

TekLink™

TL2000 Series Cloud-Based
Wireless Control System Overview

Control Systems

CS



RECALL®

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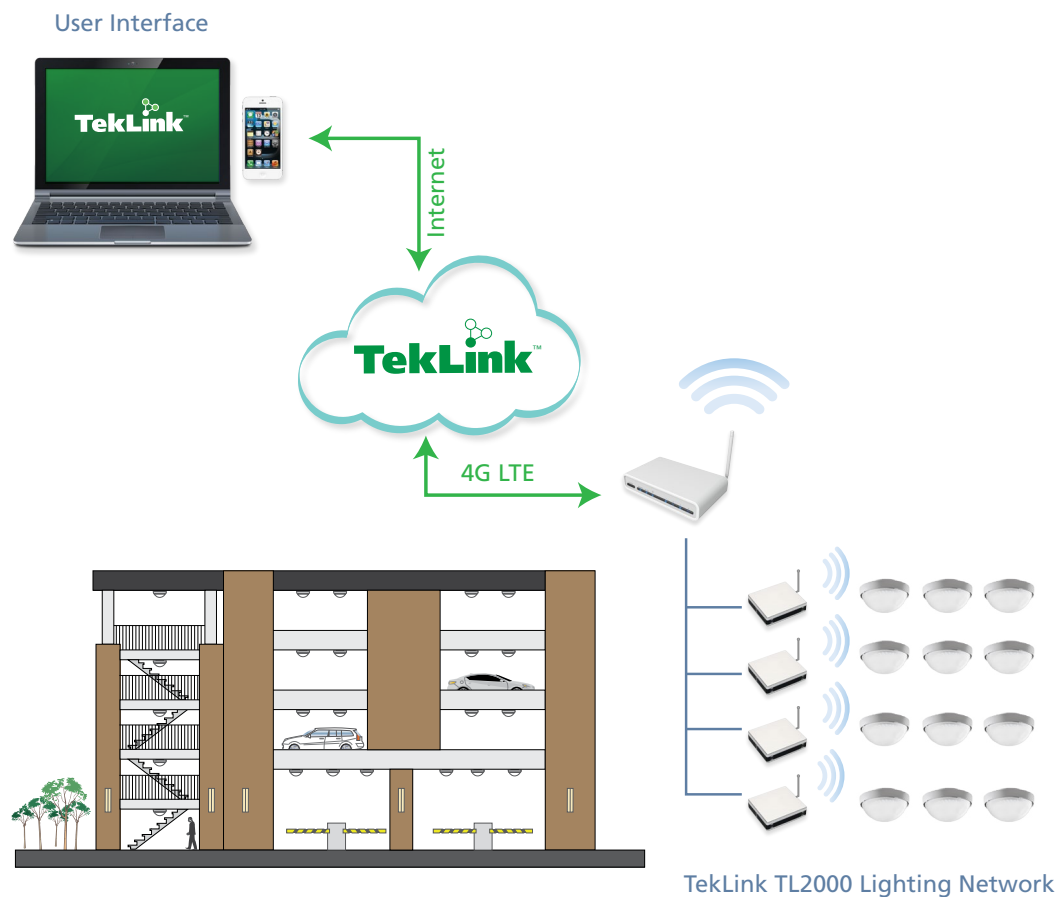
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1.0 Introduction

TekLink TL2000 is an adaptive lighting control system that utilizes a wireless communication between system nodes. In addition to occupancy detection and daylight harvesting, the TL2000 system features advanced scheduling and energy management capabilities with cloud-based control of system settings, reporting and notifications for use in parking decks and high bay applications. The system offers the ability to meet ASHRAE 90.1 and Title 24 requirements.

TekLink TL2000 Parking Suite (TL2000PS) is an extension to the system, supporting embedded cameras for features beyond lighting control such as car counting for parking garages.

This guide details the basic operating principles, features, device information, and wiring guide for TL2000 series.



2.0 TekLink TL2000 Series Overview

Kenall's TekLink TL2000 Control System reduces luminaire energy consumption by zonal occupancy detection, daylight harvesting, and light load scheduling. Lighting occupancy zones and schedules are configurable through the cloud via a web browser.

