>3 TB or higher</td>
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</tbody>
</table>

Server Software Requirements (On-Premises)

<table>
<thead>
<tr>
<th>Component</th>
<th>Supported Versions</th>
<th>Recommended Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows Server 2008 R2</td>
<td>Windows Server 2008 R2 64 bit</td>
</tr>
<tr>
<td></td>
<td>Windows Server 2012</td>
<td>Windows Server 2012 64 bit</td>
</tr>
<tr>
<td></td>
<td>Windows Server 2012R2</td>
<td>Windows Server 2012R2 64 bit</td>
</tr>
<tr>
<td>Internet Information Server (IIS)</td>
<td>7.0/7.5/8.0/8.5</td>
<td>7.5</td>
</tr>
<tr>
<td>.NET Framework</td>
<td>4.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

| Database Server       | SQL Server 2008 R2 | SQL Server 2008 R2 64 bit |
|                       | SQL Server 2012    | SQL Server 2012 64 bit   |
|                       | SQL Server 2014    | SQL Server 2014 64 bit   |

User Requirements (On-Premises or Hosted)

**Operating System:**
- Windows 7
- Windows 8
- Windows 10

**Web Browser:**
- Internet Explorer 8.0/9.0/10.0/11.0
- Safari 5.17 or higher
- Firefox 17 or higher
- Chrome 23 or higher

**.NET Framework:** 4.0

**Database Server:**
- SQL Server 2008 R2
- SQL Server 2012
- SQL Server 2014

Trilliant® empowers the energy industry with the only purpose-built communications platform that enables utilities and cities to securely and reliably deploy any application - on one powerful network. With the most field-proven, globally compliant solution in the market, Trilliant empowers you by connecting the world of things®.

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