System components:

BORG (Board On Radio Grid)

- Supports Image, Microwave, or Passive Infrared sensing technology
- Controls luminaire light output
- Data capture



BRIDGE

- Collects data from BORGs
- Maintains zone schedules for 100+ BORGs



GATEWAY & CELLULAR AP

- Connects lighting network to the cloud
- Routes data and system info for up to 15 Bridges



USER INTERFACE

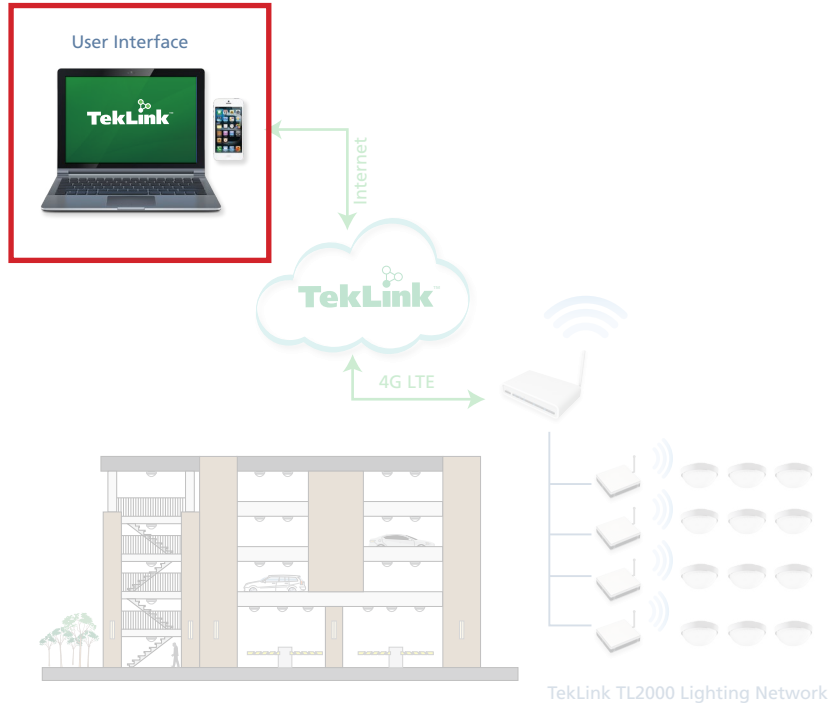
- Lighting zone and schedule configuration
- Provides reports
- Email/Text alert notifications



CLOUD

- Payment Card Industry (PCI) compliant platform allows system control from any location via a web browser

3.0 System Components



User Interface



Graphical User Interface (GUI)

- Remotely manager your TL2000 series control system(s) through common web browsers
- View and optimize lighting zone settings and schedules through a 3D site model
- Set-up email / text alert notifications
- View reports based on an array of system recordings & algorithms:



Occupancy Detection



Car Counting



Energy Consumption



Energy Savings

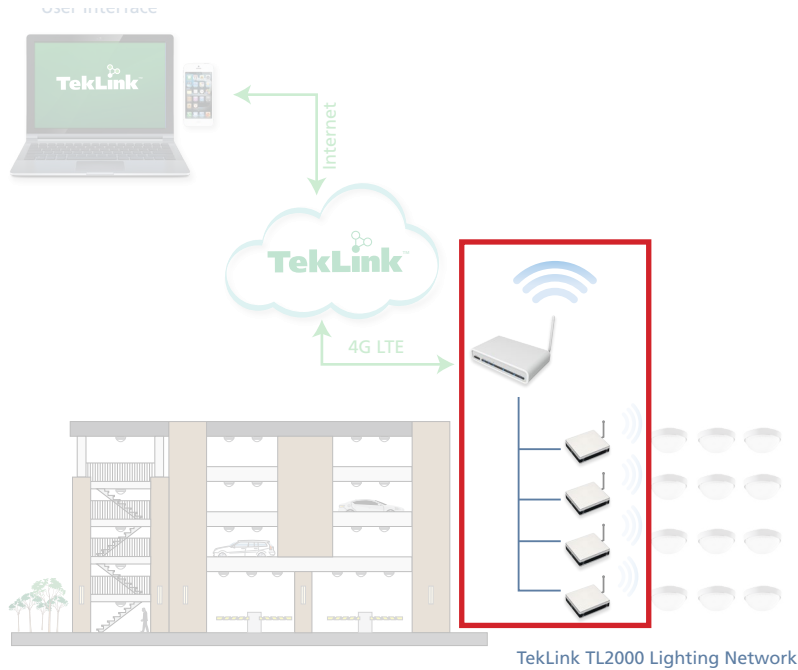
3.0 System Components cont'd



Cloud Platform

- TekLink TL2000 Series Cloud-based control system is completely isolated from a customer's corporate network, which contains the company's mission-critical information
- Access TekLink web application via a secure server adhering to the Payment Card Industry Data Security Standard (PCI DSS)
- Lighting system data stored in the Cloud and available with customer User ID and password at kenallteklink.com

3.0 System Components cont'd



Cellular Access Point

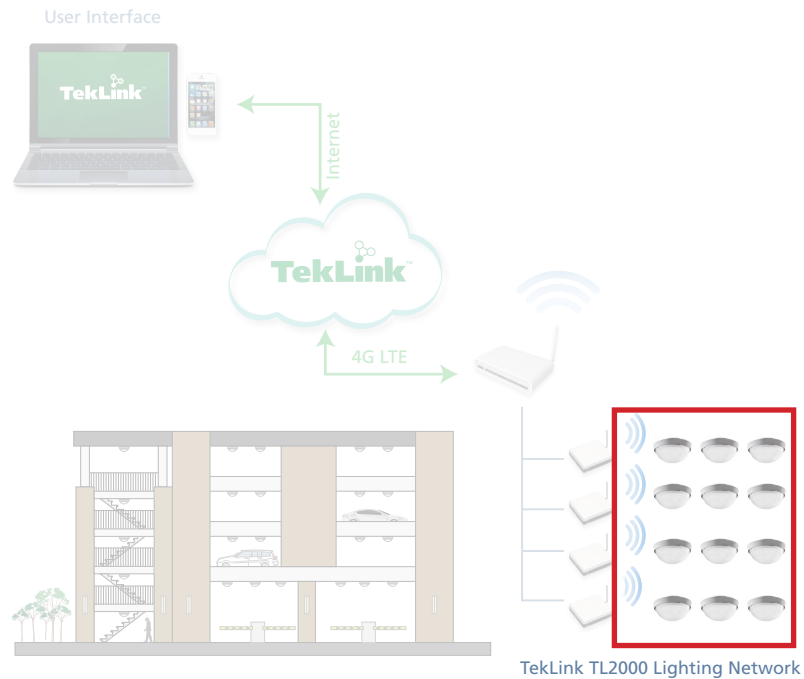
- The TekLink TL2000 Series cellular access point consists of a Gateway, Industrial Ethernet Switch, and Cellular Router integrated into an IP65 sealed enclosure
- TekLink is secured using HTTPS with a self-signed certificate for access to the web services
- The Gateway and Industrial Ethernet Switch push data and information between kenallteklink.com and the local lighting control system
- A Gateway can manage information for up to 15 Bridges



Bridge

- The Bridge passes lighting schedules and zone configuration information from the Gateway to Luminaires containing a BORG (Board on Radio Grid) device
- Uploads data from 100+ BORGs and passes it to the Gateway

3.0 System Components cont'd

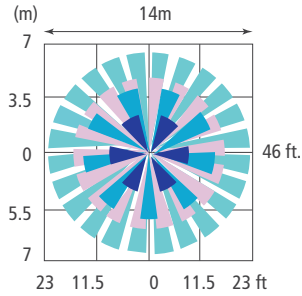


Board on Radio Grid (BORG)

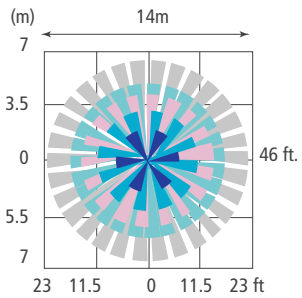
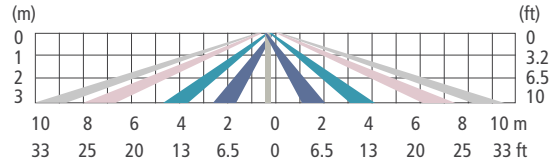
- The BORG is a lighting controller integrated into a LED luminaire and is the centerpiece of the TL2000 system
- BORGs support Image, Microwave, and Passive Infrared sensing technologies
- The BORG controls luminaire light output based on a host of configurable parameters such as; occupancy status, ambient daylight, time of day, and/or special events
- Captures and calculates light level (ft-cd), occupancy event, and energy consumption (kW/hr) data
- BORGs with embedded Image sensors are capable of counting vehicles in and out of the parking garage or lot

SENSOR COVERAGE AREAS

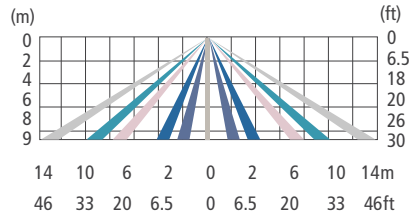
Passive Infrared Sensor



L448

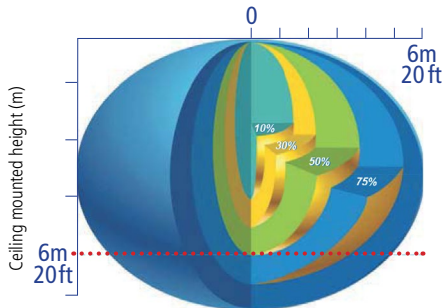


L6020



Lens Option	Description
L448	360° lens, maximum coverage 46' diameter from 8' height
L6020	360° lens, maximum coverage 60' diameter from 20' height

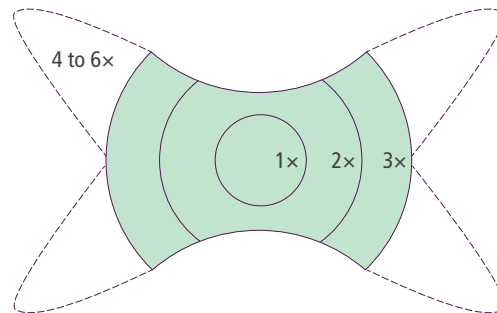
Microwave Sensor



Ceiling mounted detection pattern

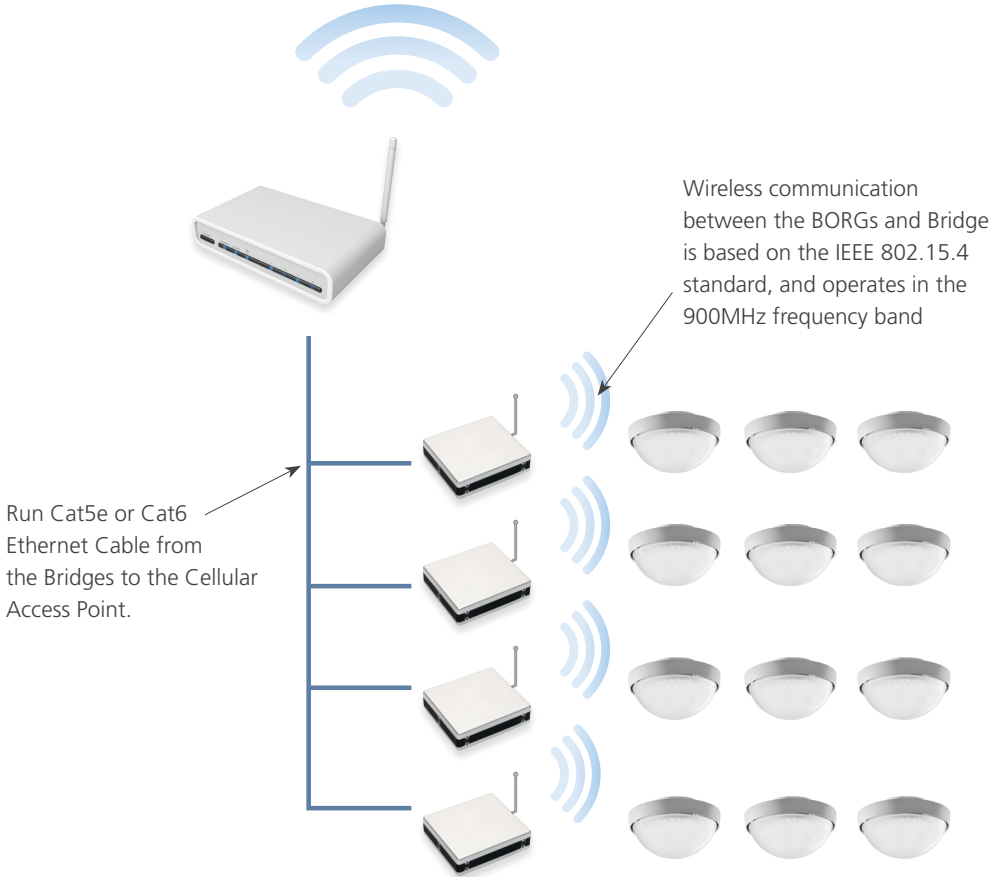
NOTE: Occupancy pattern dimensions are maximums, may vary due to environment

Image Sensor



NOTE: Numbers represent Mounting Height to Coverage Area multiplier

4.0 Wiring Guide



NOTE: Lighting fixtures with image sensors use wireless communication based on IEEE 802.11, and operate in the 2.4GHz frequency band



EXAMPLE: TL2000 Device

5.0 TL2000 Wireless System Features***TL2000 Standard Features****Web User Interface*

- 3D-graphical display
- Visual zone mapping
- Network mapping
- Site mapping
- Tiered administrative access levels

System Configuration & Scheduling

- Adjustable Occupancy Light Levels
- Fixture Zones Configurable
- Fixtures Operate in Multiple Zones
- Day and Night Scheduling
- Site-wide Special Event Scheduling
- Daylight Harvesting
- BACnet/IP Compatible
 - Enables Automated Demand Response

Measured Data

- Individual occupancy event recording
- Signal strength
- Light level

Reports & Notifications

- Energy Consumption Report
- Occupancy Data
- Disabled Fixture Alert
- Network Communication Alert

TL2000PS Parking Suite Additional***Features***

- Count Vehicles In/Out
- Review Today's Car Counting Data
- Daily/Monthly Counting Reports
- Advertise Parking Availability via 3rd Party Mobile Apps
- Display Parking Availability Per Level via 3rd Party Message Boards



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